RESEARCH CENTER

FIELD

Activity Report 2018

Section Dissemination

ALGORITHMICS, PROGRAMMING, SOFTWARE AND ARCHITECTURE

<p style="text-align:center">**ANTIQUE Project-Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Jérôme Feret is a guest member of the Steering Committee of the Conference on Computational Methods in Systems Biology (CMSB).
- Jérôme Feret is a member of the Steering Committee of the Workshop on Static Analysis and Systems Biology (SASB).
- Xavier Rival organized the 60th meeting of the IFIP Working Group 2.4 held in Dijon, in July 2018.
- Xavier Rival is a member of the Steering Committee of the Static Analysis Symposium (SAS).
- Xavier Rival is a member of the Steering Committee of the Workshop on Tools for Automatic Program Analysis (TAPAS).

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- Xavier Rival served as Chair of the Artifact Evaluation Committee of SAS 2018 (Static Analysis Symposium).

8.1.2.2. Member of the Conference Program Committees

- Jérôme Feret served as a Member of the Program Committee of LICS 2018 (Logic in Computer Science).
- Jérôme Feret served as a Member of the Program Committee of VEMDP 2018 (Verification of Engineered Molecular Devices and Programs).
- Jérôme Feret served as a Member of the Program Committee of SASB 2018 (Static Analysis and Systems Biology Workshop).
- Jérôme Feret served as a Member of the Program Committee of SAS 2018 (Static Analysis Symposium).
- Jérôme Feret served as a Member of the Program Committee of CMSB 2018 (Computational Methods in Systems Biology).
- Jérôme Feret served as a Member of the Program Committee of VMCAI 2019 (Verification, Model Checking, and Abstract Interpretation)
- Jérôme Feret is serving as a Member of the Program Committee of CIBCB 2019 (Computational Intelligence in Bioinformatics and Computational Biology).
- érôme Feret is serving as a Member of the Program Committee of HSB 2019 (Hybrid Systems and Biology).
- Jérôme Feret is serving as a Member of the Program Committee of CMSB 2019 (Computational Methods in Systems Biology).
- Xavier Rival served as a Member of the Program Committee of SAS 2018 (Static Analysis Symposium).
- Xavier Rival served as a Member of the Program Committee of Web Design, Analysis, Programming and Implementation of the WWW'18 Conference.

- Xavier Rival served as a Member of the Extended Review Committee of PLDI 2018 (Programming Languages Design and Implementation).
- Xavier Rival served as a Member of the Program Committee of APLAS 2018 (Asian Programming Languages And Systems Symposium).
- Xavier Rival is serving as a Member of the Committee of POPL 2020 (Principles of Programming Languages).
- Cezara Drăgoi served as a member of the Program Committee of Computer Aided Verification CAV'18.
- Cezara Drăgoi served as a member of the Program Committee of VMCAI 2019 (Verification, Model Checking, and Abstract Interpretation).
- Cezara Drăgoi served as a member of the Program Committee of NETYS 2018.

8.1.2.3. Reviewer

- Jérôme Feret served as Reviewer for ARSBM 2018 (Automated Reasoning for Systems Biology and Medicine).

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Jérôme Feret serves as a Member of the Editorial Board of the Frontiers in Genetics journal and the Open Journal of Modeling and Simulation.
- Jérôme Feret serves as co-Editor of an Issue of the Theoretical Computer Science journal, that is composed of papers from SASB 2016, and is expected to appear in 2019.
- Jérôme Feret serves as co-Editor of an Issue of the IEEE/ACM Transactions on Computational Biology and Bioinformatics, that is composed of papers from CMSB 2017, and is expected to appear in 2019.
- Xavier Rival serves as Editor of an Issue of the Formal Methods in System Design Journal, that is composed of a selection of papers from SAS 2016, and appeared in 2018.

8.1.3.2. Reviewer - Reviewing Activities

- Jérôme Feret served as a Reviewer for NACO (Natural Computing).
- Jérôme Feret served as a Reviewer for ACS Synthetic Biology.
- Jérôme Feret served as a Reviewer for TCS (Theoretical Computer Sciences).
- Jérôme Feret served as a Reviewer for TCBB (IEEE/ACM Transactions on Computational Biology and Bioinformatics).
- Jérôme Feret served as a Reviewer for IEEE Transactions on Reliability.
- Xavier Rival served as a Reviewer for ACM TOPLAS (Transactions On Programming Languages and Systems).
- Xavier Rival served as a Reviewer for ACM TOPS (Transactions On Privacy and Security).

8.1.4. Invited Talks

- Cezara Drăgoi was invited to give a talk at the workshop on Verification of Distributed Systems, Essaouira, Morocco, 2018.
- Cezara Drăgoi was invited to give a talk at the Dagstuhl workshop no 18211 on Formal Methods and Fault-Tolerant Distributed Computing: Forging an Alliance.

8.1.5. Leadership within the Scientific Community

Xavier Rival is a member of the IFIP Working Group 2.4 on Software implementation technology.

8.1.6. Scientific Expertise

- Cezara Drăgoi has participated to the recruitment committee for an assistant professor in the Department of Computer Science of École normale supérieure 2018.
- Jérôme Feret served as a external Reviewer for research program PRIM 2017 (funded by MIUR, the Italian Ministry for Education, University and Research).
- Jérôme Feret has participated to the recruitment committee for an assistant professor in Paris-Diderot University 2018.
- Xavier Rival chaired the Hiring Committee for an Assistant Professor position (Tenure track position, Gaspard Monge Chair) at École Polytechnique in 2018.

8.1.7. Research Administration

- Jérôme Feret and Xavier Rival are members of the Laboratory Council of DIENS.
- Jérôme Feret is member of PhD Review Committee (CSD) of Inria Paris.
- Jérôme Feret is deputy head of study of the Department of Computer Science of École normale supérieure.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence:

- Marc Chevalier, Mathematics, 40h, L1, FDV Bachelor program (Frontiers in Life Sciences (FdV)), Université Paris-Descartes, France.
- Jérôme Feret and Xavier Rival (lectures), and Marc Chevalier (tutorials), "Semantics and Application to Verification", 36h, L3, at École Normale Supérieure, France.
- Xavier Rival, "Introduction to Static Analysis", 8h, L3, at École des Mines de Paris, France.
- Xavier Rival, "Programmation Avancée", 18h, L3, at École Polytechnique, France.

Master:

- Xavier Rival, "Introduction to Static Analysis", 24h, Internet of Things Master (retraining curriculum, EXED), France.
- Xavier Rival, "Protocol Safety and Verification", 12h, M2, Advanced Communication Networks Master, France.
- Cezara Drăgoi, Jérôme Feret, Antoine Miné, and Xavier Rival, "Abstract Interpretation: application to verification and static analysis", 72h, M2. Parisian Master of Research in Computer Science (MPRI), France.
- Vincent Danos and Jérôme Feret (with Jean Krivine), Computational Biology, 28h, M1. Interdisciplinary Approaches to Life Science (AIV), Master Program, Université Paris-Descartes, France.

Doctorat:

- Jérôme Feret, "Intrinsic Coarse-Graining of Models of Signalling pathways", 1h30, aD-VANCES IN SYSTEMS AND SYNTHETIC BIOLOGY Modelling Complex Biological Systems in the Context of Genomics Thematic Research School, March 2018, Évry, France.

8.2.2. Supervision

- PhD in progress: Marc Chevalier, Static analysis of Security Properties in Critical Embedded Software. started in 2017 and supervised by Jérôme Feret

- PhD in progress: Hugo Illous, Relational Shape Abstraction Based on Separation Logic, started in 2015 and supervised by Xavier Rival and Matthieu Lemerre (CEA)
- PhD in progress: Olivier Nicole, Verification of micro-kernels, started in 2018 and supervised by Xavier Rival and Matthieu Lemerre (CEA)
- PhD defended: Huisong Li, Disjunctive Shape Abstraction for Shared Data-Structures, started in 2014 and supervised by Xavier Rival
- PhD defended: Jiangchao Liu, Static Analysis for Numeric and Structural Properties of Array Contents, started in 2014 and supervised by Xavier Rival

8.2.3. Juries

- Xavier Rival served as a Reviewer in the Jury of the PhD of Ahmad Salim Al-Sibahi (Defense planned for the 11th of January, 2018).

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

- Xavier Rival is member of the "Bureau du comité des projets" since October 2018.
- Xavier Rival is Chair of the Hiring Committee for Inria researchers at the center of Paris (CRCN) for 2019.

<p style="text-align:center; color:red;">AOSTE2 Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Liliana Cucu-Grosjen is member of the steering committees of the following conferences and workshops: RTSS, RTAS, RTNS, WMC, RTSOPS.

Rob Davis is member of the steering committees of the following conferences and workshops: RTSS, RTAS, RTNS, WMC, RTSOPS.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Liliana Cucu-Grosjean has served as PC co-chair for the 14th edition of WFCS 2018 in Imperia, Italy.

Adriana Gogonel has served as PC co-chair for the 12th Junior Researcher Workshop on Real-Time Computing (JWRTC) edition of in Poitiers, France.

10.1.2.2. Member of the Conference Program Committees

Liliana Cucu: RTAS, RTNS, WFCS.

Robert Davis: RTSS, RTAS, RTNS.

Adriana Gogonel: ACM RACS, WMC, JWRTC.

Dumitru Potop Butucaru: ACSD, EMSOFT.

Yves Sorel: DASIP.

10.1.2.3. Reviewer

All members of the team are regularly serving as reviewers for the main scientific events of our domain: RTSS, RTAS, RTCSA, RTNS, DATE, ETFA, EMSOFT, DASIP, etc.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Liliana Cucu-Grosjean has served as guest editor for the Journal of Real-Time Systems

10.1.3.2. Reviewer - Reviewing Activities

All members of the team are regularly serving as reviewers for the main journals of our domain: Information Processing Letter, Journal of Heuristics, Journal of Real-Time Systems, Journal of Systems Architecture, Journal of Signal Processing Systems, Leibniz Transactions on Embedded Systems, IEEE Transactions on Industrial Informatics, IEEE Transactions on Computers, Theoretical Computer Science.

10.1.4. Scientific Expertise

Yves Sorel: Steering Committee of System Design and Development Tools Group of Systematic Paris-Region Cluster.

Yves Sorel: Steering Committee of Technologies and Tools Program of SystemX Institute for Technological Research (IRT).

10.1.5. Research Administration

Liliana Cucu-Grosjean is member of Inria Evaluation Commission, co-chair of Inria Committee on gender equality and equal oportunities, and member of the CLHCST.

Dumitru Potop Butucaru is member of mobility grant commission for postdocs and invited professors.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Slim Ben Amor, Machine learning (practice sessions), 20H, M1, ESIEE Engineering School, Noisy-Le-Grand, France.

Master: Liliana Cucu, Distributed Databases and Statistics in Computer Science, 64h, U. Dunarea de Jos, Romania (Invited Professor).

Master: Liliana Cucu-Grosjean, Graph Theory, 32H, M1, ESIEE Engineering School, Cergy Pontoise, France.

Master: Adriana Gogonel, Machine learning, 32H, M1, ESIEE Engineering School, Noisy le Grand, France.

Master: Dumitru Potop Butucaru, A synchronous approach to the design of embedded real-time systems, 30h, M1, EPITA Engineering School, Paris France.

Master: Cristian Maxim, Graph Theory, 12H, M1, ESIEE Engineering School, Cergy Pontoise, France.

Master: Yves Sorel, Optimization of distributed real-time embedded systems, 38H, M2, University of Paris Sud, France.

Master: Yves Sorel, Safe design of reactive systems, 18H, M2, ESIEE Engineering School, Noisy-Le-Grand, France.

10.2.2. Supervision

PhD: Salah-Edinne Saidi, Distributed real-time scheduling for the co-simulation of multiple control models, UPMC, defended April 2018, co-supervised by Nicolas Pernet (IFPEN) and Yves Sorel.

PhD in progress: Slim Ben Amor, Schedulability analysis of probabilistic real-time tasks under end to end constraints, UPMC, started on September 2016, supervised by Liliana Cucu.

PhD in progress: Keryan Didier, Formal certification of real-time implementations, UPMC, started November 2015, supervised by Dumitru Potop Butucaru.

PhD in progress: Evariste Ntaryamira, Analysis of embedded systems with time and security constraints, UPMC, started on January 2017, supervised by Liliana Cucu and Rachel Akimana.

PhD in progress: Walid Talaboulma, Probabilistic timing analysis in presence of dependences, UPMC, started November 2015, co-supervised by Liliana Cucu and Adriana Gogonel.

PhD in progress: Salah-Edinne Saidi, Distributed real-time scheduling for the co-simulation of multiple control models, UMPC, started December 2014, co-supervised by Nicolas Pernet (IFPEN) and Yves Sorel.

10.2.3. Juries

Liliana Cucu-Grosjean is PhD examiner for the thesis of Anh Toan Bui Long, University of Poitiers/ENSMA, defended on December 2018.

Dumitru Potop Butucaru is PhD examiner for the thesis of Jad Khatib, Université Pierre et Marie Curie/EDITE, defended September 2018. École doctorale EDITE.

Yves Sorel is Phd examiner for the thesis of Florian Greff, University of Lorraine, defended May 2018.

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ARIC Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of Organizing Committees

- Claude-Pierre Jeannerod and Gilles Villard organized the workshop "Structured Matrix Days" (May 14–15, ENS de Lyon, France).
- Fabien Laguillaumie and Damien Stehlé organized the National Codes and Cryptography Days (Journées C2), in Aussois, France.
- Nathalie Revol co-organized the "École Jeunes Chercheurs et Jeunes Chercheuses en Programmation" (June 25–28, ENS de Lyon, France).
- Bruno Salvy is a co-chair of AofA'2019 (Analysis of Algorithms), in Luminy, France.

10.1.2. Scientific Events Selection

10.1.2.1. Member of Conference Program Committees

Chitchanok Chuengsatiansup was in the program committee of CRYPTO 2018.

Gottfried Herold was in the program committee of INDOCRYPT 2018.

Elena Kirshanova was in the program committee of INDOCRYPT 2018.

Benoît Libert was in the program committees of ACNS 2018, SCN 2018, Asiacrypt 2018, PKC 2019.

Jean-Michel Muller was in the program committee of Arith'25 and ASAP'2018.

Alain Passelègue was in the program committee of PKC 2018.

Nathalie Revol was in the program committee of Arith'25, of SCAN 2018 and of Correctness 2018.

Bruno Salvy was in the program committee for AofA'2018, is in the program committee of FPSAC 2019, in the steering committee of AofA and in the scientific committee of OPSFA 2019.

Damien Stehlé was in the program committees of Eurocrypt 2018, SCN 2018, PQCrypto 2018 and PQCrypto 2019. He is in the steering committee of the PQCrypto conference series.

Fabien Laguillaumie was in the program committee of ACISP 2018

10.1.3. Journals

Jean-Michel Muller is associate editor of the IEEE Transactions on Computers.

Nathalie Revol is a member of the editorial board of Reliable Computing.

Damien Stehlé is a member of the editorial board of the IACR Journal of Cryptology.

Bruno Salvy and Gilles Villard are members of the editorial board of Journal of Symbolic Computation.

Bruno Salvy is a member of the editorial board of the collection *Text and Monographs in Symbolic Computation* (Springer) and has been for 10 years in the editorial board of the *Journal of Algebra* (section Computational Algebra), which he left in March.

10.1.4. Invited Talks

- Claude-Pierre Jeannerod gave an invited talk *Recent results in fine-grained rounding error analysis* at the SCAN 2018 conference (Tokyo, September 10–15, 2018).

- Jean-Michel Muller gave an invited talk *Arithmétique et précision des calculs sur ordinateurs* at the conference *Tous mesureurs, tous mesurés*, organised by the INSHS and INP Institutes of CNRS, Paris, October 18-19, 2018.

- Benoît Libert gave an invited talk *New Applications of the Lossy Mode of LWE* at the *Chinacrypt 2018* conference, organised by the Chinese Association for Cryptologic Research (CACR) in Chengdu (China) on October 27-28, 2018.

- Damien Stehlé gave an invited talk *On algebraic variants of the LWE problem* at the ICERM workshop *Computational Challenges in the Theory of Lattices*, Providence (RI), on April 23-28, 2018. He also gave an invited talk on the same topic at the *Cryptography and Algorithmic Number Theory* workshop, held in Caen on June 20-22, 2018.

- Elena Kirshanova gave an invited talk *Sieving algorithms for the Shortest Vector Problem* at the *Joint Meeting of the Korean Mathematical Society and the German Mathematical Society*, held in Seoul, Korea, on October 3-6, 2018.

- Gottfried Herold gave an invited talk *Sieving in Practice* at the *Joint Meeting of the Korean Mathematical Society and the German Mathematical Society*, held in Seoul, Korea, on October 3-6, 2018.

- Jean-Michel Muller gave an invited talk *Make computer arithmetic great again* at a panel session on the future of computer arithmetic at Arith-25, 25-27 june 2018.

- Bruno Salvy gave an invited tutorial talk at STACS'2018 on random generation of combinatorial structures.

10.1.5. Leadership within the Scientific Community

Claude-Pierre Jeannerod was member of the scientific committee of JNCF (Journées Nationales de Calcul Formel). He was also a member of the recruitment committee for postdocs and sabbaticals at Inria Grenoble Rhône-Alpes.

Jean-Michel Muller is co-director of the *Groupement de Recherche Informatique Mathématique* (GDR IM) of CNRS; he chaired the HCERES evaluation committees of IRIF (UMR 8243, march 2018) and LIX (UMR 7161, october 2018); he is a member of the Scientific Concil of CERFACS; he participated to the jury of the *Prix La Recherche* award in 2018.

Alain Passelègue is a member of the steering committee of the *Groupe de Travail Codage et Cryptographie* (GT-C2) of the GDR-IM.

Bruno Salvy was a member of the HCERES evaluation committees of IRIF.

Damien Stehlé was a member of the jury for *prix de thèse SIF*.

10.1.6. Research Administration

Gilles Villard is a member of the *Section 6* of the *Comité national de la recherche scientifique*.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Claude-Pierre Jeannerod, Nathalie Revol, *Algorithmique numérique et fiabilité des calculs en arithmétique flottante* (24h), M2 ISFA (Institut de Science Financière et d'Assurances), Université Claude Bernard Lyon 1.

Master: Nicolas Brisebarre, Approximation Theory and Proof Assistants: Certified Computations, 18h, M2, ENS de Lyon, France

Master: Elena Kirshanova, Cryptanalysis, 18h, M2, ENS de Lyon, France

Master: Guillaume Hanrot, Cryptanalysis, 18h, M2, ENS de Lyon, France

Master: Damien Stehlé, Hard lattice problems, 36h, M2, ENS de Lyon, France

Post-graduate: Damien Stehlé, Hard lattice problems, 45h, Seoul National University, South Korea

Master: Elena Kirshanova, Computer Algebra, 10h, M1, ENS de Lyon, France

Master: Alexandre Wallet, Computer Algebra, 10h, M1, ENS de Lyon, France

Master: Guillaume Hanrot, Computer Algebra, 10h, M1, ENS de Lyon, France

Master: Bruno Salvy, Computer Algebra, 9h, MPRI, Paris, France

Master: Bruno Salvy, Logic and Complexity, 32h, École polytechnique, France

Master: Vincent Lefèvre, Computer arithmetic, 12h, M2 ISFA (Institut de Science Financière et d'Assurances), Université Claude Bernard Lyon 1.

Bachelor: Bruno Salvy, Design and Analysis of Algorithms, 15h, École polytechnique, France

Post-graduate: Bruno Salvy, Experimental Mathematics, 3h, Atelier jeunes chercheurs, St-Flour, France

Post-graduate: Bruno Salvy, Recent algorithms in symbolic summation and integration, 4h, Journées Louis Antoine, Rennes, France

Master: Fabien Laguillaumie, Cryptography, Security, Université Claude Bernard Lyon 1, 150h

Post-graduate : Fabien Laguillaumie, 2-party Computation and Homomorphic Encryption, 1h, École Cyber in Occitanie, France

10.2.2. Supervision

PhD: Fabrice Mouhartem, Privacy-preserving cryptography from pairings and lattices, ENS de Lyon (UdL), 18/10/2018, Benoît Libert

PhD in progress: Radu Titiu, Pseudo-random functions and functional encryption from lattices, ENS de Lyon (UdL), 01/01/2017, Benoît Libert

PhD in progress: Chen Qian, Additively homomorphic encryption and its applications, ENS de Lyon (UdL), 01/09/2016, Benoît Libert

PhD: Weiqiang Wen, Contributions to the hardness foundations of lattice-based cryptography, ENS de Lyon (UdL), 01/09/2015, Damien Stehlé

PhD in progress: Miruna Rosca, Algebraic variants of the LWE problem, ENS de Lyon (UdL), 01/01/2017, Damien Stehlé

PhD in progress: Alice Pellet–Mary, obfuscation cryptanalysis, ENS de Lyon (UdL), 01/09/2016, Damien Stehlé

PhD in progress: Huyen Nguyen, mathematical foundations of lattice-based cryptography, ENS de Lyon (UdL), 01/09/2018, Damien Stehlé

PhD in progress: Florent Bréhard, Outils pour un calcul numérique certifié -Applications aux systèmes dynamiques et à la théorie du contrôle, Ens de Lyon (UdL), 01/09/2016, Nicolas Brisebarre, Mioara Joldeş (CRNS, LAAS) et Damien Pous (CNRS, LIP, Plume)

PhD in progress: Adel Hamdi, Chiffrement fonctionnel pour le traitement de données externes en aveugle, UCBL (UdL) & Orange, 07/12/2017, Sébastien Canard (Orange), Fabien Laguillaumie

PhD in progress: Ida Tucker, Conception de systèmes cryptographiques avancés reposant sur des briques homomorphes, Ens de Lyon (UdL) et Université de Bordeaux, 17/10/2017, Guilhem Castagnos (IMB, Université de Bordeaux), Fabien Laguillaumie

10.2.3. Committees

Benoît Libert: reviewer for the PhD thesis of Pierre-Alain Dupont, ENS, 29/08/2018.

Damien Stehlé: reviewer for the PhD thesis of Thomas Ricosset, ENSEEIHT, 12/11/2018; reviewer for the PhD thesis of Ilaria Chillotti, UVSQ, 17/05/2018; examiner for the PhD thesis of Rachel Player, Royal Holloway University of London, 19/03/2018; president for the PhD thesis of Guillaume Bonnoron, Ecole nationale supérieure Mines-Télécom Atlantique Bretagne Pays de la Loire, 15/03/2018; jury member for the PhD thesis of Quentin Santos, ENS, 20/12/2018.

Bruno Salvy: member of the HdR committee of Guillaume Chapuy, IRIF, April and of Enrica Duchi, IRIF, November; reviewer for the PhD thesis of Pablo Rotondo, IRIF, September.

Fabien Laguillaumie: reviewer for the PhD thesis of Raphaël Bost, Université Rennes 1, 08/01/2018, Xavier Bultel, Université Clermont Auvergne, 17/05/2018, Vincent Zucca, Sorbonne Université, 25/06/2018, Quentin Santos, ENS, 20/12/2018

Nathalie Revol: examiner for the PhD thesis of Romain Picot, Université Paris 6, 27/03/2018

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Nathalie Revol is a member of the editorial board of interstices; she belongs to the steering committee of MMI (Maison des Mathématiques et de l'Informatique, Lyon)
- Bruno Salvy is "référent chercheur" for the Inria Grenoble Center.

10.3.2. Articles and contents

Nathalie Revol belonged to the working group that elaborated the "7 families of computer science" playcards

10.3.3. Education

Nathalie Revol taught "Dissemination of Scientific Knowledge", 10h, to the 4th year students (between Master and PhD) of ENS de Lyon, France. She has been invited to a panel about "Flashmob" type activities, at ESOF 2018 (EuroScience Open Forum), July 9–14, 2018, Toulouse, France.

Nathalie Revol works with DANE (Délégation Académique au Numérique dans l'Éducation) of Rectorat de Lyon towards educating primary school teachers, by educating educators. She has been invited to present her past activities, using educational robots, at 3es Rencontres Nationales de la Robotique Éducative, October 2–3, Lyon, France.

10.3.4. Interventions

Laurent Grémy and Fabrice Mouhartem gave talks at *Fête de la Science* for a general audience. Nathalie Revol gave talks at *Fête de la Science* for 3 classes (9 years old, 11 years old and 13 years old).

As an incentive for high-school pupils, and especially girls, to choose scientific careers, Nathalie Revol gave talks at Lycée Ella Fitzgerald (Saint-Romain-en-Gal) and Mondial des Métiers (in February 2018). With Jérôme Germoni and Natacha Portier, she organized a day *Filles & Info* in March 2018, gathering about 100 high-school girls of 1e S. She was part of the panel discussing with the audience after the movie "Les figures de l'ombre - Hidden figures" at Comoedia cinema in Lyon in March 2018.

Damien Stehlé received at ENS de Lyon several winning teams of the Alkindi highschool competition. Alice Pellet–Mary and Fabrice Mouhartem gave talks at this event.

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AROMATH Project-Team

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8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Evelyne Hubert was the general and scientific chair for the conference *Symmetry and Computation* held at the Centre International de Recherche en Mathematiques (Marseille, France) April 3-7.

8.1.1.2. Member of the Organizing Committees

Laurent Busé organized the second "Learning Week" of the ARCADES Network : "Opportunity Recognition" at Inria Sophia Antipolis, March 19-23, 2018.

8.1.2. Scientific Events Selection

8.1.2.1. Reviewer

Bernard Mourrain was reviewer for the conference ISSAC.

8.1.3. *Journal*

8.1.3.1. Member of the Editorial Boards

Bernard Mourrain is associate editor of the Journal of Symbolic Computation (since 2007) and of the SIAM Journal on Applied Algebra and Geometry (since 2016).

Ioannis Emiris is associate editor of the Journal of Symbolic Computation (since 2003) and of Mathematics for Computer Science (since 2017).

Evelyne Hubert is associate editor of the Journal of Symbolic Computation (since 2007) and of Foundations of Computational Mathematics (since 2017).

8.1.3.2. Reviewer - Reviewing Activities

Laurent Busé reviewed for the journal *Linear Algebra and its Applications*, the journal *Computer Aided Geometric Design*, the journal of *Advances in Applied Mathematics*, the *Journal of Computational and Applied Mathematics*, the journal *Applicable Algebra in Engineering, Communication and Computing*, the journal *Computer Aided Design*, the *SIAM Journal on Applied Algebra and Geometry*.

Ioannis Emiris reviewed for the *SIAM Journal on Applied Algebra and Geometry*, the *Symposium of Computational Geometry*.

Bernard Mourrain reviewed for the *Journal of Algebra and its Application*, the journal *Computer Methods in Applied Mechanics and Engineering*, the journal *Computer Aided Geometric Design*, the *Journal of Computational and Applied Mathematics*, the *Journal of Symbolic Computation*, the journal *Mathematics of Computation*. He is also guest editor of the Special Issue of the *Journal Of Symbolic Computation* after MEGA 2017 [24].

Evelyne Hubert reviewed for the *Journal of Symbolic Computation*, the journal *Foundations of Comptutational Mathematics*, and the *Journal of Algebra*.

8.1.4. *Invited Talks*

Laurent Busé was an invited speaker at the conference "Applied and Computational Geometry" that took place at Loughborough University, Centre for Geometry and Applications, September 12-14, 2018.

Ioannis Emiris was an invited speaker at JRC Ispra, Italy, February 2018, at JK University (and gave a course), Linz, Austria, April-May 2018, at the "2nd Intern. Workshop on Geometry and Machine Learning" , within Computational Geometry Week, Budapest, Hungary, June 2018, at the "Symposium on Discrete Mathematics", of the German Mathematical Society, Graz, Austria, June 2018, at CHIPSET Training School on Large-Scale Data Mining and Machine Learning for Big Data Analytics (and gave a course), Thessaloniki, 19 September 2018.

Bernard Mourrain was an invited speaker at the Workshop "Structured Matrix Days", Lyon, 14-15 May, at the International conference on Approximation and Matrix Functions, Lille, May 31 - June 1, at the Workshop "Tensors" (and gave a course), Torino, 10-14 September, at the Workshop "A two-day journey in Computational Algebra and Algebraic Geometry" dedicated to Margherita Roggero, Torino, 27-28 Sep. He was invited at Univ. of Texas, Austin, for a collaboration with Pr. Chandajit Bajaj (29 January - 9 February), an invited participant of the semester on Nonlinear Algebra at ICERM, Providence, RI, USA from 1 to 19 Oct.

Evelyne Hubert gave a keynote lecture at the conference *Symmetry & Computation*, CIRM (Marseille, France) and was invited to give talks at the conference *Algebraic and Geometric Aspects of Numerical Methods for Differential Equations* held at the Mittag-Leffler Institute (Stockholm, Sweden), the *Séminaire différentiel*, jointly organized by Université Versailles St Quentin and Inria SIF, and the conference *Nonlinear Algebra in Applications* held at the Institute for Computational and Experimental Mathematics (Providence, USA).

8.1.5. *Scientific Expertise*

Evelyne Hubert was part of the hiring committees for the positions of Directeur de Recherche 2ème classe at Inria and for the position of Chargé de Recherche at Inria NGE. As part of the Commission d'Evaluation, she was also part of the promotion committee of Inria researchers (CRHC, DR1, DR0).

Evelyne Hubert was the external reviewer for the promotion of Wei Li to the rank of associate professor at the Chinese Academy of Science (Beijing).

8.1.6. *Research Administration*

Laurent Busé is a board member of the (national) labex AMIES (CRI-SAM representative) and a member of the steering committee of the MSI, *Maison de la Modélisation, de la Simulation et des Interactions* of the University Côte d'Azur. He is also an elected member of the CPRH (Commission Permanente de Ressources Humaines) of the math laboratory of the university of Nice, and is the Inria Sophia Antipolis centre representative at the "Academic Council" and the "Research Commission" of the University of Nice Sophia Antipolis. He participated to the hiring jury of junior researchers in Inria Sophia Antipolis.

Evelyne Hubert is a member of the Comission d'Evaluation, the national Inria evaluation committee. She is nominated to represent Inria at the Academic Council of the Université Côte d'Azur.

Bernard Mourrain is member of the BCEP (Bureau du Comité des Equipes Projet) of the center Inria- Sophia Antipolis.

8.2. Teaching - Supervision - Juries

8.2.1. *Teaching*

- Master : Laurent Busé, Geometric Modeling, 27h ETD, M2, EPU of the University of Nice-Sophia Antipolis.
- Master 2: Bernard Mourrain, Symbolic-Numeric Computation, 6h, Master ACSYON, Limoges.

8.2.2. *Supervision*

PhD in progress: Evangelos Anagnostopoulos, Geometric algorithms for massive data, LAMBDA Marie Skłodowska-Curie RISE Network, started in September 2016, supervised by Ioannis Emiris.

PhD in progress: Ahmed Blidia, New geometric models for the design and computation of complex shapes. ARCADES Marie Skłodowska-Curie ITN, started in September 2016, supervised by Bernard Mourrain.

PhD in progress: Apostolos Chalkis, Sampling in high-dimensional convex regions, started in June 2018, supervised by Ioannis Emiris.

PhD in progress: Emmanouil Christoforou, Geometric approximation algorithms for clustering, Bioinformatics scholarship, started in January 2018, supervised by Ioannis Emiris.

PhD in progress: Alvaro-Javier Fuentes-Suàrez, Skeleton-based modeling of smooth shapes. AR-CADES Marie Skłodowska-Curie ITN, started in October 2016, supervised by Evelyne Hubert.

PhD: Jouhayna Harmouch, Low rank structured matrix decomposition and applications. Cotutelle Univ. Liban, cosupervised by Houssam Khalil, Mustapha Jazar and Bernard Mourrain. Defended in December.

PhD in progress: Rima Khouja, Tensor decomposition, best approximations, algorithms and applications. Cotutelle Univ. Liban, started in November 2018, cosupervised by Houssam Khalil and Bernard Mourrain.

PhD in progress: Evangelos Bartzos, Algebraic elimination and Distance graphs. ARCADES Marie Skłodowska-Curie ITN, started in June 2016, supervised by Ioannis Emiris.

PhD in progress: Clément Laroche, Algebraic representations of geometric objects. ARCADES Marie Skłodowska-Curie ITN, started in November 2016, supervised by Ioannis Emiris.

PhD in progress: Ioannis Psarros, Dimensionality reduction and Geometric search, Greek scholarship foundation, started in Sep. 2015, supervised by Ioannis Emiris.

PhD in progress: Erick David Rodriguez Bazan, Symmetry preserving algebraic computation. CORDI Inria SAM, started in November 2017, supervised by Evelyne Hubert.

PhD in progress: Fatmanur Yildirim, Distances between points, rational Bézier curves and surfaces by means of matrix-based implicit representations. ARCADES Marie Skłodowska-Curie ITN, started in October 2016, supervised by Laurent Busé.

8.2.3. *Juries*

L. Busé was a member of the committee of the PhD of Rémi Bignalet-Cazalet entitled *Géométrie de la projectivisation des idéaux et applications aux problèmes de birationalité*, University Bourgogne Franche-Comté, Dijon, France, October 24th.

I. Emiris was a member of two 3-person supervisory committees of PhD students Anuj Sharma and Emmanouil Kamarianakis, who defended their theses in December 2018, at NK University of Athens, and University of Crete, Greece, respectively.

E. Hubert was a member of the PhD committee of Timothé Pecatte from Ecole Normale Supérieure de Lyon, section informatique : *Bornes Inférieures et Algorithmes de Reconstruction pour des Sommes de Puissances Affines*.

8.3. Popularization

8.3.1. *Interventions*

- Ioannis Emiris was an invited speaker at "Open Science Days", Athens, 29 November 2018, and at "Mathematics Education Forum" within the Greek Mathematical Society annual meeting, Athens, December 2018.

<p style="text-align:center;color:red;font-weight:bold;">CAIRN Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- E. Casseau was General Co-Chair of DASIP, Conference on Design and Architectures for Signal and Image Processing, in Porto, Portugal, October 10-12, 2018.
- D. Chillet was General Chair of 10th Workshop on Rapid Simulation and Performance Evaluation: Methods and Tools (RAPIDO), Manchester, United Kingdom, January 22-24, 2018.

10.1.1.2. Member of the Organizing Committees

- E. Casseau is a member of DASIP Steering Committee, Conference on Design and Architectures for Signal and Image Processing.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- O. Sentieys was Track Chair at IEEE NEWCAS and Co-Chair of the D8 Track on Architectural and Microarchitectural Design at IEEE/ACM DATE.

10.1.2.2. Member of the Conference Program Committees

- D. Chillet was member of the technical program committee of HiPEAC RAPIDO, HiPEAC WRC, MCSoC, DCIS, ComPAS, DASIP, LP-EMS, ARC.
- S. Derrien was a member of technical program committee of IEEE FPL, IEEE FPT and ARC.
- A. Kritikakou was a member of technical program committee of IEEE RTAS, ECRTS, SAMOS.
- O. Sentieys was a member of technical program committee of IEEE/ACM DATE, IEEE FPL, ACM ENSSys, ACM SBCCI, IEEE ReConFig, CROWNCOM.
- T. Yuki was a member of technical program committee of CGO conference and of Impact workshop.

10.1.3. Member of the Editorial Boards

- D. Chillet is member of the Editor Board of Journal of Real-Time Image Processing (JRTIP).
- O. Sentieys is member of the editorial board of Journal of Low Power Electronics.

10.1.4. Invited Talks

- D.Chillet gave an invited talk at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Saint Malo, France, January 2018 on "Gestion des fautes au niveau tâche pour architectures MPSoC et Reconfigurables - Aspects multiprocesseur et reconfiguration dynamique".
- C. Killian gave an invited talk at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Saint Malo, France, January 2018 on "Energy-performance tradeoffs in optical Network-on-Chips".
- C. Killian gave an invited talk at OPTICS (4th International Workshop on Optical/Photonic Interconnects for Computing Systems), in conjunction with IEEE/ACM Design Automation and Test in Europe (DATE), Dresden, Germany, march 2018 on "Offline optimization of wavelength allocation and laser to deal with Energy-Performance tradeoffs in nanophotonic interconnects".

- C. Killian gave an invited talk at a thematic day *Photonique sur silicium pour les architectures de calcul* organized by GDR SoC^2, Lyon, France, November 2018 on "Digital architectures to enhance Optical NoCs efficiency".

- O. Sentieys gave an invited talk at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Saint Malo, France, January 2018 on "Playing with number representations for energy efficiency: an introduction to approximate and stochastic computing".

- O. Sentieys gave a Keynote at the Third Workshop on Approximate Computing (AxC), in conjunction with IEEE European Test Symposium (ETS), Bremen, Germany, June 2018 on "Playing with number representations and operator-level approximations" [59].

- O. Sentieys gave a tutorial at the Embedded Systems Week (ESWEEK), September 2018 on "A Comprehensive Analysis of Approximate Computing Techniques: From Component- to Application-Level" [55].

- T. Yuki gave an invited talk at TAPAS Workshop, Freiburg im Breisgau, Germany, August 2018 on "Polyhedral Static Analysis for the X10 Language".

10.1.5. Leadership within the Scientific Community

- E. Casseau is a member of the French National University Council in Signal Processing and Electronics (CNU - Conseil National des Universites, 61ème section) since 2018.

- D. Chillet is member of the Board of Directors of Gretsi Association.

- D. Chillet is co-animator of the topics "Connected Objects" and "Near Sensor Computing" of GDR SoC^2.

- F. Charot and O. Sentieys are members of the steering committee of a CNRS Spring School for graduate students on embedded systems architectures and associated design tools (ARCHI).

- O. Sentieys is a member of the steering committee of a CNRS spring school for graduate students on low-power design (ECOFAC).

- O. Sentieys is a member of the steering committee of GDR SoC^2.

10.1.6. Scientific Expertise

- O. Sentieys served as a jury member in the EDAA Outstanding Dissertations Award (ODA).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching Responsibilities

- C. Wolinski is the Director of ESIR.

- O. Sentieys is responsible of the "Embedded Systems" major of the SISEA Master by Research.

- D. Chillet is the responsible of the ICT Master of University of Science and Technology of Hanoi.

- C. Killian is the responsible of the second year of the Physical Measurement DUT at IUT, Lannion.

ENSSAT stands for *"École Nationale Supérieure des Sciences Appliquées et de Technologie"* and is an *"École d'Ingénieurs"* of the University of Rennes 1, located in Lannion. ISTIC is the Electrical Engineering and Computer Science Department of the University of Rennes 1. ESIR stands for *"École supérieure d'ingénieur de Rennes"* and is an *"École d'Ingénieurs"* of the University of Rennes 1, located in Rennes.

10.2.2. Teaching

E. Casseau: signal processing, 21h, ENSSAT (L3)

E. Casseau: low power design, 6h, ENSSAT (M1)

E. Casseau: real time design methodology, 57h, ENSSAT (M1)

E. Casseau: computer architecture, 24h, ENSSAT (M1)

E. Casseau: VHDL design, 42h, ENSSAT (M1)

E. Casseau: SoC and high-level synthesis, 33h, Master by Research (SISEA) and ENSSAT (M2)

S. Derrien, optimizing and parallelising compilers, 14h, Master of Computer Science, ISTIC(M2)

S. Derrien, advanced processor architectures, 8h, Master of Computer Science, ISTIC(M2)

S. Derrien, high level synthesis, 20h, Master of Computer Science, ISTIC(M2)

S. Derrien, computer science research projects, 10h, Master of Computer Science, ISTIC(M1)

S. Derrien: introduction to operating systems, 8h, ISTIC (M1)

S. Derrien, principles of digital design, 20h, Bachelor of EE/CS, ISTIC(L2)

S. Derrien, computer architecture, 48h, Bachelor of Computer Science, ISTIC(L3)

F. Charot: computer architectures, 16h, ESIR (L3)

D. Chillet: embedded processor architecture, 20h, ENSSAT (M1)

D. Chillet: multimedia processor architectures, 24h, ENSSAT (M2)

D. Chillet: low-power digital CMOS circuits, 6h, Telecom Bretagne (M2)

C. Killian: digital electronics, 62h, IUT Lannion (L1)

C. Killian: signal processing, 36h, IUT Lannion (L2)

C. Killian: automated measurements, 56h, IUT Lannion (L2)

C. Killian: measurement chain, 58h, IUT Lannion (L2)

C. Killian: embedded systems programming, 12h, IUT Lannion (L2)

C. Killian: automatic control, 18h, IUT Lannion (L2)

A. Kritikakou: computer architecture 1, 32h, ISTIC (L3)

A. Kritikakou: computer architecture 2, 44h, ISTIC (L3)

A. Kritikakou: C and unix programming languages, 102h, ISTIC (L3)

A. Kritikakou: operating systems, 96h, ISTIC (L3)

A. Kritikakou: multitasking operating systems, 20h, ISTIC (M1)

O. Sentieys: VLSI integrated circuit design, 24h, ENSSAT (M1)

O. Sentieys: VHDL and logic synthesis, 18h, ENSSAT (M1)

C. Wolinski: computer architectures, 92h, ESIR (L3)

C. Wolinski: design of embedded systems, 48h, ESIR (M1)

C. Wolinski: signal, image, architecture, 26h, ESIR (M1)

C. Wolinski: programmable architectures, 10h, ESIR (M1)

C. Wolinski: component and system synthesis, 10h, Master by Research (ISTIC) (M2)

10.2.3. Supervision

PhD: Gabriel Gallin, Hardware arithmetic units and cryptoprocessors for hyperelliptic curve cryptography, Nov. 2018, A. Tisserand.

PhD: Aymen Gammoudi, Scheduling and Mapping Strategies for Software Tasks on Energy-Constrained Reconfigurable Architectures, June 2018, D. Chillet, M.Khalgui.

PhD: Jiating Luo, Architectural and Protocol Exploration for 3D Optical Network-on-Chip, Jul. 2018, D. Chillet, C. Killian, S. Le-Beux.

PhD: Mai-Thanh Tran, Towards Hardware Synthesis of a Flexible Radio from a High-Level Language, Nov. 2018, E. Casseau, M. Gautier.

PhD: Van Dung Pham, Architectural Exploration of Network Interface for Energy Efficient 3D Optical Network-on-Chip, Dec. 2018, O. Sentieys, D. Chillet, C. Killian, S. Le-Beux.

PhD: Rafail Psiakis, Performance Optimization Mechanisms for Fault-Resilient VLIW Processors, Dec. 2018, A. Kritikakou, O. Sentieys.

PhD: Simon Rokicki, Hardware acceleration of Dynamic Binary Translation, Dec. 2018, S. Derrien, E. Rohou.

PhD in progress: Minh Thanh Cong, Hardware Accelerated Simulation of Heterogeneous Multicore Platforms, May 2017, F. Charot, S. Derrien.

PhD in progress: Minyu Cui, Energy-Quality-Time Fault Tolerant Task Mapping on Multicore Architectures, Oct. 2018, E. Casseau, A. Kritikakou.

PhD in progress: Petr Dobias, Energy-Quality-Time Fault Tolerant Task Mapping on Multicore Architectures, Oct. 2017, E. Casseau.

PhD in progress: Mael Gueguen, Improving the performance and energy efficiency of complex heterogeneous manycore architectures with on-chip data mining, Nov. 2016, O. Sentieys, A. Termier.

PhD in progress: Van-Phu Ha, Application-Level Tuning of Accuracy, Nov. 2017, T. Yuki, O. Sentieys.

PhD in progress: Jaechul Lee, Energy-Performance Trade-Off in Optical Network-on-Chip, Dec. 2018, D. Chillet, C. Killian.

PhD in progress: Audrey Lucas, Software support resistant to passive and active attacks for asymmetric cryptography on (very) small computation cores, Jan. 2016, A. Tisserand.

PhD in progress: Thibaut Marty, Compiler support for speculative custom hardware accelerators, Sep. 2017, T. Yuki, O. Sentieys.

PhD in progress: Romain Mercier, Fault Tolerant Network on Chip for Deep Learning Algorithms, Oct. 2018, D. Chillet, C. Killian, A. Kritikakou.

PhD in progress: Genevieve Ndour, Approximate Computing with High Energy Efficiency for Internet of Things Applications, Apr. 2016, A. Tisserand, A. Molnos (CEA LETI).

PhD in progress: Joel Ortiz Sosa, Study and design of a digital baseband transceiver for wireless network-on-chip architectures, Nov. 2016, O. Sentieys, C. Roland (Lab-STICC).

PhD in progress: Davide Pala, Non-Volatile Processors for Intermittently-Powered Computing Systems, Jan. 2018, O. Sentieys, I. Miro-Panades (CEA LETI).

PhD in progress: Joseph Paturel, Design-space exploration of fault-tolerant multicores, Sep. 2018, O. Sentieys, A. Kritikakou.

PhD in progress: Nicolas Roux, Sensor-aided Non-Intrusive Appliance Load Monitoring: Detecting Activity of Devices through Low-Cost Wireless Sensors, Oct. 2016, O. Sentieys, B. Vrigneau.

10.3. Popularization

10.3.1. Articles and contents

Article (in French) about the Embrace project in *Le Mag numérique*: http://www.lemag-numerique.com/2018/01/embrace-vers-radio-hf-numerique-10653

Article in Emergences on "durcir les multi-cœurs contre les rayonnements ionisants": http://emergences.inria.fr/2018/newsletter-n51/L51-FLODAM

CAMUS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. Member of Organizing Committees

Philippe Clauss organized the Special Session on Compiler Architecture, Design and Optimization (CADO) of the 16th International Conference on High Performance Computing & Simulation (HPCS 2018), June 2018, Orléans, France.

Cédric Bastoul co-organized HIP3ES 2018 (International Workshop on High Performance Energy Efficient Embedded Systems), in conjunction with the international conference HiPEAC 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Member of Conference Program Committees

Cédric Bastoul and Philippe Clauss have been part of the program committee of IMPACT 2018 (International Workshop on Polyhedral Compilation Techniques), held in conjunction with the international conference HiPEAC.

Cédric Bastoul and Vincent Loechner are part of the program committee of HIP3ES (International Workshop on High Performance Energy Efficient Embedded Systems) in conjunction with the HiPEAC international conference.

Arthur Charguéraud was a member of the program committee for the Symposium on Implementation and Application of Functional Languages (IFL 2018).

Cédric Bastoul has been part of the program committee of the international conference on Compiler Construction 2018 (CC'2018).

10.1.2.2. Reviewer

Philippe Clauss has been reviewer for the following conference and workshop: the 2nd International Conference on Computer Science and Application Engineering (CSAE 2018), the International Workshop on Polyhedral Compilation Techniques (IMPACT 2018).
Jens Gustedt has been reviewer for CCGrid 2018.
Arthur Charguéraud has been reviewer for the 30th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2018).
Cédric Bastoul has been reviewer for: international conference on Compiler Construction 2018 (CC'2018), the International Workshop on Polyhedral Compilation Techniques (IMPACT 2018), the International Workshop on High Performance Energy Efficient Embedded Systems (HIP3ES 2018).

10.1.3. Journals

10.1.3.1. Member of Editorial Boards

Since October 2001, J. Gustedt is Editor-in-Chief of the journal *Discrete Mathematics and Theoretical Computer Science* (DMTCS).

10.1.3.2. Reviewer - Reviewing Activities

Bérenger Bramas has been reviewer for the following journal: PPL (Parallel Processing Letters).
Philippe Clauss has been reviewer for the following journals: Engineering Computations, IEEE Transactions on Computers, Future Generation Computer Systems.
Jens Gustedt has been a reviewer for Discrete Applied Mathematics.

Arthur Charguéraud has been reviewer for LFMTP (Logical Frameworks and Meta Languages: Theory and Practice).

Cédric Bastoul has been reviewer for IEEE Transactions on Computers.

10.1.4. Invited Talks

Philippe Clauss has been invited at the Dagstuhl Seminar dedicated to Loop Optimization, March 11-16, 2018. The title of his talk was: *The Polyhedral Model Beyond Static Compilation, Affine Functions and Loops*.

Vincent Loechner has been invited as a speaker at the plenary session of the *journées doctorales du laboratoire d'informatique de l'université de Batna* (Algeria), April 25-26 2018, for a talk entitled *Code Optimizations Using the Polyhedral Model*.

10.1.5. Scientific Expertise

10.1.5.1. Standardization

Since Nov. 2014, Jens Gustedt is a member of the ISO working group SC22-WG14 for the standardization of the C programming language and serves as co-editor of the standards document. He participates actively in the clarification report processing, the planning of future versions of the standard and in an subgroup that discusses the improvement of the C memory model.

He was the one of the main forces behind the elaboration of C17, the new version of the C standard that has finally been published by ISO in 2018 [21].

This work on the C programming language also gave rise to the proposal of a language extension, Modular C. It has been used for the implementation of an efficient toolbox for *higher order automatic differenciation*, `arbogast`, see [9], and for the implentation of the work presented in [19].

10.1.5.2. Expertise

Cédric Bastoul as been an expert for the French research ministry and the French finance ministry for the research tax credit programme.

10.1.6. Research Administration

Jens Gustedt is head of the ICPS team for the ICube lab, and in that function a member of the directory committee of the lab. He is also a member of the local recruiting comission for phds and postdocs of the Inria Center Nancy — Grand Est.

Philippe Clauss and Cédric Bastoul are members of the *Collegium Sciences* of the University of Strasbourg, which is a group of representative scientists providing advice regarding the funding of projects.

Philippe Clauss is a member of the *Bureau du Comité des Projets* of the Nancy Grand Est Inria Center since November 2018. This group of scientists provide assistance to the Director of the Center regarding the recruitment of PhD or post-doc students and Engineers, the funding of projects and provide also some scientific expertise regarding actions of the Center.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Philippe Clauss, Architecture des ordinateurs, 18h, L2, Université de Strasbourg, France

Licence : Philippe Clauss, Bases de l'architecture informatique, 22h, L1, Université de Strasbourg, France

Master : Philippe Clauss, Compilation, 84h, M1, Université de Strasbourg, France

Master : Philippe Clauss, Système et programmation temps-réel, 37h, M1, Université de Strasbourg, France

Master : Philippe Clauss, Optimisation et transformations de codes, 31h, M1, Université de Strasbourg, France

Master : Bérenger Bramas, Compilation, 40h, M1, Université de Strasbourg, France

Licence : Jens Gustedt, systèmes concurrents, 20h, Université de Strasbourg, France

Master : Jens Gustedt, parallélisme, 14h, M1, Université de Strasbourg, France

Licence : Vincent Loechner, responsable pédagogique de la licence professionnelle ARS, L3, Université de Strasbourg, France

Licence : Vincent Loechner, accompagnement et jury de VAE licence professionnelle ARS, L3, Université de Strasbourg, France

Licence : Vincent Loechner, administration système et internet, 40h, L3, Université de Strasbourg, France

Master : Vincent Loechner, langages interprétés, 34h, M1, Université de Strasbourg, France

Master : Vincent Loechner, OS embarqués, 30h, M2, Université de Strasbourg, France

Master : Vincent Loechner, calcul parallèle, 20h, , Université de Strasbourg, France

IUT d'Informatique : Alain Ketterlin, Architecture et programmation des mécanismes de base d'un système informatique, 68h, Université de Strasbourg, France

Licence : Alain Ketterlin, Algorithmique et programmation L1, 82h, Université de Strasbourg, France

Master (Informatique) : Alain Ketterlin, Ingénierie de la preuve en Coq, 18h, Université de Strasbourg, France

Master (Calcul Scientifique et Mathématiques de l'Information) : Alain Ketterlin, Compilation et optimisation, 28h, Université de Strasbourg, France

Licence : Cédric Bastoul, Computer architecture, 92h, L1, Université de Strasbourg, France

Licence : Cédric Bastoul, Parallel programming, 20h, L3, Université de Strasbourg, France

Master : Cédric Bastoul, Compiler Design, 48h, M1, Université de Strasbourg, France

Master : Cédric Bastoul, Introduction to Research, 10h, L2+M1, Université de Strasbourg, France

Licence : Éric Violard, Modèles de Calcul, 29h, L1, Université de Strasbourg, France

Licence : Éric Violard, Programmation fonctionnelle, 85h, L2, Université de Strasbourg, France

Licence : Éric Violard, Architecture des ordinateurs, 54h, L2, Université de Strasbourg, France

Licence : Éric Violard, Logique et programmation logique, 27h, L2, Université de Strasbourg, France

Licence : Éric Violard, Systèmes concurrents, 9h, L3, Université de Strasbourg, France

Licence : Éric Violard, Algorithmique et structures de données, 39h, L3, Université de Strasbourg, France

Licence : Jens Gustedt, systèmes concurrents, 20h, Université de Strasbourg, France

Master : Jens Gustedt, parallélisme, 14h, M1, Université de Strasbourg, France

10.2.2. Supervision

PhD in progress: Salwa Kobeissi, *Dynamic parallelization of recursive functions by transformation into loops*, September 2017, Philippe Clauss

PhD: Mariem Saied, *Automatic Code Generation for Multi-Dimensional Stencil Computations on Distributed-Memory Architectures*, Sep. 2018, Jens Gustedt and Gilles Muller.

PhD in progress: Daniel Salas, *Integration of the ORWL model into parallel applications for medical research*, since Mar 2015, Jens Gustedt and Isabelle Perseil.

PhD in progress: Harenome Ranaivoarivony-Razanajato, *Hierarchical Parallelization and Optimization*, Oct. 2016, Cédric Bastoul and Vincent Loechner

PhD in progress: Paul Godard, *Parallelization and Scalability of a Graphical Pipeline for Professionnal Inkjet Printing*, Jun. 2016, Cédric Bastoul and Vincent Loechner

PhD in progress: Maxime Schmitt, *Automatic Generation of Adaptive Codes*, Sep. 2016, Cédric Bastoul and Philippe Helluy

PhD: Yann Barsamian, *Pic-Vert: A Particle-in-Cell Implementation for Multi-Core Architectures*, Université de Strasbourg, 31 Oct. 2018, Éric Violard.

PhD in progress: Armaël Géneau, *Formal verification of complexity analyses*, since Sept 2016, co-advised by Arthur Charguéraud and François Pottier, from team Gallium (Inria Paris), where Armaël is located.

10.2.3. *Juries*

Philippe Clauss participated to the following PhD committees in 2018:

Date	Candidate	Place	Role
Apr. 25	Mohamed Said MOSLI BOUKSIAA	Université de Paris-Saclay	Reviewer
Nov. 26	Adilla SUSUNGI	University de Paris Sciences et Lettres	Reviewer

Cédric Bastoul participated to the following PhD committees in 2018:

Date	Candidate	Place	Role
Sep. 25	Mariem Said	Université de Strasbourg	President
Dec. 13	Jie Zhao	École Normale Supérieure	Reviewer

10.3. Popularization

10.3.1. *Articles and contents*

Jens Gustedt is blogging about efficient programming, in particular about the C programming language. To popularize the development of the future C2x standard he has been interviewed for infoQ. He also is an active member of the stackoverflow community a technical Q&A site for programming and related subjects.

10.3.2. *Education*

A. Charguéraud is a co-organizer of the *Concours Castor informatique*. The purpose of the Concours Castor in to introduce pupils (from *CM1* to *Terminale*) to computer sciences. More information on: http://castor-informatique.fr/.

10.3.3. *Interventions*

Cédric Bastoul prepared activities and participated to *Fête de la Science* at University of Strasbourg in October 2018.

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CARAMBA Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

Paul Zimmermann co-organized two workshops on the development of the iRRAM, GNU MPFR and GNU MPC libraries: one in Dagstuhl in April, with 10 participants, and one in Trier in November, with 12 participants.

Paul Zimmermann also chaired the organizing committee of the EJCIM (*École Jeunes Chercheurs Informatique Informatique Mathématique*) which took place in Nancy in 2018.

10.1.2. Scientific Events Selection

Emmanuel Thomé is a member of the scientific directorate of the Dagstuhl computer science seminar series.

10.1.2.1. Member of steering committees

Pierrick Gaudry is a member of the steering committee of the Workshop on Elliptic Curve Cryptography (ECC).

10.1.2.2. Member of the Conference Program Committees

Paul Zimmermann was a member of the program committee of ANTS XIII (Thirteenth Algorithmic Number Theory Symposium, University of Wisconsin, Madison, WI, USA).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Virginie Lallemand is a member of the editorial board of the IACR Transactions on Symmetric Cryptology (ToSC) Journal for 2018/2019. This journal is the open-access journal associated to the International Conference on Fast Software Encryption (FSE).
- Marine Minier is a guest editor of the special issue of Workshop on Coding and Cryptography (WCC) in the journal Designs, Codes and Cryptography (DCC).

10.1.3.2. Reviewer - Reviewing Activities

Members of the project-team did their share in reviewing submissions to renowned conferences and journals. Actual publications venues are not disclosed for anonymity reasons.

10.1.4. Invited Talks

- Emmanuel Thomé was invited to give a talk at the ANTS-XIII conference (Madison, WI, USA).
- Marine Minier was invited to give a talk at the Journées Nationales du GT Codage & Cryptographie, Aussois, France.
- Marine Minier was invited to give a talk at Journée "Protection du code et des données, obfuscation & whitebox cryptography", Paris Saclay, France.
- Paul Zimmermann was invited to give a talk at the topical workshop Celebrating 75 Years of Mathematics of Computation (ICERM, Providence, RI, USA).
- Pierrick Gaudry was invited to give a talk at the 22nd Workshop on Elliptic Curve Cryptography (ECC 2018) in Osaka, Japan.

10.1.5. Research Administration

- Jérémie Detrey chairs the *Commission des Utilisateurs des Moyens Informatiques* (CUMI) of the Inria Nancy – Grand Est research center.

- Pierrick Gaudry is vice-head of the *Commission de mention Informatique* of the *École doctorale IAEM* of the University of Lorraine and is a member of the *Conseil Scientifique du GdR IM*.

  He was:
    – member of the CoS, poste MCF number 27MCF1087, Université de Lorraine;
    – member of the CoS, poste PR number 25PR1054, Université de Lorraine;
    – member of the CoS, poste MCF number 25MCF4159, Université de Toulon.

- Marine Minier is a member of Collegium of Science et Techniques of Université de Lorraine. She was:
    – president of the CoS, poste PR number 27PR1057, Université de Lorraine;
    – member of the CoS, poste MCF number 27MCF0403, Université de Grenoble;
    – member of the CoS, poste PR number 270001, École Navale de Brest;
    – member of the CoS, poste MCF number 27MCF4111, Université de Bretagne Sud;

- Pierre-Jean Spaenlehauer is a member of the *commission développement technologique* (CDT) of the Inria Nancy Grand-Est research center.

- Emmanuel Thomé
    – is a member of the management committee for the research project "CPER Cyberentreprises" (co-chair).
    – is a member of the *Comité Local Hygiène, Sécurité, et Conditions de Travail* of the Inria Nancy – Grand Est research center.
    – chaired the hiring committee for the junior research positions (CR) at Inria Nancy.

- Marion Videau
    – was a member of the hiring committee for the junior research positions (CR) at Inria Rennes.

- Paul Zimmermann is member of the Scientific Committee of the EXPLOR *Mésocentre*, of the "groupe de réflexion" *Calcul, Codage, Information* of the GDR-IM, of the advisory board of the OpenDreamKit european project, of the scientific council of the LIRMM laboratory in Montpellier.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Cécile Pierrot, *Programmation avancée en Python - TCSS5AC*, 20 eq. TD, L3, Ecole des Mines, Nancy, France.

Master: Cécile Pierrot, *Introduction à Latex*, 3 eq. TD, M1, Ecole des Mines, Nancy, France.

Licence: Jérémie Detrey, *Sécurité des applications Web*, 2 hours (lecture), L1, Université de Lorraine, IUT Charlemagne, Nancy, France.

Licence, Aurore Guillevic, *Méthodologie de conception et de programmation*, 16 eq. TD (24 TP), L1, Université de Lorraine, Nancy, France.

Formation Continue, Aurore Guillevic, *Introduction à la cryptographie pour enseignants de l'option ISN (informatique et sciences du numérique) en lycée*, 7 eq. TD, Espé de Lorraine (École supérieure du professorat et de l'éducation), Nancy, France.

Licence, Aurore Guillevic, *Introduction to algorithms* (CSE103), 32 eq. TD, L1, École Polytechnique, Palaiseau, France.

Licence, Aurore Guillevic, *Les bases de la programmation et de l'algorithmique* (INF411), 40 eq. TD, 2e année, École Polytechnique, Palaiseau, France.

Master: Marine Minier, *Contrôle d'accès*, 40h eq. TD, M2 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Master: Marine Minier, *Introduction à la cryptographie*, 18h eq. TD, M1 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Licence: Marine Minier, *Introduction à la sécurité et à la cryptographie*, 10 hours (lectures) + 10 hours (tutorial sessions) + 10 hours (practical sessions), L3, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Licence: Marine Minier, *Mathématiques Discrètes*, 80h eq. TD, L2, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Responsability of the M2 SIRAV *Sécurité Informatique, Réseaux et Architectures Virtuelles*, 30 students: Marine Minier. Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Master: Emmanuel Thomé, *Protocoles de sécurité et Vérification* (sub-part dedicated to cryptographic primitives), 8h (lectures) + 6h (tutorial sessions).

10.2.2. Supervision

Ph.D.: Simon Abelard, *Comptage de points de courbes algébriques sur les corps finis et interactions avec les systèmes polynomiaux*, Univ. Lorraine. Defended 7 sept 2018, Pierrick Gaudry & Pierre-Jean Spaenlehauer.

PhD: Svyatoslav Covanov, *Algorithmes de multiplication : complexité bilinéaire et méthodes asymptotiquement rapides*, Université de Lorraine. Defended 5 June 2018, Emmanuel Thomé and Jérémie Detrey.

PhD in progress: Aude Le Gluher, *Analyse algorithmique fine et simulation du crible algébrique*, since Sep. 2018, Pierre-Jean Spaenlehauer and Emmanuel Thomé.

PhD in progress: Simon Masson, *Algorithmique des courbes destinées aux contextes de la cryptographie bilinéaire et post-quantique*, since Jan. 2018, Emmanuel Thomé and Aurore Guillevic.

PhD in progress: Gabrielle De Micheli, *Le logarithme discret dans les corps finis*, since Oct. 2018, Cécile Pierrot et Pierrick Gaudry.

PhD in progress: Paul Huynh, *analyse et conception de chiffrements authentifiés à bas coût*, since Oct. 2017, Marine Minier.

PhD in progress: Sandra Rasoamiaramanana, *Délivrance de contextes sécurisés par des approches hybrides*, since May 2017, Ph.D. CIFRE Orange Gardens, Marine Minier.

10.2.3. Juries

Pierrick Gaudry: reviewer of the PhD thesis: *Arithmetic and geometric structures in cryptography* defended by Benjamin Wesolowski, October 2018, EPFL (Switzerland).

Marine Minier:

- reviewer of the PhD thesis: *Trust evaluation in secure architectures* defended by Jean-Baptiste Orfila, July 2018, Université Grenoble Alpes.
- member of the PhD thesis jury: *Security analysis of contactless communication protocols* defended by David Gérault, November 2018, Université Clermont Auvergne.
- member of the PhD thesis jury: *Cryptanalysis of symmetric key algorithms* defended by Colin Chaigneau, November 2018, Université de Versailles.

10.3. Popularization

10.3.1. Articles and contents

- *In books/journals for the general public.*

  Paul Zimmermann coordinated (and largely contributed to) the translation into English of the 2013 book *Calcul mathématique avec Sage*. At the same time, the book was updated to a more recent version of the Sage software tool. The resulting book will be published by SIAM at the end of 2018, while an electronic version will remain available under a Creative Commons license [12].

- *For online publications.* Pierrick Gaudry co-authored a blog article about e-voting and the Belenios tool [13].

- *Interviews in order to popularize.* Cécile Pierrot gave a radio interview at France Bleue about being a cryptographer.

- *Videos.* Cécile Pierrot worked with Accustica, a company which promotes popularization. A portrait was created for the exhibition "Les filles, osez les sciences !" [0]. (video link).

10.3.2. Education

Cécile Pierrot was invited to the exhibition "Les filles, osez les sciences !" to make teachers considers how to deconstruct gender stereotypes in (Computer) Science.

10.3.3. Interventions

Pierrick Gaudry gave a talk about e-voting at the Académie des Sciences.

Emmanuel Thomé gave a talk for students of «classes préparatoires» in Nancy visiting the Inria Nancy research center, on the topic of trapdoored primes in cryptographic standards.

Paul Zimmermann participated in the *Maths-en-jeans* programme, with a class from Lycée Vauban in Luxembourg.

Paul Zimmermann (and Stéphane Glondu from the software development team SED) participated in *Fête de la Science* in October.

Cécile Pierrot co-organized and participated in *Ada Lovelace day*.

Cécile Pierrot gave a talk at Forum de l'Innovation des Armées 2018 about the discrete logarithm problem.

Cécile Pierrot led workshops for secondary-school pupils in Nancy, Reims and Toulouse about research in Computer Science.

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[0]Girls, let's dare to do science!

CASCADE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Events and Activities

- punctual seminars are organized: https://crypto.di.ens.fr/web2py/index/seminars
- quarterly Paris Crypto Days (https://pariscryptoday.github.io) supported by CryptoCloud and aSCEND
- BibTeX database of papers related to Cryptography, open and widely used by the community (https://cryptobib.di.ens.fr)
- LATCA Bertinoro workshop (http://crypto-events.di.ens.fr/LATCA/)

8.1.1.2. Steering Committees of International Conferences

- steering committee of CANS: David Pointcheval
- steering committee of PKC: David Pointcheval
- steering committee of LATINCRYPT: Michel Abdalla (chair)
- steering committee of PAIRING: Michel Abdalla

8.1.1.3. Board of International Organisations

- Board of the *International Association for Cryptologic Research* (IACR): Michel Abdalla (2013 – 2018)

8.1.2. Scientific Events Selection

8.1.2.1. Program Committee Member

- CT-RSA '18 – 16-20 April (San Francisco, California, USA): David Pointcheval
- Eurocrypt '18 – 29 April-3 May (Tel Aviv, Israel): Georg Fuchsbauer and David Pointcheval
- Crypto '18 – 19-23 August (Santa Barbara, USA): Georg Fuchsbauer and Hoeteck Wee
- SCN '18 – 5-7 September (Amalfi, Italy): Georg Fuchsbauer and Romain Gay
- TCC '18 – 11-14 November (Goa, India): Hoeteck Wee

8.1.3. Editorial Boards of Journals

Editor-in-Chief

  – of the *International Journal of Applied Cryptography (IJACT)* – Inderscience Publishers: David Pointcheval

Associate Editor

  – of *IET Information Security*: Michel Abdalla
  – of *ETRI Journal*: Michel Abdalla
  – of *Applicable Algebra in Engineering, Communication and Computing*: David Pointcheval

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master: Michel Abdalla, David Pointcheval, Cryptography, M2, MPRI

- Master: David Pointcheval, Cryptography, M2, ESIEA
- Bachelor: Georg Fuchsbauer, David Pointcheval, Jacques Stern, Hoeteck Wee, Introduction to Cryptology, L3/M1, ENS
- Bachelor: Georg Fuchsbauer, Cryptology, 3rd year, ESGI

8.2.2. Defenses

- PhD: Raphaël Bost, Algorithmes de recherche sur bases de données chiffrées, Univ. Rennes I, January 8th, 2018 (Supervisors: Pierre-Alain Fouque & David Pointcheval)
- PhD: Rafael Del Pino, Efficient Lattice-Based ZeroKnowledge Proofs And Applications, ENS, June 1st, 2018 (Supervisors: Vadim Lyubashevsky & David Pointcheval)
- PhD: Pierre-Alain Dupont, Advanced password-authenticated key exchanges, ENS, August 29th, 2018 (Supervisor: David Pointcheval)
- PhD: Dahmun Goudarzi, Implémentations Sécurisées de Chiffrement par Bloc contre les Attaques Physiques, ENS, September 21st, 2018 (Supervisor: Damien Vergnaud)
- PhD: Michele Minelli, Fully Homomorphic Encryption for Machine Learning, ENS, October 26th, 2018 (Supervisors: Michel Abdalla & Hoeteck Wee)
- PhD: Quentin Santos, Cryptography for Pragmatic Distributed Trust and the Role of Blockchain, ENS, December 20th, 2018 (Supervisor: David Pointcheval)

8.2.3. Supervision

- PhD in progress: Aurélien Dupin, Multi-Party Computations, from 2015, David Pointcheval (with Christophe Bidan, at Rennes)
- PhD in progress: Romain Gay, Functional Encryption, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Louiza Khati, Disk Encryption Modes, from 2015, Damien Vergnaud
- PhD in progress: Anca Nitulescu, Verifiable Outsourced Computations, from 2015, Michel Abdalla & David Pointcheval
- PhD in progress: Razvan Rosie, Practical Functional Encryption Schemes For the Cloud, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Jérémy Chotard, Attribute-Based Encryption, from 2016, David Pointcheval (with Duong Hieu Phan, at Limoges)
- PhD in progress: Michele Orrù, Functional Encryption, from 2016, Hoeteck Wee & Georg Fuchsbauer
- PhD in progress: Balthazar Bauer, Transferable e-Cash, from 2017, Georg Fuchsbauer
- PhD in progress: Chloé Hébant, Big Data and Privacy, from 2017, David Pointcheval (with Duong Hieu Phan, at Limoges)
- PhD in progress: Mélissa Rossi, Post-Quantum Cryptography, from 2017, Michel Abdalla (with Henri Gilbert at ANSSI and Thomas Prest at Thales)
- PhD in progress: Antoine Plouviez, Privacy and Decentralization, from 2018, Georg Fuchsbauer
- PhD in progress: Quoc Huy Vu, Quantum Cryptography, from 2018, Céline Chevalier

8.2.4. Committees

- PhD Raphaël Bost. *Algorithmes de recherche sur bases de données chiffrées* – Université Rennes I – France – January 8th, 2018: David Pointcheval (Co-supervisor)
- PhD Xavier Bultel. *Mécanismes de délégation pour les primitives de cryptographie à clé publique* – Université Clermont Auvergne – France – May 17th, 2018: David Pointcheval (President)
- PhD Luca Nizzardo. *Cryptographic Techniques for the Security of Cloud and Blockchain Systems* – IMDEA / UPM – Spain – May 24th, 2018: Georg Fuchsbauer (Reviewer)

- PhD Rafael Del Pino. *La cryptographie à base de réseaux* – Ecole Normale Supérieure – France – June 1st, 2018: David Pointcheval (Co-supervisor)

- PhD Pierre-Alain Dupont. *Advanced password-authenticated key exchanges* – Ecole Normale Supérieure – France – August 29th, 2018: David Pointcheval (Supervisor)

- PhD Dahmun Goudarzi. *Implémentations Sécurisées de Chiffrement par Bloc contre les Attaques Physiques* – Ecole Normale Supérieure – France – September 21st, 2018: David Pointcheval (President)

- PhD Cédric Van Rompay. *Protocoles Multi-Utilisateurs de Recherche sur Bases de Données Chiffrées* – Eurecom, Sophia Antipolis, Télécom ParisTech – France – October 4th, 2018: David Pointcheval (President)

- PhD Damien Ligier. *Functional encryption applied to privacy-preserving classification: practical use, performances and security* – CEA, Saclay, IMT Atlantique – France – October 15th, 2018: David Pointcheval (President)

- PhD Fabrice Mouhartem. *Cryptographie protégeant la vie privée à base de couplages et de réseaux* – ENS Lyon – France – October 18th, 2018: David Pointcheval (Reviewer)

- PhD Michele Minelli. *Fully Homomorphic Encryption for Machine Learning* – Ecole Normale Supérieure – France – October 26th, 2018: Michel Abdalla and Hoeteck Wee (Co-supervisors)

- PhD Nadim Kobeissi. *Formal Verification for Real-World Cryptographic Protocols and Implementations* – Inria Paris – France – December 10th, 2018: David Pointcheval (President)

- PhD Quentin Santos. *Cryptography for Pragmatic Distributed Trust and the Role of Blockchain* – Ecole Normale Supérieure – France – December 20th, 2018: David Pointcheval (Supervisor)

CASH Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Member of the Organizing Committees

- Laure Gonnord animates the french compilation community since 2010 (http://compilfr.ens-lyon.fr
- Laure Gonnord has coorganised (with other members of the LIP lab) the doctoral school EJCP (École jeunes chercheur.se.s en programmation), in June 2018.

9.1.2. Chair of Conference Program Committees

- Ludovic Henrio was one of the chairs of the **ICE** 2018 workshop (Interaction and Concurrency Experiences), he will also be chairing **ICE** 2019.

9.1.3. Member of the Conference Program Committees

- Christophe Alias is a PC member of **HiP3ES** 2018 – 6th High Performance Energy Efficient Embedded Systems Workshop. He will be a PC member for **COMPAS** 2019 – Conférence d'informatique en Parallélisme, Architecture et Système.
- Matthieu Moy is a PC member of **DUHDe** 2018 — 5th Workshop on Design Automation for Understanding Hardware Designs.
- Laure Gonnord is a PC member of **TAPAS** 2018 - Ninth Workshop on Tools for Automatic Program Analysis, and **VMCAI** 2018 - 19th International Conference on Verification, Model Checking, and Abstract Interpretation. She will be a PC member of **CAV** 2019 Conference on Computer-Aided Verification.
- Ludovic Henrio is a PC member of **4PAD** 2018 (Formal Approaches to Parallel and Distributed Systems), **FASE** 2019 (Fundamental Approaches to Software Engineering). He will be a PC member of **Coordination** 2019 (Conference on Coordination Models and Languages), **ACSD** 2019 (Application of Concurrency to System Design).

9.1.4. Reviewer

- Christophe Alias was reviewer for **HCW** 2018 – 27th International Workshop on Heterogeneity in Computing.
- Matthieu Moy was reviewer for **DATE** 2018 - Design, Automation and Test in Europe, **MCSoC** 2019 - International Symposium on Embedded Multicore/Many-core Systems-on-Chip
- Laure Gonnord was reviewer for **STACS** 2018 - Symposium of Theorical Aspects of Computer Science.
- Ludovic Henrio was reviewer for **FM'2018**.

9.1.5. Journal

9.1.5.1. Reviewer - Reviewing Activities

- Christophe Alias was reviewer for ACM Transactions on Architectures and Code Optimization (**TACO**, ACM) and **Proceedings of the IEEE**.
- Matthieu Moy was reviewer for the Microprocessors and Microsystems Journal (**MICPRO**, Elsevier).
- Ludovic Henrio was reviewer for **JLAMP** (Journal of Logical and Algebraic Methods in Programming), Elsevier.

9.1.6. Invited Talks

- Matthieu Moy presented a talk "Response Time Analysis of Dataflow Applications on a Many-Core Processor with Shared-Memory and Network-on-Chip" for the 30 years of the LIP laboratory, November 2018.
- Laure Gonnord gave two invited talks at the workshop **FAC Days** (Toulouse) and at the International Conference **LOPSTR 2018** "Experiences in designing scalable static analyses".
- Ludovic Henrio gave an invited talk at **HLPP 2018** "An Overview of (some) Active-object Languages" and at **PASS** 2018 workshop "SafePlace: Trustable Virtual Machine Scheduling".

9.1.7. Research Administration

- Laure Gonnord is member of the doctoral commitee of the Inria Grenoble Rhône Alpes center.
- Laure Gonnord is elected member of the LIP council and the Fédération d'Informatique de Lyon council.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence:

- Christophe Alias, Compilation, CM+TD, 27h, 3A, INSA Centre Val de Loire.
- Laure Gonnord, Algorithmic, C++ Programming, TP: L2, UCBL
- Laure Gonnord, Operating Systems, CM+TD+TP, 24h, L2, UCBL
- Laure Gonnord, Formal Languages, TD+TP, 15h, L3, UCBL
- Laure Gonnord, Logics, TD+TP, 18h, L3, UCBL.
- Matthieu Moy, Concurrent Programming, CM+TD+TP, 57h, L3, UCBL.
- Matthieu Moy, Recursive Programming, TD+TP, 48h, L1, UCBL.
- Matthieu Moy, Software Engineering, CM+TD+TP, 25h, M1, UCBL.
- Matthieu Moy, Git, CM+TP: 12h, L3, UCBL.
- Paul Iannetta, ACM, TD, 32h, L3, ENS de Lyon.
- Julien Braine, Théorie de la programmation, TD/TP, 32h, L3, ENS de Lyon.
- Julien Braine, Projet 1, TP, 32h, L3, ENS de Lyon.

Master:

- Christophe Alias, Compiler optimizations for embedded applications, CM+TD, 27h, 4A, INSA Centre Val de Loire.
- Christophe Alias and Matthieu Moy, Hardware Compilation and Simulation, CM+TD, 36h, M2 Informatique Fondamentale, ENS de Lyon.
- Laure Gonnord, Compilation and Program Analysis, CM, 28h, M1, ENS de Lyon.
- Laure Gonnord, Compilation and program transformations, CM+TD+TP, 35h, M1, UCBL.
- Laure Gonnord, Real Time Systems, CM+TD+TP, 30h, M1, UCBL.
- Laure Gonnord (25%), with Sebastien Mosser, Software Engineering and Compilation, CM+TP, 36h, M2 Informatique Fondamentale, ENS de Lyon.
- Laure Gonnord, Graphs, Complexity, Algorithmics, M1 MEEF (CAPES prepa), CM+TD+TP+oral training, 30h, UCBL.
- Matthieu Moy, Compilation and Program Analysis, TP, 16h, M1, ENS de Lyon.
- Matthieu Moy, Compilation and program transformations, TD+TP, 25h, M1, UCBL.

- Paul Iannetta, Projet intégré, 28h, M1, ENS de Lyon.
- Ludovic Henrio, Distributed Systems: an algorithmic approach, CM+TD, 7h, M2 Specialite IFI (Ingénierie et Fondements de l'Informatique), parcours CSSR, and UBINET, Université de Nice Sophia-Antipolis.

9.2.2. Supervision

- PhD: Amaury Graillat, "Parallel Code Generation of Synchronous Programs for a Many-core Architecture", Univ. Grenoble Alpes, defended on November 16th 2018, supervised by Matthieu Moy (LIP), Pascal Raymond (Verimag) and Benoît Dinechin (Kalray).
- PhD in progress: Gabriel Busnot, "Accélération SystemC pour la co-simulation multi-physique et la simulation de modèles hétérogènes en complexité", Univ. Lyon 1, started in october 2017, supervised by Matthieu Moy (LIP) and Tanguy Sassolas (CEA-LIST).
- PhD in progress: Tristan Delizy, "Dynamic Memory Management For Embedded Non-Volatile Memory", INSA Lyon, started in October 2016, supervised by Guillaume Salagnac (CITI), Tanguy Risset (CITI), Kevin Marquet (CITI) and Matthieu Moy (LIP).
- PhD in progress (from Sept. 2018): Paul Iannetta "Complex data structures scheduling for optimizing compilers", supervised by Lionel Morel (CITI/CEA) and Laure Gonnord (LIP).
- PhD in progress (from Sept. 2018): Julien Braine "Horn Clauses as an Efficient Intermediate Representation for Data Structure Verification", supervised by David Monniaux (CNRS/Verimag) and Laure Gonnord (LIP).
- PhD in progress: Pierre Leca, "Distributed BSP: Active Objects for BSPlib programs", CIFRE Huawei/UNS, started in August 2017, supervised by Gaëtan Hains (Huawei), Wijnand Suijlen (Huawei), Françoise Baude (UNS./I3S), Ludovic Henrio (LIP).

9.2.3. Juries

- Christophe Alias was an expert for the midterm PhD evaluation of Hang Yu from Université Grenoble-Alpes. Hang Yu is supervised by Michaël Perrin and David Monniaux.
- Laure Gonnord was an expert for the midterm PhD evaluation of Sébastien Bonnieux from University Nice Côte d'Azur. Sébastien Bonnieux was supervised by Sébastien Mosser and Mireille Blay-Fornarino.
- Laure Gonnord was reviewer for the PhD of Vincent Botbol from Sorbonne Université entitled "Analyse Statique de programmes concurrents avec variables numériques" and supervised by Emmanuel Chailloux and Tristan Le Gall.
- Laure Gonnord was external jury member for the PhD of Hoby Rakotoarivelo from Université Paris-Saclay entitled "Approche de co-design de noyaux irréguliers sur accélérateurs manycore. Application au cas du remaillage adaptatif pour le calcul intensif" and supervised by Franck Ledoux et Franck Pommereau.
- Laure Gonnord was local jury member for the PhD of Mohammed Amer from Université de Lyon entitled "Centralized Optimization of the Association in IEEE 802.11 Networks" and supervised by Anthony Busson and Isabelle Guérin-Lassous.
- Matthieu Moy was an expert for the midterm PhD evaluation of Joumana Lagha from Ecole centrale de Nantes. Joumana Lagha is supervised by Prof. Olivier H. Roux, Sebastien Faucou and Jean-luc Bechennec.
- Matthieu Moy was reviewer for the Ph.D of Benjamin Rouxel from Université de Rennes 1 entitled "Minimising communication costs impact when scheduling real-time applications on multi-core architectures" and supervised by Isabelle Puaut and Steven Derrien.

9.2.4. Internships

- Bilel Aouadhi, a last year engineer student from Faculté des sciences de Tunis, worked from April 2018 to July 2018 on the implementation of a visualization tool for Data-aware process networks. His was supervised by Christophe Alias and Matthieu Moy, his internship was funded by Université Lyon 1.

- Ligia Novacean, a L3 student from University of Cluj-Napoca (Romania), worked from July 2018 to September 2018 on a DPN-to-C translator for the HLS tool of Xilinx, VivadoHLS. She was supervised by Christophe Alias and Matthieu Moy, her internship was funded by Inria.

- Alexandra Dobre, a L3 student from University of Cluj-Napoca (Romania), worked from July 2018 to September 2018 on the generation of a SystemC simulator from a Data-aware process network. She was supervised by Matthieu Moy and Christophe Alias, her internship was funded by Inria.

- Arthur Gontier, a L3 student from University of Nantes, worked from April 2018 to July 2018 on the formal functional verification of Lustre code with Horn Clauses. He was supervised by Lionel Morel and Laure Gonnord. His internship was founded by the Codas ANR.

- Paul Iannetta, a M2 student from ENS de Lyon, worked from March 2018 to July 2018 on a semantic formalisation of the polyhedral model. He was supervised by Lionel Morel and Laure Gonnord. His internship was founded by the Codas ANR.

9.3. Popularization

9.3.1. Education

- Laure Gonnord is part of the local organisation of the Computer Science preparation for the Agregation examination for future maths teachers (MEEF).

9.3.2. Interventions

- Talk at "Campus du libre" by Matthieu Moy, Doua Lyon, "Pourquoi et comment se lancer dans le libre quand on est étudiant (ou pas) ?", November 2018.

9.3.3. Internal action

- Café développeur by Matthieu Moy, "Utilisation avancée de Git" at LIRIS (2 sessions), October 2018.

9.3.4. Creation of media or tools for science outreach

- Video "Mon équipe en 180 secondes" by Matthieu Moy for the CASH team.

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CELTIQUE Project-Team

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7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. Member of the Organizing Committees
- Formal Methods meet JavaScript Workshop 2018, organizer: Alan Schmitt

7.1.2. Scientific Events Selection

7.1.2.1. Chair of Conference Program Committees
- AVoCS 2018 (International workshop on automated verification of critical systems), FLOC workshop, Oxford (co-chair) : David Pichardie

7.1.2.2. Member of the Conference Program Committees
- CC 2018 (International Conference on Compiler Construction) : David Pichardie
- CPP 2018 (ACM SIGPLAN Conference on Certified Programs and Proofs) : Sandrine Blazy
- ITP 2018 (International Conference on Interactive Theorem Proving) : Delphine Demange
- Euro S&P 2018 (IEEE European Symposium on Security and Privacy) : Sandrine Blazy
- ICFP 2018 (ACM SIGPLAN International Conference on Functional Programming) : Sandrine Blazy
- LOPSTR 2018 (Symposium on Logic-Based Program Synthesis and Transformation) : Sandrine Blazy
- SAS 2018 artefact evaluation committee : Frédéric Besson
- ProWeb 2018: Alan Schmitt

7.1.3. Journal

7.1.3.1. Reviewer - Reviewing Activities
- Discrete Mathematics & Theoretical Computer: Alan Schmitt
- Theoretical Computer Science: Alan Schmitt
- Theoretical Informatics and Applications: Alan Schmitt

7.1.4. Invited Talks
- F. Besson gave a talk at the Dagstuhl Seminar 18201 "Secure Compilation".
- T. Genet gave an invited talk at the ETAPS "Workshop on Rewriting Logic and Applications" in Thessaloniki [12].

7.1.5. Leadership within the Scientific Community
- Sandrine Blazy coordinated of the LTP (Languages, Types, Proofs) group of the French GDR GPL (until October 2018).
- Thomas Jensen is head of the research axis "Security and Privacy" at the Labex CominLabs.
- Sandrine Blazy and Thomas Jensen are member of the Steering Committee of Static Analysis Symposium (SAS).

7.1.6. Scientific Expertise
- Sandrine Blazy: expertise of an ERC Advanced Grant research proposal

- David Pichardie: expertise of two ERC Advanced Grant research proposals
- Sandrine Blazy and David Pichardie : members of the HCERES evaluation committee of the LSV laboratory in December 2018
- David Pichardie: expertise of 1 ANR project
- David Pichardie, jury member for the selection of a Maître de Conférences at ENSEEIHT (Toulouse), May 2018
- Thomas Jensen: expertise of an ERC Consolidator Grant research proposal
- Alan Schmitt: expertise of a Innovational Research Incentives Scheme Veni research proposal
- Sandrine Blazy is member of IFIP WG 2.11 on program generation and of IFIP WG 1.9/2.15 on verified software

7.1.7. Research Administration

- Sandrine Blazy is member of Section 6 of the national committee for scientific research CoNRS.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Licence : Sandrine Blazy, Programmation de confiance, 81h, L3, Université Rennes 1, France

Licence : David Cachera, Initiation to Pedagogy and Mediation, 11h, L3, ENS Rennes, France

Licence : David Cachera, Algorithmics, 20h, L3, ENS Rennes, France

Licence : Delphine Demange, Spécialité Informatique 1 - Algorithmique et Complexité Expérimentale, 36h, L1, Université Rennes 1, France

Licence : Delphine Demange, Spécialité Informatique 2 - Functional and Immutable Programming, 70h, L1, Université Rennes 1, France

Licence : Delphine Demange, Programmation de Confiance, 36h, L3, Université Rennes 1, France

Licence : Thomas Genet, Spécialité Informatique 1 - Algorithmique et Complexité Expérimentale, 47h, L1, Université Rennes 1, France

Licence : Thomas Genet, Initiation au génie logiciel, 67h, L2, Université Rennes 1, France

Licence : Thomas Jensen, Programmation de confiance, 20h, L3, Université Rennes 1, France

Licence : David Pichardie, Graph algorithms, 24h, L3, ESIR, France

Licence : Alan Schmitt, Programmation Fonctionnelle, 36h, L3, Insa Rennes, France

Licence : Alan Schmitt, Programmation de Confiance, 28h, L3, Université Rennes 1, France France

Master : Sandrine Blazy, Static analysis, 30h, M1, Université Rennes 1, France

Master : Sandrine Blazy, Mechanized Semantics, 30h, M2, Université Rennes 1, France

Master : Sandrine Blazy, Software vulnerabilities, 26h, M2, Université Rennes 1, France

Master : David Cachera, Semantics of Programming Languages, 28h, M1, Université Rennes 1, France

Master : David Cachera, Advanced Semantics, 20h, M2, ENS Rennes, France

Master : Delphine Demange, Software Security, 9h, M2, Université Rennes 1, France

Master : Thomas Genet, Analyse et conception formelle, 65h, M1, Université Rennes 1, France

Master : David Pichardie, Static analysis, 30h, M1, Université Rennes 1, France

Master : David Pichardie, Preparation of Agregation exam, 70h, M2, ENS Rennes, France

Master : Thomas Jensen, Software Security, 21h, M2, Université Rennes 1, France.

7.2.2. Supervision

PhD : Yon Fernandez De Retana, Toward verified compilation of Sea of Nodes : semantic properties and reasoning, Université Rennes 1, defended 5 July 2018, Delphine Demange and David Pichardie

PhD : Alix Trieu, Verifying constant-time implementations in a verified compilation toolchain, Université Rennes 1, defended 4 December 2018, Sandrine Blazy and David Pichardie

PhD: Gurvan Cabon, Analyse non locale certifiée en JavaScript grâce à une sémantique annotée, Université Rennes 1, defended 14 December 2018, Alan Schmitt

PhD in progress : Timothée Haudebourg, Verification of Higher-Order Functional Programs using Tree Automata, September 2017, Thomas Genet and Thomas Jensen

PhD in progress : Rémi Hutin, A C compiler ensuring security properties, September 2018, Sandrine Blazy and David Pichardie

7.2.3. *Juries*

- Sandrine Blazy, jury member for the selection of CNRS CR and DR (researchers) candidates, February and March 2018, CNRS, Paris, France.
- Sandrine Blazy, jury member for the promotion to a senior lecturer position at the University of Kent, May 2018, Canterbury, Great Britain
- Sandrine Blazy, jury member (reviewer) for the PhD defense of Martin Clochard, March 2018, Paris-Sud University
- Sandrine Blazy, jury member for the PhD defense of Huisong Li, March 2018, ENS, Paris
- Sandrine Blazy, jury member for the HDR defense of Aurélie Hurault, July 2018, Université de Toulouse
- Sandrine Blazy, jury member of the GDR GPL PhD award committee.
- Thomas Jensen, president of jury for the PhD defense of Yon Fernandez de Retana, July 2018, University of Rennes 1.
- Alan Schmitt, jury member (reviewer) for the PhD defense of Guillaume Claret, September 2018, Université Sorbonne Paris Cité
- Sandrine Blazy, jury member for the PhD defense of Rabab Bouziane, December 2018, Université Rennes 1
- David Pichardie, jury member (reviewer) for the PhD defense of Jiangchao Liu, February 2018, Paris Sciences et Lettres Research University
- David Pichardie, jury member (reviewer) for the PhD defense of Thibaut Girka, July 2018, Université Paris-Diderot
- David Pichardie, jury member (reviewer) for the PhD defense of Jean-Christophe Léchenet, July 2018, Université Paris-Saclay
- David Pichardie, jury member (reviewer) for the PhD defense of Sigurd Schneider, November 2018, Saarland University, Germany
- David Pichardie, jury member (reviewer) for the PhD defense of Narjes Jomaa, December 2018, Université de Lille
- Frédéric Besson, member of hiring committee for a Maître de Conférence position, Spring 2018, ENSIMAG

7.3. Popularization

7.3.1. *Interventions*

- Thomas Genet gave a talk "Bug, Virus, Intrusion, Pirates... So many threats and no defense? Yes... maths." in high schools close to Rennes. 2018.
- David Cachera contributed to the animation of "École Médiation scientifique en informatique ", Société Informatique de France, June 2018.

CIDRE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Jean-Louis Lanet served as general chair of the 13rd International Conference on Risks and Security of Internet and Systems CRiSIS 2018, Bordeaux France and general chair of the 11th International Conference on Information Technology and Communication Security, Bucharest, Romania,

9.1.1.2. Member of the Organizing Committees

Christophe Bidan served as a member of the organization committee of C&ESAR 2018 (25rd Computers & Electronics Security Applications Rendez-vous), November 2018, Rennes, France.

Frédéric Tronel served as a member of the organization committee of SSTIC 2018 (Symposium sur la sécurité des technologies de l'information et des communications) that took place in Rennes, France in June, where it gathered more than 600 participants.

Gilles Guette served as a member of the organization committee of InOut18, annual event on new mobility that took place in Rennes, France in March.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Eric Totel chaired the Program Committee of the 2018 French conference RESSI (Rendez-Vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

9.1.2.2. Member of the Conference Program Committees

Frédéric Tronel and Valérie Viet Triem Tong served as a member of the program committee of SSTIC 2017 (Symposium sur la sécurité des technologies de l'information et des communications) June 2018, Rennes, France.

Valérie Viet Triem Tong served as a member of the program committee of SECITC (International conference on Information Technology and Communications Security), october 2018, Bucharest, Romania.

Jean-François Lalande served as a member of the program committee of the international conferences CECC 2018, IEEE AINS 2018, IEEE HPCS 2018 and of the international workshops SHPCS 2018, IWCC 2018, CUING 2018, BioSTAR 2018, WTMC 2018, DACSW 2018.

Michel Hurfin acts as a member of the program committee of the African Conference on Research in Computer Science and Applied Mathematics (CARI 2018), South Africa, October 2018.

Emmanuelle Anceaume served as a member of the program committee of the following international conferences: ICDCN 2018, NCA 2018 CryBlock 2018, DEBS 2018, PEC 2018, BSCT 2018, and ADSN 2018.

Ludovic Mé served as a member of the 2018 MSPN (International Conference on Mobile, Secure and Programmable Networking) and CARI (Colloque Africain sur la Recherche en Informatique et Mathématiques Appliquées 2018) program Committees.

Guillaume Piolle served as a member of the 2018 APVP (Atelier sur la Protection de la Vie Privée) and EGC-IA (Extraction et Gestion des Connaissances - Intelligence Artificielle) program committees.

Gilles Guette served as a member of the program committee of the International Conference on Information Systems Security and Privacy, ICISSP 2018.

9.1.2.3. Reviewer

Valérie Viet Triem Tong served as a reviewer for the African Conference on Research in Computer Science and Applied Mathematics, October 2018, South Africa, Stellenbosch.

Jean-François Lalande served as a reviewer for ICISSP 2018, APVP 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Jean-François Lalande served as a member of the editorial board of IARIA International Journal on Advances in Security.

Michel Hurfin serves as a member of the editorial board of the JISA Journal (Journal of Internet Services and Applications - Springer).

9.1.3.2. Reviewer - Reviewing Activities

Jean-François Lalande served as a reviewer for Journal of Universal Computer Science, Elsevier FGCS, IEEE TIFS, MDPI Future Internet, MDPI Sensors, Elsevier Computer Commmunications.

Michel Hurfin served as a reviewer for the IEEE TDSC Journal (Transactions on Dependable and Secure Computing), the Springer TOCS Journal (Theory of Computing Systems), and the Taylor & Francis International Journal of Control.

Emmanuelle Anceaume served as a reviewer of the following journals: IEEE TPDS, and ACM TAAS.

Jean Louis Lanet served as reviewer for the Journal of Computer Security.

Guillaume Piolle served as a reviewer for the RIA (Revue d'Intelligence Artificielle) journal.

Guillaume Hiet served as a reviewer for the Journal of Computer Security.

Gilles Guette served as a reviewer for the IEEE JSAC-SI-NETSOFT-ENABLERS and for the IEEE Networking Letters.

9.1.4. Invited Talks

Emmanuelle Anceaume gave several talks:

- *UTXOs as a proof of membership for Byzantine Agreement based Cryptocurrencies* during the National Days of the pre-GDR on security, june 2018.
- *Beyond the block: A lego blockumentary* during "Journées scientifiques de l'Inria".
- *Sycomore, a Directed Acyclic Graph of Blocks*, Chain-in conference, Porto, Portugal, July 2018, [6], also on Youtube "https://www.youtube.com/watch?v=YLW-iHjsWo0".

Valérie Viet Triem Tong gives a talk about *information flow monitoring at the operating system level* during the National Days of the pre-GDR on security, june 2018.

Jean-François Lalande was invited as keynote speaker at SecITC'2018 [7].

Jean-François Lalande was an invited speaker of the workshop SHPCS 2018 [8].

Guillaume Piolle was an invited speaker at the *Surveillance Resilience, & Privacy* conference (Paris, December 2018).

9.1.5. Scientific Expertise

Ludovic Mé has served the Scientific Council of the LIRIMA (Laboratoire International de Recherche en Informatique et Mathématiques Appliquées).

Ludovic Mé has chaired the group of experts dedicated to the evaluation of the security of French computer science research labs (PPST S/C 7).

Ludovic Mé has chaired the Steering Committee of the annual French conference RESSI (Rendez-Vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

Eric Totel has served the Steering Committee of the annual French conference RESSI (Rendez-Vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

Valérie Viet Triem Tong has participated in the scientific evaluation comity *Global Security and Cybersecurity* (CES 39) of the French Research Agency (ANR).

9.1.6. Research Administration

Ludovic Mé acts as Scientific Officer for the Rennes - Bretagne Atlantic Inria Research Center. As such, he is also a member of the Evaluation Commission and of the Internal Scientific Council of Inria.

Ludovic Mé was the president of a recruitment committee for an assistant professor position at the CNAM (Conservatoire national des arts et métier, Paris). He also served a recruitment committee for an assistant professor position at CentraleSupélec, Rennes.

Valérie Viet Triem Tong was a member of a recruitment committee for an assistant professor position at CentraleSupélec, Rennes.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Emmanuelle Anceaume, *Research in Computer Science - Distributed Algorithms*, 20 hours of lecture, M2; Université Rennes 1, France;

Licence: Christophe Bidan, *Algorithms and Data Structures*, 36 hours of lecture including 7.5 hours of lectures, L3 - first year of the engineering degree, CentraleSupélec, France;

Licence: Christophe Bidan, *Software Engineering*, 12 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Licence: Christophe Bidan, *Supervision of student project*, 1 project, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Christophe Bidan is responsible for the module *Secured information systems*, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Christophe Bidan, *Applied cryptography*, 6 hours of lecture, M2 - master 2 degree, University of Rennes 1, France;

Master: Christophe Bidan, *Applied cryptography*, 15 hours including 6 hours of lecture, M2 - third year of the engineer degree, CentraleSupélec, France;

Master : Christophe Bidan, *Cryptographic Protocols*, 6 hours of lecture, mastère CS (Cyber Security), CentraleSupélec, France;

Master: Christophe Bidan, *Information systems*, 4.5 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Christophe Bidan, *Supervision of student project*, 2 projects, M1 - second year of the engineer degree, CentraleSupélec, France;

Licence: Gilles Guette, *Algorith and Complexity*, 36 hours, L1 - Licence, ISTIC/University of Rennes, France;

Licence: Gilles Guette, *Network Initiation*, 72 hours, L3 - Licence, ISTIC/University of Rennes, France;

Licence: Gilles Guette, *Network Initiation*, 69 hours, L3 - first year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Routing*, 45 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Mobile Network Routing*, 5 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Advanced Network Services*, 13 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Project*, 24 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Security*, 46 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Sensors Network*, 28 hours, M2 - Master, ISTIC/University of Rennes, France;

Master: Gilles Guette, *Supervision of student*, Contrat de professionnalisation, M2 - third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Supervision of student internship*, M2 - ISTIC/University of Rennes, France;

Licence: Guillaume Hiet, *Algorithms and Data Structures*, 12.5 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Computer security and privacy for the engineer*, 8 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Buffer overflow vulnerabilities*, 16 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Buffer overflow vulnerabilities*, 16 hours, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Master: Guillaume Hiet, *Pentest*, 19 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Pentest*, 3 hours, M2 - Mastère Spécialisé CS (Cyber Security), Centrale-Supélec, France;

Master: Guillaume Hiet, *Introduction to Linux*, 3 hours, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Master: Guillaume Hiet, *Java Security*, 4.5 hours, M2 - Mastère Spécialisé CS, CentraleSupélec, France;

Master: Guillaume Hiet, *Linux Security*, 18 hours, M2 - Mastère Spécialisé CS , CentraleSupélec, France;

Master: Guillaume Hiet, *Linux Security*, 7.5 hours, third year of the engineer degree, Centrale-Supélec, France;

Master: Guillaume Hiet, *LDAP*, 7.5 hours, third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Intrusion Detection*, 15 hours, M2 - Mastère Spécialisé CS, Centrale-Supélec, France;

Master: Guillaume Hiet, *Intrusion Detection*, 13.5 hours, M2 - third year of the engineer degree, M2 research degree of University of Rennes 1, CentraleSupélec, France;

Master: Guillaume Hiet, *Security Monitoring*, 3 hours, M2, cycle "Sécurité Numérique", INHESJ, France;

Master: Guillaume Hiet, *Computer Security*, 31.5 hours, M2, Mastère Spécialisé Architecte des Systèmes d'Information, CentraleSupélec, France;

Master: Guillaume Hiet, *Intrusion Detection*, 16 hours, M2, University of Rennes 1, France;

Master: Guillaume Hiet, *Intrusion Detection*, 10 hours, M2 - third year of the engineer degree, ESIR, France;

Master: Guillaume Hiet, *Intrusion Detection*, 9 hours, M2, Université of Limoges, France;

Master: Guillaume Hiet, *Firewall*, 6 hours, M2, University of Rennes 1, France;

Master: Guillaume Hiet, *Supervision of student project*, 4 projects, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Supervision of student project*, 2 projects, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Supervision of student project*, 2 projects, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Licence: Jean-François Lalande, *Algorithms and data structures*, 22 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Computer Sciences*, 13 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Operating System*, 7 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Legal aspects of information security*, 4 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Android mobile development*, 18 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Web development*, 18 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Supervision of student projects*, 7 projects, engineer degree, CentraleSupélec, France;

Licence: Guillaume Piolle, *Software engineering*, 1.5 hours, L3 - first year of the engineering degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Modelling, Algorithms and Programming*, 22 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computer security and privacy*, 5 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Software project*, 3.5 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Relational databases*, 6 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computer networks*, 30 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Security Policies*, 4.5 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Java programming*, 4.5 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computer networks*, 9 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Software engineering*, 12 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Network Access Control*, 9 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Web development*, 32 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Privacy protection*, 18 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computing project*, 60 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Legal aspects of information security*, 4.5 hours, M2 - master CyberSecurity, CentraleSupélec, France;

Licence : Eric Totel, *Foundations of computer science, data structures and algorithms*, 9 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Licence : Eric Totel, *Software Modeling*, 15 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *Operating Systems*, 30 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *C language*, 24 hours including 6 hours of lecture, M2 - master CS (Cyber Security), CentraleSupélec, France;

Master : Eric Totel, *C language and C++ language*, 12 hours including 6 hours of lecture, M2 - third year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *Dependability* , 9 hours including 7.5 hours of lecture, M2 - third year of the engineer degree and master research, CentraleSupélec, France;

Master : Eric Totel, *Dependability*, 3 hours of lecture, M2 - third year of the engineer degree (ingénierie des systèmes automatisés), CentraleSupelec, France;

Master : Eric Totel, *Dependability*, 4.5 hours of lecture, M2 - post-graduate training (master Architecture des Réseaux de Communication), CentraleSupélec, France;

Master : Eric Totel, *Intrusion Detection*, 6 hours of lecture, M2 - M2 - master CS (Cyber Security), CentraleSupélec, France;

Master : Eric Totel, *Intrusion Detection*, 9 hours of lecture, M2 - master 2 degree, University of Rennes 1, France;

Master : Eric Totel, *Supervision of student project*, 4 projects, M1 - second year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *Supervision of student project,* 1 project, M2 - third year of the engineer degree, CentraleSupélec, France;

Licence: Frédéric Tronel, *Software engineering*, 40 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Licence: Frédéric Tronel, *Operating Systems*, 12 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Operating systems*, 21 hours hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Assembly Language*, 6 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Buffer overflow vulnerabilities (theory and practice)*, 20.5 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Firewall*, 15 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Calculability in distributed systems*, 6 hours, M2, jointly with University of Rennes 1 and CentraleSupélec, France;

Master: Frédéric Tronel, *Computer network*, 8 hours, M2, jointly with University of Rennes 1 and CentraleSupélec, France;

Licence : Valérie Viet Triem Tong, *Algorithms and Data Structures*, 36 hours of lecture including 7 hours of lectures, L3 - first year of the engineering degree, CentraleSupélec, France;

Licence : Valérie Viet Triem Tong, *Supervision of student project*, 2 projects of 2nd year of the engineer degree, CentraleSupélec, France;

Master: Valérie Viet Triem Tong is responsible of the M2 degree in *CyberSecurity* (mastère spécialisé), organized jointly by CentraleSupélec and Institut Mines Télécom (IMT) Atlantique, France;

Master : Valérie Viet Triem Tong, *Formal Methods*, 9 hours, M2 - third year of the engineering degree, CentraleSupélec, France;

Master : Valérie Viet Triem Tong, *Intrusion detection using information flow control*, 9 hours, M2 / third year of the engineering degree, CentraleSupélec, France;

Master : Valérie Viet Triem Tong, , *Compilers*, 18 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master : Valérie Viet Triem Tong, *Supervision of student project*, 2 project, mastere CS (Cyber Security), CentraleSupélec, France;

Master : Valérie Viet Triem Tong, *Supervision of student project,* 1 project, M2 - third year of the engineer degree, CentraleSupélec, France;

Doctorant : Valérie Viet Triem Tong, *Malware analysis*, 6 hours, Research week, ENS Lyon, Lyon, France;

9.2.2. Supervision

9.2.2.1. Thesis defended in 2018

PhD: Thomas Letan, *Contribution à la sécurité des couches basses des systèmes d'information*, novembre 2018, supervised by Guillaume Hiet (50%), Pierre Chifflier (25% - ANSSI), and Ludovic Mé (25%);

PhD: Oualid Koucham, *Détection d'intrusions pour les systèmes de contrôle industriels*, november 2018, supervised by Stéphane Mocanu (50% - Gipsa-lab), Guillaume Hiet (25%), and Jean-Marc Thiriet (25% - Gipsa-lab);

PhD : Mourad Leslous, *Highlighting and executing Android suspicious execution path in Android malware*, 18th december 2018, supervised by Thomas Genet (20% - Celtique Inria project), Jean François Lalande (40% - INSA Centre Val de Loire), and Valérie Viet Triem Tong (40%);

PhD : Yves Mocquard, *Population protocols*, december 2018, supervised by Bruno Sericola (Dyonisos Inria project) and Emmanuelle Anceaume;

PhD : Razika Lounas, *Validation des spécifications formelles de la mise à jour dynamique des applications Java Card*, December 2018, supervised by Jean-Louis Lanet (50%) and Mohamed Mezguiche (50%-Limose, Algerie)

PhD : Abdelhak Mesbah, *Rétroconeption d'application Java Card*, November 2018, supervised by Jean-Louis Lanet (50%) and Mohamed Mezguiche (50%-Limose, Algerie)

9.2.2.2. Theses in progress

PhD in progress (previously in Tamis): Aurélien Palisse, *Detection and early mitigation of ransomware on Windows platforms*, started in 2015, supervised by Jean-Louis Lanet and Hélène Le Bouder (IMT Atlantique);

PhD in progress (previously in Tamis): Kevin Bukasa, *Vulnerability analysis of a Secure Enclave in Embedded Devices*, started in 2016, supervised by Jean-Louis Lanet and Ronan Lashermes (SED Inria);

PhD in progress (previously in Tamis): Leopold Ouairy, *Analyse des vulnérabilités dans des systèmes embarqués*, started in 2017, supervised by Jean-Louis Lanet;

PhD in progress: Mathieu Escouteloup *Micro-architectures Sécurisées*, started in 2018, supervised by Jean-Louis Lanet and Jacques Fournier (CEA);

PhD in progress: Damien Crémilleux, *Visualisation d'évènements de sécurité pour la supervision*, started in October 2015, supervised by Christophe Bidan (30%), Nicolas Prigent (35%), and Frédéric Majorczyk (35% - DGA MI);

PhD in progress: Mounir Nasr Allah, *Contrôle de flux d'information par utilisation conjointe d'analyse statique et d'analyse dynamique accélérée matériellement*, started in November 2015, supervised by Guillaume Hiet (75%) and Ludovic Mé (25%);

PhD in progress: Pernelle Mensah, *Adaptation de la Politique de Sécurité guidée par l'Évaluation du Risque dans les Infrastructures de Communication modernes*, started in January 2016, supervised by Eric Totel (25%), Guillaume Piolle (25%), Christine Morin (25% - Myriad Inria project), and Samuel Dubus (25% - Nokia);

PhD in progress: David Lanoë, *Détection d'intrusion dans les applications distribuées : l'approche comportementale comme alternative à la corrélation d'alertes*, started in october 2016, supervised by Michel Hurfin (50%) and Eric Totel (50%);

PhD in progress : Ronny Chevalier , *Enhanced computer platform security through an intrusion-detection approach*, started in November 2016, supervised by Guillaume Hiet (50%), Boris Balacheff (25% - HP), and Ludovic Mé (25%);

PhD in progress: Laetitia Leichtnam, *Visualisation pour la caractérisation d'événements de sécurité*, started in october 2016, supervised by Eric Totel (40%), Nicolas Prigent (30%) and Ludovic Mé (30%);

PhD in progress : Charles Xosanavongsa, *Combining Attack Specification and Dynamic Learning from traces for correlation rule generation*, started in december 2016, supervised by Eric Totel (50%) and Ludovic Mé (50%);

PhD in progress : Pierre Graux, *Security of Hybrid Mobile Applications*, started in october 2017, supervised by Valérie Viet Triem Tong (50%) and Jean-Francçois Lalande (50%);

PhD in progress : Vasile Cazacu, *Calcul distribué pour la fouille de données cliniques*, started February 2017, supervised by Emmanuelle Anceaume (50%) and Marc Cuggia (50%)

PhD in progress : Aurélien Dupin, *Secure multi-partie computations*, started February 2016, supervised by Christophe Bidan(40%), David Pointchavalm (30% - ENS) and Renaud Dubois (30% - Thales).

PhD in progress : Cedric Herzog, *Simulation d'environnement d'observation afin d'éviter le déploiement de malware sur une station de travail*, started in November 2018, supervised by Jean Louis Lanet (50%), Pierre Wilke (25%) and Valérie Viet Triem Tong (25%);

PhD in progress : Benoit Fournier, *Secure routing in drone swarms*, started in november 2018, supervised by Gilles Guette (50%), Jean Louis Lanet (25%) and Valérie Viet Triem Tong (25%);

PhD in progress : Aimad Berady, *Attacker characterization*, started in november 2018, supervised by Christophe Bidan (25%), Guillaume Carat (25%),Gilles Guette (25%), and Valérie Viet Triem Tong (25%);

PhD in progress : Cyprien Gottstein, *Problématiques de stockage et d'interrogation de très grands graphes répartis dans le contexte de l'internet des objets*, started in october 2018, supervised by Michel Hurfin (50%) and Philippe Raipin Parvedy (50%);

9.2.2.3. Supervision of external PhD candidates

LL. D. (Doctor of Laws) in progress: Gustav Malis, *Droit à l'effacement des données mises à disposition par les personnes elles-mêmes*, started in March 2014, supervised by Annie Blandin (80% - IODE) and Guillaume Piolle (20%);

Ruta Moussaileb, in progress, *From Data Signature to Behavior Analysis* started January 2018, supervised by Nora Cuppens (50%-) and Jean-Louis Lanet (50%)

9.2.3. *Juries*

Valérie Viet Triem Tong has reported the following PhD thesis:

Mickael Salaun, *Intégration de l'utilisateur au contrôle d'accès: du processus cloisonné à l'interface homme-machine de confiance*, february 2018.

Alicia Filipiak, *Design and formal analysis of security protocols, an application to electronic voting and mobile payment*, march 2018.

Anaël Beaugnon, *Expert-in-the-Loop Supervised Learning for Computer Security Detection Systems*, june 2018.

Steve Muller, *Risk Monitoring and Intrusion Detection for Industrial Control System*, june 2018

Guilia De Santis, *Modeling and Recognizing Network Scanning Activities with Finite Mixture Models and Hidden Markov Models*, december 2018.

Jean-Louis Lanet has reported the following PhD thesis:

Mark Angoustures, December 2018, *Automatic malicious behaviors extraction usable in malware detection*

Damien Marion, December 2018 *Multidimensionality of the Models and the Data in the Side Channel Domain*

Guillaume Hiet was a member of the PhD committee for the following PhD thesis:

Thomas Letan, *Specifying and Verifying Hardware-based Security Enforcement Mechanisms*, October 2018.

Oualid Koucham, *Détection d'intrusions pour les systèmes de contrôle industriels*, November 2018.

Muhammad Abdul WAHAB, *Support matériel pour l'analyse de sécurité du comportement des applications*, December 2018.

Valérie Viet Triem Tong was a member of the PhD committee for the following PhD thesis:

Guillaume Brogi, *Real-time detection of Advanced Persistent Threats using Information Flow Tracking and Hidden Markov Models*, february 2018.

Mourad Leslous, *Highlighting and Executing Suspicious Paths in Android Malwar*, december 2018.

Mark Angoustures, *Extraction automatique de caractéristiques malveillantes et méthode de détection de malware dans un environnement réel*, december 2018.

Jean-François Lalande has reported the following PhD thesis:

Guillaume Brogi, *Détection temps réel de Menaces Persistentes Avancées par Suivi de Flux d'Information et Modèles de Markov Cachés*, april 2018.

Jean-François Lalande was a member of the PhD committee for the following PhD thesis:

Mourad Leslous, *Highlighting and Executing Suspicious Paths in Android Malwar*, december 2018.

Jean-Louis Lanet was a member of the PhD committee for the following PhD thesis:

Khanh Huu The DAM, 2018, *Automatic Learning and Extraction of Malicious Behaviors*

Emmanuelle Anceaume was a member of the grading PhD committee of

Ivan Walulya PhD thesis *On design and applicatins of practical concurrent data structures*, Chalmers University, Sweden, November 2018.

Emmanuelle Anceaume was a member of the PhD committee of

Yves Mocquard, *Analyse probabiliste de protocoles de population* December, 2018.

Ludovic Mé was a member of the PhD committee for the following PhD committee of :

Tan Ngoc Nguyen, *A Security Monitoring Plane for Information Centric Networking: application to Named Data Networking*, Université de Technologie de Troyes, 2018.

9.3. Popularization

9.3.1. Articles and contents

- Emmanuelle Anceaume was interviewed by Jean-Michel Prima. This gave rise to an article: "Améliorer le Bitcoin ... à coup de fourches", Emergences Inria, 2018.

- Jean François Lalande and Valérie Viet Triem Tong were interviewed by Jean-Michel Prima. This gave rise to an article: "Disséquer automatiquement les malware sous Android", Emergences Inria, 2018.

- Emmanuelle Anceaume belonged to the working group "Blockchains challenges" organized by the french governmental group "France Strategie". This gave rise to a report accessible here: https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs-rapport-blockchain-21-juin-2018.pdf.

9.3.2. Interventions

Interviews, videos and podcasts :

Emmanuelle Anceaume was interviewed by Joanna Jongwane for a https://interstices.info/le-potentiel-revolutionnaire-de-la-technologie-blockchain/podcast in online Interstice journal, 2018. (Talk is in french).

Emmanuelle Anceaume was interviewed by the Parliamentary Office For Scientific and Technological Assessment (OPECST) in 2018. The OPECST acts as an intermediary between the political world and the world of research. The goal of this interview was to describe the Bitcoin cryptocurrency system and its associated blockchain, and to discuss on the different vulnerabilities Bitcoin is confronted with.

Emmanuelle Anceaume was interviewed by the *mission d'information sur l'usage des blockchains*, by the French National Assembly in 2018.

Demos : Practical results concerning malware analysis issued from the Kharon project were presented during:

Forum International de la Cybersécurité at Lille in 2018

Fête de la science at Inria in 2018

These works also regularly presented during the visits of the *Laboratoire Haute Sécurité* in the Inria Rennes Bretagne Atlantique center.

9.3.3. Internal action

- Emmanuelle Anceaume was invited to join the internal meetings at La Cordée Rennes on "Blockchain focus: Cinéma: Quel potential d'innovation", November the 8th, 2018.

COMETE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of the organizing committee

Catuscia Palamidessi is member of:

The Executive Committee of SIGLOG, the ACM Special Interest Group on Logic and Computation. Since 2014.

The Steering Committee of CONCUR, the International Conference in Concurrency Theory. Since 2016.

The Organizing Committee of LICS, the ACM/IEEE Symposium on Logic in Computer Science. 2014-18.

The Steering Committee of ETAPS, the European Joint Conferences on Theory and Practice of Software. Since 2006.

The Steering Committee of EACSL, the European Association for Computer Science Logics. Since 2015.

The Steering Committee of FORTE, the International Conference on Formal Techniques for Distributed Objects, Components, and Systems. Since 2014.

The IFIP Technical Committee 1 – Foundations of Computer Science. Since 2007.

The IFIP Working Group 1.7 – Theoretical Foundations of Security Analysis and Design. Since 2010.

The IFIP Working Group 1.8 – Concurrency Theory. Since 2005.

Frank D. Valencia is member of:

The steering committee of the International Workshop in Concurrency EXPRESS. Since 2010.

Konstantinos Chatzikokolakis is member of:

The steering committee of the Privacy Enhancing Technologies Symposium. Since 2018.

8.1.2. Scientific events selection committee

8.1.2.1. Chair of conference program committee

Konstantinos Chatzikokolakis:

is serving as PC chair (with Carmela Troncoso as co-chair) of PETS 2019: The 19th Privacy Enhancing Technologies Symposium, July 16-20, 2019, Stockholm, Sweden.

8.1.2.2. Member of conference program committees

Catuscia Palamidessi is/has been a member of the program committees of the following conferences and workshops:

> PETS 2019. The 19th Privacy Enhancing Technologies Symposium. Stockholm, Sweden, 16–20 July, 2019.

> LICS 2019. The Thirty-Fourth Annual ACM/IEEE Symposium on Logic in Computer Science. Vancouver, Canada, 24–27 June 2019.

> CSF 2019. The 32nd IEEE Computer Security Foundations Symposium. Hoboken, NJ, USA, June 24-27, 2019.

> SAC 2019 (Security track). The 34th ACM/SIGAPP Symposium On Applied Computing. Limassol, Cyprus, 8-12 April 2019.

> FACS 2018. The 15th International Conference on Formal Aspects of Component Software. Pohang, South Corea, 10-12 October 2018.

> TASE 2018. The 12th International Symposium on Theoretical Aspects of Software Engineering. Guangzhou, China, 29-31 August 2018.

> PETS 2018. The 18th Privacy Enhancing Technologies Symposium. Barcelona, Spain, 24-27 July 2018.

> FOSSACS 2018. The 21st International Conference on Foundations of Software Science and Computation Structures. (Part of ETAPS 2018.) Thessaloniki, Greece, 14-21 April 2018.

> SOFSEM 2018. The 44th Annual Int'l Conference on Current Trends in Theory and Practice of Computer Science (track on Foundations of Computer Science). Krems an der Donau, Austria, 29 January- 2 February, 2018.

> PPML 2018. Privacy Preserving Machine Learning (NeurIPS 2018 Workshop). Montréal, Canada, 8 December 2018.

> APVP 2018. Atelier sur la Protection de la Vie Privée. Porquerolles, France, 3-6 juin 2018.

Konstantinos Chatzikokolakis is/has been a member of the program committees of the following conferences and workshops:

> BMDA 2018: Workshop on Big Mobility Data Analytics

> QAPL 2018: International Workshop on Quantitative Aspects of Programming Languages and Systems

> HotSpot 2018: 6th Workshop on Hot Issues in Security Principles and Trust

Frank D. Valencia is/has been a member of the program committees of the following conferences and workshops:

> CP-ICLP-SAT-DP-18. Doctoral Program of the 23rd International Conference on Principles and Practice of Constraint Programming.

> CONCUR 2019. The 30th International Conference on Concurrency Theory. Amsterdam, the Netherlands, August 26-31, 2019.

> AAMAS 2019. International Conference on Autonomous Agents and Multiagent Systems. Montreal, Canada, 13th-17th of May 2019.

8.1.3. Journals

8.1.3.1. Member of the editorial board

Catuscia Palamidessi is:

> Member of the Editorial Board of the Proceedings on Privacy Enhancing Technologies (PoPETs), published by De Gruyter. Since 2017.

Member of the Editorial Board of Mathematical Structures in Computer Science, published by the Cambridge University Press. Since 2006.

Member of the Editorial Board of Acta Informatica, published by Springer. Since 2015.

Member of the Editorial Board of the Electronic Notes of Theoretical Computer Science, published by Elsevier Science. Since 2000.

Member of the Editorial Board of LIPIcs: Leibniz International Proceedings in Informatics, Schloss Dagstuhl–Leibniz Center for Informatics. Since 2014.

Konstantinos Chatzikokolakis is:

Editorial board member of the Proceedings on Privacy Enhancing Technologies (PoPETs), a scholarly journal for timely research papers on privacy.

8.1.3.2. Reviewing

The members of the team regularly review papers for international journals, conferences and workshops.

8.1.4. Other Editorial Activities

Catuscia Palamidessi is/has been:

Co-editor (with Anca Muscholl and Anuj Dawar) of the special issue of Logical Methods in Computer Science dedicated to selected papers of ICALP 2017.

Co-editor (with Alexandra Silva and Natarajan Shankar) of the special issue of Logical Methods in Computer Science dedicated to selected papers of LICS 2015 and LICS 2016.

Frank D. Valencia has been:

Co-editor of the special issue on Mathematical Structures in Computer Science dedicated to the best papers from the 12th International Colloquium on Theoretical Aspects of Computing.

8.1.5. Participation in other committees

Catuscia Palamidessi has been serving in the following committees:

Member of the panel for the Research Evaluation for Development 2019 (RED19) of the Department of Computer Science and Engineering at the University of Gothenburg, Sweden.

Chair of the Nominating Committee for the 2019 renewal of the office holders of SIGLOG, the ACM Special Interest Group on Logic and Computation.

Member of the evaluation panel for the SU-ICT-03-2018: "Dynamic countering of cyber-attacks" - H2020 Work Programme 2018-2020.

Member of the evaluation panel for the program IKTPLUSS on Digital Security, Research Council of Norway (2018).

Member of the committee for the Alonzo Church Award for Outstanding Contributions to Logic and Computation. From 2015. In 2018 Palamidessi is the president of this committee.

Reviewer for the projects proposal for the program PRIN, sponsored by the Italian MIUR ("Ministero dell'Istruzione, dell'Università e della Ricerca"). Since 2005.

President of the selection committee for the EATCS Best Paper Award. From 2006 until 2018.

Member of the EAPLS PhD Award Committee. From 2010.

8.1.6. Invited talks

Catuscia Palamidessi has given invited talks at the following conferences and workshops:

CSL 2018. The 27th Computer Science Logic Annual Conference. Birmingham, UK, 4–7 September 2018.

CSF 2018. The 31st IEEE Computer Security Foundations Symposium, Oxford, UK, 9-12 July 2018.

PROOFS 2018 (Keynote speaker). The 7th International Workshop on Security Proofs for Embedded Systems. Amsterdam, The Netherlands, 13 September 2018.

PiMLAI 2018 Privacy in Machine Learning and Artificial Intelligence (FAIM 2018 Workshop). Stockholm, Sweden, 15 July 2018.

Bernoulli Symposium. Opening Symposium of the new institute for Artificial Intelligence, Mathematics, and Computer Science of the University of Groningen. Groningen, The Netherlands, 1 November 2018.

Konstantinos Chatzikokolakis has given invited talks at the following conference:

QEST 2018. 15th International Conference on Quantitative Evaluation of SysTems, Beijing, China, September 4-7, 2018.

8.1.7. Service

Catuscia Palamidessi has served as:

Member of the committee for the assignment of the Inria International Chairs. From 2017.

Frank Valencia has served as:

Directeur adjoint de l'UMR 7161, le Laboratoire d'Informatique de l'Ecole Polytechnique (LIX). From May 2016.

Konstantinos Chatzikokolakis has served as:

Member of the hiring committee for the "poste enseignants-chercheur Gaspard Monge", Ecole Polytechnique, 2018.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : Frank D. Valencia has been teaching the undergraduate course "Computability", 45 hours, at the Pontificia Universidad Javeriana de Cali, Colombia. July 27 - Nov 1, 2018.

Master : Frank D. Valencia has been teaching the masters course "Foundations of Computer Science", 45 hours, at the Pontificia Universidad Javeriana de Cali, Colombia. Jan 27 - Jun 1, 2018

Master : Konstantinos Chatzikokolakis has been teaching the masters course "Privacy Technologies", 40 hours, at the University of Athens, Greece. Oct - Dec, 2018.

8.2.2. Supervision

PhD in progress (2018-) Natasha Fernandez. Co-supervised Konstantinos Chatzikokolakis, Catuscia Palamidessi, and Annabelle McIver. Thesis subject: Privacy Protection Methods for Textual Documents.

PhD in progress (2018-) Santiago Quintero. Co-supervised by Frank Valencia and Catuscia Palamidessi. Thesis Subject: Foundations of Group Polarization.

PhD in progress (2017-) Marco Romanelli. Co-supervised by Konstantinos Chatzikokolakis, Catuscia Palamidessi, and Moreno Falaschi (University of Siena, Italy). Thesis subject: Application of Information Flow to feature selection in machine learning.

PhD in progress (2017-) Anna Pazii. Co-supervised by Konstantinos Chatzikokolakis and Catuscia Palamidessi. Thesis subject: Local Differential Privacy.

PhD terminated (2016-18) Tymofii Prokopenko. Ecole Polytechnique and ENS Cachan. Grant Digiteo-Digicosme. Co-supervised by Konstantinos Chatzikokolakis, Catuscia Palamidessi, and Serge Haddad (ENS Cachan). The PhD was terminated due to the lack of progress.

PhD in progress (2017-) Sergio Ramirez. Co-supervised by Frank Valencia and Camilo Rueda, Universidad Javeriana Cali. Thesis subject: Quantitive Spatial Constraint Systems.

8.2.3. *Juries*

Catuscia Palamidessi has been reviewer and member of the board at the PhD defense for the thesis of the following PhD student:

Vittoria Nardone (University of Sannio, Italy). PhD thesis reviewer. Title of the thesis: *Formal Methods for Android Applications*. Supervised by Antonella Santone. Defended in January 2019.

Antoine Dallon (ENS Paris-Saclay). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Verification of indistinguishability properties in cryptographic protocols - Small attacks and efficient decision with SAT-Equiv*. Supervised by Veronique Cortier and Stephanie Delaune. Defended on November 26, 2018.

David Mestel (University of Oxford). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Quantifying information flow*. Supervised by Bill Roscoe. Defended on October 26, 2018.

Jun Wang (University of Luxembourg). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Privacy-preserving recommender systems facilitated by machine learning approach*. Supervised by Qiang Tang and Peter Ryan. Defended on October 19, 2018.

Hamid Ebadi (Chalmers University, Sweden). Member of the committee board at the PhD defense. Title of the thesis: *Dynamic Enforcement of Differential Privacy*. Supervised by David Sands. Defended on March 5, 2018.

Catuscia Palamidessi has been examiner of the following habilitation thesis:

Elham Kashefi (LIP6, CNRS, France). Title of the thesis: *Verification of Quantum Computing*. Defended on February 8, 2018.

8.2.4. *Other didactical duties*

Catuscia Palamidessi has been:

Member of the advising committee for Hamid Ebadi, PhD student supervised by David Sands, Chalmers University, Sweden. From 2014 until 2018.

External member of the scientific council for the PhD in Computer Science at the University of Pisa, Italy. Since 2012.

Member of the advising committee for the PhD of Jun Wang (PhD student supervised by Qiang Tang and Peter Ryan), University of Luxembourg. From 2014 until 2018.

8.3. Popularization

8.3.1. *Education*

Konstantinos Chatzikokolakis and Catuscia Palamidessi have designed, and coordinate, a course on the Foundations of Privacy at the MPRI, the Master Parisien pour la Recherche en Informatique. University of Paris VII. A.Y. Since 2015.

Catuscia Palamidessi has been:

- Invited speaker at PLMW@POPL 2019, the Programming Logic Mentoring Workshop 2019 (affiliated to POPL 2019). This workshop aims at encouraging graduate students and senior undergraduate students to pursue careers in programming language research, and at educating them on the research career.

- A participant in the round table at the FLOC Women in Logic workshop, a workshop organized to encourage women's presence in the logic community. Oxford, UK, 8 July 2018.

8.3.2. Interventions

Catuscia Palamidessi and Frank Valencia have supervised a group of high school children in stage d'observation. April 2018.

Catuscia Palamidessi has given an invited talk at:

- JNIM 2018. Journées Nationales 2018 du GDR Informatique Mathématique (Journée du 6 Avril en Hommage à Maurice Nivat). Palaiseau, France, 3-6 April 2018.

<div style="text-align:center; color:red;">**CONVECS Project-Team**</div>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Member of the Organizing Committees

- H. Garavel is a member of the model board [0] of MCC (*Model Checking Contest*). In 2018, he helped preparing new models (especially those in the NUPN format) and verified, using the CÆSAR.BDD tool of CADP, the forms describing all benchmark models submitted by the contest participants; this revealed a number of inconsistencies. The results of MCC'2018 have been published online [51].

- Together with Peter Höfner (Data61, CSIRO, Sydney, Australia), H. Garavel set up a model repository (hosted on the Gforge of Inria) to collect and archive formal models of real systems; this infrastructure is used by the series of MARS workshops [0]. This repository currently contains 21 models, one of which (a Transport Layer Security protocol) was deposited in 2018 by CONVECS.

- G. Salaün is member of the steering committee of the ACM SAC-SVT (*Symposium of Applied Computing – Software Verification and Testing Track*) conference series since 2018.

- G. Salaün is member of the steering committee of the SEFM (*International Conference on Software Engineering and Formal Methods*) conference series since 2014.

- G. Salaün is member of the steering committee of the FOCLASA (*International Workshop on Foundations of Coordination Languages and Self-Adaptative Systems*) workshop series since 2011.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- G. Salaün was co-chair of ACM SAC-SOAP'2018 (*33rd ACM Symposium of Applied Computing – Service-Oriented Architectures and Programming Track*), Pau, France, April 9–13, 2018.

- G. Salaün was workshops co-chair at STAF'2018 (*Software Technologies: Applications and Foundations*), Toulouse, France, June 25-29, 2018.

- W. Serwe was co-chair of MARS'2018 (*3rd Workshop on Models for Formal Analysis of Real Systems*) affiliated with ETAPS'2018 (*European Joint Conferences on Theory and Practice of Software*), Thessaloniki, Greece, April 20, 2018.

9.1.2.2. Member of the Conference Program Committees

- H. Garavel was program committee member of FVPS'2018 (*International Workshop on Formal Verification of Physical Systems*), Hagenberg, Austria, August 17, 2018.

- F. Lang was program committee member of SPIN'2018 (*25th International SPIN Symposium on Model Checking of Software*), Málaga, Spain, June 20–22, 2018.

- R. Mateescu was program committee member of ICTSS'2018 (*30th IFIP International Conference on Testing Software and Systems*), Cádiz, Spain, October 1–3, 2018.

- R. Mateescu was program committee member of FMICS'2018 (*23rd International Conference on Formal Methods for Industrial Critical Systems*), Maynooth, Ireland, September 3–4, 2018.

- G. Salaün was program committee member of CAL'2018 (*11ème Conférence francophone sur les Architectures Logicielles*), Grenoble, France, June 14–15, 2018.

- G. Salaün was program committee member of COMPSAC'2018 (*IEEE International Conference on Computers, Software, and Applications*), Tokyo, Japan, July 23–27, 2018.

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[0] http://mcc.lip6.fr/models.php
[0] http://www.mars-workshop.org/

- G. Salaün was program committee member of DATAMOD'2018 (*7th International Symposium "From Data to Models and Back"*), Toulouse, France, June 25–26, 2018.
- G. Salaün was program committee member of FACS'2018 (*15th International Conference on Formal Aspects of Component Software*), Pohang, Korea, October 10–12, 2018.
- G. Salaün was program committee member of FOCLASA'2018 (*16th International Workshop on Foundations of Coordination Languages and Self-Adaptative Systems*), Toulouse, France, June 26, 2018.
- G. Salaün was program committee member of HPCS-4PAD'2018 (*5th International Symposium on Formal Approaches to Parallel and Distributed Systems*), Orléans, France, July 16–20, 2018.
- G. Salaün was program committee member of SEFM'2018 (*16th International Conference on Software Engineering and Formal Methods*), Toulouse, France, June 27–29, 2018.
- G. Salaün was program committee member of SAC-SVT'2018 (*33rd ACM Symposium on Applied Computing - Software Verification and Testing Track*), Pau, France, April 9–13, 2018.

9.1.2.3. Reviewer

- G. Barbon was a reviewer for COMPSAC'2018, DATAMOD'2018, and SEFM'2018.
- F. Lang was a reviewer for FoSSaCS'2018 (*21st International Conference on Foundations of Software Science and Computation Structures*).
- A. Muroor Nadumane was a reviewer for COMPSAC'2018, FACS'2018, FOCLASA'2018, SAC-SVT'2018, and SEFM'2018.
- U. Ozeer was a reviewer for COMPSAC'2018.
- R. Mateescu and W. Serwe were reviewers for the Festschrift in honor of Bernhard Steffen.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- H. Garavel is an editorial board member of STTT (*Springer International Journal on Software Tools for Technology Transfer*).

9.1.3.2. Reviewer - Reviewing Activities

- F. Lang was a reviewer for FAoC (*Formal Aspects of Computing*) and ToCL (*ACM Transactions on Computational Logic*).
- R. Mateescu was a reviewer for STTT, ToCL, and TOR (*IEEE Transactions on Reliability*).
- A. Muroor Nadumane was a reviewer for STTT.
- G. Salaün was a reviewer for FAoC, JCC (*Journal of Computer and Communications*), JLAMP (*Journal of Logical and Algebraic Methods in Programming*), SCP (*Science of Computer Programming*), TSE (*IEEE Transactions on Software Engineering*), TSI (*Technique et Science Informatiques*).

9.1.4. Software Dissemination and Internet Visibility

The CONVECS project-team distributes several software tools, among which the CADP toolbox.

In 2018, the main facts are the following:

- We prepared and distributed twelve successive versions (2018-a to 2018-l) of CADP.
- We were requested to grant CADP licenses for 381 different computers in the world.

The CONVECS Web site [0] was updated with scientific contents, announcements, publications, etc.

By the end of December 2018, the CADP forum [0], opened in 2007 for discussions regarding the CADP toolbox, had over 426 registered users and over 1847 messages had been exchanged.

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[0]http://convecs.inria.fr
[0]http://cadp.inria.fr/forum.html

Also, for the 2018 edition of the Model Checking Contest, 4 families of models generated using CADP (totalling 101 Nested-Unit Petri Nets) were provided.

We contributed to Wikipedia as follows:

- We created a new page about the Message Authenticator Algorithm (https://en.wikipedia.org/wiki/Message_Authenticator_Algorithm)
- We added the three last paragraphs of the section about constructing integer numbers (https://en.wikipedia.org/wiki/Integer#Construction)

Other research teams took advantage of the software components provided by CADP (e.g., the BCG and OPEN/CAESAR environments) to build their own research software. We can mention the following developments:

- The RichTest Tool for Message-Passing Concurrent Programs [33]
- The REFINER Tool for Verifying Behavioural Model-to-Model Transformations [63]
- The ALVIS Tool for Modelling and Verification of Real-Time Systems [60]
- The COSTO Tool for Component-Based Software [30]
- The IDCM Tool for Analyzing UML Architectures [52]
- The OCARINA Tool and its Extension AADL2LNT for Analysing AADL Descriptions [58]
- The aZiZa Tool for Heterogeneous Behavioural Models [31]
- The Papyrus-RT Tool for Model-driven Engineering with UML-RT [62]
- Formal Analysis of Distributed Reactive Applications [35], [34]

Other teams also used the CADP toolbox for various case studies:

- Formal Modelling and Verification of an Automatic Train Supervision System [56], [57]
- Verification of Highly-Optimized Concurrent Data Structures [61]
- Detection of Data Breaches in Banking Transaction Processes [54]
- Verification of Visibility-Based Properties on Multiple Moving Robots [59]
- Experimental Analysis of Compositional State Space Generation Strategies [64]
- Product-Line for Families of Program Translators [32]

9.1.5. Invited Talks

- H. Garavel participated in the workshop "*Safety of Future Systems: Science meets Industry*" organized by the Lorentz Center (Leiden, The Netherlands) on April 9–13, 2018. He gave a lecture entitled "*Concurrency Theory Meets IoT*".
- H. Garavel gave an invited talk entitled "*Benchmarking Implementations of Term Rewriting and Pattern Matching in Algebraic, Functional, and Object-Oriented Languages - The 4th Rewrite Engines Competition*" at WRLA'2018 (*12th International Workshop on Rewriting Logic and its Applications*), Thessaloniki, Greece, April 14–15, 2018.
- L. Marsso gave a talk and presented a poster entitled "*Automated Test Generation for GALS Systems*" on March 8, 2018 at the 2nd year PhD LIG Day.
- L. Marsso gave a talk entitled "*Generation with CADP of Relevant Scenarios for Testing Autonomous Cars*" at the seminar of the group TransForm (*Méthodes formelles pour les systèmes de transport*) held in Villeneuve d'Ascq on November 22, 2018.
- L. Marsso gave a talk entitled "*Automated Test Generation for GALS Systems*" at the Scientific day of ARC 6 held in Lyon on November 29, 2018.
- R. Mateescu participated to the Kobe-Grenoble workshop organized by UGA in Grenoble on February 26–27, 2018. He gave a talk entitled "*Rigorous Design of PLC Networks using Formal Methods*" on February 26.

- A. Muroor Nadumane gave a talk entitled "*Building Reliable IoT Application and Beyond*" at the Inria-Nokia Bell Labs meeting held in Paris on November 27, 2018.

- U. Ozeer gave a talk and presented a poster entitled "*Autonomous Resilience of Distributed IoT Applications in a Fog Environment*" on March 8, 2018 at the 2nd year PhD LIG Day.

- U. Ozeer gave a talk entitled "*Autonomous Resilience of Distributed IoT Applications in a Fog Environment*" at the seminar on IoT research projects held at Orange Labs, Meylan, on March 29–30, 2018.

- U. Ozeer presented a poster entitled "*Autonomous Resilience of Distributed IoT Applications in a Fog Environment*" at the LIG seminar "*Regards sur le futur de l'informatique*" held in Grenoble on April 6, 2018.

- U. Ozeer gave a talk entitled "*Resilience of Distributed IoT Applications in a Dynamic Fog Environment*" at the IO Labs seminar held in Paris on October 30–31, 2018.

- G. Salaün gave a keynote talk entitled "*Safe Composition of Software Services*" at DATAMOD'2018, Toulouse, France, on June 26, 2018.

9.1.6. Research Administration

- H. Garavel was appointed to the Executive Commission in charge of International Relations at COMUE Université Grenoble Alpes.

- F. Lang is chair of the "*Commission du développement technologique*", which is in charge of selecting R&D projects for Inria Grenoble – Rhône-Alpes.

- R. Mateescu is the scientific correspondent of the European and International Partnerships for Inria Grenoble – Rhône-Alpes.

- R. Mateescu is a member of the *Comité d'orientation scientifique* for Inria Grenoble – Rhône-Alpes.

- R. Mateescu is a member of the "*Bureau*" of the LIG laboratory.

- G. Salaün is a member of the Scientific Committee of the PCS (*Pervasive Computing Systems*) action of the PERSYVAL Labex.

- W. Serwe is (together with Laurent Lefèvre from the AVALON Inria project-team) correspondent in charge of the 2017 Inria activity reports at Inria Grenoble – Rhône-Alpes.

- W. Serwe is a member of the "*Comité de Centre*" at Inria Grenoble – Rhone-Alpes.

- W. Serwe is "*chargé de mission*" for the scientific axis *Formal Methods, Models, and Languages* of the LIG laboratory.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

CONVECS is a host team for the computer science master entitled "*Mathématiques, Informatique, spécialité : Systèmes et Logiciels*", common to Grenoble INP and Université Grenoble Alpes (UGA).

In 2018, we carried out the following teaching activities:

G. Barbon and W. Serwe supervised each a group of six teams in the context of the "*projet Génie Logiciel*" (55 hours "*équivalent TD*", consisting in 16 hours of lectures, plus supervision and evaluation), ENSIMAG, January 2018.

F. Lang and R. Mateescu gave a lecture on "*Modeling and Analysis of Concurrent Systems: Models and Languages for Model Checking*" (27 hours "*équivalent TD*") to third year students of ENSIMAG and second year students of the MOSIG (*Master of Science in Informatics at Grenoble*).

F. Lang gave a course on "*Formal Software Development Methods*" (7.5 hours "*équivalent TD*") in the framework of the "*Software Engineering*" lecture given to first year students of the MOSIG.

F. Lang and W. Serwe provided a 6-hour training about the CADP toolbox to Eric Jenn, Nicolas Hili, and Sun Wei Tsun (IRT Saint-Exupéry, Toulouse, France) on June 28, 2018.

L. Marsso gave a course on "*Algorithms and Web Programming*" (64 hours "*équivalent TD*") at the department MMI of IUT1 (UGA).

A. Muroor Nadumane gave a course on "*Object Oriented Programming*" (42 hours "*équivalent TD*") at the department MMI of IUT1 (UGA).

G. Salaün taught about 230 hours of classes (algorithmics, Web development, object-oriented programming, iOS programming) at the department MMI of IUT1 (UGA). He is also headmaster of the "*Services Mobiles et Interface Nomade*" (SMIN) professional licence (3rd year of university) at IUT1/UGA.

9.2.2. *Supervision*

PhD in progress: L. Marsso, "*Formal Methods for Testing Networks of Controllers*, Université Grenoble Alpes, since October 2016, R. Mateescu, W. Serwe, I. Parissis, and Ch. Deleuze

PhD in progress: A. Muroor Nadumane, "*Softwarization of Everything: IoT Service Composition*, Université Grenoble Alpes, since October 2017, G. Salaün, R. Mateescu, L. Noirie, and M. Le Pallec

PhD in progress: U. Ozeer, "*Autonomous Resilience of Applications in a Largely Distributed Cloud Environment*, Université Grenoble Alpes, since November 2016, L. Letondeur, G. Salaün, F.-G. Ottogalli, and J.-M. Vincent

9.2.3. *Juries*

- G. Salaün was PhD committee member for Gustavo García Pascual's PhD thesis, entitled "*Optimizing Mobile Applications by Exploiting Variability Models at Runtime*", defended at University of Málaga (Spain) on December 18, 2018.

CORSE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Yliès Falcone chaired the programme committee of the Software Verification and Testing track of the 2018 ACM Symposium on Applied Computing.
- Yliès Falcone chaired the scientific organization of the 2nd international school on Runtime Verification.

10.1.1.2. Member of the Organizing Committees

- Fabrice Rastello: Steering Committee ACM/IEEE CGO; Steering Committee "Journées française de la compilation"

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Frédéric Desprez: Closer 2018, HPC '18, SC18 (posters), CEBDA-2018 (with IPDPS'18), CLOUDCOM-2018.
- François Broquedis: IEEE IPDPS 2019, COMPAS 2019
- Fabrice Rastello: ACM SIGPLAN/SIGBED LCTES 2018
- Yliès Falcone: RUME'18, VORTEX'18, 4PAD'18, RV'18, TASE'18, DATE'18

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Frédéric Desprez: IEEE Transaction on Cloud Computing (associate editor)

10.1.4. Invited Talks

- Fabrice Rastello: Saarbruck University: "Automated Derivation of Roofline Performance Limits for Affine Programs"
- Fabrice Rastello: UC Denver: "Automated Derivation of Roofline Performance Limits for Affine Programs"
- Fabrice Rastello: CSU: "Data-Flow/Dependence Profiling for Structured Transformations"
- Frédéric Desprez: CCDSC workshop: SILECS: Super Infrastructure for Large-scale Experimental Computer Science

10.1.5. Leadership within the Scientific Community

- Frédéric Desprez: co-présidence du prix de thèse annuel du GDR Réseaux et Systèmes Distribués (RSD) en collaboration avec l'association ACM SIGOPS France (ASF)
- Frédéric Desprez: Scientific committee of ORAP
- Frédéric Desprez: Technical Committee of GENCI

10.1.6. Scientific Expertise

- Frédéric Desprez: Genci: attribution heures de calcul CT6
- Frédéric Desprez: Groupe de travail "Cloud recherche" du ministère

- Frédéric Desprez: comité des sages IRIT
- Frédéric Desprez: Netherlands Organisation for Scientific Research (NWO), TOP Grants for senior researchers

10.1.7. Research Administration

- Frédéric Desprez: Deputy Scientific Director at INRIA
- Frédéric Desprez: Director of the GIS GRID5000
- Frédéric Desprez: Conseil Scientifique ESIEE Paris

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master 1: Frédéric Desprez, Parallel Algorithms and Programming, 30 hours, M1 MoSIG and CS, UGA, France

License 3: François Broquedis, Imperative programming using python, 40 hours, Grenoble Institute of Technology (Ensimag)

License 3: François Broquedis, Computer architecture, 40 hours, Grenoble Institute of Technology (Ensimag)

License 3: François Broquedis, C programming, 80 hours, Grenoble Institute of Technology (Ensimag)

Master 1: François Broquedis, Operating systems and concurrent programming, 40 hours, Grenoble Institute of Technology (Ensimag)

Master 1: François Broquedis, Operating Systems Development Project - Fundamentals, 20 hours, Grenoble Institute of Technology (Ensimag)

Master 1: François Broquedis, Operating Systems Project, 20 hours, Grenoble Institute of Technology (Ensimag)

Master: Florent Bouchez Tichadou, Algorithmic Problem Solving, 41 hours, M1 MoSIG

Licence: Florent Bouchez Tichadou, Algorithms languages and programming, 113 hours, L2 UGA

Licence: Florent Bouchez Tichadou is responsible of the second year of INF (informatique) and MIN (mathématiques et informatique) students at UGA, eq. 85 hours

Master 1: Yliès Falcone, Proof Techniques and Logic Reminders, MoSIG, 3 hours

Master 1: Yliès Falcone, Programming Language Semantics and Compiler Design, MoSIG and Master informatique, 96 hours

License: Yliès Falcone, Languages and Automata, Univ. Grenoble Alpes, 105 hours

Master: Yliès Falcone, is co-responsible of the first year of the International Master of Computer Science (Univ. Grenoble Alpes and INP ENSIMAG)

10.2.2. Supervision

PhD in progress: Georgios Christodoulis, Adaptation of a heterogeneous run-time system to efficiently exploit FPGA, October 2015, advised by Frederic Desprez, Olivier Muller (TIMA/SLS), and François Broquedis

PhD in progress: Mathieu Stoffel, Static and dynamic approaches for the optimization of the energy consumption associated with applications of the High Performance Computing (HPC) field, February 2018, advised by François Broquedis, Frédéric Desprez, Abdelhafid Mazouz (Atos/Bull) and Philippe Rols (Atos/Bull)

PhD: Ye Xia, Scaling and placement for autonomic management of elasticity of applications in a widely distributed cloud, defended on December 17th 2018, Combining Heuristics for Optimizing and Scaling the Placement of IoT Applications in the Fog, advised by Thierry Coupaye (Orange), Frédéric Desprez, and Xavier Etchevers (Orange)

PhD in progress: Fabian Grüber, Interactive & iterative performance debugging, September 2016, advised by Fabrice Rastello and Yliès Falcone.

PhD: François Gindraud, Semantics and compilation for a data-flow model with a global address space and software cache coherency. Defended on January 11 2018, advised by Fabrice Rastello and Albert Cohen.

PhD: Thomas Messi Nguelé, Domain Specific Languages for Social Networks Analysis on Multi-Core Architectures, defended on September 15 2018, advised by Maurice Tchuenté (Yaoundé I, LIRIMA) and Jean Francois Méhaut

PhD: Philippe Virouleau, Improving the performance of task-based run-time systems on large scale NUMA machines, defended on June 5 2018, advised by Thierry Gautier (INRIA/AVALON), Fabrice Rastello, and François Broquedis

PhD: Antoine El-Hokayem, Decentralised and Distributed Monitoring of Cyber-Physical Systems, defended on December 18 2018, advised by Yliès Falcone.

PhD in progress: Pedro Henrique Penna, Towards an Operating System for Manycore Platforms, October 2017, advised by Marcio Castro (UFSC), François Broquedis, Henrique Cota de Freitas (PUC Minas) and Jean Francois Méhaut.

PhD in progress: Raphaël Jakse, Interactive Runtime Verification, to be defended in Fall 2019, advised by Jean-François Méhaut and Yliès Falcone.

10.2.3. Juries

10.2.3.1. Frédéric Desprez

- François Gindraud, examiner, *Semantics and compilation for a data-flow model with a global address space and software cache coherency*, PhD, Université Grenoble Alpes, January 11, 2018

- Guillaume Latu, reviewer, *Contribution à la simulation haute-performance et aux méthodes de calcul très extensibles*, HDR, Université de Strasbourg, April 18, 2018

- Bastien Confais, reviewer, *Conception d'un système de partage de données adapté à un environnement de Fog Computing*, PhD, Université de Nantes, July 10, 2018

- Hadrien Croubois, examiner/chair, *Toward an autonomic engine for scientific workflows and elastic Cloud infrastructure*, PhD, ENS Lyon, October 16 2018

- Estelle Dirand, examiner, *Développement d'un système in situ à base de tâches pour un code de dynamique moléculaire classique adapté aux machines exaflopiques*, PhD, Université Grenoble Alpes, November 6, 2018

- Ovidiu Marcu, reviewer, *KerA : A Unified Ingestion and Storage System for Scalable Big Data Processing*, PhD, Insa de Rennes, December 18, 2018

- Mohamed Abderrahim, reviewer, *Conception d'un système de supervision programmable et reconfigurable pour une infrastructure informatique et réseau répartie*, IMT Atlantique, December 19, 2018

10.2.3.2. Fabrice Rastello

- François Gindraud, advisor, *Système distribué à adressage global et cohérence logicielle pourl'exécution d'un modèle de tâche à flot de données*, Université Grenoble Alpes, January 11, 2018

- Johannes Doerfert, reviewer, *Applicable and Sound Polyhedral Optimization of Low-Level Programs*, Universität des Saarlandes, December 19, 2018

- Philippe Virouleau, advisor, *Etude et amélioration de l'exploitation des architectures NUMA à travers des supports exécutifs*, Université Grenoble Alpes, June 5, 2018

10.2.3.3. François Broquedis

- Philippe Virouleau, advisor, *Etude et amélioration de l'exploitation des architectures NUMA à travers des supports exécutifs*, Université Grenoble Alpes, June 5, 2018

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Yliès Falcone: Elected member of the Research Council of Univ. Grenoble Alpes.
- Yliès Falcone: Elected member of the Academic Council of Univ. Grenoble Alpes.
- Yliès Falcone: Elected member of the Laboratory Council of the Laboratoire d'Informatique de Grenoble
- Yliès Falcone: Mission Valorisation for the Laboratoire d'Informatique de Grenoble.

<p style="text-align:center">**DATASHAPE Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of Organizing Committees

- F. Chazal co-organised the Tutorial "Machine Learning on Evolutionary Computation" at the IEEE World Congress on Computational Intelligence (WCCI), Rio de Janeiro, July 2018.
- J-D. Boissonnat was a member of the organization committee of the International Conference on Curves and Surfaces, Arcachon, July 2018.
- S. Oudot organized the mini-symposium on topological data analysis and learning at the International Conference on Curves and Surfaces, Arcachon, July 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- S. Oudot was a PC member of the International Symposium on Computational Geometry (SoCG), Budapest, Hungary, June 2018.
- David Cohen-Steiner was a PC member of the Symposium on Geometry Processing (SGP), Paris, France, July 2018, and of Shape Modeling International (SMI), Lisbon, Portugal, June 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Jean-Daniel Boissonnat is a member of the Editorial Board of *Journal of the ACM*, *Discrete and Computational Geometry*, *International Journal on Computational Geometry and Applications*.

Frédéric Chazal is a member of the Editorial Board of *SIAM Journal on Imaging Sciences*, *Discrete and Computational Geometry (Springer)*, *Graphical Models (Elsevier), and Journal of Applied and Computational Topology (Springer)*.

Steve Oudot is a member of the Editorial Board of *Journal of Computational Geometry*.

10.1.4. Invited Talks

Frédéric Chazal, Abel Symposium, Geiranger, Norway, June 2018.

Frédéric Chazal, Colloquium de Mathématiques, Math Dept. Amiens, October 2018.

Frédéric Chazal, AI Research Center at National Cheng-Kung University, Taiwan, May 2018.

Frédéric Chazal, National Center for High-performance Computing, Taiwan, May 2018.

Jean-Daniel Boissonnat, Hamilton Mathematics Institute, Trinity College, Dublin, Ireland, June 2018.

Steve Oudot, Workshop "Topological Data Analysis meets Symplectic Topology", Tel Aviv, Israel, May 2018.

Steve Oudot, Abel Symposium, Geiranger, Norway, June 2018.

Steve Oudot, Banff workshop on multiparameter persistence, Oaxaca, Mexico, August 2018.

Steve Oudot, ICERM, Brown University, Providence, USA, August 2018.

Steve Oudot, workshop on structural inference in high-dimensional models, Moscow, Russia, September 2018.

Clément Maria, Einstein workshop on Geometric and Topological Combinatorics, Freie Universität, Berlin, Germany, October 2018.

10.1.5. Leadership within the Scientific Community

Frédéric Chazal is co-responsible, with S. Arlot (Paris-Sud Univ.), of the "programme Maths-STIC" of the Labex Fondation Mathématique Jacques Hadamard (FMJH).

Frédéric Chazal has been a member of the Scientific council of the french "Agence pour les Mathematiques en Interaction avec l'Entreprise et la Societe (AMIES)" until Dec. 2018.

Frédéric Chazal is a member of the "Comité de pilotage" of the SIGMA group at SMAI.

Steve Oudot is co-organizing the monthly seminar on combinatorial and computational geometry at Institut Henri Poincaré.

Steve Oudot is co-head (with Luca Castelli-Aleardi) of the GT Géométrie Algorithmique within the GdR Informatique Mathématique.

Steve Oudot is a member of the program committee of the DataIA convergence institute.

10.1.6. Scientific Expertise

- Consulting collaboration for IFPEN to explore potential applications of TDA (from February 2018 to Dec. 2018).

10.1.7. Research Administration

Frédéric Chazal is a member of the Équipe de Direction at Inria Saclay.

Marc Glisse, responsable Raweb pour DataShape

Steve Oudot is vice-president of the Commission Scientifique at Inria Saclay.

Clément Maria is a member of the CDT at Inria Sophia Antipolis-Méditerranée.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Frédéric Chazal and Quentin Mérigot, Analyse Topologique des Données, 30h eq-TD, Université Paris-Sud, France.

Master: Jean-Daniel Boissonnat and Marc Glisse, Computational Geometry Learning, 36h eq-TD, M2, MPRI, France.

Master: Frédéric Cazals and Frédéric Chazal, Geometric Methods for Data Analysis, 30h eq-TD, M1, École Centrale Paris, France.

Master: Frédéric Chazal and Julien Tierny, Topological Data Analysis, 38h eq-TD, M2, Mathématiques, Vision, Apprentissage (MVA), ENS Paris-Saclay, France.

Master: Steve Oudot, Topological data analysis, 45h eq-TD, M1, École polytechnique, France.

Master: Steve Oudot, Data Analysis: geometry and topology in arbitrary dimensions, 24h eq-TD, M2, graduate program in Artificial Intelligence & Advanced Visual Computing, École polytechnique, France.

Undergrad-Master: Steve Oudot, preparatory course for international programming contests, 54h eq-TD, L3/M1, École polytechnique, France.

Summer School on topological data analysis and persistent homology: Steve Oudot, advanced topics, 6h eq-TD, Trento, Italy, June 2018.

Summer School on geometric data: Frédéric Chazal and Marc Glisse, Introduction to Topological Data Analysis, 9h eq-TD, Fréjus, Sept. 2018.

Winter School on Computational Geometry, Amirkabir University of Technology, Tehran, Iran. Course on Delaunay Triangulation of Manifolds, March 2018.

10.2.2. Supervision

PhD : Claire Brécheteau, Statistical aspects of distance-like functions , Defended on September 2018, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Bertrand Beaufils, Méthodes topologiques et apprentissage statistique pour l'actimétrie du piéton à partir de données de mouvement, started November 2016, Frédéric Chazal (co-advised by Bertrand Michel).

PhD: Jérémy Cochoy, Decomposition and stability of multidimensional persistence modules, Defended on December 10, 2018, Steve Oudot.

PhD in progress: Yitchzak Solomon, Inverse problems in topological data analysis, started September 1st, 2016, Steve Oudot (co-advised by Jeff Brock, Brown University).

PhD in progress: Nicolas Berkouk, Categorification of topological graph structures, started November 1st, 2016, Steve Oudot.

PhD in progress: Théo Lacombe, Statistics for persistence diagrams using optimal transport, started October 1st, 2017, Steve Oudot.

PhD in progress: Alba Chiara de Vitis, Concentration of measure and clustering, Jean-Daniel Boissonnat and David Cohen-Steiner.

PhD in progress: Siargey Kachanovich, Manifold reconstruction in higher dimensions, Jean-Daniel Boissonnat.

PhD in progress: Siddharth Pritam, Approximation algorithms in Computational Topology, Jean-Daniel Boissonnat.

PhD in progress: Raphaël Tinarrage, Persistence and stability of nerves in measured metric spaces for Topological Data Analysis, started September 1st, 2017, Frédéric Chazal and Marc Glisse.

PhD in progress: Vincent Divol, statistical aspects of TDA, started September 1st, 2017, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Owen Rouillé, September 2018, co-advised by C. Maria and J-D. Boissonnat.

10.2.3. Juries

J-D. Boissonnat was a member of the committee for the HDR defense of Aurélien Alvarez (Université d'Orléans).

F. Chazal was a member of the PhD defense committee of Jisu Kim (Carnegie Mellon University, advisors: A. Rinaldo and L. Wasserman), Claire Brécheteau (Université Paris-Saclay, advisors: F. Chazal and P. Massart), Hariprasad Kannan (Centrale-Supelec, advisor: N. Paragios), Dorian Nognen (Ecole Polytechnique, advisor: M. Ovsjanikov).

S. Oudot was a member of the Ph.D. defence committee of Tim Ophelders (T.U. Eindhoven, advisors: Bettina Speckmann and Kevin Buchin).

10.3. Popularization

10.3.1. Interventions

- Frédéric Chazal: Fujitsu Forum, "Topological Data Analysis: from academic success to industrial innovation", Tokyo, Japan, May 2018.
- Frédéric Chazal: "TDA and AI for biomedical applications", Kaohsiung MEdical Technology Expo, Taiwan, May 2018.

10. Dissemination

10.1. Promoting Scientific Activities

Stéphane Grumbach has been co-director of IXXI since 2014. He is also involved in the Anthropocene Group at ENS Lyon, which promotes interdisciplinary research and teaching activities on issues related to the adaptation to the changes of the natural ecosystem. He is involved in various initiatives to promote scientific knowledge to a wider audience, as well as in cooperation with public administrations (local and national) to face the challenges of the digital revolution.

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Kavé Salamatian Organised the 3rd French-Japan CyberSecurity workshop in Annecy in April 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Kavé Salamatian is professor at Université de Savoie.

Stéphane Grumbach is lecturer at SciPo Paris, where he teaches Master courses (M1, M2) on the Economy of Data. He also regularly gives lectures in universities, including ENA, ENS Lyon, Ecole centrale, Insa Lyon, etc.

10.2.2. Supervision

PhD in progress: Jingxiu Su, DNS data analysis, 2016, directeur de thèse Kave Salamatian

PhD in progress: Colin GERARD, Stratégies d'influence de la Russie sur les réseaux sociaux, 2018 PhD in progress with Institut Français de Géopolitique, sponsored by DGA, Director: Frederick Douzet

10.3. Popularization

Various publications have appeared in journals accessible to a larger audience [3], [2].

<p style="text-align:center">**DEDUCTEAM Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organization

Guillaume Burel has been local organizer of the scientific days of the CNRS GDR GPL working groups LTP and MTV2.

9.1.2. Scientific Events Selection

Frédéric Blanqui has been PC chair of the 13th International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP'18) with Giselle Reis.

Frédéric Blanqui is Workshop Chair of LICS and member of the Steering Committee of LICS.

Frédéric Blanqui is member of the Steering Committee of the International School on Rewriting (ISR) of the WG 1.6 of the International Federation for Information Processing.

Gilles Dowek has been a PC member of TYPES 2018.

Guillaume Burel has been PC member of the 30th Journées Francophones des Langages Applicatifs.

Guillaume Burel has reviewed a submission for the International Conference on Principles and Practice of Constraint Programming (CP). Guillaume Genestier reviewed submissions to the conferences Logic in Computer Science (LICS), Principles and Practice of Declarative Programming (PPDP) and European Symposium on Programming (ESOP).

9.1.3. Journals

Gilles Dowek is an editor of TCS-C.

Frédéric Blanqui has reviewed a paper for Mathematical Structures in Computer Science (MSCS). Guillaume Burel has reviewed papers for the Computer Journal and Logical Methods in Computer Science (LMCS). Rodolphe Lepigre has reviewed a paper for International Conference on Foundations of Software Science and Computation Structures (FoSSaCS). Rodolphe Lepigre has reviewed a paper for the journal ACM Transactions on Programming Languages and Systems (TOPLAS). Franck Slama has reviewed a paper for the Journal of Functional Programming.

9.1.4. Invited Talks

- Rodolphe Lepigre gave an invited talk entitled "The PML Language: Realizability at the Service of Program Proofs" at the Realizability Workshop (12-13 June 2018) in Luminy.
- Rodolphe Lepigre gave an invited talk entitled "An Overview of the PML_2 Language: Realizability, Subtyping and Cyclic Proofs" at LRI, for the starting days of the new Scalp working group of GDR IM. This is a presentation of his paper [32].
- Gilles Dowek has given an invited talk at NFM (Nasa Formal Methods).
- Jean-Pierre Jouannaud has given an invited talk at the workshop "Rewriting Techniques for Program Transformation and Evaluation" at FLoC, on July 8, 2018.

9.1.5. Seminars

- Gilles Dowek has participated to the meeting "From Information to Cells" organized by Hélène Kirchner and Antoine Danchin. He has given a talk at the National Institute of Aerospace.
- Gilles Dowek has co-organized a seminar on Logic and Philosophy at the CNFHPST.

- Guillaume Burel has presented a talk entitled "Bridging holes on DEDUKTI proofs, an overview" at the scientific day of the Digicosme working group UPSCaLe.

- Bruno Barras has given a talk entitled "An analysis of bindlib" at the UPSCaLe meeting (June'18) held in Palaiseau.

- Mohamed Yacine EL HADDAD has presented his work at internal laboratory seminar of LSV (June'18) and SAMOVAR (November'18).

- Gaspard Férey has presented his work at internal laboratory seminar of LSV (June'18).

- Guillaume Genestier has presented his work at the internal laboratory seminar of Centre de Recherche en Informatique of Mines ParisTech (February'18) and LSV (June'18) and presented DEDUKTI at the doctoral seminar of La Société Informatique de France (June'18). He presented [16] in the WorkShop on Termination (WST) at Oxford (July'18).

- Rodolphe Lepigre has presented his work on "Termination checking using well-founded typing derivations" at a Deducteam seminar in September 2018.

- Rodolphe Lepigre has given a talk entitled "The PML_2 Language, Integrated Program Verification in ML" at the Max Planck Institute for Software Systems in Saarbrücken, in November 2018.

- Franck Slama has presented some previous work at an internal laboratory seminar of LSV in December 2017.

- François Thiré has presented his work on interoperability at the UPSCaLe seminar on March 2018, then he presented his paper [15] at the LFMT Workshop at Oxford (July'17).

- Aristomenis Papadopoulos has presented the work he did during his summer internship at a Deducteam seminar in September 2018.

9.1.6. *Leadership within the scientific community*

Gilles Dowek is president of the scientific board of the Socitété informatique de France.

He is a member of the Ethic council CERNA.

He is a member of the Comité National Français d'Histoire et de Philosophie des Sciences et des techniques.

He is a member of the scientific board of La Main à la pâte.

He is a member of the scientific board of the Institut Villebon Charpak.

He is a member of the scientific board of the Maison des sciences de Lorraine.

He is the president of the Board of teacher school (ESPE) of the University of Lorraine.

He is a member of the scientific board of SystemX.

He is a member of the scientific board of the team Humanités numériques at the Collège des Bernardins.

Gilles Dowek and Jean-Pierre Jouannaud are honorary members of IFIP-WG1.6.

Jean-Pierre Jouannaud is a permanent member of the visiting committee of Academia Sinica, Taiwan.

9.1.7. *Scientific Expertise*

Frédéric Blanqui reviewed a project for the Netherlands Organization for Scientific Research (NWO).

9.2. Teaching - Supervision - Juries

9.2.1. *Teaching*

- Master: Bruno Barras, proof assistants, 12h, M2, MPRI
- Master: Frédéric Blanqui, formal languages, 21h, M1, ENSIIE
- Master: Frédéric Blanqui, rewriting theory, 14h, M1, ENS Paris-Saclay

- Master: Frédéric Blanqui, λ-calculus and theories in first-order logic, 18h, M1/M2, ENS Paris-Saclay
- Master: Gilles Dowek has given a course at MPRI.
- Master: Gilles Dowek is in charge of the second year of Masters at the École normale de Paris Saclay.
- Master: Gilles Dowek has given a one week invited course at the University of Buenos Aires.
- Licence: Guillaume Genestier, logic tutorials, 45h, L3, ENS Paris-Saclay
- Licence: Guillaume Genestier, complexity remedial classes, 11h, L3, ENS Paris-Saclay
- Licence: Gaspard Férey, language theory, 44h, L3, EISTI
- Licence: François Thiré, (spring) logic project, 26h, L3 ENS Paris-Saclay
- Licence: François Thiré, (spring) Programmation 2 tutorials, 26h, L3 ENS Paris-Saclay
- Licence: François Thiré, (fall) Architectures and Systems tutorials, 36h, L3 ENS Paris-Saclay
- Frédéric Blanqui is co-director of the pole 4 of the doctoral school STIC of the University Paris-Saclay.
- Frédéric Blanqui is member of the committee of the doctoral school of the ENS Paris-Saclay.
- Frédéric Blanqui is in charge of following PhD students at LSV.

9.2.2. Supervision

- PhD Defended: Frédéric Gilbert, Gilles Dowek and Florent Kirchner,
- PhD in progress: Guillaume Bury, David Delahaye and Gilles Dowek,
- PhD in progress: Guillaume Genestier, termination in $\lambda\Pi$-calculus modulo theory, 01/10/17, Frédéric Blanqui and Olivier Hermant,
- PhD in progress: Mohamed Yacine El Haddad, using automated provers in proof assistants, 05/01/18, Frédéric Blanqui and Guillaume Burel,
- PhD in progress: Gaspard Férey, Associative-Commutative rewriting in the $\lambda\Pi$-calculus, 01/09/18, Gilles Dowek,
- PhD in progress: François Thiré, Design tools to make interoperability easier in DEDUKTI, 01/09/18, Gilles Dowek.

9.2.3. Juries

Gilles Dowek has been a member of the Jury of the PhD defence of Pierre Boutry. He has been an evaluator of the thesis of Thibault Gauthier. He has been a member of the Jury of the habilitation defence of Julien Signoles and of Alexei Grinbaum.

9.3. Popularization

9.3.1. Articles and contents

Gilles Dowek writes a monthly column in Pour la Science (12 issues) and has started a bi-monthly column in Le Monde (3 issues).

Gilles Dowek has given interviews to France Inter, Radio France Internationale, France Culture, Ouest France, Usbek et Rica, and Philosophie Magazine.

9.3.2. Education

Gilles Dowek has participated to meetings on scientific education in Switzerland, Belgium, and Côte d'Ivoire.

He has been heard by a committee of the the Éducation Nationale on pedagogical data and privacy.

He has given a talk on job mutations to mathematics inspectors.

9.3.3. Interventions

Gilles Dowek has given popular science talks in Toulouse, Antony, Issoudun, Rueil Malmaison, Saint Louis, Saint-Cloud, Rennes, Nancy, Paris, Nîmes, St Quentin en Yvelines, Montbéliard, Molaix, St Agrève, Rhodes, Marcoule, and Juvisy.

GAIA Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

The GAIA team organized the 2018 edition of the *Computer Algebra in Scientific Computing* (CASC) international workshops series (17–21 September 2018). For more details, see http://www.casc.cs.uni-bonn.de/2018/.

10.1.1.1. General Chair, Scientific Chair

- Since 2018, François Boulier is a *General Chair* of CASC. See http://www.casc-conference.org/.
- A. Quadrat is a member of the *IFAC Technical Committee* "Linear Control Systems", International Federation of Automatic Control, TC2.2.

10.1.1.2. Member of the Organizing Committees

The GAIA team organized the *Computer Algebra in Scientific Computing* (CASC), University of Lille, 17–21 September 2018.

A. Quadrat is a member of the organization committee of the *Journées Nationales de Calcul Formel* (JNCF), Luminy, France, 22–26/01/2018.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

F. Lemaire was Poster Chair of the *International Symposium on Symbolic and Algebraic Computation* (ISSAC'2018) Poster Session, New York, 16–19/05/2018.

10.1.2.2. Reviewer

- Y. Bouzidi reviewed a publication for ISSAC 2018 and for TDS 2018.
- F. Lemaire reviewed a publication for CASC 2018.
- A. Quadrat reviewed two publications for ISSAC 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

A. Quadrat is associate editor of *Multidimensional Systems and Signal Processing*.

10.1.3.2. Reviewer - Reviewing Activities

A. Quadrat reviewed papers for the journal *Multidimensional Systems and Signal Processing*.

10.1.4. Invited Talks

Y. Bouzidi gave the following talks:

- A Symbolic Approach for Solving Algebraic Riccati Equations, *Journées Nationales de Calcul Formel* (JNCF), CIRM, Marseille - January 22th 2018.
- Parametric study of the critical pairs of linear differential systems with commensurate delays, *Inria DISCO team-project*, Paris - April 30th 2018.
- Using symbolic computation to solve algebraic Riccati equations arising in invariant filtering, *European Control Conference*, Limassol - June 15th 2018.
- A symbolic approach for a parametric H_∞ control problem, *visualization group*, ISCD, Paris - Novembre 30th 2018.

10.1.5. Leadership within the Scientific Community

A. Quadrat co-organized with N. Yeganefar (University of Poitiers) the invited session *New Results in Multidimensional Systems Theory* at the *2018 European Control Conference*, Cyprus, June 12-15, 2018.

R. Ushirobira was co-responsible with Denis Efimov (Non-A Post, Inria) and Gilberto Pin (Electrolux Italia) of a special issue Finite-time estimation, diagnosis and synchronization of uncertain systems for the *European Journal of Control*.

10.1.6. Scientific Expertise

A. Quadrat is a member of the *Bureau du Comité des Equipes-Projets* (BCEP) and of the *Commission des Emplois de Recherche*, Inria Lille - Nord Europe.

A. Quadrat wrote a comparative report for the position "Algorithmische Algebra" (W2), University of Siegen, Germany.

10.1.7. Research Administration

- F. Boulier has been Head of the *Spécialité GIS at Polytech Lille* since June 2018.
- A. Quadrat is in charge with C. Jamroz of the *RaWeb 2018* for Inria Lille – Nord Europe.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Rosane Ushirobira taught around 90h at Polytech Lille and University of Lille (Linear algebra, analysis and logic).

10.2.2. Supervision

PhD: Guillaume Rance, "Commande H_∞ paramétrique et application aux viseurs gyrostabilisés", University Paris - Saclay, 09/07/2018, Alban Quadrat & Arnaud Quadrat & Hugues Mounier.

PhD in progress: Grace Younes, "Calcul de multiplicités de racines de polynoômes et de quasi-polynoômes", 01 /10/2018, Alban Quadrat & Yacine Bouzidi & Adrien Poteaux.

Master: Ambroise Fleury (Licence 3 ème année training), "Computation of gcd using AVX", F. Lemaire.

Master: Guillaume Maitrot (Master 2 training), "Improving the BLINEIDE library with OpenMP", F. Lemaire.

10.2.3. Juries

F. Boulier was referee of the PhD thesis of G. Rance, University Paris Orsay, 09/07/2018.

A. Quadrat was a jury member of the CRCN Inria 2018 competition for the Lille – Nord Europe center.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Since December 2103, R. Ushirobira organize the cycle "30 minutes of science", a rotating monthly seminar for all researchers at Inria LIlle. On average, 40 people participate in this seminar.

10.3.2. Education

In 2017/2018, Rosane Ushirobira was a referent researcher for *the Math en Jean program* at Arthur Rimbaud College (Villeneuve d'Ascq).

10.3.3. Internal action

Y. Bouzidi, *Symbolic-numeric method for a parametric control problem*, presentation in the *30 minutes of science Inria event*, Lille - January 10th 2018.

GALLINETTE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- N. Tabareau has co-organized (with Matthieu Sozeau) the Coq Workshop as part of FLoC 2018.
- A. Mahboubi has co-chaired (with Jeremy Avigad) the ITP 2018 conference, part of FLoC 2018.

8.1.1.2. Member of the Organizing Committees

- A. Mahboubi has co-organized (with Andrej Bauer, Martin Escardó and Peter Le Fanu Lumsdaine) the Dagsthul seminar 19341, Formalization of Mathematics in Type Theory.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- A. Mahboubi has served in the FLoC 2018 Program Committee and Workshops Committee.

8.1.2.2. Member of the Conference Program Committees

- N. Tabareau has been a member of the program committee of FSCD'18 and ICFP'18 (External Review Committee).
- A. Mahboubi has been a member of the program committee of the CPP 2018 and CICM 2018 conferences, and of the TYPES 2018 and HOTT/UF 2018 workshops.

8.1.2.3. Reviewer

- N. Tabareau has served as an external reviewer for MFCS'18, WoLLIC'18.
- A. Mahboubi has served as external reviewer for the post-proceedings of TYPES 2017.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- A. Mahboubi is a member of the editorial board of the Journal of Automated Reasoning.
- A. Mahboubi is associate editor of the Progress in Computer Science and Applied Logic series.

8.1.3.2. Reviewer - Reviewing Activities

- A. Mahboubi has served as reviewer for the Journal of Automated Reasoning, and for the Annals of Mathematics and Artifical Intelligence.
- G. Munch-Maccagnoni has served as reviewer for the Journal of Automated Reasoning, and for Logical Methods in Computer Science.

8.1.4. Invited Talks

- A. Mahboubi has given an invited talk at the conference in honour of Thomas C. Hales on the occasion of his 60th birthday.
- A. Mahboubi has given an invited course at the Journées Nationales du Calcul Formel 2018.
- A. Mahboubi has given an invited course at the 19th Journées Louis Antoine.
- A. Mahboubi and G. Munch-Maccagnoni have given invited talks in the seminar organized by Xavier Leroy at the Collège de France in December.
- G. Munch-Maccagnoni has given an invited talk at the Journées Inaugurales du GT Scalp in November.

- G. Munch-Maccagnoni has given an invited talk at the seminar of the Celtique team in Rennes in October.
- G. Munch-Maccagnoni has given an invited talk at the seminar of the Gallium team in Paris in June.
- G. Munch-Maccagnoni has given an invited talk at the Logic and Semantics seminar at the University of Cambridge in June.

8.1.5. Leadership within the Scientific Community

- A. Mahboubi is a member of the scientific committee of the GdR Informatique-Mathématiques.
- A. Mahboubi is MC member for the COST Action CA15123 EUTypes, and a member of the core managment group of the project. She is leading the working group "Type-Theoretic Tools".

8.1.6. Research Administration

- A. Mahboubi has served in the Inria commitee examining the "Candidatures en détachements".
- A. Mahboubi has served as internal examiner in the jury of two "Maître de conférence" positions at Université de Nantes.
- A. Mahboubi has served in the jury of an assistant professor position in computer science at Stockholm University (Sweden).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence : Julien Cohen, Discrete Mathematics, 48h, L1 (IUT Informatique), IUT Nantes, France

Licence : Object oriented programming, 32h, L3 (Ingineering school), Polytech Nantes, France

Master : Functional programming, 18h, M1 (Ingineering school), Polytech Nantes, France

Master : Tools for softaware engineering (proof, test, code management), 20h, M1 (Ingineering school), Polytech Nantes, France

Licence : Rémi Douence, Object Oriented Programming Project, 45h, L1 (apprenticeship), IMT-Atlantique, Nantes, France

Licence : Rémi Douence, Object Oriented Design and Programming, 25h , L3 (engineers), IMT-Atlantique, Nantes, France

Licence : Hervé Grall, Object Oriented Design and Programming, 25h , L3 (engineers), IMT-Atlantique, Nantes, France

Licence : Rémi Douence, Data Structures and Algorithms, 20h , L2 (engineers), IMT-Atlantique, Nantes, France

Licence : Rémi Douence, GUI, 20h, L2 (engineers), IMT-Atlantique, Nantes, France

Licence, Master : Hervé Grall, Modularity and Typing, 40h, L3 and M1, IMT-Atlantique, Nantes, France

Licence : Guilhem Jaber, Computer Tools for Science, 36h, L1, Université de Nantes France

Licence : Guilhem Jaber, Computer Architecure, 36h, L3, Université de Nantes France

Master : Hervé Grall, Service-oriented Computing, 40h, M1 and M2, IMT-Atlantique, Nantes, France

Master : Rémi Douence, Functional Programming with Haskell, 20h, M1 (engineers), IMT-Atlantique, Nantes, France

Master : Rémi Douence, Functional Programming with Haskell, 20h, M1 (apprenticeship), IMT-Atlantique, Nantes, France

Master : Rémi Douence, Introduction to scientific research in computer science (Project: an Haskell interpreter in Java), 45h, M2 (apprenticeship), IMT-Atlantique, Nantes, France

Master : Hervé Grall, Research Project - Certified Programming in Coq, 90h (1/3 supervised), M1 and M2, IMT-Atlantique, Nantes, France

Master : Nicolas Tabareau, Homotopy Type Theory, 24h, M2 LMFI, Université Paris Diderot, France

Master : Guilhem Jaber, Verification and Formal Proofs, 18h, M1, Université de Nantes, France

8.2.2. Supervision

PhD : Simon Boulier, Extending Type Theory with Syntactical Models, IMT Altantique, 29 Nov 2018, advisor: Nicolas Tabareau

PhD in progress : Antoine Allioux, Coherent Structures in Dependent Type Theory and Higher Category Theory, Université Paris Diderot, advisors: Yves Guiraud and Matthieu Sozeau

PhD in progress : Gaetan Gilbert, A new foundation for the Coq proof assistant based on the insight of Homotopy Type Theory, IMT Atlantique, advisors: Matthieu Sozeau and Nicolas Tabareau

PhD in progress : Ambroise Lafont,Towards an unbiased approach to specify, implement, and prove properties on programming languages, IMT Atlantique, advisors: Tom Hirschowitz and Nicolas Tabareau

PhD in progress: Xavier Montillet, Rewriting theory for effects and dependent types, Univ Nantes, advisors: Guillaume Munch-Maccagnoni and Nicolas Tabareau

PhD in progress: Théo Winterhalter, Extending the flexibility of the universe hierarchy in type theory, Univ Nantes, advisors: Matthieu Sozeau and Nicolas Tabareau

PhD in progress: Igor Zhirkov, Certified Refactoring of C in the Coq proof assistant, advisors: Rémi Douence and Julien Cohen.

PhD in progress: Joachim Hotonnier, Deep Specification for Domain-Specific Modelling, advisors: Gerson Sunye (Naomod team), Massimo Tisi (Naomod team), Hervé Grall

8.2.3. Juries

- A. Mahboubi has served as reviewer for the PhD of Andrea Gabrielli, defended October 22nd at Università di Firenze.
- A. Mahboubi has served as external member on the PhD jury of Pierre Boutry, defended November 13th at Université de Strasbourg.
- A. Mahboubi has served as external member on the PhD jury of Simon Boulier, defended November 29th at IMT Atlantique.
- A. Mahboubi has served as external member on the PhD jury of Boris Djalal, defended December 3rd at IMT Atlantique.
- J. Cohen has served as external member on the PhD jury of Thibaut Girka, defended July 3rd at Université Paris Diderot.

8.3. Popularization

8.3.1. Interventions

- A. Mahboubi is working with composer Alessandro Bossetti and students of the professional high-school Lycée Michelet, on a project "Art and Mathematics", supported by the Athenor theater.

GALLIUM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

Xavier Leroy was on the program committee of CADO 2018, the special session on Compiler, Architecture, Design and Optimization of the 16th International Conference on High Performance Computing and Simulation.

Michel Mauny has been a member of the program committee of the International Symposium on Image, Video and Communications (ISIVC 2018).

François Pottier was a member of the program committee of ICFP 2018, the ACM International Conference on Functional Programming.

Didier Rémy was a member of the program committee of FLOPS 2018, the 14th International Symposium on Functional and Logic Programming.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Xavier Leroy is area editor (programming languages) for Journal of the ACM. He is a member of the editorial board of Journal of Automated Reasoning.

Until September 2018, Michel Mauny has been a member of the steering committee of the OCaml workshop.

François Pottier is a member of the ICFP steering committee and a member of the editorial boards of the Journal of Functional Programming and the Proceedings of the ACM on Programming Languages.

Didier Rémy is a member of the steering committee of the ML Family workshop.

10.1.3. Research Administration

In 2018, Michel Mauny was chairman of the Scientific Committee of the Caml Consortium. He organized its annual meeting in December 2018.

Since May 2018, Michel Mauny has been Chief Executive Officer of the Inria Foundation.

François Pottier is a member of Inria Paris' *Commission de Développement Technologique* and the president of Inria Paris' *Comité de Suivi Doctoral*.

Didier Rémy is *Deputy Scientific Director* (ADS) in charge of *Algorithmics, Programming, Software and Architecture*.

Didier Rémy is Inria's delegate in the pedagogical board of the *Master Parisien de Recherche en Informatique* (MPRI).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master (M2): "Proofs of Programs", Jean-Marie Madiot, 18 HETD, Université Paris Diderot, France.

Master (M2): "Semantics, languages and algorithms for multi-core programming", Luc Maranget, 18 HETD, Université Paris Diderot, France.

Master (M2): "Functional programming and type systems", François Pottier, 18 HETD, Université Paris Diderot, France.

Master (M2): "Functional programming and type systems", Didier Rémy, 18 HETD, Université Paris Diderot, France.

Licence (L3): Jean-Marie Madiot, "Les principes des langages de programmation", 40 HETD, École Polytechnique, France.

Master (M1): Michel Mauny, "Principles of Programming Languages", 32 HETD, ENSTA-ParisTech, France.

Open lectures: Xavier Leroy, *Programmer = démontrer? La correspondance de Curry-Howard aujourd'hui*, 16 HETD, Collège de France, France.

10.2.2. Supervision

PhD: Vitaly Aksenov, "Synchronization Costs in Parallel Programs and Concurrent Data Structures", ITMO University of Saint Petersburg (Russia) and Université Paris Diderot, September 26, 2018, advised by Petr Kuznetsov and Anatoly Shalyto [11].

PhD: Pierrick Couderc, "Vérification des résultats de l'inférence du compilateur OCaml", Université Paris-Saclay, October 23, 2018, advised by Michel Mauny et Fabrice Le Fessant [34].

PhD in progress: Albin Coquereau, "Amélioration de performances pour le solveur SMT Alt-Ergo: conception d'outils d'analyse, optimisations et structures de données efficaces pour OCaml," Université Paris-Saclay, since October 2015, advised by Michel Mauny, Sylvain Conchon (LRI, Université Paris-Sud) and Fabrice Le Fessant.

PhD in progress: Armaël Guéneau, "Towards Machine-Checked Time Complexity Analyses", Université Paris Diderot, since September 2016, advised by Arthur Charguéraud and François Pottier.

PhD in progress: Glen Mével, "Towards a system for proving the correctness of concurrent Multicore OCaml programs", Université Paris Diderot, since November 2018, advised by Jacques-Henri Jourdan and François Pottier.

PhD in progress: Naomi Testard, "Reasoning about Effect Handlers and Cooperative Concurrency", Université Paris Diderot, since January 2017, advised by François Pottier.

PhD in progress: Thomas Williams, "Putting Ornaments into practice", Université Paris Diderot, since September 2014, advised by Didier Rémy.

10.2.3. Juries

Xavier Leroy was a member of the jury for the Habilitation defense of Julien Signoles (Université Paris Sud, July 2018).

Xavier Leroy chaired the jury for the Ph.D. defense of Mario Pereira (Université Paris Sud, December 2018).

François Pottier was a reviewer for Steven Keuchel's PhD thesis (Ghent University), defended on June 5, 2018.

François Pottier was a reviewer for Martin Clochard's PhD thesis (Université Paris-Saclay), defended on March 30, 2018.

10.3. Popularization

10.3.1. Articles and contents

- For online publications (Interstices*, Images des Maths, Binaire, Wikipedia), and more widely blog articles

  Xavier Leroy wrote a short introduction to software sciences in general and to his lectures at Collège de France. This text was published by the "Binaire" blog of *Le Monde* [30].

10.3.2. Interventions

Gergö Barany gave a talk titled "Finding Missed Optimizations in LLVM (and other compilers)" at the 2018 European LLVM Developers Meeting, explaining his research on testing the quality of compiler optimizations to practitioners in compiler development.

GAMBLE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

Sylvain Lazard organized with S. Whitesides (Victoria University) the 17th Workshop on Computational Geometry at the Bellairs Research Institute of McGill University in Feb. (1 week workshop on invitation).

Olivier Devillers and Xavier Goaoc co-organized the Aspag Prospective workshop, April 8-12 2018 in Arcachon.

10.1.1.2. Steering Committees

Monique Teillaud is chairing the Steering Committee of the Symposium on Computational Geometry (SoCG).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Monique Teillaud was a member of the program committee of the European Workshop on Computational Geometry.

10.1.2.2. Reviewer

All members of the team are regular reviewers for the conferences of our field, namely the *Symposium on Computational Geometry* (SoCG) and the *International Symposium on Symbolic and Algebraic Computation* (ISSAC) and also SODA, CCCG, EuroCG.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Monique Teillaud is a managing editor of JoCG, *Journal of Computational Geometry* and a member of the editorial board of IJCGA, *International Journal of Computational Geometry and Applications*.

Marc Pouget and Monique Teillaud are members of the CGAL editorial board.

10.1.3.2. Reviewer - Reviewing Activities

All members of the team are regular reviewers for the journals of our field, namely *Discrete and Computational Geometry* (DCG), *Computational Geometry. Theory and Applications* (CGTA), *Journal of Computational Geometry* (JoCG), *International Journal on Computational Geometry and Applications* (IJCGA), *Journal on Symbolic Computations* (JSC), *SIAM Journal on Computing* (SICOMP), *Mathematics in Computer Science* (MCS), etc.

10.1.4. Leadership within the Scientific Community

10.1.4.1. Learned societies

Monique Teillaud was a member of the Scientific Board of the *Société Informatique de France* (SIF) until July.

10.1.5. Research Administration

10.1.5.1. Hiring committees

Sylvain Lazard was the laboratory delegate in a prof (PR) hiring committee at Lorraine Univ. (IUT Charlemagne & Loria).

Monique Teillaud chaired the hiring committee for young researchers (CRCN) of Inria Bordeaux - Sud Ouest.

10.1.5.2. National committees

L. Dupont is the secretary of *Commission Pédagogique Nationale Carrières Sociales / Information-Communication / Métiers du Multimédia et de l'Internet.*

M. Teillaud is a member of the working group for the BIL, *Base d'Information des Logiciels* of Inria.

10.1.5.3. Local Committees and Responsabilities

O. Devillers: Elected member to *Pole AM2I* the council that gathers labs in mathematics, computer science, and control theory at *Université de Lorraine*.

L. Dupont: Head of the Bachelor diploma *Licence Professionnelle Animation des Communautés et Réseaux Socionumériques*, Université de Lorraine. Responsible of Fablab of IUT Charlemagne, Universasité de Lorraine (since 2018, November). Member of *Comité Information Edition Scientifique* of LORIA.

S. Lazard: Head of the PhD and Post-doc hiring committee for Inria Nancy-Grand Est (since 2009). Member of the *Bureau de la mention informatique* of the *École Doctorale IAEM* (since 2009). Head of the *Mission Jeunes Chercheurs* for Inria national. Head of the Department Algo at LORIA (since 2014). Member of the *Conseil Scientifique* of LORIA (since 2014).

G. Moroz: Member of the *Comité des utilisateurs des moyens informatiques*. Member of the CDT, *Commission de développement technologique*, of Inria Nancy - Grand Est.

M. Pouget is elected at the *Comité de centre*, and is secretary of the board of *AGOS-Nancy*.

M. Teillaud joined the *Conseil de Laboratoire* of LORIA in May. She was a member of the BCP, *Bureau du Comité des Projets* of Inria Nancy - Grand Est until end November.

X. Goaoc is a member of the council of the *Fédération Charles Hermite* since sep. 2018.

10.1.5.4. Websites

M. Teillaud is maintaining the Computational Geometry Web Pages http://www.computational-geometry.org/, hosted by Inria Nancy - Grand Est. This site offers general interest information for the computational geomery community, in particular the Web proceedings of the Video Review of Computational Geometry, part of the Annual/international Symposium on Computational Geometry.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Charles Duménil, *Algorithmique et programmation avancée*, 32h, M2, Université de Lorraine, France.

Licence: Laurent Dupont, *Algorithmique*, 15h, L1, Université de Lorraine, France.

Licence: Laurent Dupont, *Web development*, 100h, L2, Université de Lorraine, France.

Licence: Laurent Dupont, *Traitement Numérique du Signal*, 20h, L2, Université de Lorraine, France.

Licence: Laurent Dupont *Web devloppment and Social networks* 100h L3, Université de Lorraine, France.

Licence: Iordan Iordanov, *Algorithmique et Programmation*, 64h, L1, Université de Lorraine, France.

Licence: Iordan Iordanov, *Systèmes de gestion de bases de données*, 20h, L2, Université de Lorraine, France.

Licence: Iordan Iordanov, *Algorithmique et développement web*, 28h, L2, Université de Lorraine, France.

Licence: Iordan Iordanov, *Programmation objet et événementielle*, 16h, L3, Université de Lorraine, France.

Licence: Sylvain Lazard, *Algorithms and Complexity*, 25h, L3, Université de Lorraine, France.

Master: Marc Pouget, *Introduction to computational geometry*, 10.5h, M2, École Nationale Supérieure de Géologie, France.

Licence: Galatée Hemery, *Programmation*, 64h, L3, École des Mines de Nancy, France.

Master: Vincent Despré, *Algorithmique*, 72h, M1, Polytech Nancy, France.

Master: Vincent Despré, *Systèmes distribués*, 20h, M1, Polytech Nancy, France.

Master: Olivier Devillers, *Modèles d'environnements, planification de trajectoires*, 18h, M2 AVR, Université de Lorraine. https://members.loria.fr/Olivier.Devillers/master/

Master: Olivier Devillers and Marc Pouget, *Computational Geometry*, 24h (academic year 2018-19), M2 Informatique, ENS Lyon https://members.loria.fr/Olivier.Devillers/Master2-ENS-Lyon/.

Master : Xavier Goaoc, *Algorithms and data structures*, 31.5 HETD (academic year 2018-19), M1, École des Mines de Nancy, France

Master : Xavier Goaoc, *Computer architecture*, 31.5 HETD, M1 (academic year 2018-19), École des Mines de Nancy, France

10.2.2. Supervision

PhD in progress: Sény Diatta, Complexité du calcul de la topologie d'une courbe dans l'espace et d'une surface, started in Nov. 2014, supervised by Daouda Niang Diatta, Marie-Françoise Roy and Guillaume Moroz.

PhD in progress: Charles Duménil, Probabilistic analysis of geometric structures, started in Oct. 2016, supervised by Olivier Devillers.

PhD in progress: Iordan Iordanov, Triangulations of Hyperbolic Manifolds, started in Jan. 2016, supervised by Monique Teillaud.

PhD in progress: George Krait, Topology of singular curves and surfaces, applications to visualization and robotics, started in Nov. 2017, supervised by Sylvain Lazard, Guillaume Moroz and Marc Pouget.

PhD in progress: Galatée Hemery, Algorithmic and geometric aspects of inclusion-exclusion, started in Sep. 2018 , supervised by Xavier Goaoc and Éric Colin de Verdière (UPEM).

PhD in progress: Fernand Kuiebove Pefireko, Simulation of random geometric structures, started in Oct. 2018 , supervised by Olivier Devillers.

10.2.3. Juries

O. Devillers was the president of the PhD committee of Tuong-Bach Nguyen (Université de Grenoble).

S. Lazard was a reviewer for the HDR of Yukiko Kenmochi (Université de Marnes-la-Vallée).

G. Moroz was a member of the PhD committee of Guillaume Rance (Université Paris-Sud).

10.3. Popularization

10.3.1. Education

G. Moroz is member of the Mathematics Olympiades committee of the Nancy-Metz academy.

10.3.2. Interventions

L. Dupont participated in several events of popularization of computer science:

Math en Jeans, March 30th, popularization of computer science for high-school students.

ISN day, March 22th, adult continuing education of computer science for high-school teachers.

FabLab14, July 13th, popularization of computer science, general audience.

Ada Lovelace Day 2018, october 9 : popularization of computer science for female high-school students.

<h1 style="text-align: center; color: red;">GRACE Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

- D. Augot was in the program committee of FAB 2018, Foundations and Applications of Blockchain, Los Angeles.
- D. Augot was in the program committee of WTSC 2018, Workshop on Trusted Smart Contracts, Curaçao.
- D. Augot was in the program committee of WAIFI 2018, Workshop on the Arithmetic of Finite Fields, Bergen, Norway.
- D. Augot was in the program committee of BCT 2018, International Workshop on Cryptocurrencies and Blockchain Technology, in conjunction with ESORICS 2018, Barcelona.
- A. Couvreur was in the program committee of the *Journées codes et cryptographie (C2) 2018*.

9.1.1.2. Reviewer

- D. Augot: ISIT 2018 (International Symposium on Information Theory)
- B. Smith: ANTS 2018, Indocrypt 2018, PKC 2019

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- F. Morain is member of the editorial board of the *Applicable Algebra in Engineering, Communication and Computing*, Springer.
- With Thomas Johansson, Marine Minier, Faina Soloveva, Victor Zinonviev, D. Augot is guest editor for a special issue of *Designs, Codes and Cryptography*, devoted to WCC2017, Workshop on Coding and Cryptography, St Petersburg, Russia.

9.1.2.2. Reviewer - Reviewing Activities

- A. Couvreur: Designs, Codes and Cryptography, Asiacrypt 2018, IEEE Transactions on information theory, Advances in Mathematics of communication, etc...
- J. Lavauzelle: Designs, Codes and Cryptography (special issue WCC 2017)
- B. Smith: Designs, Codes, and Cryptography, Finite Fields and their Applications, Journal of the London Mathematical Society, Mathematics of Computation,

9.1.3. Invited Talks

- D. Augot was an invited speaker of the Munich Workshop on Coding and Cryptography (MWCC) 2018
- D. Augot was an invited speaker at ACA 2018, Application of Computer Algebra, Santiago de Compostela
- D. Augot was invited at Dasgsthul Seminar 18511, Algebraic Coding Theory for Networks, Storage, and Security, and gave here a talk.
- B. Smith was an invited speaker at the *International Workshop on the Arithmetic of Finite Fields (WAIFI 2018)* (Bergen, Norway).
- B. Smith was an invited speaker at the *Journées Codage et Cryptographie 2018* (Aussois, France).

9.1.4. Industrial Show

- F. Levy-dit-Vehel demoed our Private Information Retrieval protocol at "FIC", International Security Forum, Lille, January 2018.

9.1.5. Leadership within the Scientific Community

- D. Augot is member of the scientific committee of the C2-CCA seminar, held three or four times a year, with a France wide audience, and which is the seminar of "groupe de travail" C2 "codage et cryptographie" of the GDR IM "groupement de recherche informatique mathématique".
- D. Augot is leading the scientific committee of the blocksem seminar of Plateau de Saclay.

9.1.6. Scientific Expertise

- A. Couvreur was evaluator for research grants attribution by university of Crete.

9.1.7. Research Administration

- F. Morain is vice-head of the Département d'informatique of Ecole Polytechnique; in charge of years 1 and 2 for Computer Science courses.
- F. Morain is member of the Board of Master Parisien de Recherche en Informatique (MPRI).
- A. Couvreur is member of Inria Saclay *Commission Scientifique*.
- D. Augot was member of the jury for two Inria Grenoble Rhône-Alpes positions
- D. Augot was member of the jury for a position at Institut Mines-Télécom.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence :

- F. Morain, Lectures for INF311: "Introduction à l'informatique", 15h (equiv TD), 1st year (L3), École polytechnique. Coordinator of this module (350 students).
- J. Lavauzelle, *Éléments de programmation* (1I002), 13.5h, L1, Université Pierre et Marie Curie, France
- A. Couvreur, INF411 *Introduction à la programmation et à l'algorithmique*, 40h, L3, École Polytechnique, France
- B. Smith, CSE101 *Introduction to Computer Programming*, 36h, L1, École polytechnique, France

Master :

- F. Morain is the scientific leader of the Graduate Degree *Cybersecurity: Threats and Defense* of École Polytechnique.
- A. Couvreur, *Coding theory and application to cryptography*, 20h, M2, MPRI (Université Paris VII, ENS Paris, ENS Cachan, École Polytechnique), France
- F. Morain and A. Couvreur, INF558, *Introduction to cryptology*, 36h, M1, École Polytechnique.
- B. Smith, INF568 *Advanced Cryptography*, 36h, M1, École polytechnique
- B. Smith and F. Morain, *Algorithmes arithmétiques pour la cryptologie*, 20h, M2, MPRI (Université Paris VII, ENS Paris, ENS Cachan, École Polytechnique), France
- F. Levy-dit-Vehel, discrete maths, 21h, M1, ENSTA.
- F. Levy-dit-Vehel, cryptography, 24h, M2, ENSTA.

Doctorat :

- A. Couvreur, *Introduction to code based cryptography*, 6 hours. Spring school *Post Scryptum*

9.2.2. Supervision

- PhD : J. Lavauzelle, *Codes à propriétés locales : constructions et applications à des protocoles cryptographiques*, Université Paris Saclay.
- PhD : E. Barelli, *Étude de la sécurité de certaines clés compactes pour le schéma de McEliece utilisant des codes géométriques*, Université Paris Saclay.

9.2.3. Juries

- D. Augot, A. Couvreur, and F. Levy-dit-Vehelwere in the jury of J. Lavauzelle's PhD defense, le 30 novembre 2018, à Palaiseau: *Codes à propriétés locales : constructions et applications à des protocoles cryptographiques*
- D. Augot and A. Couvreur were in the jury of E. Barelli's PhD defense, le 10 décembre 2018 à Palaiseau: *Étude de la sécurité de certaines clés compactes pour le schéma de McEliece utilisant des codes géométriques*
- D. Augot was in in the committee of
  - Victor Cauchois, le jeudi 13 Décembre 2018 à Rennes: *Couches de diffusion linéaires à partir de matrices MDS*
  - Sviat Covanov, le 5 juin 2018 à Nancy: *Multiplication algorithms: algebraic complexity and fast asymptotic methods*
  - Jonathan Detchart, le 5 décembre 2018, à Toulouse: *Optimisation de codes correcteurs d'effacements par application de transformées polynomiales*

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- D. Augot is member of the "comité de pilotage" the "BART" (Blockchain advanced research and technologies) research initiative, with Institut Mines Télécom and System-X.

9.3.2. Interventions

- D. Augot was interviewed on blockchains by three representatives of the French National Assembly.
- D. Augot was interviewed by "France Stratégie", an institution attached to the Prime Minister to support forward thinking of the French government.
- F. Levy-dit-Vehel demoed our Private Information Retrieval protocol with partitionned locally decodable codes

<p align="center" style="color:red">HYCOMES Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

- Albert Benveniste has served on the Programme Committee of the American Modelica Conference 2018.
- Benoît Caillaud has served on the Steering and Programme Committees of the ACSD'18 conference.
- Khalil Ghorbal has served on the Programme Committee of the Japanese Modelica Conference 2018.

9.1.1.2. Reviewer

- Benoî Caillaud has reviewed papers for the following conferences : ACSD'18,
- Khalil Ghorbal has reviewed papers for the following conferences : Japanese Modelica Conference 2018,

9.1.2. Leadership within the Scientific Community

Albert Benveniste has given a lecture on the Signal synchronous language at Collège de France [9], hosted by Gérard Berry, in the realm of his chair in Computer Science.

9.1.3. Scientific Expertise

- Albert Benveniste is president of the Scientific Council of Orange and member of the Scientific Council of Safran. He has also evaluated grant proposals submitted to the European Research Council.
- Benoît Caillaud has evaluated a grant proposal submitted to the European Research Council. As an Evaluation Committee member, he has served on several Inria hiring and promotion committees (in particular, Senior Researcher at a national level and Junior Researcher in Lillle).

9.1.4. Research Administration

- Albert Benveniste is member of the Burex (Executive Bureau) of the Cominlabs Labex [0].
- Benoît Caillaud is in charge of the IPL ModeliScale [0] national initiative funded by Inria. He is also head of the Programming Languages & Software Engineering department [0] of IRISA.

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[0] https://cominlabs.u-bretagneloire.fr/governance
[0] https://team.inria.fr/modeliscale/
[0] http://www.irisa.fr/en/departments/d4-language-and-software-engineering

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Khalil Ghorbal, *Analyse et Conception Formelles*, M1, (chargé de TD), 22h EqTD, University Rennes 1 and ENS Rennes, France

Master : Khalil Ghorbal, Solvers Principle and Architectures, M2, (enseignant principal), 30h EqTD, ENS Rennes, France

Master : Khalil Ghorbal, Modeling Physics with Differential-Algebraic Equations, M2, (enseignant principal), 25h EqTD, Ecole Polytechnique, Palaiseau, France

9.2.2. Supervision

PhD: Christelle Kozaily, Structural analysis of nonsmooth dynamical systems, university of Rennes 1, co-supervised by Vincent Acary (Tripop [0] team at Inria Grenoble), Benoît Caillaud and Kahlil Ghorbal, started October 2018.

PhD: Aurélien Lamercerie, Formal analysis of cyber-physical systems requirements expressed in natural language, university of Rennes 1, co-supervised by par Benoît Caillaud et Annie Forêt (SemLIS [0] team of IRISA), started December 2017.

9.2.3. Juries

Benoît Caillaud has been external examiner of Nikolaos Kekatos' PhD, defended at the University of Grenoble Alpes in December 2018. He has also served on the jury of Etienne André's habilitation, defended in June 2018 at University Paris 13.

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[0]https://team.inria.fr/tripop/
[0]https://www-semlis.irisa.fr

<p align="center">**KAIROS Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Robert de Simone organized the Scientific Program for the yearly Synchron seminar, held in November in Saint-Raphaël. He is also Steering Committee member of IEEE/ACM EmSoft a conference part of Embedded System Week.
- Eric Madelaine is chair of the steering committee of the Int. Symposium on Formal Aspects of Component Software (FACS: http://sevlab.postech.ac.kr/facs18/committees/)
- Frédéric Mallet was track co-chair for DATE 2018.
- Julien Deantoni was track co-chair for IEEE-RIVF (http://rivf2019.udn.vn/).

10.1.1.2. Member of the Organizing Committees

M-A. Peraldi-Frati and R. de Simone organized the Open Workshop Synchron 2018 in Saint-Raphaël.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- M.A Peraldi-Frati is member of the IEEE-RIVF 2019 Program Committee.
- E. Madelaine is member of the PC of FACS'2018, VECoS'2018.
- R. de Simone is PC member for the conference MeMoCode, FDL, and EmSoft.
- Frédéric Mallet. Member of program committee for DATE'18, Euromicro DSD'18, FTSCS'18, FDL'18, TASE'18, Modelsward'18.
- Julien Deantoni is PC member RIVF'19, EXE'18, GEMOC'18, MDebug'18, DSD'18, MoMo'18.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Eric Madelaine is Guest Editor of the Science of Computer Programming special issue for selected papers of the FACS'2014 symposium.
- Frédéric Mallet. Managing Guest Editor for a special issue of Elsevier Science of Computer Programming (SCP).

10.1.3.2. Reviewer - Reviewing Activities

- Eric Madelaine is reviewer for the journals: Science of Computer Programming (SCP), and Journal of Logical and Algebraic Methods in Programming (JLAMP).
- Marie-Agnès Peraldi-Frati : ACM Transactions on CPS, Forte2018.
- Luigi Liquori. Journal reviewer : Fundamenta Informaticae. Conference TPC: NICS'18, ICCE'18
- Frédéric Mallet. Journal reviewer for IEEE Transactions on Computer Aided Design of Integrated Circuits (TCAD), ACM Transactions on Embedded Computing Systems (TECS), ACM Transactions on Design Automation of Electronic Systems (TODAES), Elsevier Computers In Industry.
- Julien Deantoni. Journal reviewer for Software and Systems Modeling (http://www.i3s.unice.fr/~deantoni/SoSyM-review-certificate-Julien-DeAntoni.pdf) and for Computer Languages, Systems & Structures.

10.1.4. Research Administration

- F. Mallet is Deputy Director of UMR I3S Laboratory and as such, member of the 'comité de direction', 'conseil de laboratoire', steering committee of the graduate school (EUR) DS4H.
- Sid Touati is member of the direction committee of I3S laboratory.
- M.A Peraldi-Frati is member of the I3S Laboratory council

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Sid TOUATI, Fondement machine, 75 heures eq TD, L1 informatique, Université Côte d'Azur.

Licence : Sid TOUATI, Architecture machine, 45 heures eq TD, L3 informatique, Université Côte d'Azur.

Licence : Sid TOUATI, Compilation, 33 heures eq TD, L3 informatique, Université Côte d'Azur.

Master: Sid TOUATI, Architectures et logiciels hautes performances, 81 heures eq TD, Master 1 informatique, Université Côte d'Azur.

Master international: Sid TOUATI, Advanced operating systems, 30 heures eq TD, Master 1 informatique, Université Côte d'Azur.

International Master: Frédéric Mallet, Safety-Critical Systems, 32h.

Master: Frédéric Mallet, Software Engineering, 32h.

Master : Robert de Simone, Formal Methods for NoC-based design, 36 heures eq TD, M2 International Ubinet, Université Côte d'Azur.

M.A Peraldi-Frati teaches Web security (20h), Security of connected objects (20h), IoT Infrastructure deployment (20 H) and Large scale plateform for IoT (20h) in a licence cursus dedicated to Internet of Objects, Infrastructure and Applications.

Licence : Luigi Liquori, Peer-to-peer systems, 32 eq TD, Université Côte d'Azur.

Winter School on Theoretical Foundations of Computer Science, 4-9 February 2019, Georgia. Luigi Liquori. Peer-to-peer and reklated systems, International Black Sea University and Shota Rustaveli National Science Foundation of Georgia.

Master: Julien Deantoni, Finite State Machine, 54h eq TD, Polytech'Nice.

Master: Julien Deantoni, Multi Paradigm Programming in C++, 54h eq TD, Polytech'Nice.

Master: Julien Deantoni, Domain Specific Languages, 24h eq TD, Polytech'Nice.

Master: Julien Deantoni, Language Interpreter, 24h eq TD, Polytech'Nice.

10.2.2. Teaching Administration

- Sid Touati was the responsible of first year of computer science licentiate since 2011 till 2018.
- Sid Touati is a vice-director of the computer science department since 2017, in charge of the graduate students (licence).
- Frédéric Mallet is the coordinator of the International track of the Master of Computer Science since 2015.
- Frédéric Mallet is a member of the steering committee of the Graduate School DS4H (EUR DS4H).
- Master: Julien Deantoni, computer science internship management.

10.2.3. Supervision

- PhD in progress : Claude Stolze, A proof-functional type theory for intersection and union types, Université Côte d'Azur, end 2019, Luigi Liquori.
- PhD in progress : Carsten BRUNS, Performance analysis and optimisation of C++ applications, Université Côte d'Azur, 2021, Sid TOUATI.

- PhD in progress : Hui Zhao, Multiview System Integration for Cyber Physical Systems, Université Cote d'Azur, end 2019, Frédéric Mallet
- PhD in progress : Giovanni Liboni, Coordination of discrete (Cyber) Models, Université Cote d'Azur, end 2021, Frédéric Mallet, Julien DeAntoni

10.2.4. Juries

Robert de Simone was reviewer of the PhD thesis of Amaury Greillat (VERIMAG, Grenoble), and of the Habilitation thesis of Katell Morin-Allaury (TIMA, Grenoble).

M.A Peraldi-Frati : Examinator Thesis jury Slim Medimegh - CentraleSupélec University- Dec 2018.

Frédéric Mallet : Reviewer for the PhD thesis of NGuyen Van Hai - Université Paris Saclay - Central/Supélec, 27/09/2018

Frédéric Mallet : Reviewer for the PhD thesis of Martial Chabot - Université Grenoble Alpes - TIMA, 30/10/2018

LFANT Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Editorial Boards

K. Belabas acts on the editorial board of *Journal de Théorie des Nombres de Bordeaux* since 2005 and of *Archiv der Mathematik* since 2006.

X. Caruso is an editor and one of the founder of the journal *Annales Henri Lebesgue*.

H. Cohen is an editor for the Springer book series *Algorithms and Computations in Mathematics (ACM)*.

J.-M. Couveignes is a member of the editorial board (scientific committee) of the *Publications mathématiques de Besançon* since 2010.

From January 2015 to September 2018 J.-M. Couveignes was a member of the scientific council of the Fondation Mathématique de Paris.

A. Enge is an editor of *Designs, Codes and Cryptography* since 2004.

8.1.2. Invited Talks

A. Page: *Algorithms for the cohomology of compact arithmetic manifolds and Hecke operators* in the Simons collaboration conference *Arithmetic Geometry, Number Theory, and Computation*, MIT (Boston, US), August 20-24, 2018.

8.1.3. Scientific Expertise

K. Belabas is a member of the 'conseil scientifique' of the Société Mathématique de France

8.1.4. Research Administration

Since January 2017, A. Enge is "délégué scientifique" of the Inria research centre Bordeaux–Sud-Ouest. As such, he is also a designated member of the "commission d'évaluation" of Inria.

Since January 2015, K. Belabas is vice-head of the Math Institute (IMB). He also leads the computer science support service ("cellule informatique") of IMB and coordinates the participation of the institute in the regional computation cluster PlaFRIM.

He is an elected member of "commission de la recherche" in the academic senate of Bordeaux University.

He is a member of the "Conseil National des Université" (25th section, pure mathematics).

J.-P. Cerri is an elected member of the scientific council of the Mathematics Institute of Bordeaux (IMB) and responsible for the bachelor programme in mathematics and informatics.

From January 2015 until January 2019, J.-M. Couveignes was the head of the Math Institute (IMB). He is head of the Scientific Committee of the Albatros (ALliance Bordeaux universities And Thales Research in AviOnicS) long term cooperation between Inria, Bordeaux-INP, Université de Bordeaux and CNRS.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : G. Castagnos, *Cryptanalyse*, 60h, M2, University of Bordeaux, France;

Master : G. Castagnos, *Cryptologie avancée*, 30h, M2, University of Bordeaux, France;

Master : G. Castagnos, *Courbes elliptiques*, 60h, M2, University of Bordeaux, France;

Master : D. Robert, *Courbes elliptiques*, 60h, M2, University of Bordeaux, France;

Master : K. Belabas, *Computer Algebra*, 91h, M2, University of Bordeaux, France;

Master : J.-M. Couveignes, *Algorithmic Arithmetic*, 30h, M2, University of Bordeaux, France;

Master : J.-M. Couveignes, *Modules, espaces quadratiques*, 30h, M1, University of Bordeaux, France;

Licence : Jean-Paul Cerri, Algèbre linéaire 2, 51h TD, L2, Université de Bordeaux, France

Licence : Jean-Paul Cerri, Arithmétique et Cryptologie, 24h TD, L3, Université de Bordeaux, France

Licence : Jean-Paul Cerri, Structures algébriques 2, 35h TD, L3, Université de Bordeaux, France

Master : Jean-Paul Cerri, Cryptologie, 60h TD, M1, Université de Bordeaux, France

Master : Jean-Paul Cerri, 3 TER, Université de Bordeaux, France

Licence : Jean Kieffer, Mathématiques pour la biologie, 64h TD, L1, Université de Bordeaux, France

8.2.2. Supervision

PhD: Chloe Martindale, *Isogeny graphs, modular polynomials, and applications*, defended in 2018, supervised by A. Enge and Marco Streng (Universiteit Leiden).

PhD: Antonin Riffaut *Calcul effectif de points spéciaux*, defended in 2018, supervised by Y. Bilu and K. Belabas.

PhD in progress : Ida Tucker, *Design of new advanced cryptosystems from homomorphic building blocks*, since October 2017, supervised by Guilhem Castagnos and Fabien Laguillaumie

PhD in progress: Abdoulaye Maiga, *Computing canonical lift of genus 2 hyperelliptic curves*, University Dakar, supervised by Djiby Sow, Abdoul Aziz Ciss and D. Robert.

PhD in progress: Jared Asuncion, *Class fields of complex multiplication fields*, since September 2017, supervised by A. Enge and Marco Streng (Universiteit Leiden).

PhD in progress: Emmanouil Tzortzakis *Algorithms for $\mathbb{Q}$-curves*, supervised by K. Belabas, P. Bruin and B. Edixhoven.

PhD in progress: Pavel Solomatin *Topics on L-functions*, supervised by B. de Smit and K. Belabas.

PhD in progress: Jean Kieffer *Isogénies et endomorphismes de variétés abéliennes*, supervised by D. Robert and A. Page.

Master thesis: Amandine Malonguemfo Teagho *Algorithms for isometries of lattices*, supervised by A. Page.

Master thesis: William Dallaporta *Bhargava's theory and parametrization of algebraic structures*, supervised by K. Belabas.

8.2.3. Juries

X. Caruso has written a report for the doctoral dissertation by Robin Bartlett, King's College in London: *On the reductions of some crystalline representations*.

A. Enge has written a report for the doctoral dissertation by Benjamin Wesolowski, École polytechnique fédérale de Lausanne: *Arithmetic & Geometric Structures in Cryptography*.

A. Enge has written a report for the professorial dissertation by Luca De Feo, Université de Versailles–Saint Quentin: *Exploring Isogeny Graphs*.

8.3. Popularization

8.3.1. Articles and contents

- X. Caruso published an article entitled *Polynômes tordus* in the journal *Au fil des maths de la maternelle à l'université...* edited by APMEP.
- H. Cohen wrote in [28] an introduction to Modular forms, which has been published in the book Notes from the International School on Computational Number Theory.

8.3.2. Education

D. Robert is a member of the jury of Agregations de Mathematiques. He is also the codirector with Alain Couvreur of the option "calcul formel" of the Modelisation part of the oral examination.

8.3.3. Interventions

- 24/02/2018 in Olot (Spain), A. Page, with the other participants of Sage Days 93: one day for 20 local high school students to explore mathematical problems.
- 24/05/2018, A. Page: Unithé ou café on the mathematics of wireless communications: *Méthodes algébriques et géométriques pour les communications sans fil : comment l'espace hyperbolique peut-il améliorer vos appels téléphoniques ?*
- 30/05/2018, A. Page: in Poitiers half a day meeting with junior school students who took part in the Al-Kindi competition; introduction to cryptography.
- 27/09/2018 D. Robert and A. Page: demonstration stand on graph-based cryptography at the Inria BSO Party Day.
- 9-11/10/201 A. Page: Fête de la Science at Inria Bordeaux, activity on cryptography (7 groups of students).
- 13/10/2018 D. Robert and A. Page: demonstration stand on graph-based cryptography at the Inria BSO Open Day.
- 11/12/2018 A. Page: talk at the Inria BSO Comité des Projets *Variations arithmétiques et algorithmiques sur le thème << Peut-on entendre la forme d'un tambour? >>*

<p style="text-align:center">**MARELLE Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Yves Bertot is member of steering committee for the conferences ITP, CPP and UITP.

Yves Bertot organized the Coq Implementor's Workshop in May in Nice, France, where Cyril Cohen, Maxime Dénès, and Enrico Tassi also brought support to newcomers.

Laurence Rideau Organized a meeting of the ANR FastRelax project in June in Sophia Antipolis. There were presentations by Sophie Bernard, Yves Bertot, Cyril Cohen, Damien Rouhling, Laurent Théry during this meeting.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Benjamin Grégoire was a Program Committee member for CSF 2018 and JFLA 2019. Enrico Tassi was a Program Committee member for CPP 2019, ITP 2018, UITP 2018, F-IDE 2018. Laurent Théry was a Program Committee member for AISC, CPP 2019, ITP 2018, and UITP 2018. Yves Bertot was a Program Committee member for AISC, CICM, FMM, and UITP.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

Laurent Théry was a reviewer for *Annals of Mathematics and Artificial Intelligence*, *Journal of Applied Logic*, and *Science of Computer Programming*. Cyril Cohen was a reviewer for *Journal of Automated Reasoning* and *Mathematical Structures in Computer Science*. Enrico Tassi was a reviewer for *ACM Transactions on Computational Logic* and *Journal of Automated Reasoning*. Yves Bertot was a reviewer for *Journal of Automated Reasoning*.

9.1.4. Invited Talks

Cyril Cohen gave an invited talk on formalizing robotics in January in Nijmegen, the Netherlands.

Cyril Cohen gave an invited talk on asymptotic reasoning in June in Pittsburgh, USA.

Cyril Cohen gave an invited talk at the workshop *Lean User Group* in November in Freiburg, Germany.

Benjamin Grégoire gave an invited talk at the "journées nationales du GDR sécurité" (national days of the CNRS research group on security) in May in Paris, France.

Benjamin Grégoire gave an invited tutorial at the CHES conference (Cryptographic Hardware and Embedded Systems) in September in Amsterdam, the Netherlands.

Enrico Tassi gave a four-hour tutorial at the EUTypes Summer School in August in Ohrid, Macedonia (https://sites.google.com/view/2018eutypesschool/home)

Enrico Tassi gave an invited talk at the ML workshop in September in Saint Louis, Missouri, USA on "ELPI: an extension language with binders and unification variables".

Yves Bertot gave an invited talk at the ICTAC conference in October in Stellenbosch, South Africa on "Formal Verification of a Geometry Algorithm: A Quest for Abstract Views and Symmetry in Coq Proofs". He also gave a half-day tutorial on Coq.

9.1.5. Leadership within the Scientific Community

We organized two one-week courses on the Coq system, both tagged as entry-level, on Coq and Coq and the Mathematical Components library.

9.1.6. Scientific Expertise

Yves Bertot was part of the review committee for the French *Haut Commissariat pour l'Évaluation de la Recherche et de l'Enseignement Supérieur* for the CNRS laboratory SAMOVAR in Evry, France.

9.1.7. Research Administration

- José Grimm is a member of the local committee for hygiene and work safety.
- Yves Bertot was a member of the "Bureau du comité des projets" until June.
- Benjamin Grégoire is a member of the committee on computer tool usage (CUMI) for the Sophia-Antipolis Méditerranée Inria center.
- Laurence Rideau was a member of the hiring committee for researchers in Sophia Antipolis.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Doctorat: Enrico Tassi organized an advanced school on Coq and the Mathematical Components library, where Laurence Rideau, Cyril Cohen, Laurent Théry, and Yves Bertot gave lectures and supervised laboratory sessions. This school took place in December and had about 20 attendants.

Licence: Sophie Bernard gave 54 hours of lectures on probabilities at University of Nice Sophia Antipolis.

Licence: Damien Rouhling taught about 60 hours at University Nice Sophia Antipolis: differential calculus, Fourier analysis, and C programming (First year students).

Master: Yves Bertot organized a school on Coq in January, Boris Djalal and Damien Rouhling supervised the lab sessions.

Master: Laurent Théry taught 3 hours on "introduction to computer verified proof" at Ecole des Mines de Paris,

Licence: Boris Djalal taught 4 hours of computer science for first year students in a "classe préparatoire aux grandes écoles".

Licence: Cécile Baritel-Ruet taught 30 hours of computer science for first year students at Université de Nice, and some lectures on computer science history.

Licence: Cyril Cohen prepares students for oral examination in a "classe préparatoire aux grandes écoles".

9.2.2. Supervision

- Yves Bertot and Cyril Cohen supervised Boris Djalal, whose doctoral thesis was defended on December 3rd.
- Yves Bertot and Cyril Cohen supervise the doctoral thesis of Damien rouhling.
- Yves Bertot and Laurence Rideau supervise the doctoral thesis of Sophie Bernard.
- Yves Bertot and Benjamin Grégoire supervise the doctoral thesis of Cécile Baritel-Ruet.

9.2.3. Juries

Enrico Tassi was a member of the Thesis jury for Andrea Gabrielli, in October at the University of Florence, Italy.

Yves Bertot was a member of the Thesis jury for Guillaume Davy, in December at the University of Toulouse and the Institut Supérieur d'Aéronautique et de l'Espace, France.

9.3. Popularization

9.3.1. Interventions

Cyril Cohen presented the work of the Marelle team at a presentation for students coming from Mediterranean regions: Meddays.

MEXICO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Matthias Függer was

- general co-chair of the IEEE International Symposium on Asynchronous Circuits and Systems (ASYNC) 2018 (www.async2018.wien)
- general co-chair of the Workshop of Emergent Algorithms and Network Dynamics (WENDY) 2018 (wendy.paris)

Serge Haddad is a member of the steering commitee of the Petri Nets conference.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Thomas Chatain was co-chair of the program committe of ACSD 2018 interes.institute/acsd2018/.

10.1.2.2. Member of the Conference Program Committees

- Matthias Függer was a PC member of
    - the *21st IEEE International Symposium on Design and Diagnostics of Electronic Circuits and Systems(DDECS 2018)*,
- Stefan Haar was a PC member of
    - the *18th International Conference on Applications of Concurrency to Systems Design(ACSD 2018)*,
    - the workshop *Algorithms and Theories for the Analysis of Event Data 2018(ATAED 2018)*, and
    - the *International Workshop on Petri Nets and Modeling(PeMod '18)*.
- Laurent Fribourg was a PC member of
    - *Model-Based Design of Cyber Physical Systems* (CyPhy'18), October 4-5, 2018, Torino, Italy,
    - *12th International Conference on Reachability Problems* (RP'18), September 24-26 2018, Marseille, France,
    - *8th International Conference on New Computational Methods for Inverse Problems* (NCMIP'18), Ecole normale supérieure Paris-Saclay, France.
- Serge Haddad was a PC member of
    - *12th International Workshop on Verification and Evaluation of Computer and Communication Systems (VECOS 2018)*, Grenoble, France, September 2018
    - *5th International Symposium on Formal Approaches to Parallel and Distributed Systems (4PAD 2018)*, Orléans, France, July 2018

10.1.2.3. Reviewer

- Matthias Függer reviewed for Automatica, ASYNC'18, DDECS'18, Philisophical Transactions, DISC'18, PODC'18, SIROCCO'18, STACS'18.
- Stefan Schwoon reviewed for MFCS and FSTTCS.

- Stefan Haar reviewed for FOSSACS 2019.

10.1.3. Journals

10.1.3.1. Member of the Editorial Boards

- Matthias Függer is guest editor for the special issue *Selected Papers from the 24th IEEE International Symposium on Asynchronous Circuits and Systems - ASYNC 2018*
- Stefan Haar is an associate editor for *Journal of Discrete Event Dynamic Systems*

10.1.3.2. Reviewer - Reviewing Activities

- Thomas Chatain reviewed for *Journal of Discrete Event Dynamic Systems*, *Transactions of the Society for Modeling and Simulation International*.
- Stefan Schwoon reviewed for *Journal of Discrete Event Dynamic Systems*, *Acta Informatica*, *ACM Transactions on Programming Languages and Systems*.
- Stefan Haar reviewed for *Scientific Annals of Computer Science* and *IEEE Transactions on Automatic Control*.

10.1.4. Invited Talks

- Serge Haddad gave an invited talk on "Time and Stochastic Petri Nets" at the tutorials of Petri Nets 2018, the 25th June 2018, Bratislava, Slovakia
- Matthias Függer gave an invited talk at ACSD'18 on "Challenges of circuit design: Circuits as robust distributed algorithms"

10.1.5. Scientific Expertise

- Stefan Schwoon acted as reviewer for the ERC 2018 Starting Grant call.
- Serge Haddad was expert for the allocation of the grants "Prime d'Investissement Recherche de l'Université" of Sorbonne Université

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Note: we only list the teaching activities of researchers here, not those of our assistant and full professors.

Licence: Stefan Haar taught one half of the L3 course on formal languages (18 h EQ TD) at ENS Paris-Saclay.

Master: Matthias Függer and Stefan Haar each taught a module of 10 h EQTD in the *Jaques Herbrand* master MI course *Introduction à la recherche*.

Laurent Fribourg taught one half of M2 course on "Hybrid Automata" at MPRI (Master Parisien de Recherche en Informatique).

10.2.2. Supervision

PhD:

- Thomas Chatain is the supervisor of the PhD thesis of Mathilde Boltenhagen.
- Stefan Haar is the supervisor of the PhD theses of
  - **Juraj Kolcˇák** Unfoldings and Abstract Interpretation for Parametric Biological Regulatory Networks, started in March 2017, and of
  - **Hugues Mandon** on *Computational models and algorithms for the prediction of cell reprogramming strategies*, started on Oct. 1st,

  both at ENS Paris-Saclay.
- Laurent Fribourg is the supervisor of the PhD theses of

- **Adnane Saoud***Compositional controller synthesis for cyber-physical systems*, started in October 2016, co-supervised by Antoine Girard (CentraleSupelec), funded by Digicosme projet Emergence Codecsys

- **Jawher Jerray***Formal analysis of real-time systems*, started in October 2018, co-supervised by Etienne André (Paris 13), funded by University Paris 13, ED Galilée.

- Serge Haddad is the supervisor of the PhD thesis of Igor Khmelnitsky on Machine Learning and Verification of Infinite-state Systems co-supervised with Alain Finkel.

10.2.3. Juries

- Thomas Chatain reviewed the PhD thesis of Thi Thanh Huyen Nguyen, directed by Laure Petrucci and defended at Université Paris 13 in December 2018.

- Stefan Schwoon reviewed the PhD thesis of Adrien Pommellet, directed by Tayssir Touili and defended at Université Paris 13 in July 2018. He also acted as examinator for the PhD thesis of Huu Vu Nguyen.

10.3. Popularization

Laurent Fribourg was interviewed by *L'Édition de l' Université Paris-Saclay* in: "La cyberphysique prépare l'usine de demain", May 2018.

10.3.1. Internal or external Inria responsibilities

- Laurent Fribourg is Head of Institut Farman (FR 3311 CNRS & ENS Paris-Saclay).

- Serge Haddad is Head of the Computer Science Department of ENS Paris-Saclay.

- Stefan Haar is the president of Inria's COST-GTRI.

<h1 style="text-align:center;">MOCQUA Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Emmanuel Jeandel organized with three other colleagues the "Jeunes-Chercheurs" school of GDR IM.
- Frédéric Dupuis and Simon Perdrix organized the "Journées informatique quantique" in Nancy, Novembre 2018.
- Nazim Fatès and Irène Marcovici organised a "Journée Charles Hermite" on the theme "Cellular automata and dynamics on networks" (Nancy, Decembre 2018).

9.1.1.2. Member of the Organizing Committees

- Mathieu Hoyrup is member of the Steering Committee of the Conference Series *Computability in Europe* (CiE) for the period 2017-2021.
- Simon Perdrix is in the Scientific Board of the Colloquium IQFA (Montpellier, Novembre 2018).
- Nazim Fatès is a member of the steering committee of the Summer Solstice Conference on Discrete Models of Complex Systems.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Mathieu Hoyrup was PC member of the workshop Continuity, Computability, Constructivity - From Logic to Algorithms (CCC) 2018, Faro, September 2018.
- Emmanuel Jeandel and Simon Perdrix were PC members of MCU 2018 (https://mcu2018.lacl.fr/).
- Romain Péchoux was PC member of the workshop DICE 2018 (http://cl-informatik.uibk.ac.at/users/zini/events/dice18/).
- Frédéric Dupuis was PC member of QCrypt 2018 (http://2018.qcrypt.net/) and QIP 2019 (http://jila.colorado.edu/qip2019/).
- Nazim Fatès was a PC member of Automata 2018 and ACRI 2018.

9.1.2.2. Reviewer

- Mathieu Hoyrup reviewed articles for LICS, CiE and ICALP.
- Romain Péchoux reviewed articles for DICE, ISMVL and CSL.
- Frédéric Dupuis reviewed articles for QCrypt 2018, QIP 2019, CRYPTO 2018, and AQIS 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Emmanuel Jeandel is member of the editorial board of RAIRO-ITA (Revue d'Automatique, d'Informatique et de Recherche Opérationnelle: Informatique théorique et applications).
- Romain Péchoux is guest editor for a Theoretical Computer Science special issue on Implicit Computational Complexity (https://www.journals.elsevier.com/theoretical-computer-science/call-for-papers/mplicit-computational-complexity).
- Nazim Fatès is a member of the editorial board of the *Journal of cellular automata*.

9.1.3.2. Reviewer - Reviewing Activities

- Mathieu Hoyrup reviewed articles for Discrete and Continuous Dynamical Systems, Information and Computation, and Theoretical Computer Science.
- Romain Péchoux reviewed articles for Information Processing Letters, Journal of Automated Reasoning and Theoretical Computer Science.
- Frédéric Dupuis reviewed articles for Nature Communications, Quantum, IEEE Transactions on Information Theory, Physical Review A, Journal of Physics A, and the Journal of Mathematical Physics.
- Nazim Fatès reviewed articles on cellular automata for the *Journal of cellular automata*, *Physical Review A*, *Chaos, Solitons & Fractals* and *Informatica*.

9.1.4. Invited Talks

- Mathieu Hoyrup was invited to give a talk at the special session Continuous Computation at CiE 2018.
- Nazim Fatès was invited to give a talk on artificial intelligence in the "Colloque Cathy Dufour 2018" held in Nancy in November 2018.

9.1.5. Scientific Expertise

- Romain Péchoux was expert for the European Commission H2020 Marie Skłodowska-Curie Individual Fellowships.
- Nazim Fatès served as an expert for the Chilean national institute of research CONICYT.

9.1.6. Research Administration

- Simon Perdrix is the Scientific Secretary of the CoNRS Section 6. He was in the panel of the CR and DR recruitments at CNRS section 6.
- Frédéric Dupuis is on the board of the Fédération Charles-Hermite (Université de Lorraine).
- Emmanuel Hainry is a member of the CNU Section 27.
- Nazim Fatès is the vice-chair of the IFIP Working group 1.5 on cellular automata and discrete complex systems.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence
  - Isabelle Gnaedig:
    * To the limits of the computable, 6 hours, Opening course-conference of the collegium "Lorraine INP", Nancy, France
  - Emmanuel Hainry:
    * Operating Systems, 30h, L1, IUT Nancy Brabois
    * Algorithmics, 40h, L1, IUT Nancy Brabois
    * Dynamic Web, 60h, L1, IUT Nancy Brabois
    * Databases, 30h, L1, IUT Nancy Brabois
    * Object Oriented Languages, 16h, L2, IUT Nancy Brabois
    * Complexity, 30h, L2, IUT Nancy Brabois
  - Mathieu Hoyrup:
    * Bases de la Programmation Orientée Objet, 20 HETD, L2, Université de Lorraine, France
    * Interfaces Graphiques, 10 HETD, L2, Université de Lorraine, France

- Emmanuel Jeandel:
  * Algorithmics and Programming 1, 60h, L1 Maths-Info
  * Data Compression, 30h, L2 Informatique
  * Algorithmics and Programming 4, 30h, L3 Informatique
  * Modeling Using Graph Theory, 30h, L3 Informatique
  * Networking, 15h, L3 Informatique
  * Formal Languages, 30h, L3 Informatique
- Romain Péchoux:
  * Programmation orientée objet, 61,5h, L3 MIASHS
  * Programmation orientée objet, 53,5h, L2 MIASHS
  * Outils logiques pour l'informatique, 35h, L1 MIASHS
  * Bases de données, 40h, L3 Sciences de la Gestion
  * Algorithmic complexity, 30h, L3 MIAGE, IGA Rabat, Morocco.

- Master
  - Isabelle Gnaedig:
    * Design of Safe Software, Coordination of the module, M2, Telecom-Nancy (Université de Lorraine), Nancy, France,
    * Rule-based Programming, 20 hours, M2, Telecom-Nancy (Université de Lorraine), Nancy, France.
  - Emmanuel Jeandel:
    * Algorithmics and Complexity, 30h, M1 Informatique
  - Nazim Fatès:
    * Systèmes distribués adaptatifs, 10h, Master 2, informatique.
    * Agents intelligents et collectifs, 15h, Master 1, sciences cognitives.

9.2.2. Supervision

- PhD in progress: Renaud Vilmart, "Langages graphiques pour calculer et raisonner en quantique", Start: October 2016, Advisors: Emmanuel Jeandel and Simon Perdrix.
- PhD in progress: Titouan Carette, "Langage diagrammatique pour l'ordinateur quantique", Start: October 2018, Advisors: Emmanuel Jeandel and Simon Perdrix.
- PhD in progress: Pierre Mercuriali, "Calcul à base de médiane et structures médianes pour la classification", Start: October 2016, Advisors: Miguel Couceiro and Romain Péchoux.
- PhD in progress: Robert Booth, "Formalismes pour la vérification de technologies quantiques", Start: November 2018, Advisors: Damian Markham and Simon Perdrix.

9.2.3. Juries

- Emmanuel Jeandel reviewed the PhD thesis of Silvère Gangloff (Aix-Marseille Université - Université Toulouse III).
- Simon Perdrix was examiner for the PhD thesis of Alex Bredariol Grilo (IRIF, Université Paris Diderot), April 27 2018.
- Frédéric Dupuis was examiner for the PhD thesis of Christoph Hirche (Universitat Autònoma de Barcelona), May 9, 2018.

9.3. Popularization

9.3.1. Articles and contents

Nazim Fatès and Irène Marcovici presented an article on cellular automata in the wide audience scientific magazine *La recherche* [23]. This article appeared in an issue dedicated to "chaos and complexity" (July-August 2018).

Simon Perdrix has been one of the editors of the ERCIM news special issue on Quantum Computing.

9.3.2. *Education*

Nazim Fatès participated in a day of training destined to high school teachers of the "Académie de Poitiers" with a conference and discussions with the participants. The meeting was held on April 25, 2018, in the Lycée Victor Hugo of Poitiers and was also followed on the internet by teachers located abroad (DOM-TOM).

9.3.3. *Interventions*

Nazim Fatès participated to a debate for a large public on the theme "Space and artificial intelligence" in the Cité des sciences et de l'industrie in Paris. This debate was part of a series of events dedicated to celebrations of the fiftieth year of the film *2001, A space Odyssey*.

Nazim Fatès joined the Pariscience Festival for animating a debate on artificial intelligence with high-school students of the region of Paris. The discussion, held together with a researcher from the INSERM institute, followed the projection of the film *IA : votre nouveau cerveau* and a collective game to debate on the question of artificial intelligence.

Nazim Fatès participated in an open debate on the theme: "L'intelligence artificielle, quel avenir pour les artistes et créateurs d'aujourd'hui ?". This debate was held in conjunction with the RING Theater Festival in Nancy (Rencontres Internationales des Nouvelles Générations) in April 2018.

Nazim Fatès participated in an open debate on the general theme of joining science and art in conjunction with the exposition "Retina Pictonique" which was held in July 2018 in Toulouse in the CEMES Laboratory.

Nazim Fatès participated in an open debate on the theme "L'intelligence artificielle est-elle vraiment maligne ?" in the Shadok fab-lab of Strasbourg. The debate gathered more than a hundred persons and was preceded by an interview in the magazine *Rue 89 Strasbourg*.

9.3.4. *Internal action*

Nazim Fatès gave a talk on artificial intelligence in the *Café-In* meeting, one of the Inria Nancy Grand-Est series of talks destined to all the employees of the laboratory (March 13, 2018).

Frédéric Dupuis also gave a *Café'In* talk on quantum computing (February 13, 2018).

OURAGAN Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Antonin Guilloux is a Co-organizer of the International conference Dynamics of Groups Actions (Cetraro, may 2019) [0]
- Antoine Joux co-organized the Sprint Summer School *Post-Scryptum*[0]
- Antoine-Joux co-organized *Crypto in the quantum age (STIAS)*[0]

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Antoine Joux was Program Chair of Africacrypt [0]

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Elisha Falbel is a member of the editorial board of *São Paulo Journal of Mathematical Sciences - Springer*
- Antoine Joux is a member of the editorial board of *Designs, Codes and Cryptography*
- Fabrice Rouillier is a member of the editorial board of *Journal of Symbolic Computation*

10.1.3.2. Reviewer - Reviewing Activities

- Antonin Guilloux is reviewer in several journals, including Duke Math Journal.
- Razvan Barbulescu is reviewer for several cryptology conferences including Eurocrypt and WAIFI.

10.1.4. Invited Talks

- Razvan Barbulescu, Cryptography and algorithmic number theory, june 2018, Caen
- Elisha Falbel, Colloquium Heidelberg, June 2018 -Heidelberg -Alemagne
- Elisha Falbel, Representation varieties and geometric structures in low dimensions , July 2018 - Warwick-UK
- Elisha Falbel, Modern Trends in Differential Geometry, July 2018, Sao Paulo- Brazil
- Antonin Guilloux, Computation in Geometric Topology, December 2017 - Warwick - UK.
- Antonin Guilloux, Mahler Measure and values of L-functions, August 2018 - Copenhagen - Denmark.
- Antoine Joux, JFLI (UMI CNRS) / Tokyo university, May 2018, Tokyo https://jfliwp.prod.lamp.cnrs.fr/2018/04/13/jfli-seminar-on-the-mersenne-cryptosystem/
- Antoine Joux, Invited Lecture at the conference *Lattice crypto and algorithms*, May 2018, Bertinoro, Italy
- Antoine Joux, The Mersenne Cryptosystem, Nanyang University, June 2018, Singapore

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[0]http://dynamicsgroupactions.imj-prg.fr/fr/68-2/
[0]https://postscryptum.lip6.fr
[0]http://stias.ac.za/events/workshop-on-cryptography-in-the-quantum-age
[0]http://africacrypt2018.aui.ma/commitees.php

10.1.5. Research Administration

- Fabrice Rouillier is a member of the scientific commitee of the Indo French Centre for Applied Mathematics

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Elisha Falbel : courses in Algebra and Analysis, L1 , Sorbonne Université.

Elisha Falbel : Course in Probabiltés, L3, Polytech

Elisha Falbel : Introduction aux surfaces de Riemann, M1, Sorbonne Université.

Antonin Guilloux: Courses in General Mathematics, L1, Sorbonne Université.

Antonin Guilloux: Chair of the Mathematics in L1 at Sorbonne Université; Lead of the renewing of the mathematical courses in L1 at Sorbonne Université for 2019.

Antonin Guilloux: Course in Hyperbolic geometry and character varieties, M2, Sorbonne Université.

Antoine Joux : Course on Techniques in Cryptography and Cryptanalysis, M2, Parisian Master of Research in Computer Science.

Pierre-Vincent Koseleff : Course on Applied Algebra, L3 for undergraduate students (6th semester), Sorbonne Université.

Pierre-Vincent Koseleff : Préparation à l'agrégation de Mathématiques, M2. General Chair and teacher. Sorbonne Université.

Fabrice Rouillier : Course in Algebraic Computations, M1, 24h, Sorbonne Université.

Fabrice Rouillier : Course in "Agrégation Option - C", M2, 31 heures,Sorbonne Université.

Razvan Barbulescu : part of the Course at MPRI Arithmetic algorithms for cryptology 6h

Razvan Barbulescu : 3 projects of cryptology in Python

Razvan Barbulescu : exercice sessions for Algorithmic and complexity 30h

10.2.2. Supervision

PhD in progress : Thomas Espitau, 09/2016, directed by Antoine Joux

PhD in progress : Natalia Kharchenko, 09/2016, directed by Antoine Joux

PhD in progress : Mahya Mehrabdollahei, 09/2018, directed by Antonin Guilloux and Fabrice Rouillier

PhD in progress : Sudarshan Shinde, 09/2016, directed by Razvan Barbulescu and Pierre-Vincent Koseleff

PhD in progress : Robin Timsit, 09/2015, directed by Elisha Falbel

10.2.3. Juries

- Fabrice Rouillier was reviewer of the PhD of Ruben Becker (Universität des Saarlandes)
- Antonin Guilloux, jury of the PhD thesis of Alexandre Bellis - Etude Topologique du Flot Horocyclique Le cas des surfaces Géométriquement Infnies - Supervisor: Françoise Dal'Bo.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Razvan Barbulescu is *chargé médiation* at IMJ-PRG
- Razvan Barbulescu is a member of the steering commitee of the association *Animath*[0]
- Fabrice Rouillier is *chargé de mission médiation* at Inria Paris
- Fabrice Rouillier is a member of the editorial board of *Interstices*
- Fabrice Rouillier is the president of the association *Animath*

10.3.2. Interventions

- Razvan Barbulescu co-organizes the *Alkindi*[0] competition on crytography (50000 participants)

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[0]http://www.animath.fr

[0]http://concours-alkindi.fr/

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PACAP Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Isabelle Puaut is General Chair of the 2018 IEEE Real-Time Systems Symposium (RTSS), held in Nashville, Tennessee (USA) in December 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Sylvain Collange was PC member of DATE 2018 and Compas'2018.
- Pierre Michaud was a member of the program committees of the ICCD 2018 and HPCA 2019 conferences.
- Isabelle Puaut was a member of the program committee of the Euromicro Conference on Real Time Systems (ECRTS) 2018 and 2019, IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS) 2018.
- Isabelle Puaut was a member of the program committee of the "Real-Time and (Networked) Embedded Systems" track of IEEE ETFA 2019.
- Isabelle Puaut was a member of the program committee of the 26th International Conference on Real-Time Networks and Systems, held in Poitiers, October 2018.
- Isabelle Puaut was a member of the program committee of the 18th Workshop on Worst-Case Execution Time Analysis (WCET 2018), held in Barcelona, Spain, July 2018.
- Erven Rohou was a member of the program committee of the International Symposium on Code Generation and Optimization (CGO) 2019.
- Erven Rohou was a member of the program committee of the following international workshops: Euro-EDUPAR, ANDARE, REV-A.
- André Seznec was a member of the ICCD 2018 program committee.

10.1.2.2. Reviewer

Members of PACAP routinely review submissions to numerous international conferences and events.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Isabelle Puaut is Associate Editor of IEEE Transactions on Computers (IEEE TC) and Springer International Journal of Time-Critical Computing Systems.
- André Seznec is a member of the editorial boards of IEEE Micro and ACM Transactions on Architecture and Compiler Optimization.

10.1.3.2. Reviewer - Reviewing Activities

Members of PACAP routinely review submissions to numerous international journals.

10.1.4. Invited Talks

Members of the PACAP team were invited to present their activity at the RISC-V seminar organized by CEA Grenoble.

André Seznec was an invited speaker at the PER' 18 workshop in Gothenburg, Sweden, May 2018.

André Seznec was an invited speaker at the WOS'18 workshop in Rennes December 2018.

10.1.5. Leadership within the Scientific Community

Isabelle Puaut is member of the steering committee of RTNS (Real-Time Networks and Systems).

Isabelle Puaut is member of the steering committee of the Worst Case Execution Time (WCET) workshop, held in conjunction with the Euromicro Conference on Real Time Systems (ECRTS).

Isabelle Puaut is member of the steering committee of the Euromicro Conference on Real Time Systems (ECRTS).

10.1.6. Research Administration

Sylvain Collange is a member of the CUMIR (*Commission "Utilisateurs des moyens informatiques Recherche"*).

Isabelle Puaut is member of the Research Council (*Commission Recherche*) of the Université de Rennes 1. She is member of the working group "Habilitation à Diriger des Recherches".

Isabelle Puaut is member of the board of directors (*Conseil d'Administration*) of ISTIC (computer science and electrical engineering departement of Université de Rennes 1).

André Seznec is an elected member of the Administration Council of Inria.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence: D. Hardy, Real-time systems, 68 hours, L3, Université de Rennes 1, France
- Master: D. Hardy, Operating systems, 53 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Operating systems: concepts and system programming under Linux (SEL), 75 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Operating systems kernels (NOY), 30 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Real-time systems, 55 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Research-oriented student project, 24 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Optimizing and Parallelizing Compilers (OPC), 9 hours, M2, Université de Rennes 1, France
- Master: I. Puaut, Writing of scientific publications, 9 hours, M2 and PhD students, Université de Rennes 1, France
- Master: A. Seznec, Advanced Design and Architectures, 12 hours, M2 SIF, Université de Rennes 1.
- Master: S. Collange, Parallel Programming, 22 hours, M1, Université de Rennes 1, France
- Master: S. Collange, GPU programming, 32 hours, M2, ESIR, France
- Master: S. Collange, Advanced computer architecture, 4 hours, M2, Université de Rennes 1, France
- Master: S. Collange, Advanced CUDA programming, 8 hours, M2, Sorbonne Universités, France

10.2.2. Supervision

PhD: Viet Anh Nguyen, Worst-Case Execution Time (WCET) Estimation for Many-core Architectures, Université de Rennes 1, Feb 2018, advisors I. Puaut (50 %) and D. Hardy (50 %)

Benjamin Rouxel, Code optimizations for WCET calculation on many-core platforms, Dec 2018, advisors I. Puaut (70 %) and S. Derrien from the CAIRN group (30 %).

PhD : Rabab Bouziane, Software-level Analysis and Optimization to Mitigate the Cost of Write Operations on Non-Volatile Memories, Université de Rennes 1, Dec 2018, advisors E. Rohou (70 %) et A. Gamatié from LIRMM (30 %)

PhD : Simon Rokicki, Accélération matérielle pour la traduction dynamique de programmes binaires, Université de Rennes 1, 17 Dec 2018, advisors S. Derrien from CAIRN (70 %) et E. Rohou (30 %)

PhD in progress : Kévin Le Bon, Dynamic Binary Analysis and Optimization for Cyber-Security, started Dec 2018, advisors E. Rohou (30 %), G. Hiet from CIDRE (35 %), F. Tronel from CIDRE (35 %)

PhD in progress : Bahram Yarahmadi, Compiler Optimizations and Worst-Case Energy Consumption, started Feb 2018, advisor E. Rohou

PhD in progress: Arif Ali Ana-Pparakkal, *Dynamic Function Specialization*, Université de Rennes 1, started Feb 2015, advisor E. Rohou

PhD in progress: Kleovoulos Kalaitzidis, Ultrawide Issue Superscalar Processors, Université de Rennes 1, started Dec 2016, advisor A. Seznec

PhD in progress: Niloofar Charmchi, Hardware prefetching and related issues, Université de Rennes 1, started Jan 2017, advisor A. Seznec and S. Collange

PhD in progress: Daniel Rodrigues Carvalho, Towards a compressed memory hierarchy, Université de Rennes 1, started Oct 2017, advisor A. Seznec

10.2.3. Juries

Isabelle Puaut was a member of the following hiring committees (comités de sélection):

- assistant professor position at Université de Rennes 1 on cybersecurity.
- assistant professor at Université de Bretagne Occidentale on cybersecurity in real-time systems
- assistant professor at Université de Nantes on software and hardware for embedded systems

Erven Rohou was a *special expert* for admittance of A. Jimborean as Associate Professor (Swedish *docent*) in Computer Science (Uppsala, Sweden).

Isabelle Puaut was a member of the following committees:

- Mohamed Said Mosli Bouksiaa, Performance variation considered helpful, Université de Paris Saclay, April 2018 (jury member)
- Risat Mahmud Pathan, Design and analysis of real-time parallel and distributed systems. Chalmers University of Technology, Sweden, Oavlönad Docent, Swedish equivalent to HdR, external reviewer.

Erven Rohou was a member of the following committees:

- Antoine Faravelon, Acceleration of memory accesses in Dynamic Binary translation, Université Grenoble Alpes, Oct 2018 (reviewer).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Erven Rohou is "correspondant scientifique des relations internationales" for Inria Rennes Bretagne Atlantique. As such he is a member of the Inria COST GTRI (Groupe de Travail "Relations Internationales").

10.3.2. Articles and contents

PACAP contributed to Inria's white book on cybersecurity.

10.3.3. Education

Erven Rohou was invited to present the life of a researcher in computer science to middle school students (*Collège de Cesson-Sévigné*)

10.3.4. Interventions

We welcomed a student, grade of 3e (middle-school), for her 3-day observation stay to discover the daily life of researchers in computer science.

PARKAS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

- T. Bourke served on the PC of the International Conference on Embedded Software (EMSOFT 2018).
- T. Bourke served on the PC for the Journées Francophones des Langages Applicatifs (JFLA 2018).
- T. Bourke served on the PC of the American Modelica Conference 2018.
- T. Bourke served on the PC of the Japanese Modelica Conference 2018.
- T. Bourke served on the PC of the International Workshop on Software and Compilers for Embedded Systems (SCOPES 2018).
- F. Zappa Nardelli will serve on the PC of OOPSLA 2019 (International Conference on Object-Oriented Programming, Systems, Languages & Applications).
- M. Pouzet served on the PC of the International Workshop on Software and Compilers for Embedded Systems (SCOPES 2018).
- M. Pouzet served on the PC of the International Conference on Embedded Software (EMSOFT 2018).
- M. Pouzet served on the PC of the International Conference on Principles and Practice of Declarative Programming (PPDP 2018).
- M. Pouzet served on the PC of the International Forum on specification & Design Languages (FDL 2018).

9.1.1.2. Reviewer

- T. Bourke reviewed for the International Joint Conference on Automated Reasoning (IJCAR 2018)
- T. Bourke reviewed for the International Conference on Interactive Theorem Proving (ITP 2018)
- T. Bourke reviewed for the International Symposium on Principles and Practice of Declarative Programming (PPDP 2018)

9.1.2. Journal

9.1.2.1. Reviewer - Reviewing Activities

- T. Bourke was a reviewer for Science of Computer Programming.

9.1.3. Invited Talks

- T. Bourke was invited to present a seminar at the Collège de France in January 2018: *La vérification formelle d'un compilateur Lustre*.
- T. Bourke was invited to present an LSV Seminar (Laboratoire Spécification et Vérification) at the ENS Cachan in January 2018: *Compiling a Synchronous Language with Timers for Simulation*
- T. Bourke was invited to present to the Société Informatique de France doctoral seminar at the École normale supérieure in June 2018: *10 lignes de logique pour 1 ligne de code (correct)*
- F. Zappa Nardelli was invited to present to the DeepSpec Workshop in July 2018 on *Debugging Debug Information*.

- T. Bourke and M. Pouzet participated by invitation in the Shonan Meeting 136 on *Functional Stream Libraries and Fusion: What's next?*, in Japan in October 2018.
- M. Pouzet was invited to give a lecture at the International summer school at Marktoberdorf, in July 2018.

9.1.4. Research Administration

- F. Zappa Nardelli will chair the part-time assistant professor recruitment committee at École Polytechinque.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: F. Zappa Nardelli: "A Programmer's introduction to Computer Architectures and Operating Systems" (M1), 45h, École Polytechnique, France

Master: A. Cohen & F. Zappa Nardelli, "Semantics, languages and algorithms for multicore programming", Lecture, 12h+9h, M2, MPRI: Ecole normale supeérieure and Université Paris Diderot, France

Master : M. Pouzet & T. Bourke: "Synchronous Systems" (M2), Lectures and TDs, MPRI, France

Master: T. Bourke participated in reviewing the L3 and M1 internships of students at the ENS, France.

Licence : M. Pouzet & T. Bourke: "Operating Systems" (L3), Lectures and TDs, ENS, France.

Licence : T. Bourke, "Digital Systems" (L3), Lectures and TDs, ENS, France

Marc Pouzet is Director of Studies for the CS department, at ENS.

9.2.2. Supervision

PhD in progress : Lélio Brun, 3rd year, supervised by T. Bourke and M. Pouzet.

PhD in progress : Chandan Reddy, 3rd year, supervised by A. Cohen.

PhD : Jie Zhao, 3rd year, supervised by A. Cohen, defended in December 2018.

PhD in progress : Basile Clément, 1st year, supervised by F. Zappa Nardelli and A. Cohen.

9.2.3. Juries

- Francesco Zappa Nardelli was jury member of the PhD thesis of Francois Ginraud, Grenoble, Jan 2018.
- T. Bourke was an examiner for the thesis of Jiangchao LIU at the École normale supérieure in February 2018.
- T. Bourke was an examiner for the thesis of Hai NGUYEN VAN at the Université Paris-Sud in September 2018.
- T. Bourke was an examiner for the thesis of Narjes JOMAA at the Université de Lille in December 2018.
- F. Zappa Nardelli was an examiner for the thesis of Jie Zhao at the École normale supérieure in December 2018.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- F. Zappa Nardelli is member of the CES of Inria.

<p style="text-align:center">**PARSIFAL Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

D. Miller is the General Chair of LICS (Logic In Computer Science), starting July 2018.

9.1.1.2. Member of the Organizing Committees

D. Miller is on the Steering Committee for the FSCD conference series and the CPP conference series.

D. Miller is a member of the SIGLOG advisory board, starting November 2015.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

B. Accattoli co-chaired LSFA 2018: 13th Workshop on Logical and Semantic Frameworks with Applications, Fortaleza, Brazil, September 26-28, 2018.

G. Scherer chaired ML2018: the ML Family Workshop 2018 in Saint Louis, US, on Friday September 28th 2018.

L. Straßburger chaired TYDI 2018: Workshop on "Twenty Years of Deep Inference" in Oxford July 7, 2018.

9.1.2.2. Member of the Conference Program Committees

B. Accattoli was on the PPDP 2018 Program Comitte: 20th International Symposium on Principles and Practice of Declarative Programming, Frankfurt, Germany, 3–5 September 2018.

S. Graham-Lengrand was on the LFMTP 2018 Program Comitte: Workshop on Logical Frameworks and Meta-Languages: Theory and Practice, Oxford, UK, 7 July 2018.

L. Straßburger was on the PC for LACompLing 2018: Symposium on Logic and Algorithms in Computational Linguistics, Stockholm, 28–31 August 2018

D. Miller was on the program committee for IJCAR-2018: 9th International Joint Conference on Automated Reasoning, Oxford, 14-17 July 2018.

D. Miller was a member of the jury for selecting the 2018 Ackermann Award (the EACSL award for outstanding doctoral dissertation in the field of Logic in Computer Science).

Member of the EATCS Distinguished Dissertation Award Committee since March 2013.

G. Scherer was on the POPL 2019 Program Committee: Principles Of Programming Languages, 13-19 January 2019 Cascais/Lisbon, Portugal

9.1.2.3. Reviewer

G. Scherer reviewed for Computer Science Logic (CSL).

L. Straßburger was reviewer for the following conferences:

- LICS 2018
- IJCAR 2018
- FSCD 2018
- AiML 2018
- ARQNL 2018

B. Accattoli reviewed for LICS 2018, FSCD 2018, PPDP 2018, LSFA 2018.

9.1.3. *Journal*

9.1.3.1. Member of the Editorial Boards

D. Miller is on the editorial board of the following journals:

- Journal of Automated Reasoning
- Journal of Applied Logics

9.1.3.2. Reviewer - Reviewing Activities

G. Scherer reviewed for Mathematical Structures in Computer Science (MSCS).

L. Straßburger was reviewer for the following journals:

- Transactions on Computational Logic, ToCL (2x)
- Logical Methods in Computer Science, LMCS
- Mathematical Structures in Computer Science, MSCS
- Journal of Logic, Language and Information, JLLI
- Journal of Automated Reasoning, JAR
- Notre Dame Journal of Formal Logic, NDJFL

B. Accattoli reviewed for Logical Methods in Computer Science (LMCS) and Theoretical Computer Science (TCS).

9.1.4. *Invited Talks*

S. Graham-Lengrand gave an invited talk at the JFLA 2018 (January), and an invited lecture series at the 8th Summer School on Formal Techniques (May).

B. Accattoli gave an invited talk at the *IFIP Working Group 1.6: Rewriting* on July 8 2018 in Oxford, Uk.

D. Miller was an invited speaker and panelist at the Workshop on Proof Theory and its Applications, 6–7 September 2018 in Ghent, Beligum.

D. Miller gave a colloquim talk at the Technical University of Vienna on 31 October 2018 and at the Cyber Security Lab, NTU, Singapore, 21 March 2018.

9.1.5. *Scientific Expertise*

G. Scherer participated to a scientific expertise of the implementation of the Tezos blockchain – implemented in OCaml.

9.1.6. *Research Administration*

L. Straßburger was reviewer for the NWO (Netherlands Organisation for Scientific Research).

9.2. Teaching - Supervision - Juries

9.2.1. *Teaching*

Licence : G. Scherer, Programmation Fonctionnelle, 50, L1, Paris 8 (Vincennes / Saint Denis), France

Licence : K. Chaudhuri, Programmation avancée en OCaml, 40 hours eq TD, L3, École polytechnique, France

Bachelor : K. Chaudhuri, Computer programming, principal instructor, École polytechnique, France (This program has no direct equivalent in the traditional French university system; the closest would be L1.)

Licence: S. Graham-Lengrand, "*INF412: Fondements de l'Informatique: Logique, Modèles, Calcul*", 32 hours eq. TD, L3, École Polytechnique, France.

Master: S. Graham-Lengrand, "*INF551: Computational Logic*", 45 hours eq. TD, M1, École Polytechnique, France.

Master: B. Accattoli, "*Logique linéaire et paradigmes logiques du calcul*", 18 hours eq. TD, M2, Master Parisien de Recherche en Informatique (MPRI), France.

Master: D. Miller, "*Logique linéaire et paradigmes logiques du calcul*", 18 hours eq. TD, M2, Master Parisien de Recherche en Informatique (MPRI), France.

Summer School: B. Accattoli, "The Complexity of Beta-reduction", 4.5h, International School on Rewriting (ISR) 2018, Cali, Colombia.

9.2.2. Supervision

PhD : Sonia Marin, Modal Proof Theory through a Focused Telescope, Université Paris-Saclay, 30 January 2018, encadrant(s): Lutz Straßburger, Dale Miller.

PhD in progress: Ulysse Gérard and Matteo Manighetti supervised by Dale Miller.

PhD in progress: François Thiré (since 1st October 2016), supervised by S. Graham-Lengrand (joint with G. Dowek).

PhD in progress: Maico Leberle supervised by Dale Miller and Beniamino Accattoli.

9.2.3. Juries

D. Miller was the a reporter for the PhD juries of Michael Lettmann (TU Vienna, 30 October 2018)

9.3. Popularization

L. Straßburger serves as member of the "commission développement technologique (CDT)" for Inria Saclay–Île-de-France (since June 2012).

F. Lamarche was site co-ordinator for the Activity Report for Inria Saclay–Ile-de-France.

9.3.1. Interventions

G. Scherer and M. Manighetti participated the "Fête de la Science" exhibit at Inria Saclay on the whole day of October 11th, 2018. They manned an activity on sorting algorithms for colored plastic pieces.

9.3.2. Internal action

G. Scherer spoke at the "Unithé ou café" meeting, a Saclay-internal popularization meeting, on February 1st, 2018.

PESTO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- J. Dreier: GRSRD 2018, Grande Region Security and Reliability Day 2018, Saarbrücken, March 2018 (co-chair with C. Rossow, CISPA, Germany)
- A. Imine: German-French PhD Workshop on Secure Big Data, October 24-26, 2018, Saarland, Germany (co-chair with S. Strohbach and Y. Zhang)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- V. Cortier: POST 2018, E-VoteID 2018 (Track chair), CCS 2018, POST 2019, E-VoteID 2019 (Track chair), S&P 2019, CSF 2019
- A. Imine : DEXA 2018, SpaCCS 2018, TSP 2018, VLIoT@VLDB 2018, ICEIS 2019, DEXA 2019, VLIoT@VLDB 2019, C2SI 2019
- S. Kremer: Voting 2018, EuroS&P 2018, ESORICS 2018, EuroS&P 2019, Voting 2019, PERR 2019
- C. Ringeissen: IJCAR 2018, UNIF 2018, WRLA 2018, UNIF 2019, FroCoS 2019
- M. Rusinowitch: ICISSP 2018, IWSPA 2018, FPS 2018, CRISIS 2018

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- V. Cortier: Information & Computation, Journal of Computer Security, ACM Transactions on Privacy and Security (TOPS, previously TISSEC), Foundations and Trends (FnT) in Security and Privacy
- S. Kremer: ERCIM News
- L. Vigneron: Technique et Sciences Informatiques, Lavoisier

10.1.4. Invited Talks

- V. Cortier. Keynote speaker of the 13th International Federated Conference on Distributed Computing Techniques (DisCoTec 2018), Madrid, Spain, June 2018.
- V. Cortier. Invited speaker at the Science and Society conferences, Nancy, May 15th, 2018.
- V. Cheval. Invited speaker at the African Conference on Research in Computer Science and Applied Mathematics (CARI 2018), Stellenbosch, South Africa, October 2018.

10.1.5. Scientific Expertise

ANR project expertise (A. Imine)

10.1.6. Research Administration

Inria evaluation committee (S. Kremer)

Inria Committee on Gender Equality and Equal Opportunities (S. Kremer, co-chair)

Jury Junior Research Position Inria Rennes-Bretagne Atlantique (S. Kremer)

Jury Senior Research Position Inria (S. Kremer)

Jury Professor at Univ Lorraine, LORIA (S. Kremer)

Computer science commission of the Doctoral School, Univ Lorraine (L. Vigneron, chair)

Scientific Council of the Computer Science CNRS Institute INS2I (V. Cortier)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence:

  J. Dreier, Introduction to Theoretical Computer Science (Logic, Languages, Automata), 146 hours (ETD), TELECOM Nancy

  J. Dreier, Awareness for Cybersecurity, 7.5 hours (ETD), TELECOM Nancy

- Master:

  V. Cortier, Security of flows, 16 hours, M2 Computer Science, TELECOM Nancy and Mines Nancy

  J. Dreier, Introduction to Cryptography, 42 hours, M1 Computer Science, TELECOM Nancy

  A. Imine, Security for XML Documents, 12 hours (ETD), M1, Univ Lorraine

  S. Kremer, Security Theory, 24 hours (ETD), M2 Computer science, Univ Lorraine

  C. Ringeissen, Decision Procedures for Software Verification, 18 hours (ETD), M2 Computer science, Univ Lorraine

  L. Vigneron, Security of information systems, 32 hours (ETD), M2 Computer science, Univ Lorraine

  L. Vigneron, Security of information systems, 24 hours (ETD), M2 MIAGE – Distributed Information Systems, Univ Lorraine

  L. Vigneron, Security of information systems, 16 hours (ETD), M2 MIAGE – Audit and Design of Information Systems, Univ Lorraine

- Summer School:

  J. Dreier, Symbolic verification of cryptographic protocols using Tamarin, 8 hours, 23rd Estonian Winter School in Computer Science (EWSCS), Palmse, Estonia

  V. Cheval. Verification of Security Protocols: From Confidentiality to Privacy, 4 hours, School organized within the 15th International Colloquium on Theoretical Aspects of Computing (ICTAC 2018), Stellenbosch, South Africa

  V. Cheval. Verification of Cryptographic Protocols, 2h30, 13th Summer School on Modelling and Verification of Parallel Processes (MOVEP 2018), Cachan, France

10.2.2. Supervision

- PhD defended in 2018:

  Antoine Dallon, Decision procedures for equivalence properties, November 26th, 2018 (V. Cortier and S. Delaune)

  Younes Abid, Automated Risk Analysis on Privacy in Social Networks, July 5th, 2018 (M. Rusinowitch)

  Alicia Filipiak, Conception and formal analysis of security protocols - one application to electronic voting and mobile paiement, March 23rd, 2018 (V. Cortier)

  Ludovic Robin, Vérification formelle de protocoles basés sur de courtes chaines authentifiées, February 15th, 2018 (S. Delaune and S. Kremer)

- PhD in progress:

  Ahmad Abboud, Compressed and Verifiable Filtering Rules in Software-defined Networking, started in August 2018 (A. Lahmadi, M. Rusinowitch and A. Bouhoula)

  Bizhan Alipour, Privacy protection against inference attacks in social networks, started in October 2018 (A. Imine, M. Rusinowitch)

  Charlie Jacomme, Security protocols: new properties, new attackers, new protocols, started in September 2017 (H. Comon and S. Kremer)

  Joseph Lallemand, Type systems for equivalence properties, started in September 2016 (V. Cortier)

  Itsaka Rakotonirina, Efficient verification of equivalence properties in cryptographic protocols, started in October 2017 (V. Cheval and S. Kremer)

10.2.3. Juries

Reviewer for Jonathan Hoyland PhD, Royal Holloway, UK (V. Cortier)

Reviewer for Jean-Karim Zinzindohoué PhD, ENS Paris (V. Cortier)

Reviewer for Nicolás Sebastián Gálvez Ramírez PhD, Univ Angers and UTFSM, Valparaíso (C. Ringeissen)

Reviewer for Vaishnavi Sundararajan PhD, Chennai (M. Rusinowitch)

10.3. Popularization

10.3.1. Articles and contents

(a voté) Euh non : a cliqué. V. Cortier, P. Gaudry, and S. Glondu. In Blog Binaire, Le Monde, March 2018 [42]

Interview for *Jeune Afrique* on electronic voting (V. Cortier).

Multiple interviews and articles on 5G security (*Est Républicain*, *CNRS Le Journal*, *The Conversation*, *Univers Freebox*, ...) (J. Dreier).

Interview for *News Tank RH* on electronic voting (S. Kremer).

Interview for *AFP* on electronic voting (S. Kremer).

Si c'est gratuit, C'est toi le produit. Université Participative de Vandoeuvre. *Est Républicain* (A. Imine).

Report on risks related to personal data disclosure. Equipe de L'Esprit Sorcier, February, (A. Imine).

10.3.2. Interventions

Presentation of security protocols to high school teachers in Computer Science, April 17th, 2018 (V. Cortier).

How to explain security protocols with Playmobil, Ada Lovelace Day, October 9th, 2018, (V. Cortier)

<h1 style="color:red; text-align:center">PI.R2 Project-Team</h1>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Pierre-Louis Curien organised a Day of Hommage to the memory of Maurice Nivat on February 6, 2018, at University Paris 7.

Alexis Saurin organised and co-chaired with David Baelde the Paris workshop in Oxford, UK, July 7-8th 2018, collocated with FLoC 2018.

Matthieu Sozeau co-organised and co-chaired with Nicolas Tabareau the Coq Workshop 2018 in Oxford, UK, July 8th 2018, collocated with FLoC 2018.

8.1.1.2. Member of the Organising Committees

Yves Guiraud organised with Philippe Malbos (Univ. Lyon 1) and Samuel Mimram (École Polytechnique) the fourth edition of the workshop HDRA (Higher-Dimensional Rewriting and Algebra) in July 2018 in Oxford.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

Hugo Herbelin was a member of the program committee of the conference POPL 2019.

Yann Régis-Gianas was a member of the program committee of the conference PPDP 2018.

Yann Régis-Gianas was a member of the program committee of the conference JFLA 2019.

Matthieu Sozeau was member of the program committee of the conference Interactive Theorem Proving 2018 which took place in Oxford during FLoC 2018 and the 13th Workshop on Logical and Semantic Frameworks with Applications, which took place in Fortaleza, Brazil, September 26-28, 2018.

8.1.2.2. Member of the Conference Steering Committees

Pierre-Louis Curien is member of the steering committee of the international workshop Games for Logic and Programming Languages (GaLop).

Hugo Herbelin is a member of the steering committee of the conference TYPES.

Matthieu Sozeau is member of the steering committee of the Dependently Typed Programming international workshop (DTP).

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

Pierre-Louis Curien is editor in chief of the Cambridge University Press journal Mathematical Structures in Computer Science (since January 2016).

Alexis Saurin is editing a special issue of MSCS dedicated to contributions in honour of Dale Miller for his 60th birthday.

8.1.3.2. Reviewer - Reviewing Activities

The members of the team reviewed papers for numerous journals and international conferences.

8.1.4. Invited Talks

Pierre-Louis Curien gave talks on the legacy of Maurice Nivat at two special events organised to honour his memory: special sessions in the Journées du GDR IM (Ecole Polytechnique, May 2018), and at ICALP 2018 (Prague, July 2018).

Eric Finster gave an invited talk at the annual meeting of the GDR Topologie in Montpellier in October entitled "The Cotopological Tower".

Hugo Herbelin gave an invited talk on computing with Gôdel's completeness theorem using side effects at the workshop Proof, Computation and Complexity in Bonn, July 2018.

Yann Régis-Gianas gave an invited talk about copatterns in OCaml at the "Logique, Types et Preuves" workshop of the GDR GPL.

Matthieu Sozeau gave an invited talk on "The Predicative, Polymorphic, Cumulative Calculus of Inductive Constructions" at the TYPES 2018 International Conference on Types for Proofs and Programs in Braga, Portugal, 18-21 June 2018.

Matthieu Sozeau gave an invited seminar entitled "Programmer en Coq" at the Collège de France, on December 12th 2018, part of Xavier Leroy's lectures on the Curry-Howard Isomorphism.

Théo Zimmermann was invited to give a talk in the First international workshop on Empirical Answers to Questions of Software Engineering to present his work on the impact of switching bug trackers [60].

8.1.5. Scientific Expertise

Pierre-Louis Curien has been an expert for a hiring committee for an assistant professor position in Logic, Computation and Programming at Stockholm University (June 2018).

Hugo Herbelin has been a reviewer for FWF (Austrian research funding agency) and NKFI (Hungarian research funding agency).

8.1.6. Research Administration

Pierre-Louis Curien is a member of the Scientific Council of the CIRM (Centre International de Rencontres Mathématiques).

Pierre-Louis Curien and Yves Guiraud are members of the scientific council of the Computer Science department of University Paris 7.

Yves Guiraud is the head of the "Preuves, Programmes et Systèmes" (PPS) pole of the IRIF laboratory (since April 2016), and a member of the IRIF direction council (since September 2017).

Yann Régis-Gianas is a member of the Executive Comitee of the OCaml Foundation, acting as a representative of the teaching community.

In collaboration with Emmanuel Chailloux (UPMC), Yann Régis-Gianas is organising the next four years of IRILL, an initiative about innovation in free software.

8.1.7. Presentation of papers

Pierre-Louis Curien gave a talk at the Conference "Topology in Australia and South Korea 2018", Pohang (https://cgp.ibs.re.kr/conferences/Topology_in_Australia_and_South_Korea) in April 2018 ('A syntactic approach to opetopes').

Yann Régis-Gianas gave talks to present "Morbig", a static parser for POSIX Shellat at FOSDEM 2018 in Brussels, at MiniDebConf 2018 and at SLE 2018 in Boston.

Yann Régis-Gianas gave a talk at OCaml 2018 in St Louis to present Learn-OCaml, a project to support the teaching of OCaml worldwide.

Yann Régis-Gianas gave a talk at JFLA 2018 to present his work about extending OCaml with Copatterns.

Exequiel Rivas gave a talk on relating interfaces for computational effects at the Seventh Workshop on Mathematically Structured Functional Programming (MSFP 2018) in July 2018.

Exequiel Rivas gave a talk on relating interfaces for computational effects at the First Symposium on Compositional Structures (SYCO I) in September 2018.

Matthieu Sozeau gave a talk and presented a poster at PEPM 2018 on Equations, gave a talk on Typed Template Coq at CoqPL 2018, along with the traditional Coq developer session. These events were co-located with POPL 2018 in Los Angeles, CA in January 2018.

8.1.8. Talks in seminars

Eric Finster gave a talk about the implementation of Catt, a proof assistant for Maltsinotis-style higher categories at the Journées pi.r2 (Fontainebleau, june 2018).

Eric Finster gave a talk on "Towards Higher Universal Algebra in Dependent Type Theory" in the working group on Higher Categories, Polygraphs and Homotopy, during the Journées PPS (November 2018).

Eric Finster gave a talk during the HoTTest Electronic Seminar on "Towards Higher Universal Algebra in Type Theory".

Eric Finster gave a talk entitled "Left Exact Modalities in Type Theory" at the Cambridge Logic and Semantics Seminar (March 2018).

Hugo Herbelin gave a talk on computing with Gödel's completeness theorem at the seminar of the Logic team of the IMJ-PRG Paris 6 - Paris 7 lab.

Pierre Letouzey gave two talks on "Un problème d'Hofstadter pour ses lecteurs curieux" during the Journées pi.r2 (Fontainebleau, june 2018) and the Journées PPS (November 2018).

Jean-Jacques Lévy gave a talk at the IRIF Verification seminar (January 8) entitled "Proofs of graph algorithms with automation and their readability".

Jean-Jacques Lévy gave a talk at the VIP ISCAS-Inria workshop (Irif, November 19-22) entitled "Comparing a Formal Proof in Why3, Coq and Isabelle".

Yann Régis-Gianas gave a talk at Gallium seminar to present "Morbig", a static parser for POSIX Shell.

Exequiel Rivas gave a talk on "Arrows: from programming to semantics" at the Laboratoire d'Informatique de Paris Nord (LIPN), September 2018.

Exequiel Rivas gave a talk on "Interaction from monadic interfaces" during the Journées PPS, November 2018.

Exequiel Rivas gave a talk on "Interaction from monadic interfaces" at the Prosecco seminar, December 2018.

Alexis Saurin gave a talk at I2M seminar in the "logique de la programmation" group entitled "logical-by-need".

Alexis Saurin gave a talk at the VIP ISCAS-Inria workshop (Irif, November 19-22) entitled "On non-wellfounded proofs and cuts in linear logic with fixed points."

Matthieu Sozeau gave a talk on the MetaCoq Project at the VALS seminar, LRI, October 2018.

Matthieu Sozeau gave a talk on "A universe of strict propositions" during the Journées PPS, November 2018.

8.1.9. Attendance to conferences, workshops, schools,...

Hugo Herbelin attended TYPES 2018 in Porto (June), the Coq Implementors Workskop in Nice (May 2018), FLoC in Oxford (July 2018), the GPL working group in Marseille (October 2018), the Scalp working group in Saclay (November 2018).

Hugo Herbelin gave a talk on cubical type theory at the workshop Types, Homotopy Type theory and Verification (June 2018), on computing with Markov's principle at the workshop Proof and Computation (July 2018), on a constructive proof of the axiom of dependent choice compatible with classical logic at the workshop Constructive Mathematics (August 2018), all workshops of the special trimester on types, sets and constructions in Bonn. He gave a talk on the reverse mathematics of Gödel's completeness theorem and on the computational contents of Henkin's proof at the seminar of the trimester.

Hugo Herbelin gave a talk on cubical type theory at the TYPES conference (June 2018).

Hugo Herbelin gave a talk on the cubical type structure of cubical type theory at the HoTT-UF workshop in Oxford, July 2018.

Jean-Jacques Lévy attended the Coq Winter School 2018-2019 (SSReflect & MathComp) at Inria Sophia-Antipolis (November 2018).

Yann Régis-Gianas attended JFLA 2018, OCaml 2018, SPLASH 2018, FOSDEM 2018 and MiniDebConf 2018.

Exequiel Rivas attended to MSFP 2018 and SYCO I.

Alexis Saurin attended FLoC 2018 in Oxford.

Matthieu Sozeau attended POPL in Los Angeles, CA (January 2018), the Coq Implementors Workshop in Nice (May 2018), the TYPES Conference in Braga, Portugal (June 2018), FLoC in Oxford (July 2018) and ICFP in St Louis, MI (September 2018).

Théo Zimmermann attented FOSDEM in Brussels (February 2018), the Coq Implementors Workskop in Nice (May 2018), FLoC in Oxford (July 2018), OpenSym in Paris (August 2018) and the EAQSE workshop in Villebrumier (November 2018).

8.1.10. *Groupe de travail Théorie des types et réalisabilité*

This is one of the working groups of PPS, jointly organised by Hugo Herbelin and Matthieu Sozeau. The speakers in 2018 were Rodolphe Lepigre (Practical Curry-Style using Choice Operators, Local Subtyping and Circular proofs), Armaël Guéneau (A Fistful of Dollars: Formalising Asymptotic Complexity Claims via Deductive Program Verification), Jérôme Siméon (Specifying and compiling domain specific languages using Coq: Three case studies), Laura Fontanella 'Axiom of choice in classical realisabiity), Adrien Guatto (A Generalised Modality for Recursion), Hadrien Batmalle (Preservation of properties of the original model in classical realisability), Raphaël Cauderlier (Tactics and certificates in Meta Dedukti).

8.1.11. *Groupe de travail Catégories supérieures, polygraphes et homotopie*

Several members of the team participate actively in this weekly working group of PPS, organised by François Métayer (Univ. Nanterre) since 2009.

8.2. Teaching - Supervision - Juries

8.2.1. *Teaching*

Master: Pierre-Louis Curien teaches in the course Models of programming languages: domains, categories, games of the MPRI (together with Thomas Ehrhard and Paul-André Melliès). Pierre-Louis Curien taught a course on the Foundations of Programming Languages at East China Normal University (12 hours, November 2018).

Master: Hugo Herbelin teaches with Nicolas Tabareau the course on Homotopy Type Theory at the LMFI.

Master: Pierre Letouzey teaches two short courses to the LMFI Master 2 students : "Programming in Coq" and "Introduction to computed-aided formal proofs". These two courses come in addition to Pierre Letouzey's regular duty as teacher in the Computer Science department of Paris 7 (including a course on Compilation to M2-Pro students and a course on computed-aided formal proofs to M1 students).

Master: Yann Régis-Gianas took part in the MPRI course entitled "Type systems": he gave a 12-hour course about generalised algebraic data types, higher-order Hoare logic and dependently typed programming.

Master: Alexis Saurin taught the proof theory and lambda-calculus part of the cours fondamental de logique in M2 "Logique Mathématique et Fondements de l'Informatique", Université Paris 7.

Alexis Saurin chairs LMFI M2 since September 2013.

Master: Matthieu Sozeau taught the MPRI course on Advanced uses of proof assistants (12 hours + a project), together with Bruno Barras (Inria Deducteam).

Matthieu Sozeau gave a guest lecture on dependent pattern-matching and Equations at the University of Saarland in April 2018.

Matthieu Sozeau gave an introductory lecture on Dependent Type Theory at the EUTYPES summer school in Ohrid, Macedonia, in August 2018.

8.2.2. *Supervision*

Guillaume Claret defended his PhD on "Programmation avec effets en Coq" on 18 September 2018 (supervised by Hugo Herbelin and Yann Régis-Gianas). Note that the dissertation was completed in 2015 but Guillaume Claret moved in the meantime to a private company and the defense has been delayed.

PhD (completed): Thibaut Girka defended his PhD on "Differential Program Semantics" on the 3rd of July 2018, supervised by Roberto Di Cosmo and Yann Régis-Gianas.

PhD (abandoned): Cyprien Mangin, Dependent Pattern-Matching, induction-induction and higher inductive types (started in September 2015), supervised by Matthieu Sozeau and Bruno Barras. Cyprien Mangin left for industry.

PhD in progress: Théo Zimmermann (started in September 2016), supervised by Hugo Herbelin.

PhD in progress: Cédric Ho Thanh (started in September 2017), on Opetopes for higher-dimensional rewriting and koszulity, supervised by Pierre-Louis Curien and Samuel Mimram.

PhD in progress: Antoine Allioux (started in February 2018), on the formalisation of algebraic structures in type theory, supervised by Yves Guiraud and Matthieu Sozeau.

PhD in progress: Abhishek De (started in october 2018), on fixed point logics, structures for infinite proofs and their finite representations, supervised by Alexis Saurin.

The following are cosupervisions of PhD students who are not formally part of the team:

PhD in progress: Rémi Nollet, Functional reactive programming and temporal logics: their syntax and semantics - from discrete to continuous time (started in September 2016), supervised by Alexis Saurin and Christine Tasson.

PhD in progress: Gaëtan Gilbert (at Inria Nantes), Definitional proof-irrelevance in the Calculus of Inductive Constructions (started in September 2016), supervised by Nicolas Tabareau and Matthieu Sozeau.

PhD in progress: Simon Forest (at École Polytechnique), Rewriting in semistrict higher categories (started in September 2017), supervised by Yves Guiraud and Samuel Mimram.

PhD in progress: Théo Winterhalter (at Inria Nantes), Extensional to Intensional type theory and meta-theory of proof-irrelevance (started in September 2017), supervised by Nicolas Tabareau and Matthieu Sozeau.

8.2.3. *Juries*

Pierre-Louis Curien was member of the jury of the PhD thesis of Clovis Eberhard (Université Savoie Mont Blanc), defended in June 2018.

Hugo Herbelin was a member of the jury of the PhD thesis of Andrea Vezzosi (University of Göteborg, Sweden), defended in September 2018.

Hugo Herbelin was a member of the jury of the PhD thesis of Guillaume Claret (University of Paris-Diderot), defended in September 2018.

Hugo Herbelin was referee for the PhD thesis of Simon Boulier (University of Nantes), defended in November 2018.

Hugo Herbelin was president of the jury of the PhD thesis of Pierre Cagne (University of Paris Diderot), defended in December 2018.

Yann Régis-Gianas is a member of the jury of the competitive examination for the entrance to the Ecoles Normales Supérieures and the Ecole Polytechnique.

Matthieu Sozeau was member of the jury of the PhD thesis of Amin Timany (KU Leuven, Belgium), defended in April 2018.

8.3. Popularisation

Pierre-Louis Curien gave a talk in the Lycée Georges Dumézil (Vernon, Eure, May 2018) on computer bugs and their prevention, on the occasion of the 50th anniversary of this high school.

Jean-Jacques Lévy is member of the Inria-Alumni's executive committee (4 meetings in 2018) and organised the session about the Transparency of Algorithms (November 12).

Jean-Jacques Lévy was invited by the French Academy of Sciences to participate to the 2018 Hangzhou International Human Resources Exchanges and Cooperation Conference (Hangzhou, November 9-12).

Yann Régis-Gianas co-organised the "Journée Francilienne de Programmation", a programming contest between undergraduate students of three universities of Paris (UPD, UPMC, UPS).

8.3.1. Education

Yann Régis-Gianas is the project leader of the "Learn-OCaml" project whose purpose is to support teaching the OCaml programming language worldwide.

8.3.2. Internal action

- Science outreach towards services (DPEI, STIP...)

  Jean-Jacques Lévy talked about "L'informatique en 4 temps" at the Alumni-UniThé seminar at Inria Bordeaux (October 10).

<p style="text-align:center;color:red;font-weight:bold;">POLSYS Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Dongming Wang was the General Chair of International Conference on Automated Deduction in Geometry (ADG 2018) (Nanning, China, September 11-14, 2018).

Dongming Wang was the General co-Chair of the 44th International Symposium on Symbolic and Algebraic Computation (ISSAC 2019) , Beijing, China, July 15-18, 2019), and the 13th International Conference on Artificial Intelligence and Symbolic Computation (AISC 2018) (Suzhou, China, September 16-19, 2018).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Elias Tsigaridas was a member of the program committees of the 20th International Workshop on Computer Algebra in Scientific Computing (CASC) 2018.

Mohab Safey El Din was member of the program committee of the 43rd International Symposium on Symbolic and Algebraic Computation (ISSAC) 2018.

Emmanuel Prouff was a member of the programm committee of the Conference on Cryptographic Hardware and Embedded Systems 2018 (CHES), Smart Card Research and Advanced Application Conference (CARDIS) 2018, and Constructive Side-Channel Analysis and Secure Design (COSADE) 2018.

Dongming Wang was a member of the program committee of 13th International Conference on Artificial Intelligence and Symbolic Computation (AISC 2018) (Suzhou, China, September 16-19, 2018) and the 4th International Conference on Numerical and Symbolic Computation (SYMCOMP 2019) (Porto, Portugal, April 11-12, 2019).

9.1.2.2. Reviewer

Mohab Safey El Din was reviewer of the M. Skomra's Phd (CMAP, École polytechnique).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Mohab Safey El Din is member of the editorial board of the Journal of Symbolic Computation.

Mohab Safey El Din (with Chee Yap, Courant Inst. NYU) is guest editor of the Journal of Symbolic Computation Special Issue on the 2017 International Symposium on Symbolic and Algebraic Computation.

Dongming Wang is a member of the editorial board of

- Journal of Symbolic Computation (published by Academic Press/Elsevier, London),
- Frontiers of Computer Science (published by Higher Education Press, Beijing and Springer, Berlin),
- Texts and Monographs in Symbolic Computation (published by Springer, Wien New York).

Dongming Wang is a member of the Advisory Board for the journal SCIENCE CHINA Information Sciences (published by Science China Press, Beijing and Springer, Berlin).

Dongming Wang is the Editor-in-Chief for the journal Mathematics in Computer Science (published by Birkhäuser/Springer, Basel).

9.1.4. Invited Talks

Elias Tsigaridas was invited speaker at

- IBM T.J. Watson Research Center, (*Invited talk*) 28 Nov 2018.
- *Applied Algebra Day*. MIT, 17 Nov 2018.
- ICERM, University of Brown, *Main seminar*, Nov, 2018.

Mohab Safey El Din was invited speaker at

- Key Lab on Math. Mechanization, Chinese Academy of Sciences, *Invited talk*.
- Dep. of Math. of Univ. of Tromso, *Invited talk*.
- ICERM, Semester Prog. on Non-linear Algebra, Workshop on Real algebraic geometry and optimization, *Plenary talk*.

Emmanuel Prouff was an invited speaker at

- PANDA 2018 Conference (China) and talked on "Deep Learning for Embedded Security Evaluation".
- COSADE 2018 Conference (Singapur) and talked on "Deep Learning for Embedded Security Evaluation".

9.1.5. Scientific Expertise

Mohab Safey El Din is Chargé de Mission for Computer Science at Sorbonne Univ. (Faculté des Sciences et Ingéniérie).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Jérémy Berthomieu had the following teaching activities:

Master : Computation Modeling, 38 hours, M1, Sorbonne Université, France.

Master : In charge of Basics of Algebraic Algorithms, 74 hours, M1, Sorbonne Université & Polytech' UPMC, France.

Master : Projects supervision, 6 hours, M1, Sorbonne Université, France.

Licence : Introduction to Algorithmics, 33 hours, L2, Sorbonne Université , France.

Licence : Projects supervision, 10 hours, L2, Sorbonne Université, France.

Licence : In charge of Basics of Programmation 2, 50 hours, L1, Sorbonne Université, France.

Mohab Safey El Din has the following teaching activities:

Master : Computation Modeling, 33 hours, M1, Sorbonne Université, France.

Master : Polynomial System Solving, 40 hours, M1, Sorbonne Université, France.

Master : In charge of the curriculum on Security, Reliability of Performance in Computing, 30 hours, M1, Sorbonne Université , France.

Master : Projects management, 20 hours, M1, Sorbonne Université, France.

Licence : Projects supervision, 10 hours, L2, Sorbonne Université, France.

9.2.2. Supervision

PhD in progress : Matías Bender, Algorithms for Sparse Gröbner basis and applications, started in Dec. 2015, Jean-Charles Faugère and Elias Tsigaridas.

PhD in progress : Thi Xuan Vu, Faster algorithms for structured polynomial systems, started in Oct. 2017, Jean-Charles Faugère and Mohab Safey El Din.

PhD in progress : Phuoc Le, Real root classification and polar varieties, started in Oct. 2018, Jean-Charles Faugère and Mohab Safey El Din.

PhD in progress : Simon Landry, Threshold Implementations Against Side Channel Analysis, Emmanuel Prouff.
CIFRE/Contract with ST Micro electronics.

9.2.3. Juries

Mohab Safey El Din was member of the PhD committees of M. Skomra (CMAP, École polytechnique) and T. Weisser (LAAS, CNRS).

<p style="text-align:center">**PRIVATICS Project-Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

> Antoine Boutet: Workshop on data transparency, 23/04/2018, Lyon, France.

> Claude Castelluccia: APVP 2018, 3-6/06/2018, Porquerolles, France).

> Claude Castelluccia: *Intelligence Oversight : Is Human Rights-Preserving Surveillance Possible?*, Grenoble Data institute, 25/01/2018, Grenoble, France.

8.1.1.2. Member of the Organizing Committees

> Antoine Boutet: Winter School on Distributed Systems and Networks 2018, 4-8/02/2018, Sept Laux, France.

> Antoine Boutet: SRDS 2018, 02-05/10/2018, Salvador, Brasil.

> Mathieu Cunche: French GNURadio Days, 03/07/2018, INSA Lyon, France.

> Daniel Le Metayer: Panel *Physical tracking: nowhere to hide*, CPDP 2018, 24/01/2018, Brussels, Belgium.

> Vincent Roca: IEEE WiMob 2018.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

> Antoine Boutet: Compas 2018, APVP 2018, Middleware 2018.

> Mathieu Cunche: ACM WiSec 2018, Mobiquitous 2018, WCNC 2019, ICISSP 2018.

> Claude Castelluccia: APF 2018.

> Daniel Le Metayer: IWPE 2018, CPDP 2018, APF 2018.

> Vincent Roca: SPACOMM 2018, SSCC 2018.

8.1.3. Invited Talks

> Antoine Boutet: *Feedback on the Shonan Meeting on Anonymization methods and inference attacks*, 4th Franco-Japanese Cybersecurity workshop, 16/05/2018, Annecy, France.

> Claude Castelluccia: *Cognitive security*, 4th Franco-Japanese Cybersecurity workshop, 16/05/2018, Annecy, France.

> Claude Castelluccia: *Brain Hacking*, College des Bernardins, 11/12/2018, Paris, France.

> Claude Castelluccia: *Plateforme en ligne et transparence*, AFDIT, 09/11/2018, Paris, France.

> Claude Castelluccia: *Internet Surveillance*, Intelligence Oversight workshop, 25/01/2018, Grenoble, France.

> Cédric Lauradoux: *Cybersécurité et cybermenaces*, Club Democraties, 09/03/2018, Paris, France.

> Cédric Lauradoux: *Cybersécurité et cybermenaces*, Rectorat Académie de Grenoble, 10/12/2018, Grenoble, France.

> Daniel Le Metayer, *Intelligility and transparency in machine learning and AI*, Société Française de Statistique, 18/05/2018, Paris, France.

> Daniel Le Metayer, *Transparency and opacity in IT systems*, INSA Lyon CITI, 23/04/2018, Lyon, France.

Vincent Roca, *Privacy and Connected Objects*, Eclipse IoT Days Grenoble, 18/01/2018, Grenoble, France.

Vincent Roca, *Archéologie de la fuite de nos données personnelles par le biais de nos téléphones*, Atelier Internet – ENSIIB, 06/04/2018, Lyon, France.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : Antoine Boutet, *Privacy*, 12h, INSA-Lyon, France.

Master : Antoine Boutet, *Security*, 12h, INSA-Lyon, France.

Undergraduate course : Mathieu Cunche, *Introduction to computer science*, 120h, L1, INSA-Lyon, France.

Master : Mathieu Cunche, *Wireless Security*, 6h, M2, INSA-Lyon, France.

Undergraduate course : Mathieu Cunche, *On Wireless Network Security*, 10h, L1, IUT-2 (UPMF - Grenoble University) , France.

Undergraduate course : Mathieu Cunche, *Security & Privacy*, 21h, L3, INSA-Lyon, France.

Master : Mathieu Cunche, *Privacy and Data protection*, 14h, M2, INSA-Lyon, France.

Master : Mathieu Cunche, *Cryptography and Communication Security*, 18h, M1, INSA-Lyon, France.

Master : Cédric Lauradoux, *Advanced Topics in Security*, 20h, M2, Ensimag/INPG, France.

Master : Cédric Lauradoux, *Systems and Network Security*, 30h, M1, Ensimag, France.

Master : Cédric Lauradoux, *Internet Security*, 12h, M2, University of Grenoble Alpes, France.

Master : Cédric Lauradoux, *Cyber Security*, 3h, M2, Laws School of University of Grenoble Alpes, France.

Master : Claude Castelluccia, *Advanced Topics in Security*, 15h, M2, Ensimag/INPG, France.

Master : Claude Castelluccia, *Cyber Security*, 6h, M2, Laws School of University of Grenoble Alpes, France.

Master : Claude Castelluccia, *Data Privacy*, 6h, M2, Laws School of University of Grenoble Alpes, France.

Master : Daniel Le Metayer, *Privacy*, 12h, M2 MASH, Université Paris Dauphine, France.

Master : Daniel Le Metayer, *Privacy*, 12h, M2, Insa Lyon, France.

Master : Vincent Roca, *On Wireless Communications*, 12h, M1, Polytech' Grenoble, France.

Undergraduate course : Vincent Roca, *On Network Communications*, 44h, L1, IUT-2 (University of Grenoble Alpes), France.

Undergraduate course : Vincent Roca, *On Security and Privacy in smartphones*, 6h, L-Pro, University of Grenoble Alpes, France.

Master : Vincent Roca, *On Security and Privacy in smartphones*, 3h, M2, France.

8.2.2. E-learning

E-learning

Mooc: Cédric Lauradoux and Vincent Roca, *, 2 month session, FUN-MOOC, Inria, public ciblé, 23000 (13000 first session and 10000 second session).*

8.2.3. Supervision

- PhD in progress : Victor Morel, *IoT privacy*, September 2016, Daniel Le Métayer and Claude Castelluccia.

- PhD in progress : Mathieu Thiery, *IoT privacy* , September 2016, Vincent Roca.
- PhD in progress : Guillaume Celosia, *Wireless Privacy in the Internet of Things* , November 2017, Mathieu Cunche and Daniel Le Métayer.
- PhD in progress : Supryia Adhatarao, *Privacy of E-learning systems* , March 2018, Cédric Lauradoux.
- PhD in progress : Coline Boniface, *Cyberweapons: from bug bounties to zero days* , March 2018, Cédric Lauradoux.
- PhD in progress : Raoul Kerkouche, *Privacy-Preserving Processing of Medical Data* , January 2018, Claude Castelluccia.
- PhD in progress : Clement Henin, *Explainable AI* , September 2018, Claude Castelluccia et Daniel Le Metayer.
- PhD in progress: Théo Jourdan, *Privacy-preserving machine learning in medical domain, October 2018, Antoine Boutet.*
- *Intern (M2): Louis Beziaud,* Privacy of national identity systems*, M2 ENS Rennes, Claude Castelluccia et Daniel Le Metayer.*
- *Intern (L3): Alexandre van Beurden, Inspect what location history reveals about an individual, Antoine Boutet.*
- *Intern (L3): Romain Fournier, Development of a cybersecurity platform, Antoine Boutet.*
- *Intern (L3): Bastien Durand, Analysis of the correlation between the mobility and the personality of an individual, Antoine Boutet.*

8.2.4. *Juries*

PhD: David Gerault, *Security Analysis of Contactless Communication Protocols*, Université Clermont Auvergne , 27/11/2018, Cédric Lauradoux.

PhD: Jonathan Detchart, *Optimisation de codes correcteurs d'effacements par application de transformées polynomiales*, Université de Toulouse, 05/12/2018, Vincent Roca.

PhD: Elise Tourne, *Le phénome de circulation des données à caractère personnel dans le cloud: étude de droit matériel dans le contexte de l'Union Européenne*, Université Lyon 3, 11/06/2018, Daniel Le Métayer.

8.3. Popularization

8.3.1. *Hearings*

- Claude Castelluccia: *Understanding Algorithmic Decision-Making Systems*, European Parliament, 10/2018, Strasbourg, France.
- Daniel Le Metayer: *Understanding Algorithmic Decision-Making Systems*, European Parliament, 10/2018, Strasbourg, France.
- Daniel Le Metayer: *Transparence et explicabilité des algorithmes d'aide à la décision*, CCNE, 02/2018, Paris, France.

8.3.2. *Internal or external Inria responsibilities*

- Claude Castelluccia is co-leader of the Worpackage 5 (data governance and privacy) of the Grenoble Data Institute.
- Claude Castelluccia is co-leader of Grenoble CyberAlps (cybersecurity institute of Grenoble).
- Daniel Le Metayer chairs the CNIL-Inria privacy award.
- Vincent Roca is co-editor of the white book *Cybersecurity: current challenges and Inria's research directions*.

8.3.3. Articles and contents

- Claude Castelluccia: *Manipulation informationnelle et psychologique*, Le blog binaire du Monde, 05/2018.
- Claude Castelluccia: *Data surveillance and manipulation*,Interview for Magazine Capital, 12/2018.
- Mathieu Cunche: *Cybersécurité et menace informatique*, Sommet des start-up sciencesetavenir.fr, 11/2018, Lyon, France.
- Mathieu Cunche: *Attaque par déni de service dans le Wi-Fi*, GNULinux Magazine HS 99, 11/2018.
- Mathieu Cunche: *Comprendre les attaques Krack*, GNULinux Magazine HS 99, 11/2018.
- Daniel Le Metayer: *Weighting the impact of the GDPR*, Communications of the ACM, 11/2018.
- Daniel Le Metayer: *Qui gouverne les algorithmes ?*, Revue THIIRD, 11/2018.
- Vincent Roca: Inria White Paper in Cyber-Security.

8.3.4. Education

- Cédric Lauradoux: *Action nombres et cryptographie*, Maison pour la science, Inria, 06/02/2018, Grenoble, France.
- Cédric Lauradoux: *Action nombres et cryptographie*, Maison pour la science, 18/12/2018, Annecy, France.
- Cédric Lauradoux: *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, 02-03/2018.
- Cédric Lauradoux: : *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, 11-12/2018.

8.3.5. Interventions

- Cédric Lauradoux: *Atelier cryptograpie*, Fête de la Science, 11-12/10/2018, Grenoble, France.
- Cédric Lauradoux: *Cryptologie et Vie privée*, Semaine des mathématiques, Lycée Gabriel-Faure, 15/03/2018, Tournon, France.
- Cédric Lauradoux: *Cryptologie et Vie privée*, Semaine des mathématiques, Lycée Boissy d'Anglas, 16/03/2018, Annonay, France.
- Cédric Lauradoux: *Challenge de cryptologie*, MathC2+ internship, 26/06/18, Grenoble, France.
- Cédric Lauradoux: *Challenge de cryptologie*, Cité scolaire Jean PREVOST, 02/06/2018, Villard de Lans, France.
- Cédric Lauradoux: *Challenge de cryptologie*, Collège Barnave, 18/01/2018, Saint-Égrève, France.

8.3.6. Internal action

- Cédric Lauradoux: *Réglementation sur les données*, Inria, Grenoble, 19/06/2018.
- Cédric Lauradoux: *Réglementation sur les données*, IMAG, Grenoble, 09/07/2018.

<p style="text-align:center;color:red;font-weight:bold;">PROSECCO Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Catalin Hritcu and Amal Ahmed co-organized a Dagstuhl Seminar on Secure Compilation (18201)
- Harry Halpin and Bart Preneel co-organized the ECRYPT-CSA workshop on Crypto Policies (22-23 January 2018) in Brussels, Belgium.

9.1.1.2. Member of the Organizing Committees

- Catalin Hritcu and Amal Ahmed were organizers for PriSC 2018 and the upcoming PriSC 2019

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- Catalin Hritcu was the PC chair for the 2nd Workshop on Principles of Secure Compilation (PriSC) at POPL 2018
- Harry Halpin was General Chair of the 1st Workshop on the Decentralization of Governance at INSCI 2018

9.1.2.2. Member of the Conference Program Committees

- Bruno Blanchet was PC member of RESSI 2018 (*Rendez-vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information*).
- Catalin Hritcu was PC member of EuroS&P 2018, ESOP 2018, and CCS 2018
- Karthikeyan Bhargavan was PC member of IEEE S&P 2018, ACM CCS 2018, and POST 2018
- Harry Halpin was PC Member of SSR 2018, ACM WWW 2018, and ISWC 2018.

9.1.2.3. Reviewer

- Catalin Hritcu served as a reviewer for the Journal of Automated Reasoning (JAR)

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Associate Editor

- – of the *International Journal of Applied Cryptography (IJACT)* – Inderscience Publishers: Bruno Blanchet

9.1.4. Invited Talks

- Catalin Hritcu gave an Invited Keynote talk at the Working Formal Methods Symposium (FROM) in June 2018
- Catalin Hritcu gave invited talks at Nomadic Labs (Tezos), IRIF Verification Seminar (Paris 7), and SoSySec seminar (IRISA Rennes)
- Karthikeyan Bhargavan gave invited talks at Security Standardization Research (SSR 2018), Formal Methods and Tools for Security (FMATS 2018), Crypto Welcomes TLS 1.3 (CWTLS), and the annual GDR Securité meeting.
- Harry Halpin gave invited talks at the EPFL Summer Research Institute in July 2018, the Web 3.0 Summit in October 2018, and Binance Labs in December 2018.

9.1.5. Leadership within the Scientific Community

- Catalin Hritcu served as the Artifact Evaluation Co-Chair for POPL 2018 and POPL 2019

9.1.6. Scientific Expertise

- Bruno Blanchet is a member of the specialized temporary scientific committee of ANSM (*Agence nationale de sécurité du médicament et des produits de santé*), on the cybersecurity of software medical devices.

- Bruno Blanchet participated to a review of the code of the Tezos blockchain by the Inria Foundation (March–May 2018).

- Harry Halpin participated as a member of the advisory board to the PANORAMIX EC H2020 project (2018).

9.1.7. Research Administration

- Bruno Blanchet was co-president of the Inria hiring committee for PhD, post-docs, and *délégations* (*Commision des Emplois Scientifiques*, CES).

- Bruno Blanchet was representative of Inria Paris at the DIM RFSI (*Domaine d'Intérêt Majeur, Réseau Francilien en Sciences Informatiques*).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master: Bruno Blanchet, Cryptographic protocols: formal and computational proofs, 18h equivalent TD, master M2 MPRI, université Paris VII, France

- Master: Karthikeyan Bhargavan, Cryptographic protocols: formal and computational proofs, 18h equivalent TD, master M2 MPRI, université Paris VII, France

- Master: Karthikeyan Bhargavan, Network Protocol Safety and Security, 18h equivalent TD, ACN master, Telecom ParisTech

- PhD: Formally Secure Compartmentalizing Compilation course at International School on Foundations of Security Analysis and Design (FOSAD), 27-28 August, 2018, Bertinoro, Italy

- PhD: Program Verification with F* course at EPIT 2018 Software Verification Spring School, 7-11 May, 2018, Aussois, France

- PhD: Attacks and Automated Tools, BIU winter school on cryptography, 11-15 February, 2018, Tel Aviv, Israel

- PhD: Crypto standards for the Internet and Web. ECRYPT-CSA School on Societal Aspects of Cryptology and on Business and Innovation in Crypto. 7-9 January. Zurich, Switzerland.

- PhD: Mix networking, ECRYPT Summer School, ECRYPT-NET School on Integrating Advanced Cryptography with Applications, 16-21 September 2018, Kos, Greece.

9.2.2. Supervision

- PhD: Jean Karim Zinzindohoue, Secure, Fast and Verified Cryptographic Applications: A Scalable Approach [13], ENS Paris, defended on July 3, 2018, supervised by Karthikeyan Bhargavan.

- PhD: Nadim Kobeissi, Formal Verification for Real-World Cryptographic Protocols and Implementations [12], ENS Paris, defended on December 10, 2018, supervised by Karthikeyan Bhargavan and Bruno Blanchet.

- PhD in progress: Benjamin Beurdouche, on verified cryptographic protocol implementations, ENS Paris, since October 2016, supervised by Karthikeyan Bhargavan.

- PhD in progress: Marina Polubelova, on verified post-quantum cryptography, PSL Paris, since October 2017, supervised by Karthikeyan Bhargavan.

- PhD in progress: Natalia Kulatova, on verified secure hardware APIs, PSL Paris, since October 2017, supervised by Karthikeyan Bhargavan.
- PhD in progress: Denis Merigoux, on verified RUST applications, PSL Paris, since November 2017, supervised by Karthikeyan Bhargavan.
- PhD in progress: Benjamin Lipp, On Mechanised Cryptographic Proofs of Protocols and their Link with Verified Implementations, ENS Paris, since October 2018, supervised by Bruno Blanchet and Karthikeyan Bhargavan.
- PhD in progress: Kenji Maillard, on Semantic Foundations for F*, started January 2017, supervised by Catalin Hritcu and Karthikeyan Bhargavan
- PhD in progress: Carmine Abate, The Formal Foundations of Secure Compilation, since June 2018, advised by Catalin Hritcu and Bruno Blanchet
- PhD in progress: Jérémy Thibault, Secure Compartmentalizing Compilation to a Tagged Architecture, from August 2018, advised by Catalin Hritcu and Bruno Blanchet
- PhD in progress: Guido Martínez (CIFASIS-CONICET Rosario), Metatheory for Semi-Automatic Verification of Effectful Programs, from April 2017, advised by Mauro Jaskelioff (CIFASIS-CONICET Rosario) and Catalin Hritcu

9.2.3. Juries

- Karthikeyan Bhargavan participated in the PhD jury of Daniel Fett at University of Stuttgart.
- Harry Halpin participated in the PhD jury of Joseph Raad at University Paris-Saclay.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- Bruno Blanchet was co-president of the Inria hiring committee for PhD, post-docs, and *délégations* (*Commision des Emplois Scientifiques*, CES).
- Bruno Blanchet was representative of Inria Paris at the DIM RFSI (*Domaine d'Intérêt Majeur, Réseau Francilien en Sciences Informatiques*).

9.3.2. Interventions

- Karthikeyan Bhargavan was a panelist at the Cloudflare Internet Summit in London, June 14, 2018.
- Harry Halpin was a panelist at the World Digital Asset Summit in San Fransisco, USA, December 10, 2018.

<h1 style="color:red; text-align:center">SECRET Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- WCC 2019, March 31 - April 5, 2019, St Jacut-de-la-Mer, France: A. Canteaut, program co-chair
- Eurocrypt 2020, Zagreb, Croatia: A. Canteaut, program co-chair
- Workshop on quantum code design and architectures (kick-off meeting of the European project QCDA), November 5-6, 2018, Paris (France): A. Leverrier.

9.1.1.2. Member of the Organizing Committees

- Training School on Symmetric Cryptography and Blockchain: February 19-23, 2018, Torremolinos (Spain): A. Canteaut.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

As a co-editor-in-chief of the journal *IACR Transactions on Symmetric Cryptology*, María Naya-Plasencia served as a program chair of the conference *Fast Software Encryption (FSE)*, held in Bruges March 2018. Gaëtan Leurent will serve as a co-editor-in-chief of *IACR Transactions on Symmetric Cryptology* starting from 2019.

9.1.2.2. Member of the Conference Program Committees

- FSE 2018: March 5-7, 2018, Bruges, Belgium (C. Boura, A. Canteaut, G. Leurent, M. Naya-Plasencia, L. Perrin);
- CryptoAction Symposium 2018: April 4-5, Sutomore, Montenegro (A. Canteaut);
- PQCrypto 2018: April 9-11, 2018, Fort Lauderdale, USA, (M. Naya-Plasencia, N. Sendrier, J.P. Tillich);
- CT-RSA 2018: April 16-20, 2018, San Francisco, USA (M. Naya-Plasencia);
- Eurocrypt 2018: April 29- May 3, 2018, Tel Aviv, Israel (M. Naya-Plasencia);
- WAIFI 2018: June 14-16, 2018, Bergen, Norway, (L. Perrin)
- SAC 2018: August 13-14, 2018, Calgary, Canada, (G. Leurent);
- Crypto 2018: August 17-19, 2018, Santa Barbara, USA, (M. Naya-Plasencia);
- QCrypt 2018: August 27-31, 2018, Shanghai, China, (A. Leverrier);
- TQC 2018: July 16-18, 2018, Sydney, Australia, (A. Leverrier);
- QTech 2018: September 5-7, 2018, Paris, France, (A. Leverrier);
- SCN 2018: September 5-7, 2018, Amalfi, Italy, (G. Leurent);
- AQIS 2018: September 8-12, 2018, Nagoya, Japan, (A. Leverrier);
- SETA 2018: October 1-6, 2018, Hong-Kong, China, (P. Charpin);
- Asiacrypt 2018: December 02-06, 2018, Brisbane, Australia, (G. Leurent);
- CT-RSA 2019: March 4-8, 2019, San Francisco, USA, (L. Perrin)
- FSE 2019: March 25-28, 2019, Paris, France (C. Boura, A. Canteaut, G. Leurent, M. Naya-Plasencia)

- WCC 2019: March 31 - April 5, 2019, St Jacut-de-la-Mer, France, (A. Canteaut chair, P. Charpin, N. Sendrier, J.P. Tillich);
- PQCrypto 2019: May 8-10, 2019, Chongqing, China, (J.P. Tillich);
- CBC 2019: May 18-19, Darmstadt, Germany, (J.P. Tillich);
- Eurocrypt 2019: May 19-23, 2019, Darmstadt, Germany (C. Boura)
- ISIT 2019: July 7-12, 2019, Paris, France, (J.P. Tillich);
- CHES 2019: August 25-28, 2019, Atlanta, USA, (G. Leurent);
- Eurocrypt 2020: Zagreb, Croatia (A. Canteaut, PC co-chair).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- *Designs, Codes and Cryptography*, associate editor: P. Charpin.
- *Finite Fields and Applications*, associate editor: A. Canteaut, P. Charpin.
- *Applicable Algebra in Engineering, Communication and Computing*, associate editor: A. Canteaut.
- *IACR Transactions on Symmetric Cryptology*, associate editors: C. Boura, A. Canteaut, G. Leurent, M. Naya-Plasencia.
- *IACR Transactions on Cryptographic Hardware and Embedded Systems*, associate editors: G. Leurent.
- *Advances in Mathematics of Communications*, associate editors: N. Sendrier and J.P. Tillich

9.1.3.2. Reviewer - Reviewing Activities

- Remote Referee - step 2- ERC-2018-CoG (A. Canteaut)
- Remote Referee - step 2- ERC-2018-STG (M. Naya-Plasencia)

9.1.4. Invited Talks

- A. Canteaut, *Desperately Seeking Sboxes*, Eurocrypt 2018, Tel Aviv, Israel, April 29 - May 3 2018.
- M. Naya-Plasencia, *New Results on Quantum Symmetric Cryptanalysis*, QUANTALGO Quantum Algorithms and Applications Workshop, 2018, Paris, France, September 25 - 28, 2018.
- M. Naya-Plasencia, *New Results on Quantum Symmetric Cryptanalysis*, CrossFYRE Workshop, 2018, Surrey, UK, September 13 - 14, 2018.
- M. Naya-Plasencia, *New Results on Quantum Symmetric Cryptanalysis*, Journées Nationales 2018 du GDR Informatique Mathématique, Apr 2018, Palaiseau, France
- J.P. Tillich *Schémas cryptographiques à clé publique à base de codes correcteurs proposés à la compétition du NIST*, Journées Nationales 2018 du Pré-GDR Sécurité Informatique, June 1, 2018.

The members of the project-team have also been invited to give talks to some workshops or international seminars, including:

- C. Boura, A. Canteaut, J. Jean and V. Suder, *On Sboxes sharing the same DDT*, Dagstuhl Seminar 18021 Symmetric Cryptography, Jan 2018, Dagstuhl, Germany
- A. Canteaut *L'insoutenable légèreté du chiffrement*, Journées Scientifiques Inria 2018, June 2018, Bordeaux, France
- A. Canteaut and L. Perrin *On CCZ-Equivalence, Extended-Affine Equivalence and Function Twisting*, BFA 2018 - 3rd International Workshop on Boolean Functions and their Applications, Jun 2018, Loen, Norway
- A. Chailloux, *Relativistic commitment and zero-knowledge proofs*, 17th Bellairs Crypto-Workshop 2018, Mar 2018, Holetown, Barbados.
- T. Fuhr, M. Naya-Plasencia and Y. Rotella, *New Results on Modified Versions of Ketje Jr*, Dagstuhl Seminar 18021 Symmetric Cryptography, Jan 2018, Dagstuhl, Germany

- G. Leurent, *MDS Matrices with Lightweight Circuits*, The Challenges of Lightweight Cryptanalysis, April 2018, Tel Aviv, Israel.

- G. Leurent, *Security Issues with Small Block Sizes*, Lightweight Crypto Day, April 2018, Tel Aviv, Israel.

- G. Leurent *The Missing Difference Problem*, Flexible Symmetric Cryptography, March 2018, Leiden, Netherlands.

- M. Naya-Plasencia, *Quantum Safe Symmetric Cryptography*, Flexible Symmetric Cryptography Lorentz Center Workshop, 2018, Leiden, Netherlands, March 19 - 23, 2018.

- M. Naya-Plasencia, *Symmetric lightweight primitives: (Design and) Cryptanalysis*, Lightweight Crypto Day, April 2018, Tel Aviv, Israel.

- L. Perrin, *Generalized Feistel Networks with Optimal Diffusion*, Dagstuhl Seminar 18021 Symmetric Cryptography, Jan 2018, Dagstuhl, Germany

- L. Perrin, *S-Box Reverse-Engineering: Boolean Functions, American/Russian Standards, and Butterflies*, CECC 2018 - Central European Conference on Cryptology, Jun 2018, Smolenice, Slovakia.

9.1.5. Leadership within the Scientific Community

- A. Canteaut serves as a chair of the steering committee of *Fast Software Encryption (FSE)*.

- A. Canteaut serves on the steering committee of the international competition CAESAR for authenticated encryption [0]

- N. Sendrier serves on the steering committee of *Post-quantum cryptography (PQCrypto)*.

- P. Charpin, N. Sendrier and JP Tillich serve on the steering committee of the WCC conference series.

- A. Leverrier serves on the steering committee of *DIM SIRTEQ* (réseau francilien pour les technologies quantiques).

9.1.6. Research Administration

- A. Canteaut serves as Head of Science of the Inria Paris research center since September 2017.

- A. Canteaut serves on the *Inria Evaluation Committee* since September 2017.

- M. Naya-Plasencia and G. Leurent are members of *Inria Paris CSD Committee* (Comité de suivi doctoral).

- M. Naya-Plasencia is a member of *Inria Paris Scientific Hiring Committee* (Assignement of PhD, post-doctoral and delegation Inria fundings).

- M. Naya-Plasencia serves as head of the jury for PhD scholarships from EDITE.

- M. Naya-Plasencia serves on the *Comité des usagers du projet "rue Barrault"*.

9.1.7. Committees for the selection of professors, assistant professors and researchers

- Inria Paris Chargés de recherche: A. Canteaut (vice-chair)

- Inria Chargés de recherche (national selection): A. Canteaut

- ISTIC, Rennes, maître de conférence: M. Naya-Plasencia

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: A. Canteaut, *Error-correcting codes and applications to cryptology*, 12 hours, M2, University Paris-Diderot (MPRI), France;

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[0]https://competitions.cr.yp.to/caesar.html

Master: A. Chailloux, *Quantum Information*, 18 hours, M2, University Paris-Diderot (MPRI), France;

Master: A. Leverrier, *Quantum information and cryptography*, 18 hours, M2, University Paris-Diderot (MPRI), France;

Master: N. Sendrier, Information theory, 40 hours, M1, UVSQ, MINT, France;

Master: J.-P. Tillich, *Introduction to Information Theory*, 32 hours, M2, Ecole Polytechnique, France;

Corps des Mines: G. Leurent *Cryptographie symétrique*, 7 hours, Telecom ParisTech, France;

The members of the project-team were also invited to give courses at training schools for PhD students and young researchers:

- A. Canteaut, *Secure building-blocks against differential and linear attacks*, Training School on Symmetric Cryptography and Blockchain, Torremolinos, Spain, February 2018. 3 hours.

- A. Canteaut, *Exploiting algebraic properties of block ciphers*, Training School on Symmetric Cryptography and Blockchain, Torremolinos, Spain, February 2018. 1.5 hours.

- G. Leurent *How Not to Use a Blockcipher*, Training School on Symmetric Cryptography and Blockchain, Torremolinos, Spain, February 2018. 2.5 hours.

- A. Leverrier, *Security of continuous-variable quantum key distribution*, Secure Quantum Communications School, Baiona, Spain, May 2018.

- M. Naya-Plasencia, *Introduction to Symmetric Cryptography*, Summer School on real-world crypto and privacy, Sibenik, Croatia, June 2018.

- M. Naya-Plasencia, *Lightweight Cryptography*, Summer School on real-world crypto and privacy, Sibenik, Croatia, June 2018.

9.2.2. Supervision

PhD: Sébastien Duval, *Constructions for lightweight cryptography*, Sorbonne Université, October 3, 2018.

PhDs: Yann Rotella, *Finite fields and symmetric cryptography*, Sorbonne Université, September 19, 2018.

PhD in progress: Rodolfo Canto Torres, *Analysis of generic decoding algorithms for the Hamming metric and study of cryptosystems based on the rank metric*, since September 2015, supervisor: N. Sendrier

PhD in progress: Xavier Bonnetain, *Cryptanalysis of symmetric primitives in the post-quantum world*, since September 2016, supervisor: M. Naya Plasencia

PhD in progress: Thomas Debris, *Quantum algorithms for decoding linear codes*, since September 2016, supervisor: J.-P. Tillich

PhD in progress: Antoine Grospellier, *LDPC codes: constructions and decoding*, since October 2016, supervisor: J.-P. Tillich

PhD in progress: Vivien Londe, *Study of quantum LDPC codes*, since September 2016, supervisors: G. Zémor and A. Leverrier

PhD in progress: Kevin Carrier, *Reconstruction of error-correcting codes*, since October 2016, supervisor: N. Sendrier

PhD in progress: Matthieu Lequesne, *Attaques par canaux cachés sur les cryptosystèmes à base de codes MDPC quasi-cycliques*, since September 2017, supervisor: N. Sendrier

PhD in progress: Ferdinand Sibleyras, *Security of modes of operation*, since October 2017, supervisor: G. Leurent and A. Canteaut

PhD in progress: Valentin Vasseur, *Etude du décodage des codes QC-MDPC*, since October 2017, supervisor: N. Sendrier

PhD in progress: Rémi Bricout, *Etude de scénarios non-locaux quantiques à l'aide d'outils de la théorie de l'information quantique*, since September 2017, supervisor: A. Chailloux and A. Leverrier

PhD in progress: Shouvik Ghorai, *Beyond-QKD continuous-variable quantum cryptographic protocols*, since October 2017, supervisors: E. Diamanti (UPMC), A. Leverrier

PhD in progress: Andrea Olivo, *Partir de contraintes relativistes pour faire de la cryptographie quantique*, since November 2017, supervisors: A. Chailloux and F. Grosshans (laboratoire Aimé Cotton).

PhD in progress: Daniel Coggia, *Cryptanalysis techniques for lightweight ciphers*, since September 2018, supervisors: A. Canteaut and C. Boura.

9.2.3. Juries

- Alex Bredariol Grilo, *Quantum proofs, the Local Hamiltonian problem and applications*; Université Sorbonne Paris Cité, Paris, April 27, 2018, committee: A. Leverrier.
- Vincent Zucca, *Towards efficient arithmetic for Ring-LWE based homomorphic encryption*, Sorbonne Université, June 25, 2018, committee: A. Canteaut (chair);
- Yann Rotella, *Mathématiques discrètes appliquées à la cryptographie symétrique*, Sorbonne Université, September 19, 2018, committee: A. Canteaut (supervisor), M. Naya-Plasencia
- Dahmun Goudarzi, *Secure implementation of block ciphers against physical attacks*, PSL, September 21, 2018, committee: A. Canteaut
- Sébastien Duval, *Constructions pour la cryptographie à bas coût*, Sorbonne Université, October 3, committee: C. Boura, A. Canteaut (supervisor), G. Leurent (supervisor)
- Benjamin Lac, *Cryptographie légère intrinsèquement résistante aux attaques physiques pour l'Internet des objets*, Ecole des Mines de St-Etienne, October 18, 2018, committee: A. Canteaut
- Michele Minelli, *Chiffrement Totalement Homomorphe pour l'Apprentissage Automatique*, Université Paris Sciences et Lettres, October 26, 2018, committee: M. Naya-Plasencia (chair)
- Claire Delaplace, *Algorithmes d'algèbre linéaire pour la cryptographie*, Université de Rennes, November 21, 2018, committee: M. Naya-Plasencia.
- David Gérault, *Security Analysis of Contactless Communication Protocols*, Université Clermont Auvergne, November 27, 2018, committee: M. Naya-Plasencia (reviewer).
- Colin Chaigneau, *Cryptanalyse des Algorithmes de Chiffrement Symétrique*, Université de Versailles, November 28, 2018, committee: M. Naya-Plasencia (reviewer).
- Victor Cauchois, *Couches de Diffusion Lineaires à Partir de Matrices MDS*, Université de Rennes, December 13, 2018, committee: M. Naya-Plasencia.
- Eloi de Chérisey, *Towards a better formalisation of the side-channel threat*, Telecom Paris, December 18, 2018, committee: A. Canteaut (chair).

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- **Association Animath**: M. Lequesne serves on the board of Animath.
- M. Lequesne is also member of the scientific committee of the French Tournament of Young Mathematicians: redaction of the problems for the competition, jury member (chair of a jury) ; member of the scientific committee of the International Tournament of Young Mathematicians: redaction of the problems for the competition, jury member (chair of a jury) ; Member of the scientific committee of the Correspondances des Jeunes Mathématicien.ne.s: redaction of the problems for the competition.

9.3.2. Articles and contents

- A.Chailloux, *L'algorithme de Shor*, Interstices, Inria, March 2018.
- G. Leurent and M. Naya-Plasencia, *La fragilité inattendue du chiffrement symétrique*, "La Recherche", November 2018.
- JP Tillich, *Les codes correcteurs*, "La Recherche", November 2018, p. 45-46.
- A. Canteaut, *La meilleure garantie de sécurité est l'épreuve du temps*, interview to the journal "La Recherche", November 2018.
- M. Naya-Plasencia, *Symmetric Cryptanalysis: The Foundation of Trust*, Lorentz Center Highlights, 2018, Leiden, Netherlands, Mars 20, 2018.

9.3.3. Education

- **Alkindi cipher challenge:** Several members of the project-team are involved in the cipher challenge for high-school students "concours Alkindi" http://www.concours-alkindi.fr/. Mathieu Lequesne serves as a co-organizer of the challenge, preparing the three rounds and the final. Together with C. Boura and A. Canteaut, he was also involved in the redaction of the exercises, and in videos for Inria channel on different aspects of cryptography and how to solve problems from the Alkindi challenge: https://www.youtube.com/watch?v=Y-VQBzwEaqQ&t=17s, https://www.youtube.com/watch?v=Mv415zfUFNs&t=3s and https://www.youtube.com/watch?v=8ohEeTPKBwA&t=21s. The best teams from Académie de Paris have been visiting the SECRET project-team in June 2018 https://www.youtube.com/watch?v=EVLHEOWAORc.
- Organization of the event "Rendez-vous des Jeunes Mathématiciennes et Informaticiennes" at Inria Paris (October 22-23) by M. Lequesne, a 2-days camp for 20 high-school girls interested in mathematics and computer science.
- Organization of the International Tournament of Young Mathematicians in Paris, a one-week competition (July 5-12) for 120 high-school students. M. Lequesne served as vice-president of the local organizing committee.

9.3.4. Interventions

- A. Canteaut gave a talk to high-school students at Palais de la Découverte, during the "Semaine des maths" (March 2018) [61];
- A. Canteaut gave the talk during the closing ceremony of "Olympiades nationales de mathématiques" (June 2018) [62];
- A. Canteaut gave a presentation on research in computer science to 10-year children in a school in Paris (Jan. 2018);
- M. Lequesne gave a presentation on code-based cryptography to high-school interns (stagiaires de 3e) (Dec. 2018).

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SPADES Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Alain Girault is member of the steering committee of the International Federated Conference on Distributed Computing Techniques (DISCOTEC) and of the ACM International Conference on Embedded Software (EMSOFT).
- Gregor Gössler is member of the steering committee of the International Workshop on Causal Reasoning for Embedded and Safety-critical Systems Technologies (CREST).
- Jean-Bernard Stefani is the current chair of the steering committee of the IFIP FORTE international conference series, a member of the steering committee of the IFIP DISCOTEC conference series, and the current chair of the IFIP Working Group 6.1.

9.1.1.2. Member of the Organizing Committees

- Sophie Quinton was the co-organizer of a Dagstuhl seminar entitled "The Logical Execution Time Paradigm: New Perspectives for Multicore Systems". https://www.dagstuhl.de/18092

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Alain Girault served in the program committees of the Symposium on Industrial Embedded Systems (SIES'18), the Forum on specification and Design Languages (FDL'18), and the Conference on Applications of Concurrency to System Design (ACSD'18).
- Gregor Gössler served in the program committees of the 18th International Workshop on Automated Verification of Critical Systems (AVOCS 2018) and the 3rd international Workshop on Formal Reasoning about Causation, Responsibility, and Explanations in Science and Technology (CREST 2018).
- Sophie Quinton served in the program committees of the 30th Euromicro Conference on Real-Time Systems (ECRTS'18), the 9th International Workshop on Analysis Tools and Methodologies for Embedded and Real-time Systems (WATERS'18), the 39th IEEE Real-Time Systems Symposium (RTSS'18) and the 26th International Conference on Real-Time Networks and Systems (RTNS'18).

9.1.2.2. Reviewer

- Alain Girault reviewed papers for the ECRTS'18 conference.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Alain Girault is a member of the editorial board of the Journal on Embedded Systems.

9.1.3.2. Reviewer - Reviewing Activities

- Alain Girault reviewed articles for J. of Transportation Technologies (JTT) and IEEE Trans. Dependable and Secure Computing (TDSC).
- Gregor Gössler reviewed articles for IEEE Transactions on Automatic Control (TAC) and ACM Transactions on Embedded Computing Systems (TECS).
- Sophie Quinton reviewed an article for ACM Trans. on Embedded Computing Systems (TECS).

9.1.4. Research Administration

- Pascal Fradet is head of the committee for doctoral studies ("Responsable du comité des études doctorales") of the Inria Grenoble – Rhône-Alpes research center and local correspondent for the young researchers Inria mission ("Mission jeunes chercheurs").

- Alain Girault is vice-chair of the Inria Evaluation Committee.

- Xavier Nicollin is member of the committee for computing resources users ("Comité des Utilisateurs des Moyens Informatiques") of the Inria Grenoble – Rhône-Alpes research center.

- Jean-Bernard Stefani is head of science (délégué scientifique) of the Inria Grenoble – Rhône-Alpes research center and a member of the Inria Evaluation Committee.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Pascal Fradet, Théorie des Langages 1 & 2, 36 HeqTD, niveau L3, Grenoble INP (Ensimag), France

Licence : Pascal Fradet, Modèles de Calcul : λ-calcul, 12 HeqTD, niveau L3, Univ. Grenoble Alpes, France

Master : Pascal Fradet, Langages et Traducteurs, 16 HeqTD, niveau M1, Polytech Grenoble, Univ. Grenoble Alpes, France

Master : Xavier Nicollin, Sémantique et Analyse des Programmes, 45 HeqTD, niveau M1, Grenoble INP (Ensimag), France

Licence : Xavier Nicollin, Théorie des Langages 2, 36 HeqTD, niveau L3, Grenoble INP (Ensimag), France

Licence : Xavier Nicollin, Bases de la Programmation Impérative, 81 HeqTD (2017-2018), niveau L3, Grenoble INP (Ensimag), France

Licence : Sophie Quinton, Théorie des Langages 2, 18 HeqTD, niveau L3, Grenoble INP (Ensimag), France

Master : Sophie Quinton, Performance and Quantitative Properties, 6h, MOSIG, Univ. Grenoble Alpes, France

Master: Jean-Bernard Stefani, Formal Aspects of Component Software, 9h, MOSIG, Univ. Grenoble Alpes, France.

9.2.2. Supervision

- PhD in progress: Sihem Cherrared, "Fault Management in Multi-Tenant Programmable Networks", Univ. Rennes 1, since October 2016, co-advised by Eric Fabre and Gregor Gössler.

- PhD in progress: Christophe Prévot, "Early Performance assessment for evolving and variable Cyber-Physical Systems", Univ. Grenoble Alpes, since November 2015, co-advised by Alain Girault and Sophie Quinton.

- PhD in progress: Stephan Plassart, "On-line optimization in dynamic real-time systems", Univ. Grenoble Alpes, since September 2016, co-advised by Bruno Gaujal and Alain Girault.

- PhD in progress: Xiaojie Guo, "Formal Proofs for the Analysis of Real-Time Systems in COQ", Univ. Grenoble Alpes, since December 2016, co-advised by Pascal Fradet, Jean-François Monin, and Sophie Quinton.

- PhD in progress: Maxime Lesourd, "Generic Proofs for the Analysis of Real-Time Systems in COQ", Univ. Grenoble Alpes, since September 2017, co-advised by Pascal Fradet, Jean-François Monin, and Sophie Quinton.

- PhD in progress: Arash Shafiei, "Programming IoT and sofware defined radio with dynamic dataflow models of computation", Univ. Grenoble Alpes, since September 2017, co-advised by Pascal Fradet, Alain Girault, and Xavier Nicollin.

- PhD in progress: Martin Vassor, "Analysis and types for safe dynamic software reconfigurations", Univ. Grenoble Alpes, since November 2017, co-advised by Pascal Fradet and Jean-Bernard Stefani.

- M2 SIF in progress: T. Mari, "From diagnosis to causal analysis", U. Rennes, since November 2018, co-supervised by Gregor Gössler and Louise Travé-Massuyès (LAAS).

- PFE: Clément Arvis, "Génération automatique de musique", Grenoble INP/Ensimag, September 2018, supervized by Sophie Quinton.

9.2.3. *Juries*

- Alain Girault was referee for the PhD thesis of Colin Vidal, Université Côte d'Azur, and for the PhD thesis of Julien Hascoet, INSA Rennes. He was also vice-president of the Inria Senior Researcher jury (DR2) and of the Inria Junior Researcher national jury (CRCN).

- Gregor Gössler was examiner for the PhD jury of Vincent Wang (U. Pennsylvania).

- Jean-Bernard Stefani was examiner for the Habilitation (HDR) jury of Thomas Ledoux (U. Nantes).

- Sophie Quinton was member of the CRCN jury in Rennes.

9.3. Popularization

9.3.1. *Interventions*

Sophie Quinton gave a keynote at the MathC2+ event organized by Inria, entitled "Faire des preuves par ordinateur : Pourquoi et comment ?" (Computer-assisted proofs: Why and how?).

<h1 style="color:red; text-align:center;">SPECFUN Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

- Alin Bostan is part of the Scientific advisory board of the conference series *Effective Methods in Algebraic Geometry* (MEGA).
- Alin Bostan was a member of the Scientific advisory board of the conference *Algèbre, arithmétique et combinatoire des équations différentielles et aux différences*, CIRM (Luminy, France); ~ 60 participants.
- Alin Bostan is part of the scientific committee of the GDR EFI ("Functional Equations and Interactions") dependent on the mathematical institute (INSMI) of the CNRS. The goal of this GDR is to bring together various research communities in France working on functional equations in fields of computer science and mathematics.
- Frédéric Chyzak is member of the steering committee of the *Journées Nationales de Calcul Formel* (JNCF), the annual meeting of the French computer algebra community.
- Frédéric Chyzak is elected member (and current chair) of the steering committee of the *International Symposium on Symbolic and Algebraic Computation* (ISSAC, 3-year term, 2016–2018).
- Georges Gonthier is a member of the steering committee of the *Certified Programs and Proofs* Conference (CPP).

9.1.1.1. Member of the Organizing Committees

- Alin Bostan co-organizes, with Lucia Di Vizio, the *Séminaire Différentiel* between U. Versailles and Inria Saclay, with a bi-annual frequency (~ 30 participants per event).
- Alin Bostan co-organizes, with Lucia Di Vizio, the working group *Marches dans le quart de plan*, at Institut Henri Poincaré (Paris), with a bi-monthly frequency (~ 15 participants per event).

9.1.2. Scientific Events Selection

9.1.2.1. Reviewer

- Frédéric Chyzak has served as reviewer for the selection of the international conference ISSAC 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Alin Bostan is on the editorial board of the *Journal of Symbolic Computation*.
- Georges Gonthier is on the editorial board of the *Journal of Formalized Reasoning*.

9.1.3.2. Reviewer - Reviewing Activities

- Alin Bostan has served as a reviewer for the journals: *Journal of Symbolic Computation*, *Journal of Combinatorial Theory, Series A*, *Applicable Algebra in Engineering Communications and Computing*, *Minnesota Journal of Undergraduate Mathematics*.
- Frédéric Chyzak has served multiple times as a reviewer for the *Journal of Symbolic Computation*.
- Pierre Lairez has served as a reviewer for the *Journal of Symbolic Computation*, *Journal of the ACM* and *Journal of Physics A*.

9.1.4. Invited Talks

- Alin Bostan has been invited to give a talk at the *Workshop on algebraic and analytic aspects of power series*, Universidade Lisboa, Lisbonne, Portugal, Jan. 2018.
- Alin Bostan has been invited to give a talk at the conference *Algebra, Arithmetic and Combinatorics of Differential and Difference Equations*, CIRM (Luminy), France, May 2018.
- Alin Bostan has been invited to give a talk at the conference *Grands réseaux aléatoires et marches contraintes*, in honor of the 75th birthday of Guy Fayolle, Dijon, France, Aug. 2018.
- Alin Bostan has been invited to give a talk at the conference *Combinatorics and Arithmetic for Physics: special days*, IHES, Bures-sur-Yvette, France, Oct. 2018.
- Frédéric Chyzak was invited invited speaker at the conference *Rencontres Arithmétiques du GDR Informatique Mathématique* (RAIM 2018), Gif-sur-Yvette, France, Nov. 2018.
- Georges Gonthier was a plenary keynote speaker at the *Federated Logic Conference (FLoC 2018)* in Oxford, July 2018.
- Georges Gonthier was invited speaker at the *Workshop on Modular Knowledge (Tetrapod)* during FLoC 2018, Oxford, July 2018.
- Georges Gonthier ws the keynote speaker of the *Future of Mathematical Proofs* workshop at the Heidelberg Laureate Forum, September 2018.

9.1.5. Leadership within the Scientific Community

9.1.5.1. Regular Research Seminar

The team organizes a regular seminar, with roughly 15–20 talks a year. The topics reflect the team's interests: computer algebra, combinatorics, number theory, formal proofs, and related domains. This year, we reduced a bit the number of talks in our seminar, as we have invested much time in setting up a working group with a talk every second week (see 9.1.5.2).

9.1.5.2. Research Working Group

This year we have set up a working group *Marches dans le quart de plan* around the study of walks in the quarter plan, a very active research topic in probability theory and enumerative combinatorics in recent years. The working group is organized at Institut Henri Poincaré, with a regularity of two sessions per month. The original purpose was to read the article "On the Nature of the Generating Series of Walks in the Quarter Plane" by T. Dreyfus, C. Hardouin, J. Roques, M. Singer, published in Invent. Math. this year. But the reality exceeded expectations: the working group attracted a dozen of people, working either in computer science or pure mathematics, who began to interact and a very good dynamic was created. Altogether, sixteen sessions have taken place so far, and we have decided to continue in 2019. From the team, Alin Bostan, Frédéric Chyzak, Guy Fayolle, and Pierre Lairez have given a total of 9 talks to this working group.

9.1.6. Scientific Expertise

- Georges Gonthier participated in a review of the software and algorithms of the Tezos blockchain conducted by the Inria Foundation during Spring 2018.

9.1.7. Research Administration

- Georges Gonthier serves on the Conseil de l'École Doctorale de Mathématiques Hadamard.

9.2. Teaching - Supervision - Juries

- Alin Bostan has served as a jury member of the French *Agrégation de Mathématiques – épreuve de modélisation, option C*.

9.2.1. Teaching

Licence:

Pierre Lairez, *Introduction à l'informatique (INF311)*, TD, 40h, L3, École polytechnique, France.

Master:

Frédéric Chyzak, *Algorithmes efficaces en calcul formel*, 18h, M2, MPRI, France.

Alin Bostan, *Algorithmes efficaces en calcul formel*, 40.5h, M2, MPRI, France.

Pierre Lairez, *Algorithmique avancée (INF550)*, TD, 18h, M2, École polytechnique, France.

Pierre Lairez, *Les bases de la programmation et de l'algorithmique (INF411)*, TD, 40h, M1, École polytechnique, France.

9.2.2. Juries

- Frédéric Chyzak has been a member of the hiring jury at Inria (Concours CRCN 2018).

- Alin Bostan has served as a referee in the PhD jury of Timothée Pecatte, *Bornes inférieures et algorithmes de reconstruction pour des sommes de puissances affines*, ENS Lyon, July 11, 2018.

- Alin Bostan has served as an examiner in the PhD jury of Boris Djalal, *Formalisations en Coq pour la décision de problèmes en géométrie algébrique réelle*, Inria Sophia Antipolis, December 3, 2018.

- Alin Bostan has served as a member of the monitoring PhD committee of Youssef Abdelaziz, Univ. Paris 6.

- Alin Bostan has served as a member of the monitoring PhD committee of Manon Bertin, Univ. Rouen.

9.3. Popularization

9.3.1. Interventions

- Georges Gonthier testified before the *Mission d'information commune sur les blockchains* of the *Assemblée Nationale* in March.

- Georges Gonthier gave a public lecture and debate on blockchains at the *Institut Diderot* in September, jointly with M. Odonnat (Banque de France).

9.3.2. Internal action

- Georges Gonthier gave a presentation at the *Journées Scientifiques Inria 2018* in Bordeaux.

SUMO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Éric Badouel was the General Chair of CARI 2018, Stellenbosch, South Africa.
- Hervé Marchand is a member of the IFAC Technical Committees (TC 1.3 on Discrete Event and Hybrid Systems) since 2005. Hervé Marchand is a member of the steering committee of MSR (modélisation de systèmes réactifs) since 2012 and became the president of this steering committee in November 2017;
- Nathalie Bertrand and Nicolas Markey are members of the steering committee of the Summer School MOVEP (*Modélisation et Vérification des Processus Parallèles*).

10.1.1.2. Member of the Organizing Committees

Nicolas Markey coorganized the 6th Workshop SR 2018 (Oxford, 7-8 july 2018).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Hervé Marchand served on the Program Committee of WODES 2018
- Éric Badouel was member of the program committees of VECOS 2018, ATAED 2018, CARI 2018, ICTAC 2018.s
- Loïc Hélouët was member of the program Comitee of ACSD'2018.
- Thierry Jéron served on the Program Committees of the following international conferences: SAC-SVT 2018, TAP 2018.
- Nathalie Bertrand was a member of the PC of the following international events: FoSSaCS'18, ICALP'18, Highlights'18, MoRe'18 and RP'18.
- Ocan Sankur was a member of the PC of FORMATS'18 and SYNT'18.

10.1.2.2. Reviewer

In 2018, members of SUMO reviewed submissions for following conferences: VECOS, ATAED, CARI, ICTAC, CONCUR, SOFSEM, FOCS, ATVA, VMCAI, ICALP, SAC-SVT, TAP, ACSD, MFCS, STACS, WODES, HSCC, FSTTCS, CSL, AAMAS, TACAS, FoSSaCS, LICS, PODC, MORE, RP.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Éric Badouel is co-editor-in-Chief of ARIMA Journal.

10.1.3.2. Reviewer - Reviewing Activities

In 2018, members of SUMO reviewed submissions for following journals: Automatica, Fundamenta Informaticae, Information and Computation, The Scientific Annals of Computer Science, Science of Computer Programming, ACM Transactions on Computational Logic, ACM Transactions on Embedded Computing Systems, Journal of Systems and Software, Mathematical Review (MathSciNet), Journal of Discrete Event Dynamical Systems, Formal Methods in System Design, Software Testing, Verification and Reliability, Journal of Logic and Computation, IEEE Transactions on Automatic Control, PLoS one, Performance Evaluation, Artificial Intelligence, Journal of Logic and Algebraic Methods in Programming, Logical Methods in Computer Science, ACM Transactions on Modeling and Computer Simulation, Journal of Systems and Software.

10.1.4. Invited Talks

Loïc Hélouët was invited to give a talk at IIT Delhi on hyperlogics on November 2018.

10.1.5. Leadership within the Scientific Community

Nathalie Bertrand is the co-head of the *Groupe de Travail Verif* (together with Pierre-Alain Reynier (LIS, Marseille)) which is a part of *GDR Informatique Mathématique (GDR-IM)*.

10.1.6. Scientific Expertise

- Eric Badouel was member of the jury discerning the Ibni Prize.
- Thierry Jéron was a reviewer for ANR.
- Blaise Genest was a reviewer for Austrian Academy of Sciences.
- Nathalie Bertrand was a reviewer for Thelam Fundand FWO (Belgium).
- Éric Fabre was a reviewer for the Ministry of Research, in the "Credit Impot Recherche" initiative.

10.1.7. Research Administration

- Éric Fabre is the co-director (with Olivier Audouin, Nokia) of the joint lab of Nokia Bell Labs France and Inria. The lab has been running for 9 years and started in Nov. 2017 its 3rd phase of joint research teams. A series of 6 new just started in 2017, for a duration of 4 years. They cover topics like network virtualization, network management, information theory, (distributed) machine learning, network security. SUMO is involved in the joint team SAPIENS.
- Loïc Hélouët is a representative of researchers in the Comité de Centre of Inria Rennes. He is also part of the bureau of the Comité de Centre, leads a working group of the comité and contributes to another. In 2018, he joined the COST-GTRI, who is in charge of evaluation of international programs such as Inria associated teams. He is the principal investigator for the french side of the EQUAVE associated team. He leads the P22 projects with Alstom Transport and is responsible for Workpackage 2 of the Headwork ANR project.
- Hervé Marchand is chairman of the *Comission des utilisateurs des moyens informatiques* (CUMI) in Rennes and member of the *Action de développement technologique*(ADT) commission in Rennes.
- Thierry Jéron is a Member Committee Substitute for COST IC1402 ARVI (Runtime Verification beyond Monitoring). He is a member of the IFIP Working Group 10.2 on Embedded Systems. He is a member of the *Comité d'orientation scientifique* (COS) Prospective of Irisa Rennes and a member of the Comité de Centre of Inria Rennes. Since 2016 he is *référent chercheur* for the Inria-Rennes research center.
- Nathalie Bertrand is elected member of the Conseil National des Universités, section 27 (computer science).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Nathalie Bertrand, Advanced Algorithms (ALGO2), 20h, L3, Univ Rennes 1, France;

Licence: Nathalie Bertrand, Theory of Rational Languages (THLR), 26h, EPITA 2nd year, Rennes, France.

Licence: Loïc Hélouët, JAVA and algorithms, L2, 40h, INSA de Rennes, France.

Licence: Loïc Hélouët, Practical studies (development of a small project), 8h, INSA de Rennes, France.

Master: Loïc Hélouët, Algorithms, 2h, Agrégation, ENS Rennes, France;

Master: Nicolas Markey, Verification of Complex Systems (CSV), 10h, M2, Univ Rennes 1, France;

Master: Nicolas Markey, Algorithms, 14h, Agrégation, ENS Rennes, France;

Master : Nathalie Bertrand, Language Theory; Algorithms, 20h, Agrégation, ENS Rennes, France;

Master: Ocan Sankur, Verification of Complex Systems (CSV), 10h, M2, Univ Rennes 1, France;

Master: Ocan Sankur, *Travaux pratiques*, Analyse et Conception Formelle (ACF), 22h, M1, Univ Rennes 1, France;

Master: Éric Fabre, Models and Algorithms for Distributed Systems (MADS), 10h, M2, Univ Rennes 1, France;

Master: Éric Fabre Information Theory, 15h, M1, ENS Rennes, France.

10.2.2. Supervision

- PhD: Matthieu Pichené, Multi-level analysis in computational system biology : the case of HeLa cells under apoptosis treatment [2], Univ. Rennes 1. The defense took place on June 25, 2018, and was supervised by Blaise Genest.

- PhD: Engel Lefaucheux, Controlling information in probabilistic systems [1], Univ. Rennes 1. The defence took place on September 24, 2018, and was supervised by Nathalie Bertrand and Serge Haddad (ENS Paris-Saclay).

- PhD in progress: Hugo Bazille, Information flows in quantitative dynamic systems, started oct. 2016, Blaise Genest and Éric Fabre.

- PhD in progress: Sihem Cherrared, Diagnosis of multi-tenant programmable networks, started Dec. 2016, Éric Fabre, Gregor Goessler (Inria, Spades) and Sofiane Imadali (Orange).

- PhD in progress: Emily Clement, Verification and synthesis of control systems: efficiency and robustnes, started Dec. 2018, supervised by Thierry Jéron, Nicolas Markey, and David Mentré (Mitsubishi Electric)

- PhD in progress: Rodrigue Djeumen Djatcha, Collaborative Model for Urban Crowdsourcing, University of Douala, Cameroon, supervised by Éric Badouel.

- PhD in progress: Erij Elmajed, Diagnosis of reconfigurable systems, started March 2017, Éric Fabre and Armen Aghasaryan (Nokia).

- PhD in progress: Léo Henry, Optimal test-case generation with game theory, started Oct. 2018, supervised by Thierry Jéron and Nicolas Markey.

- PhD in progress: Karim Kecir, Régulation et robustesse des systèmes ferroviaires urbains, defense planned on the 1st semester 2019, supervised by Loïc Hélouët and Pierre Dersin (Alstom).

- PhD in progress: Anirban Majumdar, Games for distributed networks: models and algorithms, ENS Paris Saclay, France, supervised by Nathalie Bertrand and Patricia Bouyer.

- PhD in progress: Rituraj Singh, Data-centric Workflows for Crowdsourcing Applications, defense planned on February 2021, supervised by Loïc Hélouët.

- PhD in progress: Robert Fondze Jr Nsaibirni, A Guarded Attribute Grammar Based Model for User Centered, Distributed, and Collaborative Case Management – Case of the Disease Surveillance Process, University of Yaoundé, Cameroon, supervised by Éric Badouel.

- PhD in progress: The Anh Pham, Dynamic Formal Verification of High Performance Runtimes and Applications, started Nov. 2016, supervised by Thierry Jéron and Martin Quinson (Myriads, Inria Rennes).

- PhD in progress: Arthur Queffelec, Tradeoff between Robustness and Optimality in Strategic Reasoning, started Nov. 2018, supervised by Ocan Sankur and François Schwarzentruber (Logica, Irisa).

- PhD in progress: Victor Roussanaly, Efficient verification of timed systems, started Sep. 2017, supervised by Nicolas Markey and Ocan Sankur.

- PhD in progress: Suman Sadhukhan, Modelling and parameterized verification of mobile networks, started Oct. 2018, supervised by Nathalie Bertrand, Nicolas Markey, Ocan Sankur.

10.2.2.1. Master Students

- Ocan Sankur co-supervised the master's thesis (M2) of Arthur Queffelec.
- Thierry Jéron and Nicolas Markey supervised the master's thesis (M2) of Léo Henry.
- Nathalie Bertrand, Loïc Hélouët and Ocan Sankur supervised a training period (3 h/week during 6 months) for a group of master 1 students. The topic was application of model checking to assess the performance of regulation algorithms.
- Loïc Hélouët supervised the internship of master student Flavia Palmieri.

10.2.2.2. Other Internships

- L3 Intership of Mélanie Bratulic, supervised by Sophie Pinchinat (Logica, Irisa) and Thierry Jéron.

10.2.3. Juries

10.2.3.1. PhD Defenses

- Loïc Hélouët was an examiner in the PhD defense of Yann Duplouy, Ecole Normale Supérieure Paris-Saclay, November 2018.
- Thierry Jéron was a reviewer for the PhD thesis of Antoine EL HOKAYEM, Univ. Grenoble, December 2018.
- Nicolas Markey was a reviewer for the PhD thesis of Benedikt Brütsch (Decembre 20, 2018, Aachen, Germany; PhD student of Wolfgang Thomas); a reviewer for the PhD thesis of Petr Bezděk (on March 9, 2018, Masaryk University, Brno, Czech Republic; PhD student of Ivana Černá); and a reviewer for the PhD thesis of Nicola Gigante (January 2019, Udine, Italy; PhD student of Angelo Montanari).
- Nathalie Bertrand was an examiner for the PhD thesis of Philipp Schlehuber-Caissier, Sorbonne Université, December, 14 2018; a reviewer for the PhD thesis of Ľuboš Korenčiak, Masaryk University (Czech Republic), April 2018; and an examiner for the PhD thesis of Othmane Rezine, Uppsala University, January, 12 2018.

10.2.3.2. Other Juries

- Nathalie Bertrand was in the hiring committee for CRCN positions at Inria Rennes Bretagne Atlantique in 2018. She was also in the hiring committee for a Maitre de conférences position at Université Paris-Est Créteil in spring 2018.

10.2.4. Books

Nicolas Markey co-authored the chapter on *Model Checking Real-Time Systems* in the book *Handbook of Model Checking* [29].

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Éric Badouel is the co-director (with Moussa Lo, UGB, Saint-Louis du Sénégal) of LIRIMA, the Inria International Lab for Africa. He is scientific officer for the African and Middle-East region at Inria DPEI (European and International Partnership Department). He is member of the executive board of GIS SARIMA.

10.3.2. Articles and contents

- Ocan Sankur published an article on formal verification for the Turkish Academy of Sciences: "How to verify computer systems on which our lives depend" on Nov. 2018.

TAMIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of Conference Steering Committees

- Olivier Zendra is a founder and a member of the Steering Committee of ICOOOLPS (International Workshop on Implementation, Compilation, Optimization of OO Languages, Programs and Systems)

10.1.1.2. Chair of Conference Program Committees

- Olivier Zendra was co-chair of the Program Committee and the Organizing Committee of the 13th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems (ICOOOLPS 2018)

10.1.1.3. Member of the Conference Program Committees

- Stefano Sebastio was a PC member of IEEE SOCA 2018 and ICORES 2019
- Annelie Heuser was PC member of TCHES 2018, CARDIS 2018, PROOFS 2018, KANGACRYPT 2018.

10.1.1.4. Reviewer

- Stefano Sebastio was a reviewer for ICORES 2019, IEEE SOCA 2018, CRiSIS 2018, COORDINATION 2018, MeTRiD satellite workshop of ETAPS 2018

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

- Stefano Sebastio was a reviewer for EJOR (European Journal of Operational Research), OptimLett (Optimization Letters), JCST (Journal of Computer Science and Technology), IJCC (International Journal of Cloud Computing), IJDSN (International Journal of Distributed Sensor Networks)

10.1.3. Scientific Expertise

- Olivier Zendra is a CIR expert for the MENESR.
- Olivier Zendra participated to the CRHC and CRCN national juries for Inria as a member of Inria's evaluation committee.
- Olivier Zendra participated to a MCF recruiting committee for IUT de Vannes.
- Olivier Zendra is a member of the editorial board and co-author of the "HiPEAC 2019 Vision"
- Olivier Zendra is a member of Inria's evaluation committee.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Eduard Baranov: Master Méthodes d'analyse de risques, M2, Université de Bretagne Sud, France
- Tania Richmond: ENS Ker Lan.

10.2.2. Supervision

- PhD in progress: Christophe Genevey Metat (Rennes 1): , October 2018, Jean-Marc Jezequel, Benoit Gerard, Annelie Heuser and Clementine Maurice

- PhD in progress : Olivier Descourbe, On Code Obfuscation, October 2016, Axel Legay and Fabrizio Biondi.

- PhD in progress : Alexandre Gonsalvez, On Obfuscation via crypto primitives, April 2016, Axel Legay and Caroline Fontaine.

- PhD in progress : Nisrine Jafri (Rennes1), On fault Injection detection with MC of Binary code, December 2015, Axel Legay and Jean-Louis Lanet.

- PhD in progress : Routa Moussaileb, From Data Signature to Behavior Analysis, 2017, Nora Cuppens and Jean-Louis Lanet

- PhD in progress : Tristan Ninet (Rennes 1), Vérification formelle d'une implémentation de la pile protocolaire IKEv2, December 2016, Axel Legay, Romaric Maillard and Olivier Zendra

- PhD in progress: Lamine Nouredine (Rennes1); Developing new packing detection techniques to stop malware propagation, November 2017, Axel Legay and Annelie Heuser.

- PhD in progress : Aurélien Palisse, Observabilité de codes hostiles, 2015, Jean-Louis Lanet

- PhD in progress: Emmanuel Tacheau (Rennes1); Analyse et détection de malwares au moyen de méthodes d'analyse symbolique, September 2017, Axel Legay, Fabrizio Biondi, Alain Fiocco.

- PhD in progress : Aurélien Trulla, Caractérisation de malware Android par suivi de flux d'information et nouvelles techniques d'évasion, 2016, Valerie Viet Triem Tong and Jean-Louis Lanet

- PhD in progress: Alexander Zhdanov (Rennes 1): Modular Automated Syntactic Signature Extraction (MASSE), December 2017, Axel Legay, Fabrizio Biondi, François Déchelle and Olivier Zendra.

10.2.3. Juries

- Annelie Heuser was a referee for the PhD defense of Eleonora Cagli (CEA - Commissariat à l'Energie atomique et aux Energies alternatives, Grenoble)

- Annelie Heuser was a referee for the PhD defense of Damien Marion (Telecom ParisTech, CIFRE with Secure-IC)

<p style="text-align: center; color: red;">**TEA Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

Jean-Pierre Talpin served as Finance Chair and Local Organizer of the 16th J16th ACM-IEEE conference on methods and models for system design in Beijing, China (http://memocode.irisa.fr/2018) and its 1st embedded workshop on formal methods in China's industry.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Jean-Pierre Talpin served the program committee of:

- LCTES'18, 21th. ACM SIGPLAN-SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems
- SAC'19, 34rd. ACM SIGAPP Symposium on Applied Computing
- SCOPES'18, 21th. International Workshop on Software and Compilers for Embedded Systems

10.1.2.2. Reviewer

Thierry Gautier reviewed articles for *IEEE Access* and *Science of Computer Programming*.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Jean-Pierre Talpin is Associate Editor with the ACM Transactions for Embedded Computing Systems (TECS).

10.1.3.2. Reviewer - Reviewing Activities

Thierry Gautier reviewed articles for *IEEE Access* and *Science of Computer Programming*.

10.1.4. Invited Talks

Jean-Pierre Talpin gave a keynote entitled "Refinement types for system design" at the Symposium on Dependable Software Engineering (SETTA'17) in Changsha, October 25.

Thierry Gautier and Albert Benveniste gave a seminar on "The Signal synchronous language: the principles beyond the language and how to exploit and extend them", in March 2018 at the Collège de France, in Gérard Berry's 2017-2018 lecture course (https://www.college-de-france.fr/site/gerard-berry/seminar-2018-03-07-17h30.htm).

10.1.5. Expertise

Jean-Pierre Talpin served as vice-president of CES 25 (Computer Science Evaluation Committee) of ANR.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Jean-Pierre Talpin gave a seminar at Beihang Science Park on June 11th , at ISCAS on May 2nd and on June 14th, and at Beida (PKU) on December 7th. Jean-Pierre Talpin gave an introductory course on model-checking at Nankai University, May 7-8th.

10.2.2. Supervision

Jean-Pierre Talpin co-supervises the PhD Theses of Simon Lunel, Liangcong Zhang, Jean-Joseph Marty and Lucas Franceschino

10.2.3. Juries

Jean-Pierre Talpin served as reviewer at the HDR Thesis defense of Katell Morin, entitled "Assertions and hardware design", which took place at TIMA, Grenoble, on November 15.

Jean-Pierre Talpin served as reviewer at the PhD Thesis defense of Guillaume Plassan, entitled "Conclusive formal verification of clock domain crossing properties", which took place at TIMA, Grenoble, on March 28.

TOCCATA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

S. Boldo, president of the 29th "Journées Francophones des Langages Applicatifs" (JFLA 2018)

J.-C. Filliâtre, scientific chair and co-organizer of EJCP (École Jeunes Chercheurs en Programmation du GDR GPL) at Lyon on June 25–29, 2018. 5 days / 8 lectures / 25 participants. https://ejcp2018.sciencesconf.org/

D. Gallois-Wong, co-chair of the Doctoral Programme of the 11th Conference on Intelligent Computer Mathematics (CICM 2018).

10.1.1.2. Member of the Organizing Committees

G. Melquiond, organizer of the 10th "Rencontres Arithmétiques du GDR Informatique-Mathématique" (RAIM 2018)

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

S. Boldo, program chair of the 29th "Journées Francophones des Langages Applicatifs" (JFLA 2018).

S. Boldo, program co-chair of the 26th IEEE Symposium on Computer Arithmetic (ARITH 2019), Kyoto, Japan.

10.1.2.2. Member of the Conference Program Committees

S. Boldo, PC of the 25th IEEE Symposium on Computer Arithmetic (ARITH 2018)

S. Boldo, PC of the 7th ACM SIGPLAN Conference on Certified Programs and Proofs (CPP 2018)

S. Boldo, PC of the Tenth NASA Formal Methods Symposium (NFM 2018)

S. Boldo, PC of the Eleventh NASA Formal Methods Symposium (NFM 2019)

J.-C. Filliâtre, PC of the 18th International Workshop on Automated Verification of Critical Systems (AVOCS 2018)

J.-C. Filliâtre, PC of the 10th International Conference on Interactive Theorem Proving (ITP 2019)

J.-C. Filliâtre, PC of the European Symposium on Programming (ESOP 2020)

J.-C. Filliâtre, PC of the Symposium on Languages, Applications and Technologies (SLATE 2018)

G. Melquiond, PC of the 26th IEEE Symposium on Computer Arithmetic (ARITH 2019)

G. Melquiond, PC of the 10th International Conference on Interactive Theorem Proving (ITP 2019)

10.1.2.3. Reviewer

The members of the Toccata team have reviewed papers for numerous international conferences.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

G. Melquiond, member of the editorial board of *Reliable Computing*.

J.-C. Filliâtre, member of the editorial board of *Journal of Functional Programming*.

10.1.3.2. Reviewer - Reviewing Activities

The members of the Toccata team have reviewed numerous papers for numerous international journals.

10.1.4. Invited Talks

J.-C. Filliâtre, invited speaker at the 8th International Conference on Interactive Theorem Proving (ITP 2018).

J.-C. Filliâtre, invited speaker at the Formal Integrated Development Environment (F-IDE 2018).

10.1.5. Leadership within the Scientific Community

S. Boldo, elected chair of the ARITH working group of the GDR-IM (a CNRS subgroup of computer science) with J. Detrey (Inria Nancy).

J.-C. Filliâtre, chair of IFIP WG 1.9/2.15 verified Software.

10.1.6. Scientific Expertise

G. Melquiond, member of the scientific commission of Inria-Saclay, in charge of selecting candidates for PhD grants, Post-doc grants, temporary leaves from universities ("délégations").

C. Marché, member of the "Bureau du Comité des Projets" of Inria-Saclay (includes examination of proposals for creation of new Inria project-teams for Saclay research center).

S. Boldo, member of the program committee for selecting postdocs of the maths/computer science program of the Labex mathématique Hadamard.

S. Boldo, member of the national Inria admission committee.

J.-C. Filliâtre, grading the entrance examination at X/ENS ("*option informatique*").

C. Marché, scientific expert for project evaluation, Dutch Research Council (NWO https://www.nwo.nl/en), The Netherlands, 2018.

C. Marché, scientific expert for project evaluation, National Science Centre (Narodowe Centrum Nauki - NCN http://www.ncn.gov.pl/), Poland, 2018.

C. Marché, scientific expert for promotion of academic staff, Chalmers University of Technology, Sweden, 2018.

S. Boldo, member of a hiring committee for an associate professor position in computer science at University Paris Diderot (IRIF laboratory).

C. Marché, member of DigiCosme committee for research and innovation (selection of projects for working groups, post-doc grants, doctoral missions, invited professors)

10.1.7. Research Administration

G. Melquiond, member of the committee for the monitoring of PhD students ("*commission de suivi doctoral*").

S Boldo, member of the CLFP ("*commission locale de formation permanente*").

S. Boldo, member of the CCD, ("*commission consultative des doctorants*").

S. Boldo will be deputy scientific director (DSA) of Inria Saclay research center from January 1st, 2019

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

J.-C. Filliâtre, *Langages de programmation et compilation*, 25h, L3, École Normale Supérieure, France.

J.-C. Filliâtre, *Les bases de l'algorithmique et de la programmation*, 15h, L3, École Polytechnique, France.

J.-C. Filliâtre, *Compilation*, 18h, M1, École Polytechnique, France.

G. Melquiond, *Programmation C++ avancée*, 12h, M2, Université Paris-Saclay, France.

10.2.2. Supervision

PhD: M. Clochard, "Methods and tools for specification and proof of difficult properties of sequential programs" [11], Université Paris-Saclay & Université Paris-Sud, March 30th 2018, supervised by C. Marché and A. Paskevich.

PhD: D. Declerck, "Verification via Model Checking of Parameterized Concurrent Programs on Weak Memory Models" [12], Université Paris-Saclay & Université Paris-Sud, Sep 24th 2018, supervised by F. Zaïdi (LRI) and S. Conchon.

PhD: M. Pereira, "Tools and Techniques for the Verification of Modular Stateful Code" [127], Université Paris-Saclay & Université Paris-Sud, Dec 10th 2018, supervised by by J.-C. Filliâtre.

PhD in progress: M. Roux, "Model Checking de systèmes paramétrés et temporisés", since Sep. 2015, supervised by Sylvain Conchon.

PhD in progress: A. Coquereau, "[ErgoFast] Amélioration de performances pour le solveur SMT Alt-Ergo : conception d'outils d'analyse, optimisations et structures de données efficaces pour OCaml", since Sep. 2015, supervised by S. Conchon, F. Le Fessant et M. Mauny.

PhD in progress: F. Faissole, "Stabilité(s): liens entre l'arithmétique flottante et l'analyse numérique", since Oct. 2016, supervised by S. Boldo and A. Chapoutot.

PhD in progress: R. Rieu-Helft, "Développement et vérification de bibliothèques d'arithmétique entière en précision arbitraire", since Oct. 2017, supervised by G. Melquiond and P. Cuoq (TrustIn-Soft).

PhD in progress: D. Gallois-Wong, "Vérification formelle et filtres numériques", since Oct. 2017, supervised by S. Boldo and T. Hilaire.

PhD in progress: Q. Garchery, "Certification de la génération et de la transformation d'obligations de preuve", since Oct. 2018, supervised by C. Keller, C. Marché and A. Paskevich.

10.2.3. Juries

C. Marché: examiner of the habilitation thesis of J. Signoles, "From Static Analysis to Runtime Verification with Frama-C and E-ACSL", Université Paris-Sud, July 9th 2018

C. Marché: examiner of the habilitation thesis of N. Kosmatov, "Combinations of Analysis Techniques for Sound and Efficient Software Verification", Université Paris-Sud, Nov 20th 2018

C. Marché: president of the PhD defense of J.-C. Léchenet, "Certified Algorithms for Program Slicing", Université Paris-Saclay, July 19th 2018

C. Marché: reviewer of the PhD defense of C. Laurenço, "Single-assignment Program Verification", Universidad do Minho, Portugal, July 2nd 2018

S. Boldo: reviewer and president of the PhD defense of B. Djalal, "Formalisation en Coq pour la décision de problèmes en géométrie algébrique réelle", Université Côte d'Azur, December 3rd 2018

S. Boldo: reviewer of the PhD of R. Picot, "Amélioration de la fiabilité numérique de codes de calcul industriels", Sorbonne Université, March 27th 2018

S. Boldo: president of the PhD defense of S. Covanov, "Algorithmes de multiplication : complexité bilinéaire et méthodes asymptotiquement rapides", Université de Lorraine, June 5th 2018

S. Boldo: president of the PhD defense of G. Davy, "Génération de codes et d'annotations prouvables d'algorithmes de points intérieurs à destination de systèmes embarqués critiques", Université de Toulouse, December 6th 2018

J.-C. Filliâtre: licentiate doctorate examination at Chalmers University of Technology, Sweden, August 23, 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

S. Boldo is the scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria.

She was also responsible (with M. Quet of the SCM) for the 2018 "Fête de la science" on October 11th 2018. About 260 teenagers were welcomed on 8 activities ranging from unplugged activities with Duplo construction toys to programming, and from applied mathematics to theoretical computer science.

10.3.2. Interventions

S. Boldo animated an activity at the Inria "Fête de la science" on October 11th 2018 the whole day long.

S. Boldo animated an activity and gave talks at the LRI "Fête de la science" on October 12th 2018.

S. Boldo gave a talk during at a *Girls can code* week on August 31st 2018 in Paris.

S. Boldo will give a talk to about 180 teenagers at the Marie Curie high school in Sceaux on February 8th, 2019

J.-C. Filliâtre gave a talk at *Mathematical Summer in Paris* on July 16, 2018.

J.-C. Filliâtre gave a talk *Parcours d'un informaticien* at the seminar *"Info Pour Tous"* (high school and undergraduate students). Video on YouTube. http://seminairespourtous.ens.fr/ipt

S. Dailler and C. Marché gave a demonstration of the SPARK environment, at the DigiHall Day (May 22 2018 https://www.irt-systemx.fr/evenements/digihall-2018/). DigiHall is a cluster of digital technologies of Paris-Saclay. More than 800 industrial and institutional decision-makers and academic counterparts took part in this first-of-its-kind event.

C. Marché presented the joint laboratory ProofInUse at the LabCom Colloquium (Maison de la Chimie, Paris, Sep. 27 2018 http://ptolemee.com/colloque-labcom/index.html) organized by ANR, with participation of numerous actors from both academia and industry.

10.3.3. Internal action

S. Boldo demonstrated popularization by an unplugged activity to all the new Inria staff at the welcome days on June 7th 2018

S. Boldo animated an unplugged activity to the AER service (team assistants) on July 3rd 2018

S. Boldo trained colleagues on unplugged activities for the "Fête de la science" (5 sessions of about 1h30)

S. Dailler and C. Marché gave a presentation of the joint laboratory ProofInUse, together with a demonstration of the SPARK environment, at the Software Day of the DigiCosme Labex (Saclay, June 7 2018 https://digicosme.lri.fr/tiki-read_article.php?articleId=256)

10.3.4. Creation of media or tools for science outreach

S. Boldo is supervising the popularization mission of C. Patte (M3DISIM team) in order to create a new popularization activity for teenagers in 2019.

C. Marché, main contributor of the site for the Why3 tool inside the Inria Saclay Virtual Showroom. Includes a short video introduction of Why3 for beginners using the TryWhy3 Web interface http://why3.lri.fr/try/

<p style="text-align:center">**VERIDIS Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Organization of Scientific Events

Jasmin Blanchette co-organized the first *Verification and Deduction Mentoring Workshop* (VDMW 2018) as part of the Federated Logic Conferences (FLoC 2018) in Oxford, UK. He also coorganized two workshops at VU Amsterdam: the First European Workshop on *Higher-Order Automated Reasoning* (Matryoshka 2018) and the Fourth International *Workshop on Automated (Co)inductive Theorem Proving* (WAIT 2018).

Igor Konnov and Stephan Merz were organizers of the fifth *Workshop on Formal Reasoning in Distributed Algorithms* (FRIDA 2018) as part of the Federated Logic Conference (FLoC 2018) in Oxford, UK.

Stephan Merz was the main organizer of the TLA$^+$ Community Meeting as part of the Federated Logic Conference (FLoC 2018) in Oxford, UK.

Thomas Sturm co-organized two international interdisciplinary workshops on *Symbolic Methods for Biological Networks* at the University of Bonn, Germany.

The International Summer School on Verification Techniques, Systems, and Applications (VTSA) has been organized since 2008 in the Greater Region (Nancy, Saarbrücken, Luxembourg, Liège, and Koblenz), and Stephan Merz and Christoph Weidenbach are co-organizers of VTSA. In 2018, VTSA took place in August in Nancy, France.

9.1.2. Program Committees

9.1.2.1. Chair of Conference Program Committees

Igor Konnov served as a chair of the *Artifact Evaluation Committee* at *Computer-Aided Verification* (CAV 2018).

Dominique Méry was a co-chair of the program committee of the 8th International Conference on Model and Data Engineering (MEDI 2018), organized in Marrakesh, Morocco, in October 2018.

Uwe Waldmann co-chaired the program committee of Deduktionstreffen 2018, the annual meeting of the Interest Group for Deduction Systems (FGDedSys) of the AI Chapter of the German Society of Informatics.

9.1.2.2. Member of Conference Program Committees

Jasmin Blanchette served on the program committees of the *NASA Formal Methods* Symposium (NFM 2018), the Conference on *Computer-Aided Verification* (CAV 2018), the *International Conference on Tests and Proofs* (TAP 2018), the *International Joint Confrence on Automated Reasoning* (IJCAR 2018), the Interational Conferene on *Interactive Theorem Proving* (ITP 2018), the ACM SIGPLAN International Conference on *Certified Programs and Proofs* (CPP 2018), and the Conference on *Artificial Intelligence and Theorem Proving* (AITP 2018). He also served on the workshop committees for the *International Workshop on the Implementation of Logics* (IWIL 2018) and the *Deduktionstreffen* 2018.

Pascal Fontaine served on the program committees of the *International Joint Confrence on Automated Reasoning* (IJCAR 2018), the *International Workshop on the Implementation of Logics* (IWIL 2018), the *International Workshop on Practical Aspects of Automated Reasoning* (PAAR 2018), the *Satisfiability Checking and Symbolic Computation* Workshop (SC-Square 2018).

Igor Konnov served on the program committees of *ACM Symposium on Principles of Distributed Computing* (PODC 2018), *Formal Methods in Computer-Aided Design* (FMCAD 2018), *International Conference on Verification and Evaluation of Computer and Communication Systems* (VECoS 2018), *International Symposium on Formal Approaches to Parallel and Distributed Systems* (4PAD 2018), *Workshop on Methods and Tools for Rigorous System Design* (MeTRiD 2018), and *Workshop on Program Semantics, Specification, and Verification* (PSSV 2018).

Dominique Méry served on the program committees of the *International Conference on Engineering of Complex Computer Systems* (ICECCS 2018), the *International Symposium on Formal Methods* (FM 2018), the *International Conference on Formal Engineering Methods* (ICFEM 2018), the *International Conference on Integrated Formal Methods* (iFM 2018), the *International Conference on ASM, Alloy, B, TLA, VDM and Z* (ABZ 2018), the *Workshop on Formal Methods for Interactive Systems* (FMIS 2018), the *Workshop in Formal Models for Mastering Multifaceted Systems* (REMEDY 2018), the *Workshop on Formal Approaches for Advanced Computing Systems* (FAACS 2018), and the *Workshop on Software Engineering in Healthcare Systems* (SEHS 2018).

Stephan Merz served on the program committees of the *International Conference on ASM, Alloy, B, TLA, VDM and Z* (ABZ), the *International Conference on Formal Methods for Industrial Critical Systems* (FMICS), the *International Conference on Formal Engineering Methods* (ICFEM), the *International Symposium on Dependable Software Engineering: Theories, Tools, and Applications* (SETTA), the *International Workshop on Automated Verification of Critical Systems* (AVoCS), and the *International Workshop about Sets and Tools* (SETS).

Sorin Stratulat served on the program committees of the *International Symposium on Symbolic and Numeric Algorithms for Scientific Computing* (SYNASC 2018), the *International Conference on Information Assurance and Security* (IAS 2018), and the *International Conference on Computational Intelligence in Security for Information Systems* (CISIS 2018).

Thomas Sturm served on the program committees of *Automated Deduction in Geometry* (ADG 2018), *Computer Algebra in Scientific Computation* (CASC 2018), the *International Joint Confrence on Automated Reasoning* (IJCAR 2018), the *Satisfiability Modulo Theories* Workshop (SMT 2018), the *Satisfiability Checking and Symbolic Computation* Workshop (SC-Square 2018).

Uwe Waldmann served on the program committee of the *International Joint Confrence on Automated Reasoning* (IJCAR 2018).

Christoph Weidenbach served on the program committee of the *International Joint Conference on Automated Reasoning* (IJCAR 2018) and the senior program committee of *International Joint Conference on Artificial Intelligence* (IJCAI 2018).

9.1.3. Journals

9.1.3.1. Member of Editorial Boards

Jasmin Blanchette and Stephan Merz served as guest editors for the special issue on *Interactive Theorem Proving* (ITP 2016) of the *Journal of Automated Reasoning*.

Dominique Méry is Book Reviews Editor for *Formal Aspects of Computing*.

Thomas Sturm is an editor of the *Journal of Symbolic Computation* (Elsevier) since 2003 and an editor of *Mathematics in Computer Science* (Springer) since 2013.

Christoph Weidenbach is a member of the editorial board of the *Journal of Automated Reasoning* (Springer). He also served as an editor on the special issue on *Automated Reasoning Systems* of JAR.

9.1.4. Invited Talks

Jasmin Blanchette was invited to give a seminar talk at the University of Edinburgh on the IsaFoL (Isabelle Formalization of Logic) project.

Marie Duflot-Kremer was an invited speaker at EduCode 2018 in Brussels, Belgium, where she presented the Class'Code project.

Pascal Fontaine was an invited speaker at Deduktionstreffen 2018 in Luxembourg. He was an invited lecturer at the EPIT 2018 Software Verification Spring School in Aussois, France and at the SAT-SMT-AR school 2018 in Manchester, UK.

Igor Konnov was invited to give a tutorial at the Dagstuhl Seminar 18211 "Formal Methods and Fault-Tolerant Distributed Computing: Forging an Alliance" in Dagstuhl, Germany. He was also invited to give talks at the Workshop on Verification of Distributed Systems, Essaouira, Morocco, and Helmut Veith Memorial Workshop in Obertauern, Austria. Furthermore, he gave a talk (together with Josef Widder) on one of the research highlights of the RISE project at Alpine Verification Meeting in Wagrain, Austria.

Stephan Merz was invited to give a seminar talk at EPFL Lausanne on the use of auxiliary variables for proving refinement between TLA$^+$ specifications.

Thomas Sturm was an invited speaker at ISSAC 2018 in New York. He was furthermore invited to give a lecture at the graduate school for mathematics at RWTH Aachen University, Germany, and a seminar talk at Johannes Kepler University Linz, Austria.

Uwe Waldmann was invited to give a tutorial on Saturation Theorem Proving at the SAT/SMT/AR Summer School 2018 in Manchester, UK.

Christoph Weidenbach gave an invited talk on Robust Automated Reasoning at the 2018 Innsbruck Symposium on Integration of Automated Deduction and Interactive Theorem Proving.

9.1.5. Leadership within the Scientific Community

Jasmin Blanchette is a regular member of the CADE (*Conference on Automated Deduction*) Inc. Board of Trustees. He is also a regular member of the steering committees for the ITP (*Interactive Theorem Proving*) and TAP (*Tests and Proofs*) conference series.

Marie Duflot-Kremer is an elected member of the council of SIF, the French association for computer science.

Pascal Fontaine is an SMT-LIB manager, together with Clark Barrett (Stanford University) and Cesare Tinelli (University of Iowa). He is a regular member of steering committees for the FroCoS (*Frontiers of Combining Systems*) conference series, and for the SC-Square (*Satisfiability Checking and Symbolic Computation* workshop series. He is ex-officio member of the CADE (*Conference on Automated Deduction*) Inc. Board of Trustees. He is an elected member of the steering committee for the SMT (*Satisfiability Modulo Theories*) workshop series.

Stephan Merz is a member of the IFIP Working Group 2.2 on *Formal Description of Programming Concepts*, a member of the committee for the SIF thesis award (*Prix Gilles Kahn*), and a member of the steering committee of the workshop on Automated Verification of Critical Systems (AVoCS).

Thomas Sturm is a member at large of the steering committee of the ACM conference series *International Symposium on Symbolic and Algebraic Computation (ISSAC)*.

Christoph Weidenbach is the president of CADE and a member of the steering committee of IJCAR.

9.1.6. Scientific Expertise

Dominique Méry and Stephan Merz served as experts for ANR, the French national research agency.

Christoph Weidenbach served as an expert for the German Science Foundation (DFG).

9.1.7. Research Administration

Marie Duflot-Kremer is an elected member of the council of LORIA. She was a member of the hiring committee for an associate professor at Université Paris-Est-Créteil.

Stephan Merz is the delegate for scientific affairs at the Inria Nancy – Grand Est research center and a member of Inria's Evaluation Committee. In 2018, he was a member of the hiring committees of senior researchers at Inria and of junior researchers at Inria Paris. He is also a member of the *bureau* of the computer science committee of the doctoral school IAEM Lorraine and of the executive committee of the project on citizens' trust in the digital world (DigiTrust) funded by *Lorraine Université d'Excellence*.

Uwe Waldmann is a member of the admissions committee for scholarships of the International Max-Planck Research School for students aiming at a master's degree.

Christoph Weidenbach is a member of the selection committee of the Saarbrücken Graduate School in Computer Science.

9.2. Teaching, Supervision, PhD Committees

9.2.1. Teaching

Licence: Marie Duflot-Kremer is the head of the first year for computer science students at the Faculty for Science and Technology of Université de Lorraine.

Licence: Marie Duflot-Kremer, Algorithmique et Programmation 1, 60 HETD L1 Mathématiques, Informatiques, Sciences pour l'Ingénieur, Université de Lorraine, France.

Licence: Marie Duflot-Kremer, Introduction au Web, 30 HETD L1 Mathématiques, Informatiques, Sciences pour l'Ingénieur, Université de Lorraine, France.

Licence: Marie Duflot-Kremer, Méthodologie du Travail Universitaire, 24 HETD, L1 Informatique, Université de Lorraine, France.

Licence: Marie Duflot-Kremer, Bases de données 2, 20 HETD, L2 Informatique, Université de Lorraine, France.

Licence: Marie Duflot-Kremer, Programmation Web, 10 HETD, L3 Informatique, Université de Lorraine, France.

Licence: Pascal Fontaine, Structure des ordinateurs, 47 HETD, L2 MIASHS, parcours MIAGE, Université de Lorraine, France.

Licence: Sorin Stratulat, Bases de données, 32 HETD, L1, ISFATES, France.

Master: Jasmin Blanchette, Logical Verification, 36 HETD, M1/M2, Vrije Universiteit Amsterdam, the Netherlands.

Master: Marie Duflot-Kremer, Vérification de systèmes, 30 HETD, M1 Informatique, Université de Lorraine, France.

Master: Marie Duflot-Kremer and Stephan Merz, Elements of model checking, 40 HETD, M2 Informatique and Master Erasmus Mundus DESEM, Université de Lorraine, France.

Master: Marie Duflot-Kremer and Stephan Merz, Conception et architectures distribuées, 24 HETD M1 informatique, Université de Lorraine, France.

Master: Pascal Fontaine, Réseaux, 50 HETD, M1 MIAGE, Université de Lorraine, France.

Master: Pascal Fontaine is the head of the MIAGE degree at Université de Lorraine.

Master: Dominique Méry, Models and algorithms, 60 HETD, M1, Telecom Nancy, Université de Lorraine, France.

Master: Dominique Méry, Formal model engineering, 24 HETD, M2, Telecom Nancy, Université de Lorraine, France.

Master: Dominique Méry, Modeling Systems, 30 HETD, M2, Telecom Nancy, Université de Lorraine, France.

Master: Dominique Méry, Modeling Systems, 36 HETD, M2 Informatique and Master Erasmus Mundus DESEM, Université de Lorraine, France.

Master: Dominique Méry, Event-B modeling, 8 HETD, NUI Maynooth, Ireland.

Master: Sorin Stratulat, Analyse et conception de logiciels, 105.5 HETD, M1 Informatique, Université de Lorraine, France.

Master: Sorin Stratulat, Génie Logiciel, 30 HETD, M2 Informatique, Université de Lorraine, France.

Master: Uwe Waldmann, Automated Reasoning I, 90 HETD, Universität des Saarlandes, Germany.

Master: Sophie Tourret and Uwe Waldmann, Automated Reasoning II, 60 HETD, Universität des Saarlandes, Germany.

9.2.2. Supervision

HdR: Pascal Fontaine, Satisfiability Modulo Theories, Université de Lorraine, 8 October 2018.

PhD: Souad Kherroubi, Un cadre formel pour l'intégration de connaissances du domaine dans la conception des systèmes: Application au formalisme Event-B, Université de Lorraine, 21 December 2018. Supervised by Dominique Méry.

PhD: Andreas Teucke, *An Approximation and Refinement Approach to First-Order Automated Reasoning*, Saarland University. Supervised by Christoph Weidenbach, defended in May 2018.

PhD in progress: Martin Bromberger, Arithmetic Reasoning, Saarland University. Supervised by Thomas Sturm and Christoph Weidenbach, since July 2014.

PhD in progress: Margaux Duroeulx, SAT Techniques for Reliability Assessment, Université de Lorraine. Supervised by Nicolae Brînzei, Marie Duflot-Kremer, and Stephan Merz, since October 2016.

PhD in progress: Daniel El Ouraoui, Higher-Order SMT, Université de Lorraine. Supervised by Jasmin Blanchette, Pascal Fontaine, and Stephan Merz, since November 2017.

PhD in progress: Mathias Fleury, Formalization of Logical Calculi, Saarland University. Supervised by Christoph Weidenbach and Jasmin Blanchette, since September 2015.

PhD in progress: Alexis Grall, Integration of a modeling language and a language for programming distributed systems, Université de Lorraine. Supervised by Horatiu Cirstea and Dominique Méry, since October 2018.

PhD in progress: Nicolas Schnepf, Orchestration and Verification of Security Functions for Smart Environments, Université de Lorraine. Supervised by Rémi Badonnel, Abdelkader Lahmadi, and Stephan Merz, since October 2016.

PhD in progress: Hans-Jörg Schurr, Higher-Order SMT, Université de Lorraine. Supervised by Jasmin Blanchette, Pascal Fontaine, and Stephan Merz, since November 2017.

PhD in progress: Marco Voigt, Decidable Hierarchic Combinations, Saarland University. Supervised by Thomas Sturm and Christoph Weidenbach, since November 2013.

Jasmin Blanchette supervises two PhD students at VU Amsterdam and was a supervisor of Anders Schlichtkrull at TU Denmark, who defended in 2018. Igor Konnov co-supervises three PhD students at TU Wien. These PhD students are not members of VeriDis.

9.2.3. Thesis committees

Pascal Fontaine served as a reviewer in the thesis committees for Ahmed Irfan at Fondazione Bruno Kessler and University of Trento, Italy, for Vu Xuan Tung at JAIST, Japan, and for Mêton Mêton Atindehou at Université Catholique de Louvain (UCL), Belgium.

Stephan Merz served as a reviewer for the PhD theses of Bin Fang (Univ. Paris Diderot and East China Normal University) and Hai Nguyen Van (Univ. Paris Saclay). He was an examiner for the PhD committees of Evgeny Kotelnikov (Chalmers Univ.) and for the habilitation thesis of Nikolai Kosmatov (CEA Saclay).

Thomas Sturm served as a reviewer in the thesis committee for Ulrich Loup at RWTH Aachen University, Germany.

9.3. Popularization

9.3.1. Articles and Contents

In addition to the creation of unplugged computer science activities, Marie Duflot-Kremer produces documents to help others, together with videos already produced in collaboration with Inria, master and practise on their own those activities.

An article was accepted at the Educode conference on the analysis of unplugged vs. computer based programming learning [32].

9.3.2. Education

Marie Duflot-Kremer is involved in various training activities for high school teachers. She is involved in two IREM (Institute for Research on Mathematics Education) groups that produced a training session, she gave workshops in the regional APMEP (Association of Math Teachers from Public Education) day and during the "Journée ISN" (organized for teachers involved in computer science courses in high school). She also gave a conference talk and a workshop on a one day training session for teachers at the Science Museum "Le Vaisseau" in Strasbourg.

Thomas Sturm and Christoph Weidenbach co-organized the scientific track of the training program of the German team for the International Olympiad in Informatics (IOI).

9.3.3. Interventions

Marie Duflot-Kremer is involved in many outreach events where computer science is shared with a very wide audience, from 3 to 80+ years old, including "Journée des cordées de la réussite" and "Journée d'immersion" (for high school students), Fête de La Science (locally and in Paris with Inria including a theater play performed at Cité des Sciences), Math en Jeans (a program where high school students discover research through simple mathematics or computer science problems).

She gave a two-day seminar at Université Paris Nanterre to Law teachers presenting computer networks and computer security, and a talk at the "Journée GDR IA" to show to AI researchers how to present their research to a wide audience through unplugged activities.

Marie Duflot-Kremer was also one of the trainers at a three-day summer school on computer science outreach held by Société Informatique de France. During these three days the trainees discovered the concept, practised existing activities and even created their own (on subject as diverse as information leakage, Turing machines or binary integer encoding).

Concerning events organized by Inria, she took part in the Ada Lovelace Day organized by Inria Nancy – Grand Est (NGE), on three aspects: organization of the day (both scientific and practical), training of colleagues prior to the event, and supervising workshops during the event. She is also part of the FAN (Formation des Ambassadeurs du Numérique) project organised by Inria NGE and "Les Petits Débrouillards" that will, in addition to the Class'Code MOOC, train people involved in education (in school or outside) through 5 days of training seminar. She also took part in two events related to Class'Code in Bordeaux (May) and Poitiers (November), introducing the motivations of unplugged activities and their practical aspects in workshops.

9.3.4. Internal Action

Marie Duflot-Kremer is part of the "Info Sans Ordi" group affiliated to Société Informatique de France, where people share and design new unplugged activities to introduce computer science concepts.

9.3.5. Creation of Media or Tools for Science Outreach

Marie Duflot-Kremer and the Inria media team recorded three new videos presenting unplugged activities, that complement the 10 videos already existing and available on the Pixees Youtube account. She is a member of the GT7F working group (led by Interstice/Inria) that has produced a card game presenting important computer science figures (to be released in early 2019).

ACUMES Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- P. Goatin is member of the the scientific committee of the annual seminar CEA-GAMNI *"Numerical fluid-mechanics"*.
- P. Goatin was member of the scientific committee of *"HYP2018 - Conference on Hyperbolic Problems: Theory, Numerics, and Applications"*, Penn State (USA), June 2018.
- P. Goatin was member of the scientific committee of *"PED2018 - Conference on Pedestrian and Evacuation Dynamics"*, Lund (Sweden), August 2018.

9.1.1.2. Member of the Organizing Committees

- P. Goatin and M.L. Delle Monache (Inria Grenoble) organized the mini-symposium *"Modélisation et gestion du trafic routier"*, CANUM 2018 - 44e Congrès National d'Analyse Numérique, Cap d'Agde (France), May 2018.
- P. Goatin and J. Pettré (Inria Rennes) organized the workshop *"Modélisation du piéton et de la foule en mouvement"*, Saclay (France), November 2018.
- P. Goatin was member of the organizing committee of the workshop *"Mathematical modeling with measures: where applications, probability and determinism meet"*, Lorentz Center, Leiden (The Netherlands), December 2018.
- R. Duvigneau and A. Habbal are members of the OC for the FGS French-German-Swiss Conference on Optimization, Nice, September 2019.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- A. Habbal was PC member of the African Conference on Research in Computer Science and Applied Mathematics (CARI 2018), Stellenbosch, South Africa
- P. Goatin was member of the International Program Committee of *"CTS2018 - 15th IFAC Symposium on Control in Transportation Systems"*, Savona (Italy), June 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- P. Goatin is Managing Editor of *Networks and Heterogeneous Media*.

9.1.3.2. Reviewer - Reviewing Activities

- J.-A. Désidéri has made reviews for *Mathematical Problems in Engineering* (Hindawi Publishing Corporation) and *Numerical Algorithms* (Springer),
- R. Duvigneau is a reviewer for the following international journals : Computers & Fluids, International Journal for Numerical Methods in Fluids, Computer Methods for Applied Mechanical Engineering, Computer Aided Geometric Design, Applied Mathematics & Mechanics, Engineering Optimization.
- P. Goatin reviewed for the following international journals: SIAM Journal of Applied Mathematics; Networks and Heterogeneous Media; European Journal of Applied Mathematics; Journal of Advanced Transportation; IEEE Transactions on Intelligent Transportation Systems; Discrete and Continuous Dynamical Systems A.

- A. Habbal is reviewer for the following international journals: Journal of Structural and Multidisciplinary Optimization ; Journal of Math. Model. Nat. Phenom. ; Int. Journal of Mathematical Modeling and Numerical Optimization; Journal of Differential Equations; American Mathematical Society Reviews; European Journal of Operation Research (EJOR); Journal of Optimization Theory and Algorithms (JOTA).

9.1.4. Invited Talks

- F.A. Chiarello: Interactive workshop on hyperbolic equations, University of Ferrara (Italy), September 2018.
  Invited talk: *"Non-local multi-class traffic flow models"*.

- J.-A. Désidéri: Prioritized Multiobjective Optimization Using Nash Games - Towards Adaptive Optimization, ONERA, Toulouse, December 20, 2018.

- P. Goatin: ECMI 2018 - 20th European Conference on Mathematics for Industry, Budapest (Hungary), June 2018.
  Plenary talk: *"Traffic management by macroscopic models"*.

- P. Goatin: 14th Franco-Romanian Conference on Applied Mathematics, Bordeaux (France), August 2018.
  Plenary talk: *"Traffic management by macroscopic models"*.

- P. Goatin: Rencontres Normandes sur les aspects théoriques et numériques des EDP, Rouen (France), November 2018.
  Invited talk: *"Conservation laws with local constraints arising in traffic modeling"*.

- P. Goatin: LIA COPDESC Workshop "Analysis, control and inverse problems for PDEs", Napoli (Italy), November 2018.
  Plenary talk: *"Traffic control by autonomous vehicles"*.

- P. Goatin: CDC 2018 - 57th IEEE Conference on Decision and Control, Miami, FL (USA), December 2018. Workshop "Traffic Flow Control via PDE Techniques".
  Invited talk: *"Macroscopic modeling of traffic control by autonomous vehicles"*.

- A. Habbal: XI NPU-UTC Sino-French Seminar on Mechanics and Design of Advanced Material and Structures Symposium, Xi'An, China, April 2018.
  Plenary talk: *Games to solve Joint Data Completion and Obstacle Detection in Stokes Problems.*

- A. Habbal: Univ. Wurzburg Chair of Mathematics (Scientific Computing) Mathematical Colloquium, Wurzburg, May 2018.
  Plenary talk: *Games to solve Joint Data Completion and Obstacle Detection in Stokes Problems.*

- A. Habbal: Conference on Inverse Problems, Control and Shape Optimization (PICOF) Beirut, Lebanon, June 18-20 2018.
  Invited talk: *Detection of inclusions while recovering boundary data in Stokes Flows using Nash strategies.*

- A. Habbal: University Mohamed V, Rabat, June 2018.
  Plenary talk: *Avoidance mechanisms arising as Nash equilibria in Fokker-Planck constrained games.*

- E. Rossi: IFIP TC 7 Conference on System Modelling and Optimization, Essen (Germany), July 2018. Workshop "Modeling and optimization of networked systems".
  Invited talk: *"Crowd dynamics in domains with boundaries"*.

9.1.5. Scientific Expertise

- P. Goatin was proposals reviewer for FONDECYT program of CONICYT (National Committee of Science and Technology Research, Chile), 2018.

9.1.6. Research Administration

- P. Goatin is member of the board of the Doctoral School of Fundamental and Applied Sciences (ED SFA) of Université Côte D'Azur.

- P. Goatin was member of BCP ("Bureau du Comité des Projets") at Inria Sophia Antipolis Méditerranée (until August 2018).

- P. Goatin was member of the admission committee for Inria 2018 competitive selection of senior researchers (DR2).

- R. Duvigneau is member of CSD ("Comité Suivi Doctoral) at Inria Sophia Antipolis Méditerranée.

- R. Duvigneau is responsible for the Immersive Space Committee at Inria Sophia Antipolis Méditerranée.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Advanced Optimization, 40.5 hrs, M2, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (J.-A. Désidéri, R. Duvigneau).

Master: Conservation laws and finite volume scheme, 30 hrs, M2, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (P. Goatin).

Master: Multidisciplinary Optimization, 22.5 hrs, joint *Institut Supérieur de l'Aéronautique et de l'Espace* (ISAE Supaéro, "Complex Systems") and M2 (Mathematics), Toulouse (J.-A. Désidéri).

Licence: Summer Project in Mathematical Modeling, 36 hrs, L3, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Numerical Methods for Partial Differential Equations, 66 hrs, M1, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal and R. Duvigneau).

Master: Optimization, 66 hrs, M1, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Modeling strategies for e-Formula races, 10 hrs, M1 Students Project, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Multi-agents Systems, 10 hrs, M1 Students Project, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Modeling and simulation of electric mobility, 10 hrs, M1 Students Project, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Licence (L3): Implement and Experiment PSO, 48hrs, L3 Semester Project, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Graduate autumn school "Theoretical and numerical aspects of PDEs", Rouen (France), November 2018. Lecture: *"Macroscopic traffic flow models on networks"* (P. Goatin).

9.2.2. Supervision

PhD in progress: Rabeb Chamekh, *Game strategies for thermo-elasticity*, Jan 2015, Supervisors: A. Habbal, Moez Kallel (LAMSIN, ENIT, Tunis)

PhD in progress: Marwa Ouni, *Solving inverses problems in fluid mechanics with game strategies*, October 2016, Supervisors: A. Habbal, Moez Kallel (LAMSIN, ENIT, Tunis)

PhD in progress: Kelthoum Chahour, *Modeling and optimal design of coronary angioplastic stents*, Nov 2015, Supervisors: A. Habbal, Rajae Aboulaich (LERMA, EMI, Rabat)

PhD defended in June 2018: C. Durantin, *Métamodélisation et optimisation de dispositifs photoniques* (Meta-modelling and Optimization for nanophotonic devices), University of Nice - Sophia Antipolis, June 2018. Supervisors: J.-A. Désidéri and A. Glière (CEA LETI).

PhD defended in October 2018: Q. Mercier, *Algorithme de descente pour la résolution de problèmes d'optimisation multiobjectif sous incertitudes* (Descent Algorithm for the solution of multi-objective optimization problems under uncertainties), University of Nice - Sophia Antipolis, October 2018. Supervisors: J.-A. Désidéri and F. Poirion (ONERA Châtillon).

PhD defended in December 2018: A. Azaouzi, *isogeometric analysis methods for hyperbolic systems*, ENIT (Tunisia) / University of Nice - Sophia Antipolis, Oct. 2018. Supervisors: R. Duvigneau and M. Moakher (ENIT).

PhD defended in November 2018 : Sosina Mengistu-Gashaw (EURECOM), *Mobility and connectivity modelling of 2-wheels traffic for ITS applications* , March 2015. Supervisors: P. Goatin and J. Härri (EURECOM).

PhD defended in September 2018: M. Sacher, *advanced methods for numerical optimization of yacht performance*, Ecole Navale , Oct. 2014. Supervisors: R. Duvigneau, O. Le Maitre (LIMSI), F. Hauville and J.-A. Astolfi (Ecole Navale).

PhD defended in July 2018: C. Fiorini, *Sensitivity equation method for hyperbolic systems*, Univ. Versailles, Oct. 2014. Supervisors: R. Duvigneau, C. Chalons (Univ. Versailles).

PhD in progress: S. Pezzano, *Isogeometric analysis with moving grids*, Univ. Nice Sophia-Antipolis. Supervisor: R. Duvigneau.

PhD in progress : Nicolas Laurent-Brouty (ENPC), *Macroscopic traffic flow models for pollution estimation and control*, September 2016. Supervisor: P. Goatin.

PhD in progress : Felisia Angela Chiarello (Université de Nice Sophia Antipolis), *Conservation laws with non- local flux*, October 2016. Supervisor: P. Goatin .

PhD in progress : Nikodem Dymski (Maria Curie Sklodowska University & Université de Nice Sophia Antipolis), *Conservation laws in the modeling of collective phenomena*, October 2016. Supervisors: P. Goatin and M.D. Rosini (UMCS).

9.2.3. *Juries*

- R. Duvigneau was member of the committee of P. Ploe's PhD thesis *"Surrogate based optimization of hydrofoil shapes using RANS simulations"*, Ecole Centrale de Nantes, June 26th, 2018.

- R. Duvigneau was member of the committee of F. Mastrippolito's PhD thesis *"Optimisation de forme numérique de problèmes multiphysiques et multiéchelles : application aux échangeurs de chaleur"*, Ecole Centrale de Lyon, December 14th, 2018.

- P. Goatin was referee of M. Pfirsching's PhD thesis *"A multi-scale model for material flow problems based on a non-local conservation law: simulation and optimization"*, Universität Mannheim, April 11th, 2018.

- J.-A. Désidéri was referee of T. Achard's PhD. Thesis *Techniques de calcul du gradient aéro-structure haute-fidélité pour l'optimisation de voilures flexibles* (Techniques for computing the high-fidelity aero-structural gradient for the optimization of flexible wings), CNAM, Paris, December 2017.

- J.-A. Désidéri was a member of the jury of J. Mas Colomer's Phd. Thesis *Similitude Aéroélastique d'un Démonstrateur en Vol via l'Optimisation Multidisciplinaire* (Aeroelastic similarity of a Flight Demonstrator via Multidisciplinary Optimization), University of Toulouse, December 2018.

9.3. Popularization

9.3.1. *Articles and contents*

- Press article: *Dossier. Cette mathématicienne met le trafic en équation pour réduire les embouti-llages*, Nice Matin, August 2018 (P. Goatin).

- TV interview for the program "Dimanche en politique", France 3 Côte d'Azur channel, October 14, 2018 (P. Goatin).

BONUS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- E-G. Talbi (Conference program chair): Intl. Conf. on Metaheuristics and Nature Inspired Computing (META'2018), Marrakech, Morocco, Oct. 2018.

- N. Melab (Workshop co-chair): Intl. Workshop on the Synergy of Parallel Computing, Optimization and Simulation (HPCS/PaCOS'2018), Orléans, FRANCE, Jul. 16-20, 2018.

- E-G. Talbi (General Chair): 8th Intl. Conf. on Bioinspired Optimization Methods and their Applications (BIOMA'2018), Paris, FRANCE, May 16-18, 2018.

- E-G. Talbi (Workshop co-chair): Intl. Workshop on Optimization and Learning: Challenges and Applications (OLA'2018), Alicante, SPAIN, Feb. 26-28, 2018.

- E-G. Talbi (steering committee): 8th IEEE Workshop Parallel Distributed Computing and Optimization (IPDPS/PDCO'2018), Vancouver, CANADA, May 21-25, 2018.

- N. Melab: Chair of 4 simulation and HPC-related seminars at Université de Lille, Oct-Dec. 2018 (CENAERO-BELGIUM, IBM, UCL-BELGIUM, ONERA).

- B. Derbel and A. Liefooghe (workshop co-chairs): 1st International Workshop on Computational Intelligence for Massive Optimization (CIMO 2018), Nagano, Japan, July 2018 (with H. Aguirre, K. Tanaka and S. Verel).

- B. Derbel (workshop co-chair): Decomposition Techniques in Evolutionary Optimization (DTEO), workshop at GECCO 2018, Kyoto, Japan, July 2018 (with K. Li, X. Li, S. Zapotecas, Q. Zhang and H. Li).

- A. Liefooghe (workshop co-chair): Landscape-aware heuristic search (LAHS), workshop at GECCO 2018, Kyoto, Japan, July 2018 (with N. Veerapen, S. Verel and G. Ochoa).

- B. Derbel (special session co-chair): Advances in Decomposition-based Evolutionary Multi-objective Optimization (ADEMO), special session at WCCI/CEC 2018, Rio, Brazil, July 2018 (with S. Zapotecas and Q. Zhang).

- B. Derbel and A. Liefooghe (special session co-chairs): Multi-/many-objective optimization and learning, special session at BIOMA 2018, Paris, France, May 2018 (with H. Aguirre, B. Filipič, T. Tušar, and S. Verel).

10.1.1.2. Member of the Organizing Committees

- N. Melab and E-G. Talbi: Synergy Summer School on Efficient Multi-objective Optimization, Ljubljana, Slovenia, Aug. 27-31, 2018.

- E-G. Talbi: The first international Metaheuristics Summer School – MESS 2018, Acireale-Sicily, Italy, Jul. 21-25, 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- N. Melab (Program co-chair): 8th Intl. Conf. on Bioinspired Optimization Methods and their Applications (BIOMA'2018), Paris, France, May 16-18, 2018.

- A. Liefooghe (program co-chair): EvoCOP 2018: 18th European Conference on Evolutionary Computation in Combinatorial Optimisation (Parma, Italy, 2018).
- A. Liefooghe (proceedings chair): GECCO 2018: Genetic and Evolutionary Computation Conference (Kyoto, Japan, 2018).

10.1.2.2. Member of the Conference Program Committees

- IEEE Congress on Evolutionary Computation (CEC), Rio de Janeiro, BRAZIL, Jul. 8-13, 2018.
- The ACM Genetic and Evolutionary Computation Conference (GECCO), Kyoto, JAPAN, July 15-19, 2018.
- The 2018 International Conference on High Performance Computing & Simulation (HPCS), Orleans, FRANCE, July 16–20, 2018.
- IEEE Intl. Workshop on Parallel/Distributed Computing and Optimization (IPDPS/PDCO), Vancouver, Britich Columbia, CANADA, May 21-25, 2018.
- IEEE Intl. on High-Performance Optimization in Industry (HPOI), Ljubljana, SLOVENIA, October 8, 2018.
- Colloque sur l'Optimisation et les Systèmes d'information (COSI), Oran, ALGERIE, Oct. 22-24, 2018.
- The 4th Intl. Conf. on Cloud Computing Technologies and Applications (CloudTech), Brussels, BELGIUM, Nov. 26-28, 2018.
- EvoCOP'2018, 18th European Conference on Evolutionary Computation in Combinatorial Optimization, Parma, ITALY, April 4–6, 2018.
- 15th International Conference on Parallel Problem Solving from Nature (PPSN), Coimbra, Portugal, September 2018
- Genetic and Evolutionary Computation Conference (GECCO), Kyoto, Japan, July 2018.
- IEEE Congress on Evolutionary Computation (WCCI-CEC), Rio, Brazil, July 2018.
- 18th European Conference on Evolutionary Computation in Combinatorial Optimisation (EvoCOP), Parma, Italy, April 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- N. Melab: Guest and Managing Editor (in collaboration with A. Zomaya and I. Chakroun) of a special on Parallel Optimization using/for Multi and Many-core High Performance Computing in Journal of Parallel and Distributed Computing (JPDC), Vol. 112, 2018.
- P. Korosec, N. Melab and E-G. Talbi. Guest Editor of LNCS Proceedings of 8th Intl. Conf., BIOMA 2018, Paris, France, May 16-18, 2018. *Springer Lecture Notes in Computer Science (LNCS)*, Vol. 10835, 2018.
- B. Derbel: Associate Editor, IEEE Transactions on Systems, Man and Cybernetics: Systems (IEEE).
- A. Liefooghe, M. López-Ibánez: Editors of LNCS Proceedings of the 18th European conference on evolutionary computation in combinatorial optimization (EvoCOP 2018), Lecture Notes in Computer Science (LNCS), vol. 10782, Parma, Italy, 2018.
- E-G. Talbi: Co-editor (with C. Ribeiro) of a special issue in International Transactions on Operational Research (ITOR) on Optimization and Learning, 2018.

10.1.3.2. Reviewer - Reviewing Activities

- Journal of Heuristics (Springer)
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Cybernetics
- Evolutionary Computation (MIT)

10.1.4. Invited Talks

- N. Melab: High-performance Computing, Invited Speaker (1h30), Synergy Summer School, Ljubljana, SLOVENIA, Aug. 28th, 2018.

- N. Melab: Introduction to High-performance Computing, Invited Tutorial (1h40), the 7th Intl. Conf. on Metaheuristics and Nature Inspired Computing (META'18), Marrakech, MOROCCO, Oct. 27-31, 2018.

- E-G. Talbi: Bridging the gap between metaheuristics and machine learning, Invited seminar, PUCV Universidad, Santiago, Chile, Mar 2018.

- E-G. Talbi: How machine learning can help metaheuristics, Invited keynote, LOPAL'2018 International Conference on Learning and Optimization Algorithms: Theory and Applications, Rabat, Marrakech, May 2018.

- E-G. Talbi: Synergy between metaheuristics and machine learning, Tutorial, BIOMA'2018 International Conference on Bioinspired Optimization and their Applications, Paris, France, May 2018.

- E-G. Talbi: Parallel and distributed evolutionary algorithms, Invited tutorial, IEEE WCCI World Congress on Computational Intelligence, Rio de Janeiro, Brazil, July 2018.

- E-G. Talbi: Optimization for machine learning, Invited seminar, Universidad Elche, Spain, Dec 2018.

10.1.5. Leadership within the Scientific Community

- N. Melab: scientific leader of Grid'5000 (https://www.grid5000.fr) at Lille, since 2004

- E-G. Talbi: Co-president of the working group "META: Metaheuristics - Theory and applications", GDR RO and GDR MACS

- E-G. Talbi: Co-Chair of the IEEE Task force on Cloud Computing within the IEEE Computational Intelligence Society

- A. Liefooghe: co-secretary of the association "Artificial Evolution" (EA)

10.1.6. Scientific Expertise

- N. Melab: Reviewer expert for AAPG ANR, CES 23 (B.7, Axe 4), JCJC, FRANCE, 2018

- N. Melab: Member of the advisory committee for the IT and maganement engineer training at Faculté Polytechnique de Mons, BELGIUM

10.1.7. Research Administration

- N. Melab: Member of the steering committee of "Maison de la Simulation" at Université de Lille

- E-G. Talbi, Coordinator of the International Relationships of Inria Lille Nord Europe

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- International Master lecture: N. Melab, Supercomputing, 24h ETD, M2, Université de Lille, FRANCE

- Master lecture: N. Melab, Operations Research, 72h ETD, M1, Université de Lille, FRANCE

- Master leading: N. Melab, Co-head (with B. Merlet) of the international Master 2 of advanced scientific computing, Université de Lille, FRANCE

- Licence: A. Liefooghe, Algorithmic and Data structure, 36h ETD, L2, Université de Lille, FRANCE

- Licence: A. Liefooghe, Algorithmic for Operations Research, 36h ETD, L3, Université de Lille, FRANCE

- Master: A. Liefooghe, Databases, 30h ETD, M1, Université de Lille, FRANCE

- Master: A. Liefooghe, Advanced Object-oriented Programming, 53h ETD, M2, Université de Lille, FRANCE
- Master: A. Liefooghe, Combinatorial Optimization, 10h ETD, M2, Université de Lille, FRANCE
- Master: A. Liefooghe, Multi-criteria Decision Aid and Optimization, 25h ETD, M2, Université de Lille, FRANCE
- Master leading: A. Liefooghe, superviser of the Master 2 MIAGE IPI-NT
- Master: Bilel Derbel, Combinatorial Optimization, 35h, M2, Université de Lille, FRANCE
- Master: Bilel Derbel, Grid Computing, 16h, M2, Université de Lille, FRANCE
- Master: Bilel Derbel, Parallel and Distributed Programming, 35h, M1, Université de Lille, FRANCE
- Master: Bilel Derbel, Algorithms and Applications, 28h, M1, Université de Lille, FRANCE
- Engineering school: El-Ghazali Talbi, Advanced optimization, 36h, Polytech'Lille, Université de Lille, FRANCE
- Engineering school: El-Ghazali Talbi, Data mining, 36h, Polytech'Lille, Université de Lille, FRANCE
- Engineering school: El-Ghazali Talbi, Operations research, 60h, Polytech'Lille, Université de Lille, FRANCE
- Engineering school: El-Ghazali Talbi, Graphs, 25h, Polytech'Lille, Université de Lille, FRANCE
- Master leading: B. Derbel, head of the Master MIAGE, Université de Lille, FRANCE
- Licence: O. Abdelkafi, Computer Science, 46.5 ETD, L1, Université de Lille, FRANCE
- Licence: O. Abdelkafi, Web Technologies, 36 ETD, L1, Université de Lille, FRANCE
- Licence: O. Abdelkafi, Unix system introduction, 6 ETD, L2, Université de Lille, FRANCE
- Licence: O. Abdelkafi, Web Technologies, 24 ETD, L2 S3H, Université de Lille, FRANCE
- Licence: O. Abdelkafi, object-oriented programming, 36 ETD, L2, Université de Lille, FRANCE
- Licence: O. Abdelkafi, Relational Databases, 36h ETD, L3, Université de Lille, FRANCE
- Licence: O. Abdelkafi, Algorithmic for Operations Research, 36h ETD, L3, Université de Lille, FRANCE

10.2.2. Supervision

- PhD defended: Sohrab Faramarzi, Optimization of medical laboratories, Defended on Dec. 17th, El-Ghazali Talbi
- PhD in progress: Z. Garroussi, Demand side management in smart grids: Multi-objective models, El-Ghazali Talbi and Rachid Ellaia (EMI, Morocco)
- PhD in progress: J. Pelamatti, Multi-disciplinary design of aerospace vehicles, Jan 2017, El-Ghazali Talbi
- PhD in progress: Ali Hebbal, Surrogate-assisted multi-objective evolutionary algorithms, Oct 2017, El-Ghazali Talbi and Nouredine Melab
- PhD in progress (cotutelle): Maxime Gobert, Surrogate-assisted multi-objective evolutionary algorithms, Oct 2017, Nouredine Melab (Université de Lille) and Daniel Tuyttens (Université de Mons, BELGIUM)
- PhD in progress (cotutelle): Guillaume Briffoteaux, Surrogate-assisted multi-objective evolutionary algorithms, Oct 2017, Nouredine Melab (Université de Lille) and Daniel Tuyttens (Université de Mons, BELGIUM)
- PhD in progress: Geoffrey Pruvost, Machine learning and decomposition techniques for large-scale multi-objective optimization, Oct 2018, Bilel Derbel and Arnaud Liefooghe

- PhD in progress: Nicolas Berveglieri, Meta-models and machine learning for massive expensive optimization, Oct 2018, Bilel Derbel and Arnaud Liefooghe
- PhD in progress: Alexandre Jesus, Algorithm selection in multi-objective optimization, Bilel Derbel and Arnaud Liefooghe (University of Lille), Luís Paquete (University of Coimbra, PORTUGAL)

10.2.3. Juries

- N. Melab: PhD thesis of Yahya Al Dhuraibi, Flexible Framework for Elasticity in Cloud Computing, Université de Lille (FRANCE), Dec. 10th 2018.
- N. Melab: PhD thesis of Muhammad Umer Wasim, Design and Implementation of Legal Protection for Trade Secrets in Cloud Brokerage Architectures relying on Blockchains, University of Bologna (ITALY), Apr. 2018.
- N. Melab: PhD thesis of Maruf Ahmed, On Improving The Performance and Resource Utilization of Consolidated Virtual Machines: Measurement, Modeling, Analysis and Prediction, The University of Sydney (AUSTRALIA), Aug. 2018.
- B. Derbel: PhD thesis of Christopher Jankee, Optimisation par métaheuristique adaptative distribuée en environnement de calcul parallèle, Université du Littoral Côte d'Opale (FRANCE), Aug. 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- N. Melab: Nominated again as Chargé de Mission of High Performance Computing and Simulation at Université de Lille, since 2010.
- E-G. Talbi: International relations coordinator for Inria Lille Nord Europe, since 2016.
- N. Melab. Member of the Working Group on software and technological demonstrators, since end 2017.

<p style="text-align:center">**CAGE Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Ugo Boscain and Mario Sigalotti were Members of the Organizing Committee of the Workshop "Sub-Riemannian Geometry and Topolò(gy)", Topolò/Topolove, Italy, June 2018

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Emmanuel Trélat was Member of the Program Committee of the 18th French-German-Italian Conference on Optimization (FGI'2018).
- Emmanuel Trélat was Member of the Scientific Committee of the 23rd International Symposium on Mathematical Programming (ISMP 2018).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Ugo Boscain is Associate editor of SIAM Journal of Control and Optimization
- Ugo Boscain is Managing editor of Journal of Dynamical and Control Systems
- Jean-Michel Coron is Editor-in-chief of Comptes Rendus Mathématique
- Jean-Michel Coron is Member of the editorial board of Journal of Evolution Equations
- Jean-Michel Coron is Member of the editorial board of Asymptotic Analysis
- Jean-Michel Coron is Member of the editorial board of ESAIM : Control, Optimisation and Calculus of Variations
- Jean-Michel Coron is Member of the editorial board of Applied Mathematics Research Express
- Jean-Michel Coron is Member of the editorial board of Advances in Differential Equations
- Jean-Michel Coron is Member of the editorial board of Math. Control Signals Systems
- Jean-Michel Coron is Member of the editorial board of Annales de l'IHP, Analyse non linéaire
- Mario Sigalotti is Associate editor of ESAIM : Control, Optimisation and Calculus of Variations
- Mario Sigalotti is Associate editor of Journal on Dynamical and Control Systems
- Emmanuel Trélat is Editor-in-chief of ESAIM : Control, Optimisation and Calculus of Variations
- Emmanuel Trélat is Associate editor of Syst. Cont. Letters
- Emmanuel Trélat is Associate editor of J. Dynam. Cont. Syst.
- Emmanuel Trélat is Associate editor of Bollettino dell'Unione Matematica Italiana
- Emmanuel Trélat is Associate editor of ESAIM Math. Modelling Num. Analysis
- Emmanuel Trélat is Editor of BCAM Springer Briefs
- Emmanuel Trélat is Associate editor of J. Optim. Theory Appl.
- Emmanuel Trélat is Associate editor of Math. Control Related fields

9.1.4. Invited Talks

- Ugo Boscain was invited speaker at the International Conference "Optimal Control and Differential Games", dedicated to the 110th anniversary of L.S. Pontryagin, Dec. 2018.
- Ugo Boscain was invited speaker at the conference "Dynamics, Control, and Geometry", Banach Center, Warsaw, Sept. 2018.
- Ugo Boscain was invited speaker at Linkopyng University, Department of Electrical Engineering, Nov. 2018.
- Ugo Boscain was invited speaker at the conference "Analysis, Control and Inverse Problems for PDEs", Napoli (Italy), Nov. 2018.
- Mario Sigalotti was invited speaker at the Workshop Quantum control and feedback: foundations and applications, Paris, Jun. 2018.
- Emmanuel Trélat was invited speaker at ICM 2018, Rio, section "Control Theory and Optimization", Aug. 2018.
- Emmanuel Trélat was invited speaker at Analysis, Control and Inverse Problems for PDEs, Naples, Nov. 2018.
- Emmanuel Trélat was invited speaker at Dynamics Control and Geometry, Varsovie, Sept. 2018.
- Emmanuel Trélat was invited speaker at 14th Viennese Conference on Optimal Control and Dynamic Games, Vienna, July 2018.
- Emmanuel Trélat was invited speaker at Portuguese Meeting on Optimal Control 2018, Coimbra (Portugal), June 2018.
- Emmanuel Trélat was invited speaker at International Symposium on Mathematical Control Theory, Shanghai, June 2018.
- Emmanuel Trélat was invited speaker at GAMM Munich, March 2018.

9.1.5. Leadership within the Scientific Community

Emmanuel Trélat is director of the Fondation Sciences Mathématiques de Paris (FSMP).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Ugo Boscain thought "Sub-elliptic diffusion" to PhD students at SISSA, Trieste Italy
- Ugo Boscain thought "Automatic Control" (with Mazyar Mirrahimi) at Ecole Polytechnique
- Ugo Boscain thought "MODAL of applied mathematics. Contrôle de modèles dynamiques" at Ecole Polytechnique
- Emmanuel Trélat thought "Control in finite and infinite dimension" at Master 2, Sorbonne Université

9.2.2. Supervision

PhD: Riccardo Bonalli, Optimal Control of Aerospace Systems with Control-State Constraints and Delays, Sorbonne Université, July 2018, supervised by Emmanuel Trélat.

PhD: Antoine Olivier, Optimal and robust attitude control of a launcher, Sorbonne Université, October 2018, supervised by Emmanuel Trélat and co-supervised by Thomas Haberkorn, Éric Bourgeois, David-Alexis Handschuh.

PhD: Ludovic Sacchelli, Singularities in sub-Riemannian geometry, Université Paris-Saclay, September 2018, supervised by Ugo Boscain and Mario Sigalotti.

PhD in progress: Nicolas Augier, "Contrôle adiabatique des systèmes quantiques", started in September 2016, supervisors: Ugo Boscain, Mario Sigalotti.

PhD in progress: Amaury Hayat, " Contrôle et stabilisation en mécanique des fluides", started in October 2016, supervisors: Jean-Michel Coron and Sébastien Boyaval

PhD in progress: Mathieu Kohli, "Volume and curvature in sub-Riemannian geometry", started in September 2016, supervisors: Davide Barilari, Ugo Boscain.

PhD in progress: Gontran Lance, started in September 2018, supervisors: Emmanuel Trélat and Enrique Zuazua.

PhD in progress: Cyril Letrouit, "Équation des ondes sous-riemanniennes", started in September 2019, supervisor Emmanuel Trélat.

PhD in progress: Jakub Orłowski, "Modeling and steering brain oscillations based on in vivo optogenetics data", started in September 2016, supervisors: Antoine Chaillet, Alain Destexhe, and Mario Sigalotti.

PhD in progress: Eugenio Pozzoli, "Adiabatic Control of Open Quantum Systems", started in September 2018, supervisors: Ugo Boscain and Mario Sigalotti.

PhD in progress: Shengquan Xiang, Stabilisation des fluides par feedbacks non-linéaires, September 2016, supervisor: Jean-Michel Coron.

PhD in progress: Christophe Zhang, started in October 2016, supervisor: Jean-Michel Coron

9.2.3. *Juries*

- Ugo Boscain was referee and member of the jury of the HDR of Jean-Marie Mirebeau, Université Paris-Sud.
- Mario Sigalotti was member of the jury of the PhD thesis of Abdelkrim Bahloul, Univ. Paris-Saclay.
- Emmanuel Trélat was co-supervisor and member of the jury of the PhD thesis of Camille Pouchol, Sorbonne Université.
- Emmanuel Trélat was member of the jury of the PhD thesis of F. Omnès, Sorbonne Université.
- Emmanuel Trélat was referee and member of the jury of the PhD thesis of S. Mitra, Univ. Toulouse.
- Emmanuel Trélat was referee and member of the jury of the PhD thesis of T. Weisser, Univ. Toulouse.
- Emmanuel Trélat was referee and member of the jury of the PhD thesis of S. Maslovskaya, Univ. Paris-Saclay.
- Emmanuel Trélat was referee and member of the jury of the PhD thesis of A. Vieira, Grenoble University.
- Emmanuel Trélat was member of the jury of the HDR of F. Chittaro, Univ. Toulon.

9.3. Popularization

Emmanuel Trélat is member of the Comité d'Honneur du Salon des Jeux et Culture Mathématique since November 2018

9.3.1. *Articles and contents*

- Nicolas Augier, Ugo Boscain, and Mario Sigalotti are authors of the popularization article [32] explaining how broken adiabatic paths can be used to enhance the control of a quantum systems.

9.3.2. *Education*

- Ugo Boscain and Jean-Michel Coron gave a lecture at journée ENS-UPS, ENS Paris
- Emmanuel Trélat gave a lecture at ENS Ulm to first-year students
- Emmanuel Trélat gave a lecture at Université Paris-Diderot to first- and second-year students

9.3.3. *Interventions*

- Ugo Boscain gave a lecture at Alfaclass, Saint-Barthélemy, Aosta, Italy
- Emmanuel Trélat gave a lecture at Salon des Jeux et Culture Mathématique

<h1 style="text-align:center;color:red">CAGIRE Project-Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Member [RM] of the steering committee of the Special Interest Group "Turbulence Modelling" (SIG-15) of ERCOFTAC (European Research COmmittee for Flow, Turbulence and Combustion) that organizes a series of international workshops dedicated to cross-comparisons of the results of turbulence models and experimental/DNS databases. Organization of the next workshop to be held at the Jožef Stefan Institute in Ljubljana, Slovenia in 2019.
- Scientific chair of the mini-symposium on Hybrid RANS/LES methods of the Fluids Engineering Division Summer Meeting(FEDSM) of ASME held in Montreal in 2018 [RM].

10.1.1.2. Member of the Organizing Committees

- Organizer and scientific chair of the mini-symposium on numerical schemes for compressible flows at low Mach number at CANUM 2018 [JJ].

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Intl Symp. Turbulence, Heat and Mass Transfer [RM]

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Visualization of Mechanical Processes [PB]
- Advisory Board of International Journal of Heat and Fluid Flow [RM]
- Advisory Board of Flow, Turbulence and Combustion [RM]

10.1.3.2. Reviewer - Reviewing Activities

During 2018, the team members reviewed 22 papers for the following journals:

- Aerospace Science and Technology (3) [PB]
- AIAA Journal (2) [PB,RM]
- Computational Thermal Sciences (1) [PB]
- Computers and Fluids (3) [RM,VP(2)]
- Energy and Buildings (1) [PB]
- Flow, Turbulence and Combustion (3) [RM]
- International Journal of Heat and Fluid flow (1) [RM]
- International Journal of Heat and Mass Transfer (2) [PB]
- Journal of Buildings Engineering (1) [PB]
- Journal of Petroleum Science and Engineering (1) [PB]
- Journal of Scientific Computing (1) [VP]
- Nuclear Engineering and Design (1) [RM]
- Physics of Fluids (1) [RM]
- Theoretical and Computational Fluid Dynamics (1) [RM]

10.1.4. Invited Talks

- P. Bruel [18]
- R. Manceau [10]

10.1.5. Research Administration

- Co-responsible for the organisation of the LMAP seminar of Mathematics and their Applications [JJ].
- Member of the LMAP council [JJ, PB].
- Member of the IPRA research federation scientific council [RM].

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : [JJ], Research and innovation, 1h50, L1, Université de Pau et des Pays de l'Adour, Pau, France.

Licence : [JJ], Descriptive statistical, 24h, L1 - MIASHS, Université de Pau et des Pays de l'Adour, Pau, France.

Licence : [JJ], Scientific computing, 19h, L2 - Informatic, Université de Pau et des Pays de l'Adour, Pau, France.

Master : [JJ], Data analysis, 68h25, M1 - GP, Université de Pau et des Pays de l'Adour, Pau, France.

Master : [JJ], Tools for scientific computing, 48h75, M1 - MMS-MSID, Université de Pau et des Pays de l'Adour, Pau, France.

Master : [JJ,VP], Finite volume methods for hyperbolic systems, 52h50, M2 - MMS , Université de Pau et des Pays de l'Adour, Pau, France.

Master : "Turbulence modelling" (in English), 27h30, M2 - International Master program Turbulence, Université de Poitiers/Ecole centrale de Lille, France. [RM]

Eng. 3 : "Industrial codes for CFD" (in English), 12h30, 3rd year of engineering school (M2), ENSMA, Poitiers, France. [RM]

Eng. 3 : "Advanced physics–Turbulence modelling for CFD", 16h, 3rd year of engineering school (M2), ENSGTI, France. [RM]

10.2.2. Supervision

- PhD in progress : Puneeth Bikkanahally Muni Reddy, "Modelling turbulent flows in natural convection regimes using hybrid RANS-LES approaches, UPPA, October 2018, Rémi Manceau.
- PhD in progress : Gaëtan Mangeon, "Advanced modelling of heat transfer for industrial configurations with or without accounting of the solid wall", UPPA, February 2017, Rémi Manceau.
- PhD in progress : Vladimir Duffal, "Hybrid RANS/LES modelling for unsteady loadings in turbulent flows", UPPA, November 2017, Rémi Manceau.
- PhD in progress : Hassan Al Afailal: "3D simulation of non-reactive internal aerodynamics of spark-ignition engines using an hybrid RANS/LES method", September 2017, Rémi Manceau.
- PhD in progress Saad Jameel : "Turbulence modelling in the mixed and natural convection regimes in the context of automotive applications", UPPA, February 2017, Rémi Manceau.
- PhD in progress : Gustave Sporschill, "Amélioration des modèles pour la turbulence. Applications à la prédiction des écoulements aérodynamiques", UPPA, May 2018, Rémi Manceau.

10.2.3. Juries

The participation in the following thesis juries is noted ("referee" in a French doctoral thesis jury is more or less equivalent to an external opponent in an Anglo-Saxon like PhD jury):

- François Delassaux, "Modélisation instationnaire de l'aérodynamique externe automobile", Conservatoire National des Arts et Métiers, 20 December 2018. Supervisor: I. Mortazavi [RM, Referee]
- Loïc Jecker, "Prévision de la transition bypass à l'aide d'un modèle à énergie cinétique laminaire basé sur la dynamique des modes de Klebanoff", ONERA, 15 November 2018. Supervisor: G. Casalis [RM, Referee]
- PhD: R. Bizzari "Modélisation aérodynamique et thermique des plaques multiperforées en LES", Université de Toulouse, France, 5 November 2018. Supervisors: T. Poinsot and A. Dauptain. [PB]
- PhD: D. Maestro "Large eddy simulation of the interactions between flames and thermal phenomena : application to wall heat transfer and combustion control" Université de Toulouse, France, 27 September 2018. Supervisors: T. Poinsot et G. Staffelbach. [PB, Referee]
- Cédric Uribe, "Développement d'une approche ZDES à deux équations de transport et application turbomachines", Sorbonne Université/ONERA, 24 September 2018. Supervisor: G. Gerolymos [RM, Referee]
- PhD: Valentin Bonnifet, "Prédiction du phénomène de tremblement sur un profil d'aile avec une approche LES de type PANS-RSM", Sorbonne Université, 19 September 2018. Supervisor: I. Vallet [RM, Referee]
- PhD: F. Guillois "Simulation d'une zone de mélange turbulente issue de l'instabilité de Richtmyer-Meshkov à l'aide d'un modèle à fonction de densité de probabilité – Analyse du transport de l'énergie turbulente", Université de Lyon, France, 7 September 2018. Supervisors: S. Simoëns and V.A. Sabel'nikov. [PB, Referee]
- PhD: Q. Douasbin "Acoustic waves in combustion devices : interactions with flames and boundary conditions", Université de Toulouse, France, 30 March 2018. Supervisors: T. Poinsot and L. Selle. [PB, Referee]
- PhD: B. P. Trevisan "Estudo experimental da interaçao turbulênca, combustão e acústica aplicada a motores aeroespaciais", INPE, São José dos Campos, Brazil, 28 February 2018. Supervisor: W.M.C. Dourado. [PB]

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Vincent Perrier is a member of the CUMI-R.
- Vincent Perrier is a member of the CDT, in charge of the evaluation of software projects at the Inria Bordeaux center.
- Vincent Perrier is an elected member of the CLHSCT.
- Vincent Perrier is an elected member of the Inria evaluation committee. [0]
- Vincent Perrier is a member of the CT3-Num committee of Pau University, in charge of managing the computing resources and projects at Pau University.

10.3.2. Interventions

- «Forum des Métiers» organized by Collège Pierre Emmanuel, Pau (64), France, 9 February 2018. A stand was manned during one day with the objective of explaining the activity of researcher to an audience of middle school students. [PB]
- «Savoir en Partage», organized by Lacq Odyssée. [PB [22], JJ and VP [27], [24], RM [29], [28]]
- «Café des Sciences». [PB [23], JJ, RM [30], VP [25]]
- «Fête de la Science - Journée Portes Ouvertes Centre Inria BSO», Talence, France, 13 October 2018. [PB]
- «10 ans du centre Inria BSO: célébration de 10 ans de recherche et de transfert», Talence, France, 28 September 2018. [JJ and VP]

10.3.3. Creation of media or tools for science outreach

- «Science on tourne». [PB, JJ, RM, VP]

  http://www.cestdanslaire.fr/fr/page/science-on-tourne

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[0]https://www.inria.fr/en/institute/organisation/committees/evaluation-committee

<p style="text-align:center">**CARDAMOM Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

Mathieu Colin is a member of the scientific committee of the JEF day's.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Mathieu Colin is a member of the board of the journal Applications and Applied Mathematics: An International Journal (AAM)
- P.M. Congedo is Editor of Mathematics and Computers in Simulation, MATCOM (Elsevier)
- Mario Ricchiuto is member of the editorial board of *Computers & Fluids (Elsevier)*, and of *Water Waves: An interdisciplinary journal (Springer)*

10.1.2.2. Reviewer - Reviewing Activities

We reviewed papers for top international journals in the main scientific themes of the team : Journal of Computational Physics, Optimization and Engineering, Computer Methods in Applied Mechanics and Engineering, International Journal of Numerical Methods in Fluids, Physics of Fluids, Journal of Marine Science and Technology, Engineering Applications of Computational Fluid Mechanics, Computers and Fluids, Computational and Applied Mathematics, Communications in Computational Physics, Coastal Engineering Journal, Journal of Hydraulic Research, International Journal of Modelling and Simulation in Engineering Aircraft Engineering and Aerospace Technology, International Journal of Computational Fluid Dynamics, Applications and applied mathematics : An international journal, Discrete and Continuous Dynamical Systems - Series A, Electronic Journal of Differential Equations, Calculus of Variations and Partial Differential Equations, Nonlinear Analysis: Modelling and Control, Advanced Nonlinear Studies, Communications on Pure and Applied Analysis, Communications in Computational Physics, Nonlinearity, Applications and Applied Mathematics: An International Journal, Journal of Differential Equations, Analysis and Mathematical Physics.

10.1.3. Invited Talks

Mario Ricchiuto has give a plenary talk at the 2018 edition of the Melosh Medal award, held at Duke University in April 2018.

10.1.4. Research Administration

Mario Ricchiuto is member of the "bureau du comité des projets" of the Inria BSO center, as representative of the theme *Modelling, High-Performance Computing and Parallel Architecture*.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- License: Héloïse Beaugendre, Encadrement de projets sur la modélisation de la portance, 20h, L3, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, TD C++, 52h, M1, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Calcul Haute Performance (OpenMP-MPI), 40h, M1, ENSEIRB-MATMÉCA et Université de Bordeaux, France
- Master : Héloïse Beaugendre, Responsable de filière de 3ème année, 15h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Calcul parallèle (MPI), 39h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Encadrement de projets de la filière Calcul Haute Performance, 14h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Co-organisatrice du Hackathon, Inria, PlaFRIM et CATIE sont organisateurs sur Bordeaux du Hacakathon GENCI, France
- Master : Héloïse Beaugendre, Encadrement de projets sur la modélisation de la pyrolyse, 20h, M1, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre , Projet fin d'études, 4h, M2, ENSEIRB-MATMÉCA, FRANCE
- Master: Mario Ricchiuto, Multi-Physics, 36hETD in the last year of the ENSEIRB-MATMÉCA school
- Post-Graduate: Mario Ricchiuto, Modelling of free surface flows, 12hETD post-graduate level short-course at Duke University
- Master : Mathieu Colin : Integration, M1, 54h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : Fortran 90, M1, 44h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : PDE, M1, 30h, University of Bordeaux, FRANCE
- Master : Mathieu Colin : Analysis, L1, 47h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : projet professionnel and internship responsibility : 15 h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : Encadrement de projets TER, 20h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : responsable relation entreprise formation en alternance ENSEIRB-MATMECA (30h)
- Master : Mathieu Colin : suivi d'apprenti en entreprise (28h).

10.2.2. Supervision

Lin Xi, Asymptotic modelling of incompressible reactive flows in self-healing composites, defended in October 2018.

Bosi, Umberto, ALE spectral element Boussinesq modelling of wave energy converters, started in November 2015.

Cortesi Andrea, Predictive numerical simulation for rebuilding freestream conditions in atmospheric entry flows, defended in March 2018

Aurore Fallourd, Modeling and Simulation of inflight de-icing systems, Started in October 2016.

Francois Sanson, Uncertainty propagation in a system of codes, started in February 2016.

Nassim Razaaly, Robust optimization of ORC systems, started in February 2016.

Mickael Rivier, Optimization under uncertainties of complex systems, started in May 2017.

Elie Solai, Efficient virtual prototyping of the EVE expander using robust multi-fidelity optimization,started in October 2018

Sixtine Michel, Parallel Coastal flood simulations using adaptive high order schemes with re-meshing and mesh deformation, PhD started in November 2018

10.2.3. Juries

Mario Ricchiuto has contributed to the following theses defense:

- Stephane Glockner: HDR U. de Bordeaux, June 2018 (as reviewer)
- Xi Lin: PhD U. Bordeaux, October 2018 (as examiner)
- Evi Noviani: PhD U. de Poitiers, November 2018 (as president of the jury)
- Kevin Pons: PhD U. de Toulon, December 2018 (as reviewer)
- Paola Bacigaluppi: PhD Zurich University, December 2018 (as reviewer)

Mathieu Colin has contributed to the following theses defense :

- Xi Lin: PhD U. Bordeaux, October 2018 (as director)

10.3. Popularization

10.3.1. Interventions

- Héloïse Beaugendre has co-organized (with PlaFRIM and CATIE) the Bordeaux session of the HPC hackathon sponsored by GENCI. This coding competition is open to students and young reserachers and has taken place at the Inria BOS center in December (for more information see `https://www.inria.fr/centre/bordeaux/agenda/hackathon-du-hpc-genci`)
- Algiane Froehly (Mmg-Consortium) and Mario Ricchiuto have set up and animated the CARDAMOM stand during the event "Fête des 10 Ans", held on September 27th, and celebrating the 10 years of the Inria BSO center

COMMANDS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees
- F. Bonnans: PGMO Days 2018.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards
- F. Bonnans: Associate Editor of "Applied Mathematics and Optimization" and of "Series on Mathematics and its Applications, Annals of The Academy of Romanian Scientists".

10.1.3. Invited Talks
- F. Bonnans: CAESAR workshop, Palaiseau, Sept. 5-7, 2018.

10.1.4. Leadership within the Scientific Community
- F. Bonnans: French representative to the IFIP-TC7 committee (International Federation of Information Processing; TC7 devoted to System Modeling and Optimization).
- F. Bonnans: member of the PGMO board and Steering Committee (Gaspard Monge Program for Optimization and Operations Research, EDF-FMJH).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master :
F. Bonnans: *Numerical analysis of partial differential equations arising in finance and stochastic control*, 18h, M2, Ecole Polytechnique and U. Paris 6, France.
F. Bonnans: *Optimal control*, 15h, M2, Optimization master (U. Paris-Saclay) and Ensta, France.
A. Kröner : Optimal control of partial differential equations, 20h, M2, Optimization master (U. Paris-Saclay), France.

10.2.2. Supervision

Finished PhD : C. Rommel, Data exploration for the optimization of aircraft trajectories. Started November 2015, finished Oct 2018 (CIFRE fellowship with Safety Line), F. Bonnans and P. Martinon.

PhD in progress : A. Le Rhun, Optimal and robust control of hybrid vehicles. Started September 2016 (IFPEN fellowship), F. Bonnans and P. Martinon.

PhD in progress : G. Bonnet, Efficient schemes for the Hamilton-Jacobi-Bellman equation. Started Oct. 2018. F. Bonnans and J.-M. Mirebeau, LMO, U. Orsay.

PhD in progress : P. Lavigne, Mathematical study of economic equilibria for renewable energy sources. Started Oct. 2018. F. Bonnans.

PhD in progress : E. Weill, Optimal control of partial differential equation systems: Application to heterogeneous cell populations. Started Oct. 2018. F. Bonnans and G. Batt, Inria and Institut Pasteur.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- F. Bonnans: codirection of a joint Allistene-Ancre commission (contribution to the national strategy for research), Numerics and Energy committee (2017-2018).
- F. Bonnans: Dimitrie Pompeiu Prize Committee (Academy of Romanian Scientists).
- P. Martinon is member of the CDT.

10.3.2. Articles and contents

- The work on races on curved tracks was covered in the Sciences page of Le Figaro.

10.3.3. Internal action

- The collaboration with startup Safety Line was presented to the "Journée Nationale des Nouveaux Arrivants"

CQFD Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Chair of Conference Program Committees

F. Dufour is the chair of the Program Committee of the SIAM Conference on Control and Its Applications (CT19) in Pittsburgh, USA, 2019.

9.1.1.2. Member of the Conference Program Committees

J. Anselmi has been a member of the technical program committee of the following international conference VALUETOOLS 2018.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

P. Del Moral is an associate editor for the journal Stochastic Analysis and Applications since 2001.

P. Del Moral is an associate editor for the journal Revista de Matematica: Teoria y aplicaciones since 2009.

P. Del Moral is an associate editor for the journal Applied Mathematics and Optimization since 2009.

F. Dufour is corresponding editor of the SIAM Journal of Control and Optimization since 2018. F. Dufour is associate editor of the journal Applied Mathematics & Optimization (AMO) since 2018. F. Dufour is associate editor of the journal Stochastics: An International Journal of Probability and Stochastic Processes since 2018.

F. Dufour is the representative of the SIAM activity group in control and system theory for the journal SIAM News since 2014.

J. Saracco is an associate editor of the journal Case Studies in Business, Industry and Government Statistics (CSBIGS) since 2006.

9.1.2.2. Reviewer - Reviewing Activities

All the members of CQFD are regular reviewers for several international journals and conferences in applied probability, statistics and operations research.

9.1.3. Invited Talks

In March 2018, Jonatha Anselmi was invited to give a talk on load balancing for parallel systems at the Inria team Polaris (Grenoble).

François Dufour was invited to give a talk during the IMA Conference on Stochastic Control, Computational Methods, and Applications at University of Minnesota, May 2018.

François Dufour was invited to give a talk during the Symposium on Optimal Stopping, Rice University, Houston, Texas, June 2018.

9.1.4. Scientific Expertise

J. Saracco is elected member of the council of the *Société Française de Statistique* (SFdS, French Statistical Society).

9.1.5. Research Administration

J. Saracco is deputy director of IMB (Institut de Mathématiques de Bordeaux, UMR CNRS 5251) since 2015.

M. Chavent is member of the national evaluation committee of Inria.

M. Chavent and Pierrick Legrand are members of the council of the Institut de Mathématique de Bordeaux.

F. Dufour has been the coordinator for the Inria evaluation of the theme "Stochastic Approaches"

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : J. Anselmi, Probabilités et statistiques, 20 heures, L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, filière Télécommunications, France.
- Licence : J. Anselmi, Probabilités et statistiques, 16 heures, L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, filière Electronique, France.
- Licence : J. Anselmi, Probabilités et statistiques, 48 heures, niveau L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, filière Mathématique et Mécanique, France.
- Licence : F. Dufour, Probabilités et statistiques, 70h, first year of école ENSEIRB-MATMECA, Institut Polytechnique de Bordeaux, France.
- Master : F. Dufour, Méthodes numériques pour la fiabilité, 36h, third year of école ENSEIRB-MATMECA, Institut Polytechnique de Bordeaux, France.

9.2.2. Supervision

- PhD completed : Alizé Geeraert, Contrôle optimal des processus Markoviens déterministes par morceaux et application à la maintenance, University of Bordeaux, supervised by B. de Saporta and F. Dufour (defense in October 2018).
- PhD in progress : Tiffany Cherchi, "Automated optimal fleet management policy for airborne equipment", Montpellier University, since 2017, supervised by B. De Saporta and F. Dufour.

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DEFI Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. General Chair, Scientific Chair

- P. Congedo is General Chair of the CWI-Inria workshop at Inria Paris research centre in Paris on September 25, 26 2018.

10.1.2. Member of the Organizing Committees

- L. Chesnel co-organized the Journée de rentrée (2018) of the Centre de Mathématiques Appliquées of École Polytechnique.
- L. Chesnel co-organizes the seminar of the Centre de Mathématiques Appliquées of École Polytechnique.
- L. Chesnel co-organizes the joint seminar of the Inria teams Defi-M3DISIM-Poems.
- H. Haddar co-organized a minisymposium at waves conference, Karlsruhe, July 2018
- H. Haddar co-organized a minisymposium at the conference Inverse problems: modeling and simulation, Malta, May 2018
- H. haddar co-organized a minisymposium at the Faculty of DSIT of Ecole polytechnique, May 2018.
- J.R. Li is Co-organizer of the summer school Ecole d'Été France Excellence, Data science for document analysis and understanding sponsored by the French Embassy in China, 07/2018. 4 weeks.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- G. Allaire is member of the editorial boards of
  - Book series "Mathématiques et Applications" of SMAI and Springer,
  - ESAIM/COCV, Structural and Multidisciplinary Optimization,
  - Discrete and Continuous Dynamical Systems Series B,
  - Computational and Applied Mathematics,
  - Mathematical Models and Methods in Applied Sciences (M3AS),
  - Annali dell'Universita di Ferrara,
  - OGST (Oil and Gas Science and Technology),
  - Journal de l'Ecole Polytechnique - Mathématiques,
  - Journal of Optimization Theory and Applications.
- P.M. Congedo is Editor of Mathematics and Computers in Simulation, MATCOM (Elsevier).
- H. Haddar is
  - Member the editorial board of Inverse Problems
  - Associate Editor of the SIAM Journal on Scientific Computing
  - Guest editor of for a special issue in the journal Inverse Problems

10.1.3.2. Reviewer - Reviewing Activities

We reviewed papers for top international journals in the main scientific themes of the team.

10.1.4. Invited Talks

- G. Allaire
    - Seminar at BCAM, Bilbao (january 2018).
    - Séminaire JOFA, Pau (juin 2018).
    - ECCM-ECFD, ECCOMAS, Glasgow (juin 2018).
    - Summer school Sendai, Japon (August 2018).
    - Fifth workshop on thin structures, Naples, September 13-15, 2018.
    - Current trends and open problems in computational solid mechanics, Hannover, October 8-9, 2018.
- L. Chesnel
    - Conference on Mathematics of Wave Phenomena, July 2018.
    - SIAM conference on imaging science, Bologna, June 2018.
    - Inverse problems: modeling and simulation, Malta, May 2018.
    - Workshop du GDR ondes, Jussieu, March 2018.
- P.M. Congedo
    - von Karman Institute Symposium, Bruxelles, April 2018.
    - CERFACS Seminar, Toulouse, October 2018
    - VKI Lecture Series on Uncertainty Quantification, Bruxelles, September 2018.
    - Seminar at CEA-CESTA, Le Barp, September 2018.
- H. Haddar
    - ICAV conference, Hammamet, March 2018
    - SIAM conference on imaging science, Bologna, June 2018.
    - Waves conference, Karsruhe, July 2018
    - Seminar at LJK, Grenoble, October 2018
    - Kickoff workshop of Mecawave, November 2018
    - Workshop "Inverse Problems: Theory and Applications", Reims, 2018

10.1.5. Leadership within the Scientific Community

- G. Allaire is a board member of Institut Henri Poincaré (IHP). He is the chairman of the scientific council of IFPEN (French Petroleum Institute and New Energies). He is the chairman of the scientific council of AMIES (Agency for Interaction in Mathematics with Business and Society).

10.1.6. Scientific Expertise

- G. Allaire is a member of th"comité national" CNRS, section 41 (mathematics).
- G. Allaire is a member of the scientific board of the Gaspard Monge program on optimization (PGMO) at the Jacques Hadamard Mathematical Foundation.
- J.R. Li is Member of the SIAM Committee on Programs and Conferences 2017-2019.
- J.R. Li is Member Elu of Inria Commission d'Evaluation, 2015-present.

10.1.7. Research Administration

- J.R. Li is correspondant International for Centre de Mathematiques Appliquees, Ecole Polytechnique, 2018-present.
- J.R. Li is responsable for the Ecole Polytechnique part of the French-Vietnam Master Program in Applied Mathematics, 2016-present.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: Grégoire Allaire, Approximation Numérique et Optimisation, for students in the second year of Ecole Polytechnique curriculum: 8 lessons of 1h30.
- Master: Grégoire Allaire, Transport and diffusion, for students in the third year of Ecole Polytechnique curriculum. 9 lessons of 2h jointly with F. Golse.
- Master: Houssem Haddar, Approximation Numérique et Optimisation, for students in the second year of Ecole Polytechnique curriculum: 8 TDs of 4h.
- Master: Houssem Haddar, Waves and imaging: Concepts, Theory and Applications, Master M2 "mathematical modeling": 9 lessons of 3h.
- Master: Lucas Chesnel, Variational analysis for partial differential equations, for students in the second year of Ecole Polytechnique curriculum: 8 TDs of 4h.
- Master: Lucas Chesnel, Numerical approximation and optimisation, for students in the second year of Ecole Polytechnique curriculum: 2 TDs of 4h + one project.
- Master: Lucas Chesnel, Modal Modélisation mathématique par la démarche expérimentale, for students in the second year of Ecole Polytechnique curriculum: 5 TDs of 2h.
- Master: Grégoire Allaire, Optimal design of structures, for students in the third year of Ecole Polytechnique curriculum. 9 lessons of 1h30.
- Master: Grégoire Allaire, Theoretical and numerical analysis of hyperbolic systems of conservation laws, Master M2 "mathematical modeling", 8 lessons of 3h.
- Master: Jing Rebecca Li, Lecturer of course Mathematical and numerical foundations of modeling and simulation using partial differential equations French-Vietnam Master in Applied Mathematics, University of Science, Ho Chi Minh City, 10/2018. 2 weeks.
- Master: P.M. Congedo, Numerical methods in Fluid Mechanics, ENSTA ParisTech, 12 h.
- Doctorat: Houssem Haddar, Lecturer at the kickoff workshop of GDR mecawave. Introduction to Inverse problems (2x1h30).
- Doctorat: P.M. Congedo, Introduction to Uncertainty Quantification, 12h, Doctorate School of University of Bordeaux, France.

10.2.2. Supervision

- Ph.D. A. Bissuel, Linearized Navier Stokes equations for optimization, floating and aeroaccoustic (Dassault Aviation, defended in January 2018). G. Allaire.
- Ph.D. P. Geoffroy, Topology optimization by the homogenization method in the context of additive manufacturing (defended in December 2018). G. Allaire.
- Ph.D. in progress: S. Houbar sur la cavitation dans le fluide caloporteur induite par les mouvements des assemblages d'un réacteur (CEA, to be defended in 2020). G. Allaire and G. Campioni.
- Ph.D. in progress: M. Boissier, Optimisation couplée de la topologie des formes et de la trajectoire de lasage en fabrication additive (to be defended in 2020). G. Allaire and Ch. Tournier.
- L. Rakotondrainibe sur l'optimisation des liaisons enre pièces dans les système mécaniques (Renault, to be defended in 2020). G. Allaire.
- F. Feppon sur l'optimisation topologique de systèmes couplés fluide-solide-thermique (Safran, to be defended in 2020). G. Allaire and Ch. Dapogny.
- Q. Feng sur les éléments finis multi-échelles pour Navier Stokes incompressible en milieu encombré (CEA, to be defended in 2019). G. Allaire and P. Omnes.
- J. Desai sur l'optimisation topologique de structures au comportement non-linéaire avec des méthodes de déformation de maillage (IRT SystemX, to be defended in 2021). G. Allaire and F. Jouve,

- Ph.D. in progress: B. Charfi, Identification of the sigular support of a GIBC, to be defended in 2019, H. Haddar and S. Chaabane
- PhD in progress: K. Napal, Transmission eigenvalues and non destructive testing of concrete like materials , to be defended in 2019, L. Chesnel H. Haddar and L. Audibert
- PhD in progress: M. Kchaou, Higher order homogenization tensors for DMRI modeling, to be defended in 2019, H. Haddar and M. Moakher
- PhD in progress: H. Girardon, Non destructive testing of PWR tubes using eddy current rotating coils, to be defended in 2021, H. Haddar and L. Audibert
- PhD in progress: J. Hao, Thesis topic: Algorithm and software development for analysis and classification of EEG measurements during administration of neuropsychological tests for AD/HD, 2017, J.R. Li and H. Rahioui. PhD stopped in Jan 2019.
- PhD in progress: M. Rihani, Maxwell's equations in presence of metamaterials (to be defended in 2021), A.-S. Bonnet-BenDhia and L. Chesnel.
- PhD in progress: F. Sanson, UQ in systems of solver for the atmospheric reentry (to be defended in July 2019), P.M. Congedo, O. Le Maitre.
- PhD in progress: N. Razaaly, Optimization under uncertainties of ORC turbine cascades, (to be defended in July 2019), P.M. Congedo.
- PhD in progress: M. Rivier, optimization under uncertainty through a Bounding-Box concept (to be defended in May 2020), P.M. Congedo.
- PhD in progress: Joao Reis, Advanced methods for stochastic elliptic PDEs (to be defended in October 2020), P.M. Congedo, O. Le Maitre.
- PhD in progress: G. Gori, Bayesian calibration of complex thermodynamic flows (to be defended in January 2019), P.M. Congedo, O. Le Maitre, A. Guardone.
- PhD in progress: Anabel Del Val, Advanced bayesian methods for aerospace applications (to be defended in October 2020), P.M. Congedo, O. Le Maitre, O. Chazot, T. Magin.
- PhD in progress: J. Carlier, Residual distribution schemes for cavitating two-phase flows (to be defended in October 2019), P.M. Congedo, M. Pelanti, R. Abgrall.
- PhD in progress: P. Novello, Deep learning for reentry atmosperic flows (to be defended in November 2021), P.M. Congedo, D. Lugato, G. Poette.
- PhD in progress: E. Solai, Virtual Prototyping of the EVE expander (to be defended in October 2021), P.M. Congedo, H. Beaugendre.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- P.M. Congedo is Deputy Coordinator of "Maths/Engineering" Program of the Labex Mathématiques Hadamard.
- J.R. Li is Member Elu of Inria Commission d'Evaluation, 2015-present.

10.3.2. Internal action

- L. Chesnel provided some numerical experiments used in the exhibition "Rencontres diffractantes : quand les mathématiques inspirent l'art...". This exhibition was presented at Ensta ParisTech and at Inria Saclay.
- P.M. Congedo presented some research activities in aerospace in the context of UnithéauCafé du centre Inria de Saclay Ile-de-France.
- P.M. Congedo made a presentation in the context of the Fete de la science 2018, to several groups of young students (around 10-12 years old).
- H. Haddar made a joint presentation with O. Bunau from Xenocs on nanoparticle imaging using small angle X-ray diffraction technology in the context of UnithéauCafé at Inria de Saclay Ile-de-France.

DISCO Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

Catherine Bonnet is member of the organizing committee of SIAM CT19, Chendu China, July 2019. Islam Boussaada is co-animator of the national working group GT OSYDI of the GDR MACS funded by CNRS. Giorgio Valmorbida was member of the Organizing committee of the 2nd Workshop on DElays and COnstraints on Distributed parameter systems (DECOD-2018).

8.1.2. Scientific Events Selection

- Catherine Bonnet was Associate Editor for the conferences 2019 American Control Conference, Philadelphia, USA.
- Islam Boussaada was Associate Editor for 14th IFAC Workshop on Time Delay Systems, Budapest, Hungary.
- Frédéric Mazenc was Associate Editor for the conferences 2019 American Control Conference, Philadelphie, USA, and the 57th IEEE Conference on Decision and Control, Miami, USA, (2018).

8.1.2.1. Member of the Conference Program Committees

- Catherine Bonnet is a member of the scientific committee of the GDRI (International Research Group funded by CNRS) SpaDisco since 2017.
- Catherine Bonnet, Islam Boussaada and Sorin Olaru are members of the International Program Committee of the Joint IFAC Conference 7th Symposium on System Structure and Control (SSSC 2019) and 15th IFAC Workshop on Delay Systems, Sinaia, Roumania, Sept 2019.
- Islam Boussaada was a member of the International Program Committee for 14th IFAC Workshop on Time Delay Systems (TDS 2018), Budapest, Hungary.
- Frédéric Mazenc and Giorgio Valmorbida are members (Associate Editors) of the *Control Editorial Board - IEEE - CSS*. Sorin Olaru was member of the International Program Committee of the 9th IFAC Symposium on Robust Control Design - ROCOND and of the IEEE Mediterranean Control Conference.

8.1.2.2. Reviewer

The team reviewed papers for several international conferences including IEEE Conference on Decision and Control, IEEE American Control Conference, European Control Conference, IFAC World Congress.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

Frédéric Mazenc is member of the editorial boards (Associate Editor) of the following journals:

- IEEE Transactions on Automatic Control;
- European Journal of Control;
- Journal of Control and Decision.

Sorin Olaru is is member of the editorial boards (Associate Editor) of the following journals:

- IEEE Control Systems Letters;
- IMA Journal of Mathematical Control and Information, Oxford Press.

8.1.3.2. Reviewer - Reviewing Activities

The team reviewed papers for several journals including SIAM Journal on Control and Optimization, Automatica, IEEE Transactions on Automatic Control, IEEE Control Systems Magazine, Systems and Control Letters.

8.1.4. Invited Talks

Stefanella Boatto gave a talk at the biomathematics Seminar of Institut de Mathématiques de Marseille, Aix-Marseille univerité, February 2018, Marseilles, France. Title of her talk: '*Modelling epidemics dynamics due to Aedes mosquitoes : the example of Rio de Janeiro. How to approximate an epidemic attractor and to estimate the infectivity rate*'.

Frédéric Mazenc was a plenary speaker of the conference POSTA2018, August 2018, Hangzhou, China. Title of his talk: '*Stability of Positive Systems With Delay: Changes of Coordinates, Comparison Systems, Lyapunov Functionals*'.

Giorgio Valmorbida gave an invited talk at the International Workshop on Robust LPV Control Techniques and Anti-Windup Design, April 2018, Toulouse, France. Title of his talk: '*Anti-Windup Design for Synchronous Machines*'.

Giorgio Valmorbida gave an invited talk at the Meeting of the GT CSE (groupe de travail Commande de Systèmes Éléctriques) , May 2018, Paris, France. Title of his talk: '*Anti-Windup Design for Synchronous Machines*'.

Giorgio Valmorbida gave an invited talk at the 2nd Workshop on Stability and Control of Infinite-Dimensional Systems (SCINDIS-2018), May 2018, Wurzburg, Germany. Title of his talk: '*Convex Optimization Methods to Solve Integral Inequalities*'.

Giorgio Valmorbida gave an invited talk at the 2nd Workshop on DElays and COnstraints on Distributed parameter systems (DECOD-2018), November 2018, Toulouse, France. Title of his talk: '*Stability Analysis of Piece-wise Affine Discrete-Time systems*'.

8.1.5. Leadership within the Scientific Community

Catherine Bonnet is a member of the IFAC Technical Committees on *Distributed Parameter Systems* and on *Biological and Medical Systems*. She is a member of the management committee of the COST Action FRACTAL (2016-2020). Sorin Olaru is a member of the IFAC Technical Committees on *Robust Control* and on *Optimal control*. He is a member of the IEEE Technical Committee on *Hybrid Systems*. He is a Senior Member IEEE since 2012.

8.1.6. Scientific Expertise

Catherine Bonnet is a member of the Evaluation Committee of Inria since September 2015.

Since 2014, Frédéric Mazenc is an expert for the FNRS (Belgium). His mission consists in evaluating research projects funded by this institution.

Since 2012, Frédéric Mazenc is an expert for the ANVUR (National Agency for the Evaluation of Universities and Research Institutes, Italy). His mission consists in evaluating the contribution of Italian scientists.

Since 2011, Frédéric Mazenc is an expert for the Romanian National Council for Development and Innovation (Romania). His mission consists in evaluating research projects funded by the this institution.

8.1.7. Research Administration

Catherine Bonnet is a member of the administration council of the association *Femmes et Mathématiques*, of the *Parity Committee* of Inria and of the *Cellule veille et prospective* of Inria (both created in 2015). She is a member of the Bureau du Comité des Projets du CRI Saclay-Ile-de-France.

In 2018, Frédéric Mazenc is a member of the commission scientifique du CRI Saclay-Ile-de-France. Since October 2017, he is Correspondant Inria Saclay A.M.I.E.S., http://www.agence-maths-entreprises.fr/

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : Stefanella Boatto, Challenges in Biomathematical Modelling, 3h, M1, CentraleSupélec, France.

Master : Catherine Bonnet, Stability of Delay Systems, 1.5h, M1, CentraleSupélec.

Licence : Islam Boussaada, Complex analysis, 60, L3, IPSA, France.

Licence : Islam Boussaada, Harmonic analysis, 60, L3, IPSA.

Licence : Sorin Olaru, Automatic Control, 8h , M1, CentraleSupélec.

Licence : Sorin Olaru, Signals and systems, 8h , L3, CentraleSupélec.

Licence : Sorin Olaru, Embedded systems, 8h , M1, CentraleSupélec.

Licence : Sorin Olaru, Numerical methods and Optimization, 24h, M1, CentraleSupélec.

Licence : Sorin Olaru, Hybrid systems, 16h, M2, CentraleSupélec.

Licence : Guillaume Sandou, Signals and Systems, 87h, L3, CentraleSupélec.

Licence : Guillaume Sandou, Model representation and analysis, 70h, L3, CentraleSupélec.

Licence : Guillaume Sandou, Mathematics and programming, 18h, L3, CentraleSupélec.

Licence : Giorgio Valmorbida, Embedded systems, 7.5h, M1, Cursus Ingénieur CentraleSupélec.

Master : Guillaume Sandou, Automatic Control, 8h, M1, CentraleSupélec.

Master : Guillaume Sandou, Numerical methods and optimization, 28h, M1 and M2, Centrale-Supélec.

Master : Guillaume Sandou, Modelling and system stability analysis, 21h, M2, CentraleSupélec.

Master : Guillaume Sandou, Control of energy systems, 22h, M2, CentraleSupélec.

Master : Guillaume Sandou, Robust control and mu-analysis, 9h, M2, CentraleSupélec.

Master : Guillaume Sandou, Systems identification, 32h, M2, ENSTA.

Master : Guillaume Sandou, System Analysis, 22h, M2, Ecole des Mines de Nantes.

Master : Giorgio Valmorbida, Numerical methods and optimisation, 6 h, 6hETD, niveau M1, Cursus Ingénieur CentraleSupélec.

Master : Giorgio Valmorbida, Commande d'Entraînements de Vitesse Variable 12 h, M1, Cursus Ingénieur CentraleSupélec.

Master : Giorgio Valmorbida, Control Theory, 7.5 h, M1, Cursus Ingénieur CentraleSupélec.

Master : Giorgio Valmorbida, Dynamical Systems, 9 h, M2, Master Automatique Taitement du Signal et de l'image - Université Paris-Saclay, France.

Master : Giorgio Valmorbida, Control 30h, niveau M1, Master Nuclear Energy - Université Paris-Saclay.

Doctorat : Islam Boussaada, Introduction to the qualitative theory of functional differential equations, 12h, University Mouloud Mammeri, Algeria

8.2.2. Supervision

PhD : Saeed Ahmed, title: *Observer Design and Output Feedback Stabilization of Time Varying Systems*, Bilkent University. Thesis defense: 03 July 2018, supervisors: Hitay Ozbay, Frédéric Mazenc.

PhD in progress : Nadine Aoun, Modélisation de réseaux de chaleur et gestion avancée multi-échelles de la production, de la distribution et de la demande. Modeling and multi-scale advanced management of production, distribution and demand in district heating networks. Supervisor: Guillaume Sandou.

PhD in progress : Leonardo Broering Groff, Periodic Event-Triggered Control, mars 2016. Supervisors: Giorgio Valmorbida and Joao Manoel Gomes da Silva Jr.

PhD in progress : Caetano Cardeliquio, Stability and stabilization of (possibly fractional) systems with delays. French Supervisor : Catherine Bonnet, Brazilian Supervisor : André Fioravanti.

PhD in progress : Mohamed Lotfi Derouiche, Sur l'optimisation par métaheuristiques avancées de lois de commande prédictive non linéaire. On the optimization of nonlinear predictive control laws using advanced metaheuristics algorithms. Supervisors: Soufienne Bouallegue, Joseph Haggége et Guillaume Sandou.

PhD : Nicolo Gionfra, Optimisation du pilotage d'un parc d'énergies renouvelables avec stockage et du réseau de distribution sous-jacent. Optimization of the control of a park of renewable sources considering strorage means and distribution network. Supervisors: Houria Siguerdidjane et Guillaume Sandou. Defended in March 2018.

PhD in progress : Jean Mercat, Modele predictif des objets d'une scene routiere ; application à la sélection robuste des cibles pour les ADAS. Supervisor: Guillaume Sandou.

PhD in progress : Maxime Pouilly-Cathelain, Commande adaptative temps réel vis-a-vis de critères multiples de haut niveau. Supervisor : Guillaume Sandou.

8.2.3. *Juries*

- Catherine Bonnet was President of the Saclay-Ile-de-France Junior Researcher recruiting committee and a member of the National Inria Junior Researcher recruiting committee.

- Catherine Bonnet was reviewer of the PhD thesis of Mohamad Taki Asghar *'New advanced control strategies for steel making process'*, 3 May 2018, Université de Nancy. She was President of the PhD Defense juries of Noussaiba Gasmi *'Observation et commande des systèmes dynamiques d'ordre non entier'*, 14 November 2018, Université de Nancy, of Pierre-Marie Gibert *'Use of sinusoidal predictors for time-domain simulation of AC power systems'*, 30 November 2018, Université de Lyon, of Abdelkrim Bahloul *'Sur la commande des robots manipulateurs industriels en co-manipulation robotique'*, 7 December 2018, L2S, CentraleSupelec, and member of the PhD Defense jury of Bainan Liu *'Boundary obeserver-based output feedback control of coupled parabolic PDEs'*, 17 December 2018, INSA centre Val de Loire.

- Frédéric Mazenc was a reviewer of the Phd thesis of Ricardo Sanz Diaz, *'Robust control strategies for unstable systems with input/output delays'*, September 27, 2018, Universitat Politecnica de Valencia, Spain and of the Phd thesis of Mohammed Safi, *'Stabilité de Lyapunov de systèmes couplés impliquant une équation de transport'*, October 31, 2018, LAAS, Université de Toulouse, France.

- Sorin Olaru was President of the PhD Defense jury of Dominique Monnet, *'Global Minmax optimization for robust Hinf control'*, université de Brest, France, reviewer of the PhD Defense jury of Nadia Paola Rosero Ibarra,*'Modeling and Observation applied to physiology-aware control for cycling'*, 12 November 2018, université Grenoble Alpes, France and member of the PhD Defense jury of Nassim Loukkas, *'State-membership state observer design based on explicit characterizations of the estimation-error bounds'*, 6 June 2018, université Grenoble Alpes.

- Giorgio Valmorbida was a member of the jury of the Phd thesis of Fabien Niel, *'Modeling and control of a wing at low Reynolds number with high amplitude aeroelastic oscillations'*, 26 January 2018, LAAS, université de Toulouse, France.

8.3. Popularization

8.3.1. *Interventions*

Catherine Bonnet awarded the price of Mathematics and Italian et Italien at the *Concours Général des lycées et des métiers du Ministère de l'Éducation nationale*, Grand Amphitéatre de La Sorbonne, July 2018. She welcomed a group of middle school students, 17 December 2018.

ECUADOR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

Laurent Hascoët is on the organizing commitee of the EuroAD Workshops on Algorithmic Differentiation (http://www.autodiff.org).

9.1.2. Scientific Expertise

Alain Dervieux is Scientific Director for the LEMMA company.

9.2. Teaching - Supervision - Juries

9.2.1. Supervision

PhD : Éléonore Gauci, "Goal-oriented metric-based mesh adaptation for unsteady CFD simulations involving moving geometries", defended december 12, co-advisor A. Dervieux

ELAN Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. *Member of the Conference Program Committees*

- Florence Bertails-Descoubes, member of the ACM SIGGRAPH Technical Program Committee in 2018 and 2019, and the Eurographics Technical Program Committee in 2018 and 2019.

8.1.2. *Journal*

8.1.2.1. Reviewer - Reviewing Activities

- Florence Bertails-Descoubes, Reviewer in 2018 for ACM Transaction on Graphics, ACM SIGGRAPH Asia 2018, Soft Matter, Royal Society Open Science.

8.1.3. *Invited Talks*

- Florence Bertails-Descoubes, invited talk at IUSTI, Marseille, June 2018 (contact: O. Pouliquen, équipe Écoulements de Particules).

8.2. Teaching - Supervision - Juries

8.2.1. *Teaching*

Licence : Raphaël Charrondière, Calcul matriciel et fonctions de plusieurs variables, 36h éq TD, L2, Université Grenoble Alpes

Licence : Florence Bertails-Descoubes, Méthodes Numériques, 18h éq TD, L3, ENSIMAG 1A, Grenoble INP.

8.2.2. *Supervision*

PhD in progress : Mickaël Ly, Static inverse modelling of cloth, 01 octobre 2017, Florence Bertails-Descoubes and Mélina Skouras.

PhD in progress : Haroon Rasheed, Inverse dynamic modeling of cloth, 01 novembre 2017, Florence Bertails-Descoubes, Jean-Sébastien Franco, and Stefanie Wuhrer

PhD in progress : Raphaël Charrondière, Modeling and numerical simulation of elastic inextensible surfaces, 01 septembre 2018, Florence Bertails-Descoubes and Sébastien Neukirch.

8.2.3. *Juries*

Florence Bertails-Descoubes, member (Rapportrice) of Ph.D. Thesis committee of E. Cottenceau (10 avril 2018), ENSAM Lille (directeur de thèse : O. Thomas)

Florence Bertails-Descoubes, member (Rapportrice) of Ph.D. Thesis committee of S. Salamone (4 juillet 2018), Institut Charles Sadron à l'Université de Strasbourg (directeur de thèse : T. Charitat)

Florence Bertails-Descoubes, member (Rapportrice) of Ph.D. Thesis committee of S. Poincloux (15 octobre 2018), Laboratoire de Physique Statistique de l'ENS Paris (directeurs de thèse : F. Léchenault et M. Adda-Bedia).

8.3. Popularization

8.3.1. *Articles and contents*

- Interview about our past work on hair and cloth for a press article in Dauphiné Libéré des Enfants in November 2018.
- Press interview about our SIGGRAPH Asia paper on inverse shell design for an ACM Press Release in November 2018.

FACTAS Team

9. Dissemination

9.1. Promoting Scientific Activities

- V. L. Coli presented oral communications at the "Journées Idex UCA[JEDI] Matière, Lumière, Interactions", October 4-5, Fréjus, France, http://univ-cotedazur.fr/events/MLI/fr, and at the Journée d'échanges "Applications de la tomographie par rayons X", November 23, Paris, France, https://jea-tomo3d-2018.sciencesconf.org/.

- J. Leblond and K. Mavreas presented oral communications at the 5th International Conference "Modern Mathematical Methods in Science and Technology 2018 (M3ST '18)", September 2-4, Kalamata, Greece.

- K. Mavreas gave a talk at the PhD Seminar at Inria Sophia, France, November 13, https://phd-seminars-sam.inria.fr.

- G. Bose, S. Fueyo and D. Martinez Martinez presented posters at the Workshop ERNSI 2018, http://mlg.eng.cam.ac.uk/ernsi2018/.

- G. Bose gave a talk at the 23rd International Symposium on Mathematical Theory of Networks and Systems http://mtns2018.ust.hk/, July 16-20 2018, Hong-Kong.

- D. Martinez Martinez gave a talk at the 7th International Workshop on Microwave Filters https://artes.esa.int/news/7th-international-workshop-microwave-filters, 17-19 Apr 2018, Noordwijk, Netherlands, and a talk at the 2nd URSI AT-RASC (Atlantic Radio Science) http://www.ursi.org/events.php?atrasc=on, May 28 - June 1, 2018, Gran Canaria, Spain, and a talk at IMS 2018 https://ims2018.org/, June 10-15 2018., Philadelphia, USA

- A. Cooman gave a talk at IMS 2018 https://ims2018.org/, June 10-15, 2018, Philadelphia, USA.

- F. Seyfert gave a talk at IMS 2018 https://ims2018.org/, June 10-15 2018, Philadelphia, USA and at the KTH's seminar May 15, Stockholm, Sweden and at XLIM seminar, October 3, Limoges, France

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- L. Baratchart, S. Chevillard, and J. Leblond organized (scientifically and practically) the Spring School/Workshop "Inverse problems and approximation techniques in planetary sciences" [0], at Inria Sophia Antipolis, May 16-18. It was financially supported by UCA[Jedi] and gathered around 20 participants.

9.1.1.2. Member of the Organizing Committees

- L. Baratchart and J. Leblond organized a mini-symposium [0] on "Inverse source problems with applications to planetary sciences and medical imaging" at the 9th international conference "Inverse problems: modeling and simulation (IPMS 2018)", Malta, May 21-25.

- Fabien Seyfert organized a workshop at IMS 2018, on "Advanced Synthesis Techniques for reduced size filtering techniques", https://ims2018.org/technical-program/workshops-and-short-courses#2018-06-15, Philadelphia, USA.

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[0] http://www-sop.inria.fr/apics/IPAPS18/
[0] http://www.ipms-conference.org/ipms2018/index.php/m20

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

L. Baratchart sits on the Program Committee of *Applied Inverse Problems 2019*, to be held in Grenoble, France.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

L. Baratchart sits on the editorial boards of "Constructive Methods in Function Theory" and "Complex Analysis and Operator Theory".

9.1.3.2. Reviewer - Reviewing Activities

S. Chevillard was a reviewer for the journal *Transactions on Mathematical Software*.

J. Leblond was a reviewer for the journals *Numerical Algorithms, DMV Jahresberichte*.

M. Olivi was a reviewer for the journal *Automatica* and for the *18th IFAC Symposium on System Identification* (SYSID 2018).

F. Seyfert is a reviewer of *IEEE Transactions on Microwave Theory and Techniques*.

L. Baratchart was a reviewer for the seed fund program at MIT.

9.1.4. Invited Talks

- L. Baratchart was an invited speaker at the SIGMA day organized by SMAI at Université Pierre et Marie Curie, November 30.
- L. Baratchart and J. Leblond were invited to give talks at the IPMS 2018 conference, Malta, May (see Section 9.1.1). They were invited speakers at the Conference "Advances in Operator Theory with Applications to Mathematical Physics", http://www1.chapman.edu/~alpay/conf2018/conf2018.html, Chapman University, Orange, CA, USA, November.
- L. Baratchart and K. Mavreas gave talks at the workshop "Inverse problems and approximation techniques in planetary sciences", Sophia Antipolis, France, May.

9.1.5. Scientific Expertise

L. Baratchart is sitting on committee 40 of the ANR.

J. Leblond was a reviewer for the Strategic Research Programmes of the Research Council of the Vrije Universiteit Brussel (VUB, Brussel, Belgium).

F. Seyfert is a member of the IEEE MTT-8 committee for filters and passive components.

9.1.6. Research Administration

L. Baratchart sits on the committee "Mathématiques et Informatique" of the French Agency for research (ANR).

J. Leblond is an elected member of the "Conseil Scientifique" and of the "Commission Administrative Paritaire" of Inria.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Colles: S. Chevillard is giving "Colles" at Centre International de Valbonne (CIV) (2 hours per week).

9.2.2. Supervision

PhD in progress: K. Mavreas, *Inverse source problems in planetary sciences: dipole localization in Moon rocks from sparse magnetic data*, since October 2015, advisors: S. Chevillard, J. Leblond.

PhD in progress: D. Martinez Martinez, *Méthodologie et Outils de Synthèse pour des Fonctions de Filtrage Chargées par des Impédances complexes*, since October 2015, advisors: L. Baratchart, F. Seyfert, M. Olivi.

PhD in progress: G. Bose, *Filter Design to Match Antennas*, since December 2016, advisors: F. Ferrero, F. Seyfert and M. Olivi.

PhD in progress: S. Fueyo, *Cycles limites et stabilité dans les circuits*, since October 2016, advisors: L. Baratchart and J.-B. Pomet (Inria Sophia, McTao).

Post-doc. in progress: V. L. Coli, *Multiscale Tomography: imaging and modeling ancient materials*, since March 2018, advisors: J. Leblond, L. Blanc-Féraud (project-team Morpheme, I3S-CNRS/Inria Sophia/iBV), D. Binder (CEPAM-CNRS, Nice).

Post-doc.: A. Cooman, from January 2017 until June 2018, advisors: F. Seyfert and M. Olivi.

9.2.3. Juries

J. Leblond was a member of the "Comités de Suivi Doctoraux" (preliminary evaluation committees, after one year of PhD) for the ongoing PhDs of Kostiantyn Maksymenko (project-team Athena, doctoral school STIC, UCA), and for Arne Bechensteen (project-team Morpheme, I3S-CNRS), May. She was a member of a "Comité de Sélection" for professors at the University Paris Descartes (MAP5).

M. Olivi was a member of the "jury d'admission du concours CR" of the Inria Research Center.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

M. Olivi is responsible for Scientific Mediation and president of the Committee MASTIC (Commission d'Animation et de Médiation Scientifique) https://project.inria.fr/mastic/. Her main contributions related with this mission were:

- submit applications to get founding for 2019: "cordées de la réussite" (accepted) et "APOCS région".
- co-organize 10 robotic sessions for 2 classes of middle school students (device "MEDITES" http://medites.fr, founded by ANRU, the "Agence Nationale de Rénovation Urbaine"),
- co-organize the "stage MathC2+" https://project.inria.fr/mastic/mediation/stage-mathc2/, a four-day internship for 50 high school students ("secondes", about 16 years old) organized by the Committee MASTIC and its partners (June 19-22),
- co-organize Inria participation to the event "Le Village des Sciences et de l'Innovation" in Antibes (October 20-21, 10000 people), and the event "Mouans-Sartoux fête les sciences du quotidien" http://univ-cotedazur.fr/events/fetedelascience.
- co-organize about 10 "cafés scientifiques" (c@fé-in's and cafés Techno, 30 to 80 participants each) https://project.inria.fr/mastic/category/cafein/.

9.3.2. Education

- M. Olivi animated a half-day workshop session "activités débranchées" at "l'ESPE de Nice" for primary school students (April 10).

9.3.3. Interventions

- National events: M. Olivi participated to the event "Le Village des Sciences et de l'Innovation" in Antibes (October 20-21, 8000 people) and to the event "Mouans-Sartoux fête les sciences du quotidien" (October 13, 1000 people).
- In educational institutions: M. Olivi participated to the event "bilan Medium's" at the "collège Émile Roux, Le Cannet".

- Welcoming of schoolchildren or the general public in an Inria center: M. Olivi animated a workshop session during the "stage MathC2+", a four-day internship for high-school students organized by the Committee MASTIC and its partners (June 19-22).

9.3.4. Internal action

- M. Olivi presented the scientific objects produced during the year at the CaféIn of the Research Center, https://project.inria.fr/mastic/cafe-in-12-fevrier-manipulons-et-echangeons/, February.
- J. Leblond together with members of the SED gave a communication at the CaféIn of the Research Center, http://project.inria.fr/mastic/category/cafein/, October.

9.3.5. Creation of media or tools for science outreach

M. Olivi participated in the creation of the web pages https://pixees.fr/jouons-avec-des-experiences-scientifiques/.

GAMMA3 Project-Team (section vide)

GEOSTAT Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- K. Daoudi is Special Session Chair for the The 9th International Symposium on Signal, Image, Video and Communications ISIVC 2018, link.
- H. Yahia is Publication Chair for the The 9th International Symposium on Signal, Image, Video and Communications ISIVC 2018, link.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- H. Yahia is Review Editor for the journal Fronteirs in Physiology (Fractal Physiology).
- H. Yahia is Guest Editor of Springer Nature, Special Issue on Marine Information Technology, Volume 19, Issue 8, August 2018.

10.1.3. Invited Talks

- Seminars: K. Daoudi gave a seminar in July 2018 at FORTH in Greece. Title: "Speech-based differential diagnosis of Parkinsonism".

10.1.4. Scientific Expertise

- H. Yahia has been expert for the CNRS Momentum call.

10.2. Popularization

- C. Sakka, A. Zebadua, N. Brodu and H. Yahia have been participating in the demonstration made by I2s company during the Celebration of the 10 years of the center and presenting results of the demosaicing method applied to digital images.

10.2.1. Interventions

- GEOSTAT has been participating to the 10 years Inria celebration, in the form of a demonstration with I2S company.

<p style="text-align:center">**I4S Project-Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Conference Program Committees

J.Dumoulin is

- member of the scientific committee of the GI Division (Geosciences Instrumentation and Data Systems) of EGU (European Geosciences Union) for infrastructure instrumentation and monitoring since April 2013. (http://www.egu.eu/gi/structure/)
- member of the scientific committee of QIRT (quantitative Infrared Thermography) since February 2014 (http://www.qirt.org/)
- organizer and co-chair of a session at EGU 2018 (http://www.egu2018.eu/).

Q. Zhang is

- member of the international program commitee of the 18th IFAC Symposium SYSID that will take place in Stockholm, Sweden, July 9-11, 2018.
- member of the international program commitee of the 10th IFAC Symposium SAFEPROCESS that will take place in Warsaw, Poland, 29-31 August 2018.
- member of IFAC Technical Committee on Modelling, Identification and Signal Processing.
- member of IFAC Technical Committee on Fault Detection, Supervision and Safety of Technical Processes.
- member of IFAC Technical Committee on Adaptive and Learning Systems.

L. Mevel is

- member of the EWSHM scientific committee.
- member of the IOMAC scientific committee.

V. Le Cam is

- member of the IWSHM scientific committee.
- head and general secretary of the EWSHM scientific committee.
- session chairman for EWSHM 2018 in Manchester, UK.

M. Doehler is

- member of IFAC Technical Committee on Modelling, Identification, and Signal Processing.
- member of the IOMAC scientific committee.

8.1.1.2. Reviewer

Q. Zhang was reviewer for CDC 2018, ACC 2019.

M. Doehler was reviewer for SYSID 2018, SAFEPROCESS 2018 and ACC 2019.

J. Dumoulin was reviewer for EGU2018, QIRT2018 and SFT 2018

L. Mevel was reviewer for SAFEPROCESS 2018 and SYSID 2018

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

L. Mevel is member of the editorial board of the journal Mathematical Problems in Engineering, and of the journal Shock and Vibration.

Q. Zhang is member of the editorial board of the journal of Intelligent Industrial Systems.

J. Dumoulin is member of the editorial board of the journal Quantitative Infrared Thermography, and of the journal Geoscientific Instrumentation and Data Systems.

8.1.2.2. Reviewer - Reviewing Activities

L. Mevel was reviewer for Mechanical Systems and Signal Processing, journal of Sound And Vibration, Sensors

M. Doehler was reviewer for Mechanical Systems and Signal Processing, Journal of Sound and Vibration, Journal of Civil Structural Health Monitoring, Engineering Structures.

J. Dumoulin was reviewer for Quantitative Infrared Thermography Journal, GI Journal (EGU), SFT conference, Engineering Geology, International Journal of Pavement Research and Technology, Remote sensing of environment, Structural Health Monitoring, Composites Structures

F. Gillot was reviewer for Structural and Multidisciplinary Optimization, Applied Mathematical Modelling, Shock and Vibration, Applied Sciences, Lubricants

8.1.3. Invited Talks

M. Doehler, "Détection de changements dans des modèles physiques pour la surveillance vibratoire en génie civil", GdR ISIS, Paris on March 15th 2018.

L. Mevel, "Données, SHM et analyse statistique", SHM France meeting, Saclay, France on March 15th 2018.

L. Mevel presented a talk "Localisation de défaut dans les structures mécaniques à partir de mesures vibratoires." at Polytec Blois, on October 11th 2018.

J. Dumoulin presented a talk "Review on past to present achievements in Non Destructive Testing by active infrared thermography and current prospects" at International School of Quantum Electronics, Progress in Photoacoustic and Photothermal Phenomena: Focus on BIOMEDICAL, NANOSCALE, NDE and Thermophysical phenomena and technologies, 6-12 September 2018, Erice, Italie.

L. Ibos, T-T. Ha, V. Feuillet, S. Thebault, K. Zibouche, R. Bouchie, J. Weaytens, Z. Djatouti, **J. Dumoulin**, V. Le Sant, « Problématique de l'estimation de la résistance thermique de parois courantes de bâtiments par thermographie infrarouge : apport et limitations de la réduction de modèles », Journée thématique de la Société Française de Thermique (SFT) sur « Méthodes inverses et thermique du bâtiment: réduction et identification de modèles », Paris, 2 Mai 2018.

8.1.4. Leadership within the Scientific Community

V. Le Cam organized the 1st SHM France meeting in Saclay on MArch 15th 2018, together with CEA and Precend.

8.1.5. Scientific Expertise

V. Le Cam was involved in an expertise dealing with electromagnetic susceptibility of axle detectors for National French Railway Company (SNCF).

8.1.6. Research Administration

V. Le Cam is member of the scientific council of WEN (West Electronic Network) since 2014, which is a cluster of about 200 companies, academics and research laboratories active in electronics. During 2017, he has been involved amongst others in meetings and selection of R&D projects, PhD and post-doc funding, international mobility.

8.2. Teaching - Supervision - Juries

8.2.1. *Teaching*

J. Dumoulin

- Licence Professionnelle TAM : thermographie infrarouge active, 12h, Université Paris-Est, France
- Master 2 MMMRI (Maintenance et Maîtrise des Risques Industriels), contrôle non destructif par thermographie infrarouge active, 24h, Université Paris-Est, France
- Master 2 ITII, BTP, module Maintenance et réhabilitation des ouvrages, Transferts thermiques dans les Structures : Des principes physiques à l'application sur site réel, 12 h, Ecole Centrale de Nantes(ECN), France.
- Technical Skills Training for Master 2, PhD and Post-Doctoral on InfraRed Thermography : Industrial case studies IRT, at 1st Annual General Meeting of On Duty project, 5th June 2018, 1h30, Laval University, Québec, Canada.

V. Le Cam

- Master 2 Civil engineering, Structural Monitoring, 4h, Université de Nantes, France
- Licence 3 Professional SEICOM, 3h of theoretical lessons and 20H of practical lessons on Embedded and Smart Systems, Université de Nantes, France
- ESEO, 16h, practical lessons on embedded and smart systems under Linux, France
- Master 2 Electrical Engineering (GEII), 4h on electronic systems and Structural Monitoring, Université Bretagne Sud, France

M. Doehler

- Cycle préparatoire intégré, STPI, mathématiques, 48h TD, INSA Rennes, France

X. Chapeleau

- Licence Pro Mesures physiques, Mesures optiques, 15h, IUT de St Nazaire, Université de Nantes, France

T. Toullier

- Master 1, TP Capteurs (12h), contrôle, commandes, École Centrale de Nantes, France
- Foundation Master, TD Programming and Data Analysis (14h), École Centrale de Nantes, France

F. Gillot

- Master 1, Conception optimale robuste de systèmes mécaniques (10h), École Centrale de Lyon, France
- Master 1, Dynamique des systèmes biologiques humains (4h), École Centrale de Lyon, France
- Formation initiale des ingénieurs de l'École Centrale de Lyon, TP, TD, BE, niveau L3, (50h), France

8.2.2. *Supervision*

PhD : Antoine Bassil, *Fibre-optic sensor for fatigue monitoring*, D. Leduc, O. Abraham and X. Chapeleau. Ecole doctorale SPIGA, Université de Nantes, since November 2016.

PhD : Bian Xong, *Vibration analysis by video image processing for civil engineering structure monitoring*, Q. Zhang, V. Balthazar. Ecole doctorale MathsTIC, Université de Rennes 1, since October 2018.

Ludovic Gavérina post-doctoral project on in-situ measurement of thermal resistance of building envelopes, J. Dumoulin, march 2017- february 2019.

PhD : Nicolas Le Touz. *Design and study of positive energy transport infrastructures: from thermo-mechanical modeling to the optimization of such energy systems* J. Dumoulin. Ecole Centrale Nantes (ECN), defended in November 2018.

PhD : Thibaud Toullier. *Simultaneous characterization of the radiative properties and temperatures of envelopes of structures in natural environment by multispectral infrared thermography* L. Mevel, J. Dumoulin and M. Doehler. Ecole doctorale MathSTIC, Université de Rennes 1, since November 2016.

PhD : Eva Viefhues, *Statistical damage localization for civil structures*, L. Mevel and M. Doehler. Ecole doctorale MathSTIC, Université de Rennes 1, since November 2016.

PhD : David Pallier, *Sensor Enhancement to Augmented Usage and Reliability*, S. Pillement, IETR, V. Le Cam, Ecole doctorale MathSTIC

PhD : Alexander Mendler, *Vibration-based structural health monitoring of road bridges*, C. Ventura and M. Doehler. University of British Columbia, Vancouver, Canada, since September 2018.

8.2.3. *Juries*

Q. Zhang participated in the PhD jury of Kokou Langueh on December 6th, 2018 at Centrale Lille.
J. Dumoulin participated in the PhD jury of Lei Lei on July 16th, 2018 at Laval University Québec.
F. Gillot participated in the PhD jury of Melaine Desvaux on July 9th, 2018 at ENS Rennes.
L. Mevel participated in the PhD jury of Martin D. Ulriksen on April 20th, 2018 in Aalborg.

8.3. Popularization

J. Dumoulin presented a talk on "Surveillance thermique long terme" at Blue Day event organized by the Pole Mer Bretagne Atlantique on "Maintenance des infrastructures / Instrumentation / Suivi en service / durée de vie et prolongation / nouvelles agressions" , Brest, November 14th, France.

J. Dumoulin presented the COP21 solar hybrid road demonstrator at Loire- Atlantique event : "Inventons la route de demain", journées enseignements et perspectives, Fay de Bretagne, November 5th, France.

J. Dumoulin presented a talk "Routes à énergie positive" at Escales Génie Civil, Saint-Nazaire, November 22nd, France.

8.3.1. *Internal or external Inria responsibilities*

L. Mevel is member of CLHSCT committee in Rennes.

L. Mevel is member of Comité de centre committee in Rennes.

M. Doehler is member of Comité de centre committee in Rennes.

8.3.2. *Interventions*

M. Doehler participated to Journée de la science on October 5th 2018.

8.3.3. *Creation of media or tools for science outreach*

A damage localization mockup has been developed and installed in the showroom of Inria Rennes [43]. It has been the support of I4S presence during the Fête de la Science on october 5th, where several highschool classes were introduced to physics and statistics by means of our demonstration mock-up.

<div align="center">

INOCS Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- IWOBIP 2018, 2nd International Workshop on Bilevel Programming, Lille, France, June 2018: Luce Brotcorne, Martine Labbé.
- Operations Research 2018, Brussels, Belgium, September 2018: Bernard Fortz.

10.1.1.2. Member of the Organizing Committees

7th Winter School on Network Optimization, Estoril, Portugal, January 2018: Bernard Fortz.

International Symposium on Mathematical Programming (ISMP), Bordeaux, July 2018: Luce Brotcorne, Bernard Fortz.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

ORBEL 2018, Liège, Belgium, January 2018: Bernard Fortz

6th INFORMS Transportation Science and Logistics Society Workshop, January, 2018: Luce Brotcorne, Frédéric Semet

ROADEF2018 - 18ème Conférence de la Société Française de Recherche Opérationnelle et d'Aide à la Décision, Metz, France, February 2018: Luce Brotcorne, Bernard Fortz, Frédéric Semet

ISCO 2018: International Symposium on Combinatorial Optimization, Marrakesh, Morocco, April, 2018: Martine Labbé

Odysseus 2018, International Workshop on Freight Transportation, Cagliari, Italy, June 2018: Martine Labbé, Frédéric Semet

Matheuristics 2018, Tours, France, June 2018: Martine Labbé

EURO/ALIO International Conference 2018 on Applied Combinatorial Optimization, Bologna, June 2018: Martine Labbé

International Symposium on Mathematical Programming (ISMP), Bordeaux, July 2018: Martine Labbé (Program Committee), Frédéric Semet (Scientific Committee)

EURO 2018, European Conference of Operational Research Societies, Valencia, Spain, July 2018: Luce Brotcorne, Bernard Fortz

INFORMS Annual Meeting, Phoenix, United States, November 2018: Luce Brotcorne (cluster chair), Bernard Fortz

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

EURO Journal on Computational Optimization: Martine Labbé - Editor in chief, Bernard Fortz - Editor.

Computers and Operations Research: Luce Brotcorne - Associate editor.

INFORMS Journal on Computing: Bernard Fortz - Associate editor.

International Transactions in Operations Research: Bernard Fortz, Martine Labbé - Associate editors.

Transportation Science: Martine Labbé - Member of the Advisory Board.

10.1.3.2. Reviewer - Reviewing Activities

Annals of Operations Research, Applied Computing and Informatics, Central European Journal of Operations Research, Computers & Operations Research, Computational Optimization and Applications, Discrete Applied Mathematics, EURO Journal on Transportation and Logistics, European Journal of Operational Research, IISE Transactions, INFORMS Journal on Computing, International Journal of Management Science and Engineering Management, Mathematical Programming Computation, Networks, Omega, Operations Research, Optimization and Engineering, RAIRO - Operations Research, Transportation Science: Luce Brotcorne, Diego Cattaruzza, Bernard Fortz, Martine Labbé, Maxime Ogier, Frédéric Semet.

10.1.4. Invited Talks

XIX Latin-Iberoamerican Conference on Operations Research (CLAIO 2018), Lima, Peru, September 2018: Luce Brotcorne, EURO Plenary speaker [28].

Journées de l'optimisation, Montreal, Canada, May 2018 : Martine Labbé, Plenary Speaker [31].

10.1.5. Leadership within the Scientific Community

EURO Working Group "Pricing and Revenue Management": Luce Brotcorne - coordinator.

EURO Working Group "European Network Optimization Group (ENOG)": Bernard Fortz - coordinator.

EURO Working Group "Vehicle routing and logistics optimization (VEROLOG)": Frédéric Semet - Member of the board.

INFORMS Women in OR/MS : Luce Brotcorne - International liaison.

SIAG/Optimization Prize committee: Martine Labbé - Chair.

ORBEL (Belgian Operations Research Society): Bernard Fortz - Member of the board of administration and treasurer.

ORBEL representative for EURO and IFORS: Bernard Fortz.

CNRS GdR 3002: Operations Research: Frédéric Semet - Member of the steering committee.

10.1.6. Scientific Expertise

Scientific orientation committee of the Interuniversity Centre on Entreprise Networks, Transportation and Logistics (CIRRELT), Canada: Bernard Fortz, Frédéric Semet - Members.

Centro de Matemática, Aplicaçoes Fundamentais e Investigaçao Operacional, University of Lisbon: Martine Labbé - Member.

DFG Review Panel "Mathematics" for Clusters of Excellence, 2018: Martine Labbé - Member.

Scientific committee of France-Netherlands Exchange Program: Luce Brotcorne - Member.

Evaluation committee for Inria/MITACS Exchange Program: Luce Brotcorne - Member.

Evaluation committee COST GTRI: Luce Brotcorne - Member.

President of the FRIA PE1 - jury 1: Bernard Fortz - Chair.

Scientific board of PICOM competitiveness cluster: Frédéric Semet - Member.

Agence Nationale de la Recherche (ANR): Luce Brotcorne, Frédéric Semet - Reviewer.

Fond de Recherche Nature et Technologie du Québec: Frédéric Semet - Reviewer.

Research Council of Norway: Frederic Semet - Reviewer.

10.1.7. Research Administration

Committee for the Technological Development (CDT): Luce Brotcorne - Member.

CRIStAL: Frédéric Semet - Deputy-director.

Scientific council of Centrale Lille: Frédéric Semet - Elected member.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Bernard Fortz, Recherche Opérationnelle et Applications, 30hrs, M1, Université de Mons (campus Charleroi), Belgique.

Master: Bernard Fortz, Continuous Optimization, 24hrs, M1 & M2, Université libre de Bruxelles, Belgique.

Master: Martine Labbé, Computer science seminar, 12hrs, M2, Université libre de Bruxelles, Belgique.

Master: Frédéric Semet, Non-linear Optimization, 30hrs, M2, Centrale Lille.

Master: Frédéric Semet, Operations Research, 28hrs, M2, Centrale Lille.

Master: Luce Brotcorne, Optimisation, 14hrs, M1, Polytech Lille.

Master: Luce Brotcorne, Recherche opétrationnelle, 16hrs, M1 apprentissage, Polytech Lille.

Master: Luce Brotcorne, Diego Cattaruzza, Maxime Ogier, Frédéric Semet, Numerical Analysis and Optimization, 132hrs, M1, Centrale Lille.

Master: Diego Cattaruzza, Maxime Ogier, Object-Oriented Programming, 48hrs, M1, Centrale Lille.

Master: Diego Cattaruzza, Maxime Ogier, Operations Research, 16hrs, M1, Centrale Lille.

Master: Frédéric Semet, Large-scale optimization methods, 24hrs, M1, Centrale Lille.

Licence: Diego Cattaruzza, Maxime Ogier, Object-Oriented Programming, 36hrs, L3, Centrale Lille.

Licence: Frédéric Semet, Advanced programming and Complexity, 24hrs, L3, Centrale Lille.

Licence: Diego Cattaruzza, Maxime Ogier, Object-Oriented Programming, 40hrs, L2, Centrale Lille.

Licence: Diego Cattaruzza, Web Technologies and Multimedia, 32hrs, L2, Centrale Lille.

Licence: Bernard Fortz, Algorithmique 1, 12hrs, L1, Université libre de Bruxelles, Belgique.

Licence: Bernard Fortz, Algorithmique 2, 24hrs, L2, Université libre de Bruxelles, Belgique.

Licence: Bernard Fortz, Algorithmique et Recherche Opérationnelle, 24hrs, L3, Université libre de Bruxelles, Belgique.

Licence: Martine Labbé, Projets d'informatique 3 transdisciplinaire, 12hrs, L3, Université libre de Bruxelles, Belgique.

10.2.2. Supervision

PhD: Luciano Porretta, Models and methods for the study of genetic associations, Université libre de Bruxelles, January 2018, Bernard Fortz.

PhD in progress: Jérôme De Boeck, Optimization problems in energy, from October 2015, Bernard Fortz.

PhD in progress: Mathieu Besançon, Approche bi-niveau de réponse à la demande dans les réseaux électriques intelligents, from September 2018, Miguel Anjos, Luce Brotcorne, Frédéric Semet.

PhD in progress: Yaheng Cui, Models and methods for decentralized decision in logistics networks, from Oct 2016, Luce Brotcorne, Eric Ballot.

PhD in progress: Concepción Domínguez Sánchez, Mixed integer linear models and algorithms for pricing problems, from October 2017, Martine Labbé.

PhD in progress: Wenjuan Gu, Location routing for short and local fresh food supply chain, from Oct 2016, Maxime Ogier, Frédéric Semet.

PhD in progress: Léonard Von Niederhausern, Design and pricing of new services in energy in a competitive environment, from Oct 2015, Luce Brotcorne, Didier Aussel.

PhD in progress: Fränk Plein, Models and methods for the robust verification of booked capacities in gas networks in a decentralized setting, from October 2017, Martine Labbé.

PhD in progress: Luis Alberto Salazar Zendeja, Formulations and resolution methods for network interdiction problems, from November 2018, Diego Cattaruzza, Martine Labbé, Frédéric Semet.

PhD in progress: Yuan Yuan, Vehicle routing problems with synchronization for city logistics, from Oct 2016, Diego Cattaruzza, Frédéric Semet.

10.2.3. Juries

PhD: "Design of reliable aerospace system architecture", University of Edinburgh. Lukas Matthias Schaefer, Bernard Fortz - Reviewer.

PhD: "Fast and scalable optimization for segment routing", Université catholique de Louvain. Renaud Hartert, Bernard Fortz - Examiner.

PhD: "Network design under uncertainty and demand elasticity", Concordia University. Carlos Armando Zetina, Bernard Fortz - External examiner.

Habilitation: "Optimization for complex problems in air and rail transport", Université de Lille 1. Paola Pellegrini, Bernard Fortz - Reviewer.

Habilitation: "A journey through optimization: from global to discrete optimization and back", Université de Lorraine. Bernardetta Addis, Bernard Fortz - Reviewer, Martine labbé - Examiner.

PhD: "Design of optimal routes for vehicles and drivers", Universidad de La Laguna. Bencomo Domínguez-Martín, Martine Labbé - Reviewer.

PhD: "A comparative study of labeling algorithms within the branch-and-price framework for vehicle routing with time windows", Université de Liège. Stefano Michelini, Martine Labbé - Examiner.

PhD: "Mathematical programming models and algorithms for offshore wind park design", Technical University of Denmark. Martina Fischetti, Martine Labbé - External examiner.

Habilitation: "Linear formulations and exact algorithms for combinatorial optimization", Sorbonne Université. Pierre Fouilhoux, Martine Labbé - Examiner.

PhD: "Tactical planning on freight transport networks: service design and pricing", Université de Liège. Christine Tawfik, Luce Brotcorne - Reviewer.

PhD: "A tropical geometry and discrete convexity approach to bilevel programming", Université de Paris-Saclay. Jean-Bernard Eytard, Luce Brotcorne - Reviewer.

PhD: "Revenue management for transport service provides in physical internet: Freight carriers as case", Université de Recherche Paris Sciences et Lettres. Bin Qiao, Luce Brotcorne - Reviewer.

10.3. Popularization

F. Semet, Club Logistique et Transport, CCI St Quentin, November 2018.

MATHERIALS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

E. Cancès

- is the director of CERMICS, the Applied Mathematics department at École des Ponts,
- is a member of the editorial boards of Mathematical Modelling and Numerical Analysis (2006-), SIAM Journal of Scientific Computing (2008-), SIAM Multiscale Modeling and Simulation (2012-), and the Journal of Computational Mathematics (2017-),
- has co-organized an Oberwolfach workshop (March), an IMA workshop (March), the 2018 SIAM MS conference (July), and an ISCD summer school (July - August),
- was a member of the DFG Review Panel "Mathematics" for Clusters of Excellence, Cologne, April.

V. Ehrlacher

- is a member of the "Conseil d'Enseignement et de Recherche" of Ecole des Ponts,
- has co-organized the GdR MASCOT-NUM Working meeting on "Uncertainty quantification in materials science", at IHP, May (with J. Baccou, J. Reygner and G. Perrin).

G. Ferré and J. Roussel have co-organized the working group J-PSI (Jeunes chercheurs en physique statistique et interactions, until July) at IHP. The working group was provided financial support from the SMAI through a BOUM grant, and ended with a one-day conference in June at Inria Paris.

C. Le Bris is a managing editor of Networks and Heterogeneous Media. He is a member of the editorial boards of Annales mathématiques du Québec (2013-), Archive for Rational Mechanics and Analysis (2004-), COCV (Control, Optimization and Calculus of Variations) (2003-), Mathematics in Action (2008-), Nonlinearity (2005-), Journal de Mathématiques Pures et Appliquées (2009-), Pure and Applied Analysis (2018-). He is a member of the editorial boards of the monograph series Mathématiques & Applications, Series, Springer (2008-), Modelling, Simulations and Applications, Series, Springer (2009-), Springer Monographs in Mathematics, Springer (2016-). He is a member of

- the Cabinet of the High Commissioner for Atomic Energy (until September),
- the "International Scientific Advisory Committee" of the Centre de Recherche Mathématique, Université de Montréal (until mid-2018),
- the "Advisory Board" of the DFG Cluster of Excellence Engineering of Advanced Materials, Erlangen,
- the "International Scientific Advisory Board" of the DFG research center Matheon, Berlin,
- the "Conseil scientifique de la SMAI" (Scientific Council of the French Applied Maths Society),
- the International Mathematical Union Circle,
- the "Conseil de la Faculté des sciences et ingénierie", Sorbonne Université.

He is the president of the scientific advisory board of the Institut des Sciences du calcul et des données, Sorbonne Université. He has held a regular position of Visiting Professor at the University of Chicago.

F. Legoll

- is a member of the editorial board of SIAM MMS (2012-) and of ESAIM: Proceedings and Surveys (2012-),
- is a member of the ANR committee CES-40 "mathématiques et informatique".

T. Lelièvre

- is editor-in-chief of ESAIM: Proceedings and Surveys (with D. Chafai, C. Imbert and P. Lafitte),
- is a member of the editorial boards of IMA: Journal of Numerical Analysis and SIAM/ASA Journal of Uncertainty Quantification,
- is a member of the "Conseil d'Administration" of SMAI and École des Ponts,

Together with G. Stoltz, they have

- co-organized the Workshop "Advances in Computational Statistical Physics", CIRM, September (with G. Pavliotis),
- co-organized the CECAM discussion meeting "Coarse-graining with Machine Learning in molecular dynamics", Sanofi Campus Gentilly, December (with P. Gkeka, P. Monmarché).

G. Stoltz

- is a member of the scientific council of UNIT (Université Numérique Ingénierie et Technologie),
- co-organized with C. Robert the workshop "Computational Statistics and Molecular Simulation: A Practical Cross-Fertilization" (BIRS-Oaxaca, November),
- co-organizes the working group "Machine learning and optimization" of the Labex Bezout (with W. Hachel and R. Elie).

9.1.1. *Conference participation*

Members of the project-team have delivered lectures in the following seminars, workshops and conferences:

- S. Boyaval, weekly seminar of Laboratoire Jean Kuntzmann, Grenoble, February,
- S. Boyaval, GDR EGRIN annual meeting, Clermont-Ferrand, June,
- S. Boyaval, La Trobe University – Kyushu University joint Industrial Math seminar, Melbourne, September,
- E. Cancès, Energy and forces workshop, Cambridge, UK, January,
- E. Cancès, workshop "Mathematical models and computation of nonlinear problems", China, January,
- E. Cancès, weekly seminar of the mathematics department, Sapienza University of Rome, February,
- E. Cancès, weekly seminar of Maison de la Simulation, Saclay, March,
- E. Cancès, 2D materials workshop, Minneapolis, March,
- E. Cancès, Fields Institute workshop, Toronto, May,
- E. Cancès, workshop on computational mathematics, Suzhou, China, June,
- E. Cancès, Centre Henri Lebesgue workshop, Rennes, June,
- E. Cancès, SIAM Materials Science conference, Portland, July,
- E. Cancès, IPAM workshop, Los Angeles, August,
- E. Cancès, GAMM workshop, Aachen, September,
- E. Cancès, Franco-German Meeting Workshop on Mathematical Aspects in Computational Chemistry, Aachen, September,
- E. Cancès, CECAM workshop, Lausanne, November,
- E. Cancès, workshop "Big data challenges for predictive modeling of complex systems", Hong Kong, November,
- V. Ehrlacher, Groupe de travail ENS Rennes, January,
- V. Ehrlacher, workshop on "Mathematical Methods in Quantum Chemistry", Oberwolfach, Germany, March,
- V. Ehrlacher, Séminaire DEFI-MEDISIM-POEMS, October,

- G. Ferré, CERMICS PhD Seminar, Paris, February,

- G. Ferré, Les probabilités de demain, IHP, Paris, March,

- G. Ferré, Congrès National d'Analyse Numérique, Cap d'Agde, May,

- G. Ferré, International Conference in Monte Carlo and Quasi Monte Carlo Methods in Scientific Computing, Rennes, July,

- G. Ferré, SIAM Materials Science conference, Portland, July (two talks),

- G. Ferré, Franco-German Meeting Workshop on Mathematical Aspects in Computational Chemistry, Aachen, September,

- G. Ferré, Student Probability Seminar, Courant Institute of Mathematical Science, New-York, December,

- M. Josien, CANUM conference, Cap d'Agde, May,

- M. Josien, SIAM Materials Science, Portland, USA, July,

- F. Hédin, "PinT 7th Workshop on Parallel-in-Time methods", Roscoff Marine Station, France, May,

- F. Hédin, "CECAM Workshop, Frontiers of coarse graining in molecular dynamics", Zuse Institute Berlin, Germany, July,

- F. Hédin, CIRM Conference "Advances in Computational Statistical Physics", September,

- C. Le Bris, Séminaire Pierre-Louis Lions, Collège de France, January,

- C. Le Bris, Applied Mathematics Colloquium of the University of Maryland, February,

- C. Le Bris, PDE seminar, University of Chicago, April,

- C. Le Bris, Journées de l'Ecole Doctorale Carnot-Pasteur, Université de Besançon, June,

- C. Le Bris, Journées Scientifiques de Marcoule, CEA Marcoule, June,

- C. Le Bris, Journées de Cadarache, CEA Cadarache, June,

- C. Le Bris, (plenary lecture) 25th International Conference on Domain Decomposition Methods, St. John's, Canada, July,

- C. Le Bris, LMS Durham Research Symposium on Homogenization in Disordered Media, Durham, UK, August,

- C. Le Bris, Groupe de travail Calcul des Variations Paris-Ile de France, November

- F. Legoll, EMMC conference, Nantes, March,

- F. Legoll, University of Chicago, CAMP seminar, Chicago, USA, May,

- F. Legoll, AIMS conference, Taipei, Taiwan, July,

- F. Legoll, NumDiff conference, Halle, Germany, September,

- T. Lelièvre, Journée de l'ANR CINE-PARA, Université Paris 13, January,

- T. Lelièvre, Workshop "Interplay of Analysis and Probability in Applied Mathematics", Oberwolfach, Feburary,

- T. Lelièvre, Séminaire de la Maison de la Simulation, Saclay, March,

- T. Lelièvre, Séminaire du LJK, Grenoble, March,

- T. Lelièvre, Séminaire Statistical Machine Learning in Paris, Paris, April,

- T. Lelièvre, Workshop "Data-driven modelling of complex systems", ATI, London, May,

- T. Lelièvre, Workshop "Uncertainty quantification in materials science", IHP, Paris, May,

- T. Lelièvre, Séminaire Mathématiques pour l'Industrie et la Physique, Toulouse, May,

- T. Lelièvre, Fields Institute, "Focus Program on Nanoscale Systems and Coupled Phenomena: Mathematical Analysis, Modeling, and Applications", Toronto, May,

- T. Lelièvre, Workshop "Simulation and probability: recent trends", Rennes, June,

- T. Lelièvre, Workshop "Particle based methods", ICMS, Edinburgh, July,
- T. Lelièvre, CECAM workshop "Frontiers of coarse graining in molecular dynamics", Berlin, July,
- T. Lelièvre, Franco-German Workshop on mathematical aspects in computational chemistry, Aachen, September,
- T. Lelièvre, Séminaire "Simulation, Incertitudes et Méta-modèles", CEA Saclay, October,
- T. Lelièvre, Workshop "Computational Statistics and Molecular Simulation: A Practical Cross-Fertilization", Oaxaca, November,
- T. Lelièvre, Groupe de travail Évolution de Populations et Systèmes de Particules en Interaction, Ecole Polytechnique, December,
- A. Levitt, Mathematical Methods in Quantum Chemistry, Oberwolfach, March,
- A. Levitt, Analytical & Numerical Methods in Quantum Transport, Aalborg, May,
- A. Levitt, Beijing Normal University seminar, June,
- A. Levitt, Chinese Academy of Sciences seminar, June,
- A. Levitt, Franco-German Meeting Workshop on Mathematical Aspects in Computational Chemistry, Aachen September,
- P.-L. Rothé, PhD seminar, Inria Paris, June,
- J. Roussel, SIAM Materials Science conference, Portland, July,
- J. Roussel, Monte Carlo & Quasi-Monte Carlo Methods conference, Rennes, France, July,
- L. Silva Lopes, CECAM Coarse Graining Workshop, Berlin, Germany, July,
- L. Silva Lopes, Advances in Computational Statistical Physics, Marseille, September,
- S. Siraj-Dine, SIAM Materials Science conference, Portland, July,
- G. Stoltz, Seminar of the polymer physics group, ETH Zürich, February,
- G. Stoltz, Applied mathematics seminar Duke University, Durham, North Carolina, USA, February,
- G. Stoltz, Statistical Machine Learning in Paris seminar, Paris, April,
- G. Stoltz, Focus Program on Nanoscale Systems and Coupled Phenomena: Mathematical Analysis, Modeling, and Applications, Fields institute, Toronto, Canada, May,
- G. Stoltz, Journées scientifiques Inria, Bordeaux, France, June,
- G. Stoltz, Applied mathematics seminar Courant Institute of Mathematical Sciences, New York, October,
- G. Stoltz, Inria-LJLL seminar, December,
- P. Terrier, Minerals, Metals & Materials Society Annual Meeting & Exhibition, Phoenix, March,
- P. Terrier, CANUM, Cap d'Adge, June.

Members of the project-team have delivered the following series of lectures:

- E. Cancès, Fourier transform and applications in quantum physics and chemistry, 9h, GDR CORREL spring school, Paris, April,
- E. Cancès, Optimization problems in molecular simulation, 12h, ISCD summer school, Roscoff, July,
- E. Cancès, Mathematical methods and numerical algorithms for quantum chemistry, 12h, MWM autumn school, Gelsenkirchen, October,
- C. Le Bris, Aziz Lectures, University of Maryland, College Park, February,
- C. Le Bris, Fields Institute Coxeter Lecture Series, Toronto, May,
- T. Lelièvre, Mini-school math/chemistry GDR CORREL, 9h, April,
- T. Lelièvre, Lectures on "Stochastic numerical methods and molecular dynamics simulations" (15h), Ecole d'été ISCD (Sorbonne Université), Roscoff, August.

Members of the project-team have presented posters in the following seminars, workshops and international conferences:

- A. Lesage, Fifth workshop on thin structures, Naples, Italy, September,
- J. Roussel, Advances in Computational Statistical Physics, CIRM, Marseille, France, September,
- G. Ferré, Data-driven modelling of Complex Systems, Alan Turing Institute, London,
- G. Ferré, Simulation Aléatoire : problèmes actuels, Inria Rennes,
- G. Ferré, Advances in Computational Statistical physics, CIRM.

Members of the team have benefited from long-term stays in institutions abroad:

- G. Ferré, Courant Institute of Mathematical Science, New York University, New York, USA, October-November,
- P.-L. Rothé, Department of Applied Mathematics, University of Washington, Seattle, USA, April-May.

Members of the project-team have participated (without giving talks nor presenting posters) in the following seminars, workshops and international conferences:

- G. Ferré YES'X Workshop, Scalable Statistics: Accuracy and computational complexity, March,
- M. Josien, Coxeter Lecture Series, Seminar talks, Toronto, Canada, May
- A. Lesage, CANUM conference, Cap d'Agde, May,
- A. Lesage, 6th European conference on computational mechanics, Glasgow, United Kingdom, June,
- M. Ramil, Perspectives en physique statistique computationnelle au CIRM (Centre International de Recherche Mathématiques), Marseille, September,
- M. Ramil, Journées Kolmogorov, Evry, September,
- M. Ramil, ANR EFI workshop, Lyon, November,
- P.-L. Rothé, 6th European conference on computational mechanics, Glasgow, United Kingdom, June,
- P.-L. Rothé, FreeFem++ days, Paris, December,
- S. Siraj-Dine, Workshop Mathematical Challenges in Quantum Mechanics, Rome, February,
- S. Siraj-Dine, Oberwolfach Workshop on Mathematical Methods in Quantum Chemistry, March,
- S. Siraj-Dine, ICMP XIX Congress on Mathematical Physics, Montréal, July.

9.1.2. Software development and contributions

- A. Levitt has implemented a method to construct maximally-localized Wannier functions for metals. A. Levitt and S. Siraj-Dine have implemented a method for the computation of Wannier functions of topological insulators. Both these methods are available at https://github.com/antoine-levitt/wannier.
- J. Roussel and G. Stoltz have restructured the SIMOL code, in particular separating core functions, routines for quantum simulations and advanced features for molecular dynamics, in order to obtain a simpler and more accessible base code. The code is available at https://gitlab.inria.fr/matherials/simol/.
- A first implementation of the Generalized Parallel Replica algorithm, developed by F. Hédin and T. Lelièvre, is available at https://gitlab.inria.fr/parallel-replica/gen.parRep. The objective of the gen.parRep software is to popularize the use of the Parallel Replica algorithm to biological systems. Molecular dynamics is performed by using external codes linked to this program such as OpenMM. This is the first publicly available implementation of the Generalized Parallel Replica method targeting frequently encountered metastable biochemical systems, such as conformational equilibria or dissociation of protein-ligand complexes. We refer to the preprint [22] for more details.

9.2. Teaching - Supervision - Juries

The members of the project-team have taught the following courses.

At École des Ponts 1st year (equivalent to L3):

- Analyse et calcul scientifique, 30h (A. Levitt, G. Stoltz),
- Équations aux dérivées partielles et éléments finis, 15h (F. Legoll, P.-L. Rothé),
- Hydraulique numérique, 15h (S. Boyaval),
- Mécanique quantique, 10h (E. Cancès, A. Levitt),
- Méthodes numériques pour les problèmes en grande dimension, 17h30 (V. Ehrlacher, S. Boyaval),
- Optimisation, 15h, L3 (A. Lesage, A. Levitt),
- Outils mathématiques pour l'ingénieur, 15h (E. Cancès, G. Ferré, F. Legoll, T. Lelièvre, P-L. Rothé),
- Probabilités, 27h (M. Ramil)
- Projets de première année, 15h (J. Roussel, P. Terrier),

At École des Ponts 2nd year (equivalent to M1):

- Analyse de Fourier, 15h (A. Levitt),
- Analyse spectrale et application aux Équations aux dérivées partielles, 36h (F. Legoll, V. Ehrlacher),
- Contrôle de systèmes dynamiques et équations aux dérivées partielles, 18h (E. Cancès),
- Projet du département IMI, 12h (G. Ferré, M. Ramil, J. Roussel, L. Silva Lopes),
- Projets Modéliser Programmer Simuler (T. Lelièvre),
- Simulation moléculaire en sciences des matériaux, 6h (A. Levitt),
- Statistics and data sciences, 24h (G. Stoltz).

At École des Ponts 3rd year (equivalent to M2):

- Méthodes de quantification des incertitudes en ingénierie, 18h (V. Ehrlacher),
- Remise à niveau: outils mathématiques, 6h (A. Lesage).

At the M2 "Mathématiques de la modélisation" of Sorbonne Université:

- Introduction à la physique statistique computationnelle, 20h (G. Stoltz),
- Méthodes numériques probabilistes, 24h (T. Lelièvre),
- Problèmes multiéchelles, aspects théoriques et numériques, 24h (F. Legoll),
- Théorie spectrale et variationnelle, 10h (E. Cancès).

At other institutions:

- Analyse variationnelle des équations aux dérivées partielles, 32h, École Polytechnique (T. Lelièvre),
- Aléatoire, 32h, École Polytechnique (T. Lelièvre),
- Maths 1 et 2, 9h, L3, École des Mines (A. Levitt, G. Stoltz),
- Mathématiques pour l'ingénieur, 36h, L2, UPEC (S. Siraj-Dine),
- Numerical methods for partial differential equations, 21h, University of Chicago (C. Le Bris).

The following PhD theses have been defended in the group at École des Ponts:

- Amina Benaceur, Réduction de modèles en thermique et mécanique non-linéaires, Université Paris-Est, École des Ponts, defended on December 21th, 2018, supervised by A. Ern (CERMICS), co-supervised by V. Ehrlacher,
- Marc Josien, Etude mathématique et numérique de quelques modèles multi-échelles issus de la mécanique des matériaux, Université Paris-Est, École des Ponts, defended on November 20th, 2018, supervised by C. Le Bris,
- Julien Roussel, Analyse théorique et numérique de dynamiques non-réversibles en physique statistique computationnelle, Université Paris-Est, École des Ponts, defended on November 27th, 2018, supervised by G. Stoltz,
- Pierre Terrier, Reduced models for defect migration in metals, Université Paris-Est, École des Ponts and CEA Saclay, defended on December 19th, supervised by G. Stoltz and M. Athènes (CEA).

The following PhD theses are ongoing in the group at École des Ponts:

- Zineb Belkacemi, Machine learning techniques in molecular simulation, Université Paris-Est, Thèse CIFRE Sanofi, started November 1st, 2018, co-supervised by T. Lelièvre and G. Stoltz,

- Robert Benda, Multiscale modeling of functionalized nanotube networks for sensor applications, Ecole Polytechnique, started September 1st, 2018, supervised by E. Cancès and B. Lebental (École Polytechnique),

- Raed Blel, Monte Carlo methods and model redcution, started October 1st, 2018, supervised by V. Ehrlacher and T. Lelièvre,

- Lingling Cao, Mathematical analysis of models of thermo-electronic transport, Université Paris-Est, École des Ponts, started November 1st, 2016, supervised by E. Cancès and G. Stoltz,

- Rafaël Coyaud, Méthodes numériques déterministes et stochastiques pour le transport optimal, Université Paris-Est, École des Ponts, started October 1st, 2017, supervised by A. Alfonsi (CERMICS) and co-supervised by V. Ehrlacher,

- Qiming Du, Mathematical analysis of splitting methods, École Doctorale Sciences Mathématiques de Paris Centre, started September 1st, 2016, supervised by A. Guyader (Sorbonne Université) and T. Lelièvre,

- Grégoire Ferré, Efficient sampling methods for nonequilibrium systems, Université Paris-Est, École des Ponts started October 1st, 2016, supervised by G. Stoltz,

- Adrien Lesage, Multi-scale methods for calculation and optimization of thin structures, started October 1st, 2017, supervised by F. Legoll, co-supervised by V. Ehrlacher and A. Lebée (École des Ponts),

- Sofiane Martel, Modélisation de la turbulence par mesures invariantes d'EDPS, Université Paris-Est, École des Ponts, started January 1st, 2017, supervised by S. Boyaval and co-supervised by J. Reygner (CERMICS),

- Pierre-Loïk Rothé, Numerical methods for the estimation of fluctuations in multi-scale materials and related problems, started October 1st, 2016, supervised by F. Legoll,

- Mouad Ramil, Metastability for interacting particle systems, started October 1st, 2017, supervised by T. Lelièvre and J. Reygner (CERMICS),

- Laura Silva Lopes, Numerical methods for simulating rare events in molecular dynamics, started October 1st, 2016, supervised by J. Hénin (IBPC) and T. Lelièvre,

- Sami Siraj-Dine, Modélisation mathématique des matériaux 2D, École des Ponts, started October 1st, 2017, supervised by E. Cancès, C. Fermanian and co-supervised by A. Levitt.

Project-team members have participated in the following PhD juries:

- E. Cancès, PhD of Marco Vanzini ("Auxiliary systems for observables: dynamical local connector approximation for electron addition and removal spectra"), defended at Ecole Polytechnique in January 2018,

- E. Cancès, PhD of Giovanna Marcelli ("A mathematical analysis of spin and charge transport in topological insulators"), defended at Sapienza University of Rome in February 2018,

- E. Cancès, PhD of Mi-Song Dupuy ("Analyse de la méthode projector augmented-wave pour les calculs de structure électronique en géométrie périodique"), defended at Université Paris Diderot in September 2018,

- E. Cancès, PhD of Carlo Marcati ("Discontinuous hp finite element methods for elliptic eigenvalue problems with singular potentials, with applications in quantum chemistry"), defended at Sorbonne Université in October 2018,

- V. Ehrlacher, PhD of Mi-Song Dupuy, ("Analyse de la méthode projector augmented-wave pour les calculs de structure électronique en géométrie périodique"), defended at Université Paris-Diderot in September 2018.

- V. Ehrlacher, PhD of Nicolas Cagniart, ("Quelques approches non linéaires en réduction de complexité"), defended at Sorbonne Université in November 2018,

- V. Ehrlacher, PhD of Jules Fauque, ("Modèle d'ordre réduit en mécanique du contact. Application à la simulation du comportement des combustibles nucléaires"), defended at Ecole des Mines de Paris in November 2018,

- V. Ehrlacher, PhD of Ahmad Al-Takash, ("Development of numerical methods to accelerate the prediction of the behavior of multiphysics under cyclic loading"), defended at ENSMA in November 2018,

- F. Legoll, PhD of Brian Staber ("Stochastic analysis, simulation and identification of hyperelastic constitutive equations"), defended at Université Paris-Est in June 2018,

- T. Lelièvre, PhD of Bob Pépin ("Time Averages of Diffusion Processes and Applications to Two-Timescale Problems"), défended at Université du Luxembourg, April 2018,

- T. Lelièvre, PhD of Michel Nowak ("Accelerating Monte Carlo particle transport with adaptively generated importance maps"), defended at Université Paris Saclay, September 2018,

- T. Lelièvre, PhD of Ze Lei ("Irreversible Markov Chains for Particle Systems and Spin Models: Mixing and Dynamical Scaling"), défended at Ecole Normale Supérieure, December 2018,

- G. Stoltz, PhD of Sabri Souguir ("Simulation numérique de l'initiation de la rupture à l'échelle atomique"), defended at Ecole des Ponts in November 2018.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- A. Levitt is a member of the editorial board of Interstices, Inria's popularization website.

9.3.2. Articles and contents

- E. Cancès has been interviewed in "La Jaune et La Rouge", the journal of the alumni of Ecole Polytechnique, in January.

9.3.3. Internal actions

- C. Le Bris organized an open day at CERMICS in June for the administrative staff of École des Ponts.

<p style="text-align:center">**MATHRISK Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- A. Alfonsi:

  Co-organizer of the working group seminar of MathRisk "Méthodes stochastiques et finance".

- A. Sulem

  Co-organizer of the seminar Inria-MathRisk /Université Paris 7 LPMA "Numerical probability and mathematical finance". https://www.lpsm.paris/mathfipronum/gt

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- B. Jourdain

  Associate editor of

  – ESAIM : Proceedings and Surveys
  – Stochastic Processes and their Applications (SPA)

- D. Lamberton

  Associate editor of

  – Mathematical Finance,
  – Associate editor of ESAIM Probability & Statistics

- A. Sulem

  Associate editor of

  – Journal of Mathematical Analysis and Applications (JMAA)
  – International Journal of Stochastic Analysis (IJSA)
  – SIAM Journal on Financial Mathematics (SIFIN)

10.1.2.2. Reviewer - Reviewing Activities

- B. Jourdain : Reviewer for *Mathematical Reviews*
- A. Sulem: Reviewer for *Mathematical Reviews*

10.1.3. Invited Talks

- A. Alfonsi
  – 15th of December 2017: "Sampling of probability measures in the convex order and approximation of Martingale Optimal Transport problems." Séminaire Bachelier, Paris.
  – 12th of June 2018: "Sampling of probability measures in the convex order and approximation of Martingale Optimal Transport problems." Conference on Stochastic modeling and financial applications, Verona.
  – 29th and 30th of August 2018: "Introduction to affine processes". Lecture given at the 11th European Summer School in Financial Mathematics, Palaiseau.

- 29th of October 2018: "Sampling of probability measures in the convex order and approximation of Martingale Optimal Transport problems." International Conference on Control, Games and Stochastic Analysis, Hammamet.
- 7th of December 2018: "Approximation de mesures de probabilité dans l'ordre convexe par projections pour la distance de Wasserstein." Séminaire de Mathématiques Appliquées, Collège de France.

- V. Bally
  - Conference SPA (Stochastic Processes and their Applications): "Abstract Malliavin calculus and invariance principles", 11-15 June 2018, Gothenburg, Sweden.
  - Workshop on Analytical Aspects of Stochastic Systems: "Transfer of regularity for Markov semigroups", Växjö, Sweden, June 6-8, 2018.
  - Workshop Recent Advances in Random Processes - Conference in honor of Paolo Baldi's 70th aniversary. Talk: Malliavin Calculus and Invariance Principles"
  - Workshop on Asymptotic expansions and Malliavin calculus 15-16 November 2018, Institut Henri Poincaré. Talk: Malliavin Calculus and Invariance Principles"

- B. Jourdain

  - Inria Mathrisk/LPSM university Paris Diderot seminar, 20 December 2018 : Differentiability of the squared quadratic Wasserstein distance

  - 1st Moscow-UK workshop on stochastic analysis : Wasserstein calculus and related topics, ICMS Edinburgh 19-23 November 2018 : Lifted and geometric differentiability of the squared quadratic Wasserstein distance

  - Seminar of the chair Financial Risks, IHP, 5 October 2018 : A new family of one-dimensional martingales couplings

  - Populations : Interaction and Evolution, IHP, 10-14 September 2018 : Existence of a calibrated regime-switching local volatility model

  - Journées MAS 2018, Dijon, 29-31 August : plenary talk entitled Sampling of probability measures in the convex order and approximation of martingale optimal transport problems

  - 10th world congress of the Bachelier finance society, Dublin, 16-20 July 2018 : Sampling of probability measures in the convex order and approximation of martingale optimal transport problems

  - MCQMC2018, Rennes, 2-6 July 2018 : Sampling of probability measures in the convex order and approximation of martingale optimal transport problems

  - Bachelier course : Systems of rank-based diffusions with mean-field interaction, 4 hours, 23 and 30 March 2018

- D. Lamberton

  Invited speaker: Symposium on optimal stopping, June 25-29 2018, Rice University, Houston. (USA)

- A. Sulem
  - Conference SPA (Stochastic Processes and their Applications): "Stochastic Optimal Control Under Partial Observations", 11-15 June 2018, Gothenburg, Sweden.

10.1.4. Research Administration

- A. Alfonsi

  - Deputy director of CERMICS laboratory

  - In charge of the Master "Finance and Application" at the Ecole des Ponts.

- D. Lamberton

  Vice-president for research at Université Paris-Est Marne-la-Vallée

- B. Jourdain

  - Head of the doctoral school MSTIC, University Paris-Est

- A. Sulem

  - Member of the Committee for scientific positions (Commission des emplois scientifiques), Inria Paris

  - Corresponding member of the comité opérationel d'évaluation des risques légaux et éthiques (COERLE) at Inria Paris research center

  - Member of the Committee for Inria international Chairs

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence :

- A. Alfonsi: 'Probabilités", first year course at Ecole des Ponts.

- V. Bally : "Analyse Hilbertienne", Course L3, UPEMLV

Master :

- A. Alfonsi:

  - "Données Haute Fréquence en finance",Master lectures at UPEMLV.

  - 'Traitement des données de marché : aspects statistiques et calibration", Master lectures at UPEMLV.

  - "Mesures de risque", Master course of UPEMLV and Paris VI.

  - Professeur chargé de cours at Ecole Polytechnique.

- V. Bally

  - Course on "Taux d'Intêret", M2 Finance, UPEMLV

  - Course on "Calcul de Malliavin et applications en finance", M2 Finance, UPEMLV

  - Course on "Analyse du risque", M2 Actuariat, UPEMLV

  - Course on "Processus Stochastiques", M2 Recherche, UPEMLV

- B. Jourdain

  - Course on "Mont-Carlo Markov chain methods and particle algorithms", Research Master Probabilités et Modèles Aléatoires, Sorbonne Université

  - B. Jourdain: course "Mathematical finance", M1, ENPC

- B. Jourdain, B. Lapeyre

  - Course "Monte-Carlo methods", 3rd year ENPC and Master Recherche Mathématiques et Application, University of Marne-la-Vallée

- J.-F. Delmas, B.Jourdain

  - course "Jump processes with applications to energy markets", 3rd year ENPC and Master Recherche Mathématiques et Application, University of Marne-la-Vallée

- B. Lapeyre

  - Monte-Carlo methods in quantitative finance, Master of Mathematics, University of Luxembourg,

- D. Lamberton

  - Calcul stochastique pour la finance, master 1 course, Université Paris-Est Marne-la-Vallée

- A. Sulem

- "Finite difference for PDEs in Finance", Master 2 MASEF, Université Paris IX-Dauphine, Département Mathématiques et Informatique de la Décision et des Organisations (MIDO), 27 h.
- "PDE methods in Finance", Master of Mathematics, University of Luxembourg, 22 h lectures and responsible of the module "Numerical Methods in Finance".

10.2.2. Supervision

PhD Alexandre Zhou, "Theoretical and numerical study of problems nonlinear in the sense of McKean in finance", Ecole des Ponts, defended on October 17th 2018, supervised by B.Jourdain.

PhD Giulia Terenzi, "American options in complex financial models", université Marne la Vallée, defended on December 17th 2018, supervised by D. Lamberton and Lucia Caramellino, University Tor Vergata, Rome.

PhD Marouan Iben Taarit , " On CVA and XVA computations ", "Valorisation des ajustements Xva : de l'exposition espérée aux risques adverses de corrélation", CIFRE Natixis/ENPC, defended on January 8th, ENPC, Supervisor: Bernard Lapeyre.

PhD in progress :

- Anas Bentaleb (started February 2018) : Mathematical techniques for expected exposure evaluation, Supervisor: B. Lapeyre.

- Adel Cherchali, "Numerical methods for the ALM", funded by Fondation AXA, starting from September 2017, Supervisor: A. Alfonsi

- Rafaël Coyaud, "Deterministic ans stochastic numerical methods for multimarginal and martingale constraint optimal transport problems", starting from October 2017, Supervisor: A. Alfonsi

- Rui Chen (Fondation Sciences Mathématiques de Paris grant), "Stochastic Control of mean field systems and applications to systemic risk, from September 2014, Université Paris-Dauphine, Supervisor: A. Sulem.

- Sophian Mehalla (started November 2017), CIFRE agreement Milliman company/Ecole des Ponts (http://fr.milliman.com, Supervisor: B. Lapeyre

- Oumaima Bencheikh (started November 2017) "Acceleration of probabilistic particle methods", Supervisor: B. Jourdain

- Ezechiel Kahn (started September 2018) "Functional inequalities for random matrices models", supervised by B. Jourdain and D. Chafai

- William Margheriti (started January 2018) "Numerical methods for martingale optimal transport problems", supervised by J.-F. Delmas and B. Jourdain

10.2.3. Juries

B. Jourdain :

Jury and report on

- PhD of Hadrien De March, defended on June 29, university Paris Saclay
- PhD of David Krief, defended on September 27, University Paris Diderot

A. Sulem

- PhD of David Krief, defended on September 27, University Paris Diderot (Chair of the Committee)
- PhD of Xiao Wei, November 27, University Paris Diderot
- PhD Hadjer Moussaoui, December 14, Université de Toulon
- HdR of Thomas Lim, ENSIIE, December 4, Université Evry Val d'Essonne
- PEDR CNRS September 2018
- PRIX Inria : Grand Prix Inria - Académie des Sciences; - Prix Jeune Chercheur - Académie des Sciences ; Prix Innovation - Dassault Système (Spring 2018)

<p align="center">MCTAO Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

Members of the team have been involved in creating a series of conferences on "The cut locus: A bridge over differential geometry, optimal control, and transport", together with Japanese colleagues, see motivations in Section 3.2 . The first one took place in Bangkok, Thailand, in 2016 and the second one was organized this year, September 3-6 in Sapporo, Japan. There are plans to organise the third conference in Nice in 2020. J.-B. Caillau and L. Rifford were members of the scientific and organising committee for this second edition.

J.-B. Caillau was member of the Scientific committee of the PGMO days 2018, hosted by EDF labs in Saclay, and supported by the Fondation Mathématique Jacques Hadamard (FMJH). The conference gathered about 280 scientists working in optimization and data science. Together with H. Zidani (ENSTA Paristech), J.-B. Caillau organized two sessions of invited talks on "Optimal control and applications" during the conference.

J.-B. Caillau is chair (together with D. Auroux, UCA) of the 19th French-German-Swiss conference on Optimization that will take place in Nice in September 2019. This conference is the main European biennial event in optimization in the broad sense.

10.1.2. Journal

B. Bonnard is a member of the editorial board of the *Pacific Journal of Mathematics for Industry*.

10.1.3. Invited Talks

B. Bonnard, J.-B. Pomet and J. Rouot gave three invited talks at the conference Dynamics, Control, and Geometry, Banach center, Warsaw (Poland): "Sub-Riemannian geometry and the Copepod Micro–swimmer", "Geometric and numerical methods in optimal control for the time minimal saturation of a pair of spins", "Dynamic equivalence and flatness of control systems: some results and open questions".

Olivier Cots gave an invited talk at PGMO Days. Olivier Cots, Bernard Bonnard, Jérémy Rouot and Thibaut Verron, "Geometric and numerical methods for the saturation problem in Magnetic Resonance Imaging".

J.-B. Pomet gave an invited talk at the 2$^{\text{nd}}$ conference on "The cut locus: A bridge over differential geometry, optimal control, and transport", September 3-6, Sapporo, Japan.

P. Lissy gave two seminars at Fudan University, Shanghai, China (February).

P. Lissy gave two plenary talks at *PICOF conference*, Beyrouth, Libanon (June) and at *Workshop on Microlocal analysis, numerical analysis and kinetic equations*, Madrid, Spain (February).

J.-B. Caillau gave the following invited talks:

- "Optimal control of slow-fast mechanical systems" (in January), *UCA Complex days*, Nice
- "Smooth and broken Hamiltonian curves in optimal control" (in February), *Recent advances in Hamiltonian dynamics and symplectic topology*, Padova

L. Dell'Elce gave the following seminars:

22/2/2018   *Robust trajectory design using invariant manifolds. Application to the asteroid (65803) Didymos* at Astrogeo, Sophia Antipolis, France.

7/5/2018   *Two-phase averaging of optimal control systems with application to the Eath-Moon transfer* at JAXA, Sagamihara, Japan.

9/7/2018   *Two-phase averaging of optimal control systems* at Technion, Haifa, Israel.

10.1.4. Leadership within the Scientific Community

J.-B. Caillau is member of the following committees:

- Conseil scientifique du GdR Calcul
- Conseil scientifique de l'Institut de Mécanique Céleste et de Calcul des Éphémérides (Observatoire de Paris)
- Conseil scientifique PGMO, Fondation Mathématique Jacques Hadamard
- Jury du prix de thèse PGMO

J.-B. Caillau, L. Dell'Elce and J.-B. Pomet are members of the Centre Spatial Universitaire UCA (projet CubeSat).

10.1.5. Scientific Expertise

J.-B. Caillau and L. Giraldi were hired for a one day expertise for Smart'n Go (startup working in marine routing).

10.1.6. Research Administration

J.-B. Caillau is

- co-organizer of the Séminaire de géométrie hamiltonienne of Sorbonne Université
- member of the Conseil Scientifique 3IA (project on AI supported by Nice-Sophia Antipolis)

Laetitia Giraldi is

- a member of CSD (*Comité du Suivi Doctoral*) at Inria Sophia-Antipolis,
- a redactor of the meeting reports of the *Comité des Équipes-Projets* at Inria Sophia-Antipolis.

Jean-Baptiste Pomet is

- a member of the steering committee of the Center for Planetary Origin (C4PO),
- a member of the scientific council of Académie 2 "Complex system", both for Université Côte d'Azur (UCA),
- an elected member of Commission d'Évaluation (Inria permanent evaluation committee).

Ludovic Rifford is the Executive Director of the CIMPA (Centre International de Mathématiques Pures et Appliquées).

Pierre Lissy is elected member of the "CCR" of the CEREMADE (committee in charge of the recruitment at Dauphine, notably for ATER, months of invited and composition of hiring committees).

Pierre Lissy is member of the team of the website "Opération Postes".

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

B. Bonnard taught 220 hours at undergraduate level (ESIREM engineering school)

J.-B. Caillau taught 200 hours at L3, M1 and M2 level (Polytech Nice Sophia, Universié Nice Sophia).

L. Giraldi taught 10 hours in the Master 2 recherche, Cell Physics (Université de Strasbourg). She also teaches in Classe préparatoire aux grandes écoles d'ingénieurs (Centre International de Valbonne) as a interrogatrice in MP* and MPSI (4 hours per week).

P. Lissy gave a six hour lecture on "Spectral Geometry" at the CIMPA spring school "PDEs and geometry" (May 2018, Jijel, Algeria).

J.-B. Caillau is director of the Applied Math. & Modelling department of Polytech Nice Sophia.

J.-B. Caillau and L. Giraldi are members of the jury of Agrégation externe de mathématiques.

P. Lissy was coordinator of a work group on the recast of the Teaching in Analysis for the initial education in Maths at Université Paris-Dauphine.

10.2.2. Supervision

PhD : Michaël Orieux, "Quelques propriétés et applications du contrôle en temps minimum" [1], Université Paris Dauphine, November 27, 2018, co-supervised by J.-B. Caillau and J. Féjoz (Univ. Paris-Dauphine).

PhD in progress : Sébastien Fueyo, "Testing stability of nonlinear amplifier by frequency-domain methods", started October, 2016, co-supervised by J.-B. Pomet and L. Baratchart (FACTAS team).

PhD in progress : Yacine El alaoui-faris, "modeling magneto-elastic micro-robot from theory to experiment", started October, 2017, co-supervised by L. Giraldi, J.-B. Pomet and Stephane Régnier (Sorbonne Université).

PhD in progress : Clément Moreau, "Contrôlabilité de systèmes en dimension finie ou infinie issus du vivant", started September, 2017, co-supervised by L. Giraldi, P. Lissy (Univ. Paris-Dauphine) and J.-B. Pomet.

PhD in progress : Agustin Yabo, "Control of biological processes", started September, 2018, co-supervised by J.-B. Pomet and J.-L. Gouzé (Biocore team).

PhD in progress : Luca Berti, "Modeling magneto-elastic micro-robot using PDE", started October, 2018, co-supervised by L. Giraldi and C. Prud'Homme (Université de Strasbourg).

10.2.3. Juries

B. Bonnard was a reviewer of Sofya Maslovskaya's PhD (ENSTA ParisTech), and he sat in the jury for Toufik Bakir's Habilitation defense (Univ. de Bourgogne Franche Comté).

J.-B. Caillau was a reviewer of Ivan Beschastnyi PhD thesis (SISSA, September 2018), Francesca Chittaro Habilitation (Univ. Toulon, December 2018), Antoine Olivier PhD thesis (Sorbonne Université, October 2018), Cédric Rommel PhD thesis (École Polytechnique, October 2018), and he sat in the jurys of Clément Gazzino PhD thesis (Univ. Toulouse, January 2018), Ricardo Bonalli PhD thesis (Sorbonne Université, July 2018).

J.-B. Pomet was a reviewer of Riccardo Bonalli's PhD (Univ. Paris Sorbonne), and he sat in the jury for Sofya Maslovskaya's PhD (ENSTA ParisTech) and for Toufik Bakir's Habilitation defense (Univ. de Bourgogne Franche Conté).

L. Rifford was a reviewer of Vincenzo Basco's PhD (Sorbonne Université) and sat in the jury for Nicolas Juillet's Habilitation à Diriger des Recherches (Université de Strasbourg).

Pierre Lissy has been a member of hiring committees for "Maître de Conférences" positions at Université Paris-Dauphine (2 positions) and Université Sorbonne Université (1 position).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Clément Moreau is a member of the team « équipe actualités » of Images des Mathématiques since October, 2018.

J.-B. Caillau is member of the MASTIC initiative at Inria Sophia (Médiation et animation scientifiques Inria) and delivers regular talks in high school or college.

10.3.2. Articles and contents

Clément Moreau participated in the radio show « La méthode scientifique » on March 7, 2018.

Clément Moreau participated in the national competition « Ma thèse en 180 secondes ».

10.3.3. Education

Lamberto Dell'Elce is involved in the PoBot challenge promoted by MEDITES. Specifically he supervises a class in the College Emile Roux in Cannes.

10.3.4. Interventions

Clément Moreau participated in the « journées portes ouvertes » at Inria Sophia Antipolis in the framework of the 2018 « Fête de la Science », October 7, 2018, and in a scientific discovery workshop for secondary school students at the concrete Art Museum, Mouans-Sartoux, October 11, 2018.

Lamberto Dell'Elce gave the talk "CubeSats: Concevoir et Realiser un Satellite à l'Université" at the *Cafe In* meeting held at Inria Sophia on June 6, 2018, and for high scholl students during the stage MathC2+ in June, 2018.

MEMPHIS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

The team organized a conference in honour of Charles-Henri Bruneau. Several scientific presentations have been given by his many collaborators and friends. This conference was organized over two half-days: the afternoon of September 13 and the morning of September 14. The presentations are in a 30-minute format. https://indico.math.cnrs.fr/event/3768/

The team organized a half-day workshop on numerical modelling of swimming on December 12th 2018. Participants: Patrick Babin (MRGM), Michel Bergmann, Afaf Bouharguane, Marie Couliou (ONERA), Hamid Kellay (LOMA), Angelo Iollo, Olivier Marquet (ONERA).

9.1.2. Reviewer - Reviewing Activities

Journal of Computational Physics, International Journal of CFD, Journal of Non-linear Analysis B, ASME Journal of Computational and Nonlinear Dynamics, Journal of Fluid Mechanics, Acta Mechanica, AIAA Journal, International Journal Numerical Methods in Fluids, Computers & Fluids, Journal of Engineering Mathematics, European Journal of Mechanics / B Fluids, Journal Européen de Systèmes Automatisés, Applied Mathematics and Computation. Nuclear Science and Engineering, Computer Methods in Applied Mechanics and Engineering, Journal of Theoretical Biology, Computational Optimization and Applications, Applied science, Meccanica, SIAM journal on scientific computing, SIAM journal on uncertainty quantification, Advances in Computational Mathematics.

9.1.3. Invited Talks

Angelo Iollo was invited as plenary speaker to SIMAI 2018, https://ocs.simai.eu/index.php/SIMAIcongress/SIMAI2018.

Angelo Iollo was invited to Gran Sasso Science Institute for the *Intensive Week on Fluids and Waves*https://fluidsandwaves.wordpress.com/blog/

9.1.4. Scientific Expertise

Angelo Iollo is an expert for the European Union for the program FET OPEN.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Four members of the team are Professors or Assistant Professors at Bordeaux University and have teaching duties, which consist in courses and practical exercises in numerical analysis and scientific computing. Michel Bergmann (CR) also teaches around 64 hours per year (practical exercises in programming for scientific computing).

9.2.2. Supervision

PhD: Federico Tesser. *Parallel solver for the Poisson equation on a hierarchy of superimposed meshes, under a Python framework*, University of Bordeaux and Insubria University. 11/09/2018. Advisors: Michel Bergmann, Angelo Iollo.

PhD: Claire Taymans. *Solving Incompressible Navier-Stokes Equations on Octree grids : towards Application to Wind Turbine Blade Modelling*, University of Bordeaux. 28/09/2018. Advisors: Michel Bergmann, Angelo Iollo.

PhD: Baptiste Lambert. *Modelling and numerical simulation of interactions in particle-laden flows*, University of Bordeaux. 17/10/2018. Advisors: Michel Bergmann, Lisl Weynans.

PhD: Emanuela Abbate. *Numerical methods for the simulation of low-Mach phenomena in continuum mechanics*, University of Bordeaux and Insubria University. 19/12/2018. Advisors: Angelo Iollo, Gabriella Puppo.

PhD in progress: Michele Giuliano Carlino. *Fluid-structure models on Chimera grids.* 01/10/2018. Advisors: Michel Bergmann, Angelo Iollo.

PhD in progress: Sebastien Riffaud. *Convergence between data and numerical models.* Advisor: Angelo Iollo.

PhD in progress: Antoine Fondanèche. *Monolithic fluid-structure modeles on parallel hierarchical grids.* 01/09/2018. Advisor: Michel Bergmann, Angelo Iollo.

PhD in progress: Luis Ramos Benetti. *Monolithic fluid-structure modeles on parallel hierarchical grids.* 01/10/2017. Advisor: Michel Bergmann, Angelo Iollo.

PhD in progress: Mathias Braun. *Reduced-order modelling for increased resilience of water distribution networks.* 01/10/2015. Advisors: Angelo Iollo, Iraj Mortazavi, Olivier Piller.

PhD in progress: *Numerical simulation and modeling of zebra fish swimming for the study of human diseases of genetic and toxicological origin.* 01/10/2015. Advisors: Afaf Bouharguane, Patrick Babin.

9.2.3. Juries

Angelo Iollo has been reviewer of the PhD thesis of Nicola Pozzi *Numerical Modeling and Experimental Testing of a Pendulum Wave Energy Converter (PeWEC)*, Politecnico di Torino, DIMEAS, May 2018.

Tommaso Taddei has partecipated to the PhD thesis of Nicolas Cagniart *A few nonlinear approaches in model order reduction*, Sorbonne University, LJLL, November 2018.

9.3. Popularization

Afaf Bouharguane has presented her research at the event Unithé ou Café at Inria Bordeaux, November 2018.

Michel Bergmann, "Modéliser et optimiser les énergies renouvelables". Stand for the 10-th year anniversary of Inria Bordeaux South West centre, October 13th 2018.

<p style="text-align:center">**MEPHYSTO-POST Team**</p>

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific Events Organisation

6.1.1.1. Member of the Organizing Committees

A. Hardy co-organized the "Semaine d'Etude Math-Entreprise Hauts de France 2018" (Lille).

6.1.2. Journal

6.1.2.1. Reviewer - Reviewing Activities

- S. De Bièvre served as reviewer for J. Math. Phys., Ann. Institut H. Poincaré, J. Stat. Phys. in 2018.
- G. Dujardin served as reviewer for APNUM and Numer. Math. in 2018.
- A. Hardy served as reviewer for Communications in Pure and Applied Mathematics and Annals of Applied Probability in 2018.
- M. Simon was reviewer for Markov Processes and Related Fields, and Annales de L'I.H.P. Probabilités et Statistiques in 2018.

6.1.3. Invited Talks

A. Hardy was invited to give several talks in 2018, including:
- (May 2018) Workshop "random matrices and their applications", Kyoto university (Japan)
- (April 2018) Groupe de travail "Probas du vendredi" de Jussieu, Paris
- A. Hardy was invited at a "réunion interne de l'Académie des Science" entitled "Le renouveau des processus ponctuels déterminantaux, des fermions à la statistique appliquée".

M. Simon was invited to give several talks in 2018, including:
- (April 2018) Workshop of the Simons Semester "PDE/SPDE-s, Functional Inequalities", Banach Center, Poznan (Poland)
- (August 2018) Journées "Modélisation Aléatoire et Statistique" of the "Société de Mathématiques Appliquées et Industrielles", Dijon (France)
- (November 2018) Weekly Probability Seminar at University of Bath (England)
- (December 2018) Weekly Probability Seminar in Lyon (France).

6.1.4. Research Administration

G. Dujardin is a member of Inria Evaluation Committee.

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

Licence: G. Dujardin, "Calcul Différentiel et Intégral", 30h, L2, Université Libre de Bruxelles, Belgique.

Master: G. Dujardin, "Analyse Fonctionelle", 30h, M1, Université Libre de Bruxelles, Belgique.

Master: G. Dujardin, "Vortex dans les condensats de Bose–Einstein en rotation", 20h, M2, Université de Lille, France.

6.2.2. Supervision

HdR: Guillaume Dujardin, Contribution à l'analyse numérique de problèmes d'évolution : comportements asymptotiques et applications à l'équation de Schrödinger, Université de Lille, November 12th 2018 [3].

6.2.3. Juries

G. Dujardin and M. Simon participated in the jury of the "Agrégation externe de mathématiques" in 2018.

G. Dujardin took part in the hiring committees of Junior Scientists for Inria Paris, Inria Saclay and in the final admission committee in 2018.

M. Simon was member of the jury of the PhD thesis of J. Roussel which was defended in November 2018 at École des Ponts (Marne-la-Vallée, France) and is entitled *Theoretical and numerical analysis of non-reversible dynamics in computational statistical physics*.

6.3. Popularization

6.3.1. Interventions

- M. Simon participated in the local program "Chercheurs itinérants", and gave several lectures directed to high-school students.

<p style="text-align:center;color:red;font-weight:bold;font-size:larger;">MINGUS Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- F. Castella organized the workshop "Multiscale numerical methods", Saint-Malo, december 13-15 2017. [15 participants]
- P. Chartier, M. Lemou and F. Méhats organized the MOONRISE Workshop on "Numerical methods for multi-scale PDEs", Institut d'études scientifiques de Cargèse, Cargèse, France, September 3th-7th, 2018.
- P. Chartier, N. Crouseilles, M. Lemou and F. Méhats organized the workshop Henri Lebesgue Center on "Geometric and multi-scale methods for kinetic equations", Rennes, June 12th-15th, 2018.
- A. Crestetto organized the "journée d'analyse Rennes-Nantes", january 2018, ENS Rennes.
- A. Crestetto organized the workshop Henri Lebesgue Center on "mathematical models in health sciences".
- N. Crouseilles co-organized the weekly seminar "Mathematic and applications", ENS Rennes.
- A. Debussche organized the workshop on Stochastic partial differential equations, may 2018, CIRM, Marseille, France.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- N. Crouseilles was member of the scientific committee of the SMAI-2019 conference organized by the university of Nantes.
- E. Faou was head of organization of the semester *scientific computing* sponsored by the Labex Lebesgue (2 international summer schools, 7 workshops and international conferences), january-july 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- P. Chartier is member of the editorial committee of Mathematical Modelling and Numerical Analysis (M2AN).
- A. Debussche is editor in chief of Stochastic Partial Differential Equations: analysis and computations (2013-).
- A. Debussche is associate editor of Differential and Integral Equations (2002-2018).
- A. Debussche is associate editor of Potential Analysis (2011-2018).
- A. Debussche is associate editor of ESAIM:PROC (2012-).
- A. Debussche is associate editor of Journal of Evolution Equation (2014-).
- A. Debussche is associate editor of Applied Mathematics & Optimization (2014-).
- A. Debussche is associate editor of SIAM JUQ (2017-).
- A. Debussche is member of the editorial board of the collection "Mathématiques & Applications de la SMAI", Springer.
- M. Lemou is member of the editorial committee of "Communications in Mathematical Sciences" (CMS).

10.1.3.2. Reviewer - Reviewing Activities

The members of the IPSO team are reviewers for almost all the journals in which they publish (SIAM, JCP, CPDE, CMP, ARMA, JSP, JSC, JMAA, ANM, JCAM, NMPDE, Numer. Math., · · ·)

10.1.4. Invited Talks

- J. Bernier: invited speaker at the workshop "dynamics of Hamiltonian PDEs", february 2018, La Thuile, Italy.

- J. Bernier: invited speaker at the workshop "NABUCO", february 2018, Toulouse, France.

- P. Chartier: invited speaker at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Application, July 5 - July 9, 2018 Taipei, Taiwan.

- A. Crestetto: invited speaker at the conference ABPDEIII, august 2018, Lille, France.

- A. Crestetto: invited speaker at the workshop on "Numerical Methods for Multiscale PDEs", september 2018, Cargèse, France.

- N. Crouseilles: invited talk at the Workshop Numerical Aspects of Hyperbolic Balance Laws and Related Problems, University of Ferrara, Italy, April 2018.

- N. Crouseilles: invited talk at the "Journée Scientifique Inria", june 27-28, Bordeaux, France.

- N. Crouseilles: invited speaker at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Application, July 5 - July 9, 2018 Taipei, Taiwan.

- N. Crouseilles: invited speaker at the worskhop "Integrating the Integrators for Nonlinear Evolution Equations: from Analysis to Numerical Methods, High-Performance-Computing and Applications", december 2018, BIRS, Banff, Canada.

- A. Desbussche: invited speaker "Aziz lecture", university of Maryland, april 2018, USA.

- A. Desbussche: invited speaker at the "school on PDEs", Riemann international school of mathematics, july 2018, Varese, Italy.

- E. Faou: invited plenary speaker at the conference on "Mathematics of Wave Phenomena", august 2018, KIT Karlsruhe, Germany.

- E. Faou: invited speaker at the worskhop "Integrating the Integrators for Nonlinear Evolution Equations: from Analysis to Numerical Methods, High-Performance-Computing and Applications", december 2018, BIRS, Banff, Canada.

- M. Lemou: invited speaker at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Application, July 5 - July 9, 2018 Taipei, Taiwan.

- M. Lemou: invited speaker at the Ki-Net Conference on "Mathematical and Numerical Aspects of Quantum Dynamics", June 19-21, 2018. CSCAMM, University of Maryland, USA.

- M. Lemou: invited speaker at "Premier Congrès Franco-Marocain de Mathématiques Appliquées", april 16-20 2018, Marrakech, Maroc.

- F. Méhats: invited talk at the Workshop Numerical Aspects of Hyperbolic Balance Laws and Related Problems, University of Ferrara, Italy, April 2018.

- F. Méhats: 7 hours mini course on Averaging Techniques, Colloque Inter' Actions, Lyon, May 2018.

- F. Méhats: talk at the day Space-Time Multiscale Methods (Atelier MePhy), Paris, June 2018.

- F. Méhats: talk at the University of Wisconsin, October 2018.

- F. Méhats: talk at a workshop on dispersive equations, October 2018.

- G. Morel: invited speaker at the Numkin workshop, october 2018, Max Planck Institute, Garching, Germany.

- P. Navaro: invited speaker at the CANUM 2018, France.

- P. Navaro: invited speaker at the IPL meeting, France.

- P. Navaro: invited speaker at the Finist'R meeting, France.

- X. Zhao: invited speaker at the workshop on "Numerics for cosmology - the Schrödinger method", may 22nd-25th 2018, WPI Vienna, Austria.

- X. Zhao: invited speaker at the workshop on "weak turbulence, kinetic problems and related", july 14-15 2018, Wuhan university, China.
- X. Zhao: invited speaker at the "Forum on modern challenges in modelling and numerics", july 20th-21st 2018, Beijing CSRC, China.
- X. Zhao: invited speaker at the "Modern Numerics on Nonlinear Wave and Dispersive Equations and Related Problems", august 8th-9th 2018, Chengdu university, China.
- X. Zhao: invited speaker at the Numkin workshop, october 2018, Max Planck Institute, Garching, Germany.
- X. Zhao: invited speaker at the workshop on "Numerical Methods for Multiscale PDEs", september 2018, Cargèse, France.

10.1.5. Scientific Expertise

- P. Chartier was member of the hiring committee CR2-Inria (Bordeaux).
- P. Chartier was member of the hiring committee the Inria promotion committee (DR1-DR0).
- A. Crestetto was member of the hiring committee AGPR-2018, ENS Rennes, France.
- A. Crestetto was the vice-head of the hiring committee of the MCF position, university of Nantes, France.
- A. Debussche was reviewer for Austrian Science Fundation (FWF).
- E. Faou is the member of the CNU 26.
- E. Faou was member of the hiring committee of the professor position, university of Dijon, France.

10.1.6. Research Administration

- F. Castella was member of the evaluation HCERES committee of the MICS laboratory (Centrale-Supélec).
- P. Chartier is the vice-head of science (DSA) of the Rennes Inria-Center until the end of 2018,
- P. Chartier is member of the national evaluation committee (CE) of Inria until the end of 2018.
- P. Chartier is member of the direction committee (ED) of the Rennes Inria-Center until the end of 2018
- P. Chartier is member of the G6-committee (bureau of the direction committee) Inria-Rennes-Bretagne-Atlantique center until the end of 2018.
- A. Crestetto is member of the mathematics department council, university of Nantes.
- A. Crestetto is member of the scientific council of the sciences unity, university of Nantes.
- A. Crestetto is the SMAI correspondent for the mathematics laboratory of Nantes.
- N. Crouseilles is member of the scientific council of ENS Rennes.
- N. Crouseilles is member of the mathematic laboratory (IRMAR) council.
- N. Crouseilles is member of the Fédération de Fusion council (University of Rennes representative).
- A. Debussche is member of the scientific council of the Fédération Denis Poisson.
- A. Debussche is member of the administrative council of ENS Paris-Saclay.
- A. Debussche if scientific vice-deputy and international relations of ENS Rennes.
- A. Debussche is vice-head ot the Centre Henri Lebesgue.
- A. Debussche is vice-head of the Lebesgue agency for Mathematic and Innovation.
- E. Faou is the AMIES correspondent for Inria Bretagne Atlantique.
- E. Faou is member of the scientific council of the Pôle Universitaire Léonard de Vinci.
- M. Lemou is the head of the IRMAR team "Analyse numérique" composed of 48 members.
- M. Lemou is member of the scientific council of ENS Rennes.

- M. Lemou is member of the scientific council of the LABEX Lebesgue.
- P. Navaro is member of the national network "calcul" http://calcul.math.cnrs.fr. This network is well known for interdisciplinarity of CNRS dedicated to technological aspects of scientific computing (programming, optimization, architectures, ⋯).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence:

- P. Chartier: lecture "Ordinary differential equations" of the first year (Licence) of the Magistère, Ecole Normale Supérieure de Rennes (24 hours).
- N. Crouseilles: lecture on "Numerical methods" of L3, ENS Rennes (30h).

Master:

- F. Castella: lecture on "Numerical methods" of M1, University of Rennes 1 (50 hours).
- P. Chartier: lecture on "Numerical methods for kinetic equations" of the third year (M2) of the Magistère, University of Rennes 1 (12 hours).
- A. Crestetto: lecture on "Numerical methods for incompressible fluids" of M2, university of Nantes (62h).
- N. Crouseilles: lecture on "Numerical methods for PDEs" of M1, ENS Rennes (30h).
- E. Faou: lecture on "numerical integration of Hamiltonian PDEs" of M2, university of Rennes 1 (30h).
- M. Lemou: lecture on "elliptic PDEs" of the second year (M1) of the Magistère, University of Rennes 1 (36 hours).
- M. Lemou: lecture on "fundamental tools for PDEs" of the third year (M2) of the Magistère, University of Rennes 1 (12 hours).
- M. Lemou: lecture on "Numerical tools for kinetic equations" of the third year (M2) of the Magistère, University of Rennes 1 (12 hours).
- P. Navaro: lecture on "numerical tools for Big Data", master, university of Rennes 2.
- P. Navaro: lecture on "Python programming", master, ENSAI.

Doctorat:

- F. Casas: lecture for PhD students " A (very) Short Introduction to Geometric Numerical Integration and Splitting Methods", (4h).

10.2.2. Supervision

PhD: M. Fontaine, Modèles mathématiques de type HMF : stabilité et méthodes numériques autour d'états staionnaires, ENS Rennes, july 13th, advisors: M. Lemou and F. Méhats.

PhD: M. jugal Nguepedja Nankep, Modélisation stochastique de systèmes biologiques multi-échelles et inhomogènes en espace, ENS Rennes, march 22th, advisor: A. Debussche.

PhD in progress: J. Bernier, Mathematical and numerical anaysis of nonlinear transport equations, started in september 2016, advisors: N. Crouseilles and E. Faou.

PhD in progress: A. Rosello, "Approximation-diffusion pour des équations cinétiques pour les modèles de type spray", started in september 2016, advisors: A. Debussche and J. Vovelle (CNRS, Lyon).

PhD in progress: J. Massot, "Modélisation et simulation de plasmas chauds", started in october 2018, advisors: A. Crestetto (Nantes) and N. Crouseilles.

PhD in progress: L. Trémant, "Méthodes d'analyse asymptotique et d'approximation numérique de modèles dissipatifs multi-échelles : EDO à variété centrale et modèles cinétiques", started in october 2018, advisors: P. Chartier and M. Lemou.

10.2.3. Juries

- F. Castella: reviewer of the thesis and member of the PhD committee of P. Terrier (university of Paris Est and CEA).

- A. Crestetto: member of the PhD committee of the thesis of M. Stauffert (university of Versailles).

- N. Crouseilles: reviewer of the thesis and member of the PhD comittee of N. Bouzat (university of Strasbourg, Inria and CEA).

- N. Crouseilles: member of the PhD comittee of M. Malo (ENS Rennes).

- A. Debussche: reviewer of the HDR and member of the HDR committee of G. Dujardin (Inria, university of Lille).

- A. Debussche: member of the PhD committee of M. Tomasevic (university of Nice).

- A. Debussche: member of the PhD committee of P. Tsatsoulis (university of Warwick).

- E. Faou: reviewer of the thesis and member of the PhD committee of M.-S. Dupuy (university of Paris Diderot).

- E. Faou: member of the HDR committee of G. Dujardin (Inria, university of Lille).

10.3. Popularization

10.3.1. Interventions

- A. Crestetto: talks on "traffic flows" in several educational institutions within the framework of "Essentielles", university of Nantes.

- N. Crouseilles: welcoming of two schoolchildren at IRMAR laboratory.

- N. Crouseilles: welcoming of a student within the framework of the modulus "visit a researcher" (3 meetings).

10.3.2. Internal action

- P. Navaro: Python training (3 days) at the CNRS delegation of Lille, april 2018.
- P. Navaro: Python training (3 days) for the Rennes DSI, june 2018.

MISTIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Florence Forbes, Stéphane Girard and Julyan Arbel organized the two-day workshop Bayesian learning theory for complex data modelling, on September 6-7 2018.

10.1.1.2. Member of the Organizing Committees

- Florence Forbes was a member of the scientific committee of the 50th journées de statistique of Société Francaise de Statistique (JDS 2018) organized in Saclay.

- Julyan Arbel co-organized the two-day workshop entitled Workshop sur la dynamique des communautés sur Twitter en période électorale : analyse par graphes aléatoires workshop on random graphs in Grenoble on April 26-27 2018.

- Julyan Arbel co-organized with Richard Nickl, Cambridge University, a session entitled Bayesian nonparametrics for stochastic processes at International Society for Bayesian Analysis (ISBA) World Meeting 2018 in Edinburgh.

- Jean-Baptiste Durand co-organized a three-day workshop on Models and Analysis of Eye Movements in Grenoble on June 6-8 2018 (https://eyemovements.sciencesconf.org/).

Seminars organization

- MISTIS participates in the weekly statistical seminar of Grenoble. Several lecturers have been invited in this context.

- Florence Forbes, Julyan Arbel and Marta Crispino are co-organizing a monthly reading group on Bayesian statistics.

10.1.2. Scientific Events Selection

10.1.2.1. Reviewer

In 2018, Florence Forbes, Stéphane Girard and Julyan Arbel have been a reviewer for *Journées de la Statistique* (JDS 2018). Additionally,

- In 2018, Julyan Arbel has been a reviewer for
  - Statistics Conferences: *Bayesian Young Statisticians Meeting proceedings* (BAYSM),
  - Machine Learning Conferences: *Conference on Neural Information Processing Systems* (NIPS), *International Conference on Learning Representations* (ICLR), *Symposium on Advances in Approximate Bayesian Inference* (AABI).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Stéphane Girard is Associate Editor of the *Statistics and Computing* journal since 2012 and Associate Editor of the *Journal of Multivariate Analysis* since 2016. He is also member of the Advisory Board of the *Dependence Modelling* journal since December 2014.

- Florence Forbes is Associate Editor of the journal Frontiers in ICT: Computer Image Analysis since its creation in Sept. 2014. She is also Associate Editor of the *Computational Statistics and Data Analysis* journal since May 2018.

- Julyan Arbel is Associate Editor of the *Bayesian Analysis* (BA) journal.

10.1.3.2. Reviewer - Reviewing Activities

- In 2018, Florence Forbes has been a reviewer for *Ecological Modelling* journal.

- In 2018, Stéphane Girard has been a reviewer for *Annals of the Institute of Statistical Mathematics, Statistics & Risk Modeling, Communications in Statistics - Theory and Methods, Extremes.*

- In 2018, Jean-Baptiste Durand has been a reviewer for *Behavior Research Methods* (BRM) and a guest editor for *PLOS Computational Biology* (PLOS Comput. Biol.).

- In 2018, Julyan Arbel has been a reviewer for: *Annals of Statistics* (AoS), *Bayesian Analysis* (BA), *Brazilian Journal of Probability and Statistics* (BJPS), *Computational Statistics & Data Analysis* (CSDA), *Electronic Journal of Statistics* (EJS), *Journal of Nonparametric Statistics* (JNS), *Scandinavian Journal of Statistics* (SJS), *Statistics and Probability Letters* (SPL).

10.1.4. Invited Talks

Florence Forbes has been invited to give talks at the following seminars and conferences:

- Data Science Seminar Series, December 2018 (Link) .

- 11th International Conference of Computational and Methodological Statistics (CMStat), University of Pisa, Italy, December 14-16, [60].

- NeuroCog Seminar Series, October 2018.

- La Trobe-Kyushu Joint Seminar on Mathematics for Industry, Melbourne, October 2018 (Link).

- Joint Statistical Meeting of the American Statistical Association, Vancouver Canada, July [29]

- Workshop on Bayesian nonparametrics, Bordeaux, France, July 2-4, [30]

Julyan Arbel has been invited to give talks at the following seminars and conferences:

- 11th International Conference of Computational and Methodological Statistics (CMStat), University of Pisa, Italy, December 14-16. Invited talk: Some distributional properties of Bayesian neural networks.

- Workshop on Bayesian nonparametrics, Bordeaux, France, July 2-4. Invited talk. Some distributional properties of Bayesian neural networks.

- Olympiades Académiques de Mathématiques, Grenoble. Talk: The mathematics of artificial intelligence.

- Trinity College Statistics Seminar, Dublin, Ireland, May 9. Invited talk: Bayesian graphs and neural networks.

- Journées statistiques de Rochebrune, Megève, France (26-30 March). Invited course: An introduction to Bayesian nonparametric statistics.

- R User group in Grenoble, France, February 8, 2018. Talk (with Alexis Arnaud): Good coding practice, coding style and R packages.

- Workshop on Statistical Methods for Post Genomic Data (SMPGD), Université de Montpellier, France, 11-12 January 2018. Invited talk: A Bayesian Nonparametric Approach to Ecological Risk Assessment.

Among the conferences listed in Section 10, [42], [43], [31], [33] were invited talks.

10.1.5. Scientific Expertise

Florence Forbes is Scientific Advisor since March 2015 for the Pixyl company.

10.1.6. Research Administration

- S. Girard is a member of the "Comité des Emplois Scientifiques" at Inria Grenoble Rhône-Alpes since 2015.

- Since 2015, S. Girard is a member of the INRA committee (CSS MBIA) in charge of evaluating INRA researchers once a year in the MBIA dept of INRA.

- S. Girard has been a reviewer of research projects for the Research Foundation Flanders (FWO), Belgium.

- Florence Forbes is a member of the "Comité Développement Technologique" for software development projects at Inria Grenoble Rhône-Alpes since 2015.

- Florence Forbes is a member of the "Comite d'organisation stratégique" of Inria Grenoble Rhône-Alpes since 2017.

- Florence Forbes is a member of the Executive Committee of the Grenoble data institute.

- Florence Forbes has been a member of the Selection committee for assistant professors at ENS Paris and a member of the Inria admission committee of junior researchers (CRCN) in June 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master : Stéphane Girard, *Statistique Inférentielle Avancée*, 18 ETD, M1 level, Ensimag. Grenoble-INP, France.

- Master : Stéphane Girard, *Data analysis, linear models and ANOVA*, 18 ETD, M1 level, MSIAM. UGA, France.

- Master and PhD course: Julyan Arbel, Bayesian statistics, Ensimag, Université Grenoble Alpes (UGA), 25 ETD.

- Master and PhD course: Julyan Arbel, Bayesian nonparametric statistics, Master Mathématiques Apprentissage et Sciences Humaines (M*A*S*H), Université Paris-Dauphine, 25 ETD.

- Master: Jean-Baptiste Durand, *Statistics and probability*, 192H, M1 and M2 levels, Ensimag Grenoble INP, France. Head of the MSIAM M2 program, in charge of the data science track.

- Jean-Baptiste Durand is a faculty member at Ensimag, Grenoble INP.

10.2.2. Supervision

- PhD defended: Clément Albert "Estimation des limites d'extrapolation par les lois de valeurs extrêmes. Application à des données environnementales", December 2018, Stéphane Girard, Université Grenoble Alpes.

- PhD defended: Thibaud Rahier "Réseaux Bayesiens pour la fusion de données statiques et temporelles", December 2018, Florence Forbes and Stéphane Girard, Université Grenoble Alpes.

- PhD defended: Pierre-Antoine Rodesch "Méthodes statistiques de reconstruction tomographique spectrale pour des systèmes à détection spectrométrique de rayons X", October 9, 2018, Florence Forbes, Université Grenoble Alpes.

- PhD defended: Alexis Arnaud "Analyse statistique d'IRM quantitatives par modèles de mélange : Application à la localisation et la caractérisation de tumeurs cérébrales", October 24, 2018, Florence Forbes and E. Barbier, Université Grenoble Alpes.

- PhD in progress: Karina Ashurbekova, "Robust Graphical Models" Florence Forbes and Sophie Achard, Université Grenoble Alpes, started on October 2016.
- PhD in progress: Veronica Munoz,"Extraction de signatures dans les données IRM de patients parkinsoniens de novo", Florence Forbes and Michel Dojat, Université Grenoble Alpes, started on October 2017.
- PhD in progress: Fabien Boux,"Développement de méthodes statistiques pour l'imagerie IRM fingerprinting", Florence Forbes and Emmanuel Barbier, Université Grenoble Alpes, started on October 2017.
- PhD in progress: Benoit Kugler, "Massive hyperspectral images analysis by inverse regression of physical models", Florence Forbes and Sylvain Douté, Université Grenoble Alpes, started on October 2018.
- PhD in progress: Chun-Chen Tu,"Gaussian mixture sub-clustering/reduction refinement of Non-linear high-to-low dimensional mapping", Florence Forbes and Naisyin Wang, University of Michigan, Ann Arbor.
- PhD in progress: Mariia Vladimirova, "Prior specification for Bayesian deep learning models and regularization implications", started on October 2018, Julyan Arbel and Jakob Verbeek.
- PhD in progress: Brice Olivier, "Joint analysis of eye-movements and EEGs using coupled hidden Markov and topic models", started on October 2015, Jean-Baptiste Durand and Anne Guérin-Dugué (Université Grenoble Alpes).
- PhD in progress: Aboubacrène Ag Ahmad "*A new location-scale model for heavy-tailed distributions*", started on September 2016, Séphane Girard and Alio Diop (Université Gaston Berger, Sénégal).
- PhD in progress: Meryem Bousebata "*Bayesian estimation of extreme risk measures: Implication for the insurance of natural disasters*", started on October 2018, Séphane Girard and Geffroy Enjolras (Université Grenoble Alpes).
- PhD in progress: Alexandre Constantin "*Analyse de séries temporelles massives d'images satellitaires: Applications à la cartographie des écosystèmes*", started on November 2018, Séphane Girard and Mathieu Fauvel (Université Grenoble Alpes).

10.2.3. Juries

- Julyan Arbel has been reviewer for the PhD thesis of Ilaria Bianchini "Modeling and computational aspects of dependent completely random measures in Bayesian nonparametric statistics", Politecnico di Milano, Italy.
- Stéphane Girard has been reviewer for the PhD thesis of Mor Absa Loum, "*Modèle de mélange et modèles linéaires généralisés, application aux données de co-infection*", Univ. Paris-Saclay, France, et Gaston Berger, Sénégal.
- Stéphane Girard has been a member of the PhD committee of Antoine Usseglio Carleve, "*Estimation de mesures de risque pour les distributions elliptiques conditionnées*", Univ. Lyon, France.
- Florence Forbes has been reviewer for the PhD thesis of Amy Chan, University of Queensland, Brisbane and for the HDR thesis of Emilie Lebarbier, agroParisTech.
- Florence Forbes has been a member of the PhD committee of Israel Gebru Inria Grenoble, Marine Roux Gipsa-Lab, Grenoble and Jessica Sodjo, Bordeaux University.

10.3. Popularization

Florence Forbes was a speaker at the Paris Biotech Sante Forum on AI in life sciences, in November 2018, (Program).

10.3.1. Articles and contents

S. Girard and C. Albert have given an interview "When statistics help to predict disasters" for Citizen press: https://www.inria.fr/en/centre/grenoble/news/statistics-and-disasters

<p style="text-align:center">**MODAL Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Pascal Germain and Benjamin Guedj are the organizers of the https://modal.lille.inria.fr/wikimodal/doku.php?id=seminarsModal team scientific seminar.

Sophie Dabo-Niang is a co-organizer of the 2nd Conference on Econometrics for Environment.

Sophie Dabo-Niang, Cristian Preda and Vincent Vandewalle are the organizers of a session on "Functional Data Analysis" for the conference COMPSTAT 2018.

Vincent Vandewalle is the organizer of a session on advances in model based clustering for the conference ERCIM 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Sophie Dabo-Niang is the chair of the Scientific Committee of CIMOM18.

10.1.2.2. Member of the Conference Program Committees

Christophe Biernacki is a member of the program committee of MBC2, an international workshop on Model-Based Clustering and Classification (http://mbc2.unict.it).

Cristian Preda was a member of the Scientific Committee of the 9th International Workshop on Applied Probability, IWAP 2018, 18-21 June Budapest, Hungary (https://iwap2018.com).

10.1.2.3. Reviewer

Pascal Germain acted as a reviewer for NIPS 2018, ICML 2018, ICLR 2018, CAp 2018.

Benjamin Guedj served as a reviewer for the top-tier conferences in machine learning ALT 2018, AISTATS 2018, NIPS 2018, ICML 2018, ICLR 2018. He also served as a reviewer for journals (Electronic Journal of Statistics, Journal of Machine Learning Research).

Sophie Dabo-Niang acted as a reviewer for JNP, JSPI, JRSSB, Spatial Statistics, Journal of SFDS, JMVA, ...

Christophe Biernacki acted as a reviewer for a dozen international statistical journals (CSDA, STCO, JMLR, IEEE PAMI, ...).

Serge Iovleff acted as a reviewer for Journal of Statistics and Computing.

Vincent Vandewalle acted as a reviewer for Statistics in Medicine, ADAC and Journal de la SFdS.

Alain Celisse acted as a reviewer for the Annals of Statistics, Bernoulli, JMLR, EJS, JSPI, Artificial Intelligence, ...

Cristian Preda acted as a reviewer for TEST, MCAP, JASA and Bernoulli.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Christophe Biernacki is an Associate Editor of the North-Western European Journal of Mathematics (NWEJM) and for Frontiers on the topic "Computational Methods for Data Analytics". He is also a Guest Editor for the Special Issue on Innovations in Model-Based Clustering and Classification of the journal Advances Data Analysis and Classification (ADAC).

Cristian Preda is an Associate editor of the Methodology and Computing in Applied Probability Journal.

10.1.4. Invited Talks

Christophe Biernacki gave several invited talks:

- One talk at the international conference Compstat 2018
- Four talks at the Summer School on Clustering, Data Analysis and Visualization of Complex Data, May 2018, Catania, Italy [21] [22] [23] [30]
- Two talks at the Research Summer School on Statistics for Data Science – S4D, June 15th-22th 2018, Caen, France [32] [31]
- One talk at the international conference ERCIM 2018 [33]

Vincent Vandewalle:

- Invited talk at the international conference Compstat 2018 [25]
- Invited talk at the international conference ERCIM 2018
- Seminar of the EA 2694 (Université de Lille), Lille, France

Alain Celisse:

- ERCIM, Pise, 15 December 2018
- IWAP, Budapest, July 2018
- WeierstraßInstitute, Berlin, 2018

Pascal Germain:

- Journée Lilloise de Probabilité et Statistiques, Lille, France, 22 June, 2018
- Séminaire de l'équipe PS, Laboratoire Painlevé (University of Lille), Villeneuve d'Ascq France, 9 May, 2018

Benjamin Guedj:

- December 2018, GreekStochastics κ , Athens, Greece
- December 2018, 11th International Conference of the ERCIM working group on Computational and Methodological Statistics (CMStatistics 2018) (invited talk), Pisa, Italy
- September 2018, 2nd Italian-French Statistics Seminar (invited talk), Grenoble, France
- June 2018, 2nd annual congress of the French Mathematical Society (invited talk), Lille, France

Cristian Preda:

- One-Dimensional Discrete Scan Statistics Associated to Some Dependent Models, 5th Stochastic Modeling Techniques and Data Analysis International Conference. 12 - 16 June 2018, Chania, Crete, Greece

10.1.5. Leadership within the Scientific Community

Sophie Dabo-Niang is vice-chair of EMS-CDC.

Till May 2018, Christophe Biernacki was the president of the data mining and learning group of the French statistical association (SFdS, http://www.sfds.asso.fr/).

Since May 2018, Benjamin Guedj has served as president of the Machine Learning and Artificial Intelligence group (MALIA) of the French Statistical association (SFdS, http://www.sfds.asso.fr/).

Since 2017, Benjamin Guedj has been serving as a member of the boards of SFdS and AMIES.

10.1.6. Scientific Expertise

Guillemette Marot reviewed one project as an expert for the ANR and another one for ANSES.

10.1.7. Research Administration

Sophie Dabo-Niang is in charge of the MeQAME axis of the laboratory LEM, CNRS 9221.

Christophe Biernacki has been "Délégué Scientifique" of the Inria Lille center since June 2017.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Sophie Dabo-Niang is teaching

> Master: Spatial Statistics, 24h, M2, University of Lille, France
>
> Master: Advanced Statistics, 24h, M2, University of Lille, France
>
> Master: Multivaraite Data Analyses, 24h, M2, University of Lille, France
>
> Licence: Probability, 24h, L2, University of Lille, France
>
> Licence: Multivariate Statistics, 24h, L3, University of Lille, France

Guillemette Marot is teaching:

> Licence: Biostatistics, 12h, L1, University of Lille Droit et Santé, France
>
> Licence: Health care Informatics, 24h, L2, University of Lille Droit et Santé, France
>
> Master: Biostatistics, 45h, M1, University of Lille Droit et Santé, France
>
> Master: Supervised classification, 20h, M1, Polytech Lille, France
>
> Doctorat: Data analysis with R, 7h, University of Lille Droit et Santé, France
>
> Doctorat: RNA-Seq analysis, 12h, University of Lille Droit et Santé, France

Serge Iovleff is teaching

> Licence: Mathématiques discrètes, 68h, University of Lille, DUT Informatique
>
> Licence: Modélisation mathématique, 14h, University of Lille, DUT Informatique
>
> Licence: Algèbre linéaire, 32h, University of Lille, DUT Informatique
>
> Licence: Analyse et méthodes numériques, 56h, University of Lille, DUT Informatique
>
> Licence: R.O. et aide à la décision, 32h, University of Lille, DUT Informatique
>
> Formation Continue: Modélisation, 10h, University of Lille, DUT Informatique
>
> Master: Introduction to statistics, 16h, University of Lille

Cristian Preda is teaching

> Licence: Linear Regression, 24h, L3, University of Lille, France
>
> Master: Advanced Statistics, 24h, M1, University of Lille, France
>
> Master: Biostatistics, 10h, M2, University of Lille, France
>
> Master: Experimental Designs, 24h, M2, University of Lille, France

Alain Celisse is teaching

> Licence: Graphes et langages, 24h, L3, University of Lille, France
>
> Licence: Probabilités et statistique, 136h, L3, University of Lille, France
>
> Formation continue: Probabilités et statistique, 32h, L3, University of Lille, France

Pascal Germain is teaching

> Master: Introduction aux réseaux de neurones, 30h, M2, University of Lille, France

Benjamin Guedj is teaching

> Master: Bayesian Learning, 10h, M2, Centrale Lille, France

10.2.2. Supervision

PhD in progress: Yaroslav Averyanov, November 2017, supervision: Alain Celisse.

PhD in progress: Anne-Lise Bedenel, June 2015, supervision: Christophe Biernacki, Laetitia Jourdan.

PhD in progress: Adrien Ehrhardt, June 2016, supervision: Christophe Biernacki, Philippe Heinrich and Vincent Vandewalle.

PhD defended: Le Li, November 2014–November 2018, supervision: Benjamin Guedj.

PhD in progress: Arthur Leroy, November 2017, supervision: Benjamin Guedj.

PhD in progress: Margot Selosse, October 2017, Christophe Biernacki and Julien Jacques.

PhD in progress: Maxime Baelde, January 2016, Christophe Biernacki and Raphaël Greff.

PhD in progress: Hélène Sarter, Outils statistiques pour la sélection de variables et l'intégration de données "cliniques" et "omiques" : développement et application au registre EPIMAD, December 2016, Corinne Gower and Guillemette Marot.

10.2.3. Juries

Pascal Germain was an examiner at the PhD defense of Valentina Zantedeschi, University Jean Monnet of Saint-Etienne, December 18, 2018.

Benjamin Guedj served as a jury member for the PhD defense of Mahmoud Albardan, Univ. Lille, October 2018.

Sophie Dabo-Niang was a referee at the HDR defense of Tristan Kenga Kiesse, University of Rennes 1, October 22, 2018.

Sophie Dabo-Niang was a referee at the PhD defense of Ousmane Cisse, University Paris 1, December 11th, 2018, and of Julien Ndrin, University of Abidjan (Côte-d'Ivoire), April, 19th, 2018.

Sophie Dabo-Niang was a referee of the PhD dissertation of Javier Álvarez Lièbana, University of Granada (Spain), April, 2018.

Christophe Biernacki acted as a reviewer for PhD theses and one HdR defense. He also acted as an examinator for one PhD thesis and for one HdR defense.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Guillemette Marot is responsible of bilille, the bioinformatics and bioanalysis platform of Lille. More information about the platform is available at https://wikis.univ-lille.fr/bilille/.

Benjamin Guedj is an appointed deputy member of CLHSCT (Inria LNE).

Benjamin Guedj is an elected member of the Evaluation Committee (CE, Inria).

10.3.2. Internal action

- Pascal Germain gave a talk at the "30 minutes de sciences" seminar of Inria Lille (21/03/2018).
- Pascal Germain gave a talk vulgarizing his work at the "Café des sciences" of Inria Rocquencourt (13/11/2018).
- Guillemette Marot gave a talk at the "30 minutes de sciences" seminar of Inria Lille (21/12/2018).

<div align="center">

MOKAPLAN Project-Team

</div>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

- G. Carlier was in the organizing committee of the conference *Des mathématiques de la décision aux jeux à champ moyen* held in Honor of Jean-Michel Lasry at Dauphine in July 2018.
- T. O. Gallouët was in the organizing committee of the international conference *Modern mathematical methods for Data analysis* held at Liège (Belgium) in June 2018.
- F-X. Vialard was in the organizing committee of the December 2018 Banff, applied optimal transport, stochastic geometric mechanic and shapes conference.

8.1.2. Scientific Events Selection

8.1.2.1. Reviewer

V. Duval has reviewed contributions to the LVA/ICA conference.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

G. Carlier is in the board of Journal de l'Ecole Polytechnique, Applied Mathematics and Optimization, Mathematics and Financial Economics and Journal of Dynamic Games (starting end of 2018).

8.1.3.2. Reviewer - Reviewing Activities

- V. Duval has reviewed papers for the following journals: *ESAIM COCV*, *IEEE Trans. on Signal Processing*, *Information and Inference: a Journal of the IMA*, *Math. Stat. Learning*, *SIIMS*, *Inverse Problems on Imaging*.
- J-D. Benamou has reviewed papers for the following journals: *SINUM*, *Numerische Math.*, ...
- T. O. Gallouët has reviewed papers for ARMA, ...
- P. Pegon has reviewed articles for Journal de Mathématiques Pures et Appliquées and Journal of Functional Analysis.
- F-X. Vialard has reviewed papers for Numerische Math., Siam IS, IEEE TMI, Siaga, P AMS.

8.1.4. Invited Talks

- I. Waldspurger gave talks at the Séminaire de mathématiques appliquées du collège de France, at the Mathematical Image Analysis conference (Berlin), at the Colloquium in Applied and Computational Mathematics of ETH Zurich, at the 7th international conference on computational harmonic analysis (Nashville) and at the SIAM conference on imaging science (Bologne).
- V. Duval has given invited talks at the MAGA workshop (Jan.), Journée Parcimonie Bordeaux of the GdR MIA (May), GdT StatNum at CEREMADE (May), SIAM Imaging Conference (June), ISMP Conference (July), Journées MAS (Aug.).
- J-D. Benamou has given invited talks at : Algebraic and geometric aspects of numerical methods for differential equations Workshop (Institut Mittag-Leffler, Djursholm), Workshop on Moving and Adaptative Meshes for Global Atmospheric Modelling (University of Reading), Gradient flows: challenges and new directions Workshop (ICMS, Edinburgh), Workshop on Monge-Ampère numerical resolution methods (TU Eindhoven), Shape Analysis, Stochastic Geometric Mechanics and Applied Optimal Transport (BIRS, Banff), MIGSAA Mini-Symposium in Optimal Transport and its Applications (University of Edimburgh).

- G. Carlier gave talks at TUM (Munich), workshop Optimisation and Machine Learning in Economics at UCL (Londres), workshop Entropies, the Geometry of Nonlinear Flows, and their Applications (Banff, Canada), SFB Colloquium, TUM, Munich, Workshop PDEs and optimal Transport (Essaouira), PDE seminar, Imperal College (Londres), Optimal Transport and Applications (Pise), ERC Readi closing conference (EHESS Paris).

- Y. De Castro has given invited talks at Société Mathématiques de France national conference, Ecole Normale Supérieure de Lyon, Oxford numerical analysis seminar (invited by Pr Tanner), Ecole des Ponts ParisTech, and Labex Bezout day.

- F-X. Vialard gave talks at siam Imaging Sciences in bologna june 2018, septembre 2018 Lisbonne workshop on optimal transport, geometric mechanics, october 2018, Labex Bézout, université paris-est and wasinvited to Mittag-Leffler institute for a conference on optimal transport, geometry and algebra.

- T. O. Gallouët gave talks at UPMC, Paris, Séminaire du Laboratoire Jacques-Louis Lions, ANR MAGA meeting, Paris and Workshop on New Developments in PDEs and Related Topics, Essaouira, Maroc.

- P. Pegon was invited for 10 days to Penn State College by Alberto Bressan in order to start a collaboration on the theory of ramified transport and applications to biology, and to give lectures (2) in the seminar series on Computational and Applied Mathematics.

- Andrea Natale gave the following talks:
  - Generalized H(div) geodesics and solutions of the Camassa-Holm equation. *BIRS Workshop: "Shape Analysis, Stochastic Geometric Mechanics and Applied Optimal Transport"*, 12/2018, Banff (Canada).
  - An optimal transport approach for the Camassa-Holm variational model. *Canadian Mathematical Society Winter Meeting*, 12/2018, Vancouver (Canada).
  - Generalized H(div) geodesics and solutions of the Camassa-Holm equation. *Oberwolfach Seminar: "Optimal Transport Theory and Hydrodynamics (from Euler to Monge and vice versa)"*, 10/2018, Oberwolfach (Germany).
  - Generalized H(div) geodesics and solutions of the Camassa-Holm equation. *MokaMeeting*, 12/2018, Inria Paris (France).

8.1.5. Research Administration

J-D. Benamou is a member of the *Commision de restauration locale*.

J-D. Benamou is the *Commission Bureau* referent for the 4th floor of building A.

J-D. Benamou is a member of PSL *Conseil Académique*.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence: I. Waldspurger, Analyse 1, 92 heures d'équivalent TD, L1, Université Paris Dauphine, France

Master: V. Duval, project supervision (M2), INSA de Rouen, France

Licence: T. O. Gallouët, Optimisation (TD, L3, Orsay), EDP (TD, 2 ème anné, ENS).

Master, Licence: G. Carlier taught algebra (Licence, Dauphine, 91h), transport and variational methods in economics (Dauphine, M2, 18h) and Convex duality and applications in mass transport and the calculus of variations in Munich (18h).

Licence: Y. De Castro taught optimization to first year engineering school student (10h).

Licence: A. Natale taught (TD) for the course "Calcul Différentiel et Optimisation" (Instructor: Emeric Bouin), 09-12/2018, Université Paris Dauphine, Paris (France).

Licence, Master: P. Pegon taught a crash course in analysis (M1, Dauphine, 12h), and gave exercise sessions in Measure theory and probability (L3, Dauphine, 39h) and on Functional Analysis and PDEs (M1, Dauphine, 19.5h).

8.2.2. *Supervision*

- PhD : Quentin Denoyelle, *Theoretical and Numerical Analysis of Super-Resolution without Grid*, defended on 09/07/2018, G. Peyré and V. Duval.

- PhD in progress : Gabriele Todeschi, Optimal transport and finite volumes, 01/10/2018, T. O. Gallouët.

- PhD in progress : Miao Yu , *Optimal Transport distances for Full Waveform Inversion*, 01/10/2016, J-D. Benamou.

- PhD in progress: Paul Catala, *Low-rank Approaches for Off-the-grid Superresolution*, 01/10/2016, G. Peyré and V. Duval.

- PhD in progress : Lucas Martinet , *Decomposed and Parallel Sinkhorn Algorithm for Optimal Transport*, 01/10/2017, J-D. Benamou.

- PhD in progress : Giorgi Rukhaia , *On the application of Sinkhorn methods in Freeform Optics*, 01/05/2018, J-D. Benamou.

- PhD in progress : Ernesto Araya , *Random Graphs*, Y. De Castro.

8.2.3. *Juries*

G. Carlier was in the HDR committee of Nicolas Juillet and in the Ph.D committees of Michael Orieux, Hadrien de March and Thomas Dumas

8.3. Popularization

8.3.1. *Internal or external Inria responsibilities*

V. Duval was a member of the *Commission d'évaluation scientifique* (CES) of the CRI Paris in 2018, and has been a member of the *Comité de suivi doctoral* since September 2018.

J-D. Benamou was a member of the *CR2 Recruiting Commission* of the CRI Paris in 2018.

8.3.2. *Education*

I. Waldspurger has given a talk at the Mathematic Park seminar (for L1 and L2 students), on the minimization of convex functions with Lipschitz gradient.

8.3.3. *Interventions*

Participation à l'accueil de 15 collégiens dans le cadre de leur stage d'observation (3 heures dans l'équipe MOKAPLAN supervisé par Lucas Martinet).

<div align="center">**NACHOS Project-Team**</div>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Stéphane Lanteri has chaired the second workshop of the CLIPhTON (advanCed numericaL modelIng for multiscale and multiphysics nanoPhoTONics) network that took place at Humboldt-Universität zu Berlin, Berlin, Germany, July 12-13, 2018.

9.1.2. Invited Talks

Claire Scheid, "A Discontinuous Galerkin Time-Domain framework for nanoplasmonics", Topical Workshop "Computational Aspects of Time Dependent Electromagnetic Wave Problems in Complex Materials", ICERM, Brown University, Providence, USA, June 25-29, 2018

Stéphane Lanteri, "Discontinuous Galerkin solvers for the numerical modeling of nanoscale light-matter interactions", MATHIAS 2018 - Computational Science Engineering & Data Science by TOTAL, Paris, October 22-24, 2018

Stéphane Lanteri, "Rigorous modeling of light absorption in nanostructured materials using a parallel high order finite element time-domain technique", Research Center for Advanced Science and Technology, The University of Tokyo, Japan, July, 30 2018

Stéphane Lanteri, "An upscaled DGTD method for time-domain electromagnetics", Special Session "Multiscale and multiphysics computation and applications", Progress In Electromagnetics Research Symposium - PIERS 2018, Toyama, Japan, August 1-4, 2018

9.1.3. Scientific Expertise

Stéphane Lanteri is a member of the Scientific Committee of CERFACS.

9.1.4. Research Administration

Stéphane Lanteri is a member of the Project-team Committee's Bureau of the Inria Sophia Antipolis-Méditerranée research center.

Stéphane Lanteri is a member of the Sciences Fondamentales et Appliquées Doctoral School Committee (until December 2018).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Stéphane Descombes, *Scientific computing*, M1, 36 h, Université Côte d'Azur.

Stéphane Descombes, *Principal components analysis*, M2, 30 h, Université Côte d'Azur.

Stéphane Lanteri, *High performance scientific computing*, MAM5, 24 h, Polytech Nice Sophia.

Claire Scheid, *Analyse Hibertienne et analyse de Fourier, Practical works*, Master 1 MPA, 36h, Université Côte d'Azur.

Claire Scheid, *Option Math 2*, Licence 1, 20h, Université Côte d'Azur.

Claire Scheid, *Méthodes numériques en EDP, Lectures and practical works*, Master 1 MPA and IM, 63h, Université Côte d'Azur.

Claire Scheid, *Option Modélisation, Lectures and practical works*, Master 2 Agrégation, 48h, Université Côte d'Azur.

Claire Scheid, *Analyse, Lecture and practical works*, Master 2 Agrégation, 27h, Université Côte d'Azur.

Claire Scheid, *EDP et Différences Finies, Lectures and practical works*, Master 1 MPA and IM, 72h, Université Côte d'Azur.

9.2.2. Supervision

PhD in progress: Alexis Gobé, *Multiscale hybrid-mixed methods for time-domain nanophotonics*, November 2016, Stéphane Lanteri.

PhD in progress: Georges Nehmetallah, *Efficient finite element type solvers for the numerical modeling of light transmission in nanostructured waveguides and cavities*, November 2017, Stéphane Descombes and Stéphane Lanteri.

PhD defened in September 2018: Nikolai Schmitt, *High-order simulation and calibration strategies for spatially dispersive metals in nanophotonics*, Stéphane Lanteri and Claire Scheid.

<p style="text-align:center">**NANO-D Project-Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Reviewer

- Léonard Jaillet has been reviewer for the IROS 2018 conference (International Conference on Intelligent Robots and Systems).

- Sergei Grudinin was a reviewer for the BIBM'18 conference (The IEEE International Conference on Bioinformatics and Biomedicine), and 6th International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO 2018).

8.1.2. Journal

8.1.2.1. Reviewer - Reviewing Activities

Sergei Grudinin has reviewed submissions for the following journals : PLOS Computational Biology, Journal of Computer–Aided Molecular Design, Bioinformatics, Computational Biology and Chemistry, Journal of Computational Chemistry, Proteins, Nature, BMC Bioinformatics, The Journal of Physical Chemistry, IEEE Access, Accounts of Chemical Research, Computational and Structural Biotechnology Journal.

8.1.3. Invited Talks

- Sergei Grudinin gave an invited talk 'Algorithms for Protein–Protein Docking' at the Meet–U 2018 course on structural bioinformatics, Paris, 2018.

- Sergei Grudinin gave an invited talk 'Using Machine Learning for Structure–Based Predictions of Protein–Ligand Interactions' at the 7th French–Japanese Workshop on Computational Methods in Chemistry, Strasburg, 2018.

- Sergei Grudinin gave an invited talk 'Novel Methods for Structural Bioinformatics' at the GDR BIM / GT Méthodes Algorithmiques pour les Structures et Interactions, Paris 2018.

- Sergei Grudinin gave an invited talk 'Using machine learning to predict protein structure and interactions' at the VIth International Conference "Chemistry, Structure and Function of Biomolecules", Minsk, 2018.

- Sergei Grudinin gave an invited talk 'Predicting protein interactions with protein flexibility and small-angle scattering profiles' at the Modeling of Protein Interactions (MPI) 2018 conference, November 8-10, Lawrence, KS, USA.

- Sergei Grudinin gave an invited talk on data-assisted modeling of protein structures at the CASP13 conference, Iberostar Paraiso, Riviera Maya, Mexico December 1-4, 2018.

- Sergei Grudinin gave an invited talk 'Artificial Intelligence for Learning Protein Interactions' at the 4th International Conference on Mathematical and Computational Medicine, December 3-7, 2018, Cancun, Mexico.

8.1.4. Leadership within the Scientific Community

Sergei Grudinin with his colleagues from ILL has organized a new data-assisted (SANS) sub-challenge for the CASP13 community-wise protein structure prediction exercise.

8.1.5. Scientific Expertise

Sergei Grudinin reviewed an application for the OPUS funding scheme at the National Science Center, Poland.

8.2. Teaching - Supervision - Juries

8.2.1. Supervision

PhD : Phd thesis defence of Minh Khoa Nguyen, Université Grenoble Alpes, 2018
Title: Efficient exploration of molecular paths from As-Rigid-As-Possible approaches and motion planning methods [67].
Thesis committee: Emmanuel Mazer, Léonard Jaillet, Stéphane Redon, Juan Cortes, Charles Robert, Dirk Stratmann.
Summary: In this dissertation, we are particularly interested in developing new methods to find for a system made of a single protein or a protein and a ligand, the pathways that allow a transition from one state to another. During a few past decades, a vast amount of computational methods has been proposed to address this problem. However, these methods still have to face two challenges: the high dimensionality of the representation space, associated to the large number of atoms in these systems, and the complexity of the interactions between these atoms. This dissertation proposes two novel methods to efficiently find relevant pathways for such biomolecular systems. The methods are fast and their solutions can be used, analyzed or improved with more specialized methods. The first proposed method generates interpolation pathways for biomolecular systems using the As-Rigid-As-Possible (ARAP) principle from computer graphics. The method is robust and the generated solutions best preserve the local rigidity of the original system. An energy-based extension of the method is also proposed, which significantly improves the solution paths. However, in the scenarios requiring complex deformations, this approach may still generate unnatural paths. Therefore, we propose a second method called ART-RRT, which combines the ARAP principle for reducing the dimensionality, with the Rapidly-exploring Random Trees from robotics for efficiently exploring possible pathways. This method not only gives a variety of pathways in reasonable time but the pathways are also low-energy and clash-free, with the local rigidity preserved as much as possible. The mono-directional and bi-directional versions of the ART-RRT method were applied for finding ligand-unbinding and protein conformational transition pathways, respectively. The results were found to be in good agreement with experimental data and other state-of-the-art solutions.

PhD : Phd thesis defence of Alexandre Hoffmann, Université Grenoble Alpes, 2018
Title: Docking Flexible Proteins using Polynomial Expansions.
Thesis committee: Valérie Perrier, Slavica Jonic, Florence Tama, Sergei Grudinin, Marc Delarue, Roland Hildebrand.
Summary: This thesis focuses on two main axes. The first axis is the development of a new method that exhaustively samples both rigid-body and collective motions computed via normal mode analysis (NMA). We first present a method that combines the advantages of the fast Fourier transform (FFT)-based exhaustive search, which samples all the conformations of a system under study on a grid, with a local optimization technique that guarantees to find the nearest optimal off-grid and flexible conformation. The algorithm first samples a quadratic approximation of a scoring function on a 6D grid. Then, the method performs the flexible search by maximizing the quadratic approximation of the cost function within a certain search space. We then present a multi-step version of our algorithm, which finds the collective motions that maximize the docking score with respect to the rigid-body degrees of freedom (DOFs). The method exhaustively samples both rigid- body and collective motions by maximizing the soft maximum over the rigid body DOFs of the docking/fitting cost function. Both methods were applied to docking problems on both real and artificial example and we were able to design a benchmark in which the "fit then refine" approach fails at finding the correct conformation while our method succeeds.

The second axis is the development of a new extrapolation of motions computed by NMA. We show that it is possible, with minimal computations, to extrapolate the instantaneous motions computed by NMA in the rotations-translations of blocks (RTB) subspace as an almost pure rotation around a certain axis. We applied this non-linear block (NOLB) method on various biological systems and

were able to, firstly, retrieve biologically relevant motions and secondly, to demonstrate that the NOLB method generates structures with a better topology than a linear NMA method.

PhD : Phd thesis defence of Semeho Prince A. Edorh, Université Grenoble Alpes, 2018
Title: Incremental Algorithm for long range interactions [11].
Thesis committee: Stephane Redon, Olivier Coulaud, Matthias Bolten, Jean-Louis Barrat, Stefano Mossa, Jerôme Mathe.
Summary: Particle simulations have become an essential tool in various fields such as physics, astrophysics, biology, chemistry, climatology, and engineering, to name few. Usually, these computer simulations produce a temporal evolution of the system of interest by describing the motion of particles. In order to perform reliable simulations, we must provide an accurate description of interaction forces undergone by each particle. In most cases, these forces mirror inter-particle interactions and depend on relative coordinates of the particles. Moreover, pairwise long-range interactions are generally the cornerstone of particle simulations, an example being gravitational forces that are so essential in astrophysics. In molecular simulations, electrostatic forces are the most common illustration of long-range interactions. Furthermore, due to their computational cost, pairwise long-range interactions are the bottleneck of particle simulations. Therefore, sophisticated algorithms must be used for efficient evaluations of these interactions. In this thesis, we thus propose algorithms which may reduce the cost of long-range interactions when the studied system is governed by a particular dynamics. Precisely, these so-called «incremental» algorithms are effective for simulations where a part of the system remains frozen awhile. In particular, our algorithms will be validated on systems whose particles are governed by the so-called Adaptively Restrained Molecular Dynamics (ARMD) which is a promising approach in molecular dynamics simulations. Although several incremental algorithms introduced by this thesis will be devoted to molecular dynamics simulations, we believe that they can be generalized to all kinds of long-range interactions.

PhD in progress : Maria Kadukova, "Novel computational approaches for protein ligand interactions", Sep 2016-, supervisors: Sergei Grudinin (France) and Vladimir Chupin (MIPT, Russia).

PhD in progress : Guillaume Pagès, "Novel computational developments for protein structure prediction", Apr 2016-, supervisors: Sergei Grudinin (Inria), Valentin Gordeliy (IBS).

8.3. Popularization

8.3.1. Articles and contents

Sergei Grudinin and Guillaume Pagès were interviewed by Le Figaro about the progress of deep learning and artificial intelligence in protein structure prediction [88].

<h1 style="text-align:center;color:red">NECS Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

The team organized the international ERC Scale-FreeBack workshop on "Analysis and Control of Large-Scale Complex Networks", Grenoble, September 10-11th, 2018 (http://scale-freeback.eu/workshop-on-analysis-and-control-of-large-scale-complex-networks-10-11-sept-2018-grenoble/).

M. L. Delle Monache organized a mini-symposium on "Modélisation et gestion du trafic routier", 44e Congrès National d'Analyse Numérique, May 2018 (with P. Goatin, Acumes team).

M. L. Delle Monache organized a workshop on "Traffic flow control via PDE techniques", CDC, December 2018 (with Nikolaos Bekiaris-Liberis, Delphine Bresch-Pietri and Rafael Vazquez).

Team members organized the following invited sessions at the European Control Conference ECC 2018, Cyprus, June 2018:
- "Model reduction and control in large-scale networks" (P. Frasca and C. Canudas de Wit)
- "Multi-agent network games" (F. Garin, with S. Grammatico from Delft Univ. of Technology)

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

C. Canudas de Wit has served as Associate Editor at Large for the American Control Conference ACC 2019.

P. Frasca has served as Associate Editor in the conference editorial boards for the 7th IFAC Workshop on Distributed Estimation and Control in Networked Systems and the 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS).

F. Garin is Associate Editor in the IEEE Control System Society Conference Editorial Board (this year, she served for CDC 2018, ACC 2019) and Associate Editor in the European Control Association (EUCA) Conference Editorial Board (this year, she served for ECC 2019).

H. Fourati was member of:
- the International Program Committee (IPC) of international conferences STA'18, ICCAD'18, ICITE'18.
- the International Program Committee (IPC)/Associate Editor for contributed papers for the IEEE Conference on Control Technology and Applications (CCTA'18), Copenhagen (Denmark), Aug. 2018;
- the Technical Program Committee (TCP) for the International Conference on Indoor Positioning and Indoor Navigation (IPIN'18), Nantes (France), Sep. 2018;
- the committee of the reviewing phase of the 21st Euro Working Group on Transportation Meeting (EWGT'18), Braunschweig (Germany), Sep. 2018.

9.1.2.2. Reviewer

Team members have been reviewers for several conferences, including the most prestigious ones in their research area: IEEE Conference on Decision and Control CDC, European Control Conference ECC, American Control Conference ACC, European Signal Processing Conference, IEEE International Conference on Robotics and Automation ICRA, IEEE/RSJ International Conference on Intelligent Robots and Systems IROS, IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys), IFAC Workshop on Control for Transportartion Systems (CTS), IEEE Intelligent Transportation Systems Society Conference, Transportation Research Board Annual Meeting.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

C. Canudas de Wit is Associate Editor of the IEEE Transactions on Control of Networks Systems IEEE-TCNS (since June 2013) and Editor of the Asian Journal of Control AJC (since 2010).

P. Frasca is Subject Editor of the International Journal of Robust and Nonlinear Control (Wiley) (since February 2014), Associate Editor of the IEEE Control System Letters (from February 2017) and Associate Editor of the Asian Journal of Control (Wiley) (since January 2017).

H. Fourati is Associate Editor of the Asian Journal of Control (Wiley) (since January 2016) and of the Open Transportation Journal https://benthamopen.com/TOTJ/editorial-board. He has also been guest editor of the special issue "Multi-sensor Integrated Navigation and Location based services applications" for International Journal of Distributed Sensor Networks (IJDSN), 2017-2018 (http://journals.sagepub.com/topic/collections-dsn/dsn-1-msinalbsa/dsn) and lead guest editor of the special issue "Recent Advances on Data Fusion, Estimation in Navigation and Control" for Asian Journal of Control (AJC), 2018.

9.1.3.2. Reviewer - Reviewing Activities

Team members have been reviewers for several journals, including the most prestigious ones in their research area: IEEE Trans. on Automatic Control, IEEE Trans. on Control of Network Systems, IEEE Trans. on Signal Processing, Automatica, IEEE Signal Processing Letters, Systems and Control Letters, Int. Journal of Robust and Nonlinear Control, Elsevier Transportation Research Part B, IEEE Trans. on Intelligent Transportation Systems, IEEE/ASME Trans. on Mechatronics, IEEE Trans. on Instrumentations and Measurements, IEEE Sensors journal, IEEE Trans. on Robotics, AIMS Networks and Heterogeneous Network (NHM), Wiley Mathematical Methods in the Applied Sciences (MMAS), Journal of Mathematical Analysis and Applications (JMMA), Journal of Nonlinear Science and Applications (JNSA), Journal of the Franklin Institute, AMS Mathematical Reviews, Asian Journal of Control.

9.1.4. Invited Talks

- C. Canudas de Wit, "Model and Control of Large scale systems", plenary talk at IFAC-NecSys'18, Groningen, The Netherlands, August 2018.
- C. Canudas de Wit, "Control of Large scale Urban networks: a new perspective", plenary talk at IFAC-CTS'18, Savona, Italy, June 2018
- C. Canudas de Wit, "Scale-FreeBack", pitch talk at Transport Research Arena, Vienna, Austria, April 2018 .
- C. Canudas de Wit, "Towards Scale-Free Control of Large-scale Traffic Networks" and M. L. Delle Monache, "Micro-macro traffic modeling for estimation and control", First SoPhy International Workshop on Societal-Scale Cyber-Physical Transport Systems Workshop, Stockholm, Sweden, September 2018.
- M. L. Delle Monache, "Can big data help traffic flow control?", Workshop: Traffic flow control via PDE Techniques, IEEE-CDC Conference, Miami Beach, USA, December 2018.
- M. L. Delle Monache, "Control and estimation of traffic flow using autonomous vehicles", Joint meeting of the Italian Mathematical Union, the Italian Society of Industrial and Applied Mathematics and the Polish Mathematical Society, Wroclaw, Poland, September 2018.
- M. L. Delle Monache, "Riemann solver for a macroscopic double-lane roundabout model", 15th IFAC Symposium on Control in Transportation Systems, Savona, Italy, June 2018.
- M. L. Delle Monache, "Control of traffic: from ramp metering to autonomous vehicles", Institute for Software Integrated Systems, Vanderbilt University, USA, May 2018.
- M. L. Delle Monache, "Control of traffic flow: from ramp metering to autonomous vehicles", Seminar of the department of mathematics, University of Alabama, USA, April 2018

- M. L. Delle Monache, "Two-dimensional macroscopic model for large scale traffic network", Incontro Scientifico su Modellizzazione ed Analisi di Problemi di Folle e Traffico, Politecnico di Torino, Italy, April 2018.
- M. L. Delle Monache, "Les mathématiques cachées du trafic routier", ISN Conference, Académie de Grenoble, Inria Grenoble – Rhône-Alpes, France, March 2018.
- P. Frasca, "The harmonic influence in social networks and its distributed computation by message passing", IXXI, ENS Lyon, July 3, 2018
- P. Frasca, "Randomization and quantization in opinion dynamics", IRSTEA, Clermont-Ferrand, March 14, 2018.
- F. Garin, "Input-and-state observability of structured systems", Paths in Mathematical Systems Theory workshop, Torino (Italy), Feb. 2018.

9.1.5. Leadership within the Scientific Community

Team members participate to the following technical committees of IEEE Control Systems Society and of the International Federation of Automatic Control:

- IEEE-CSS Technical Committee "Networks and Communications Systems" (P. Frasca and F. Garin);
- IFAC Technical Committee 1.5 on Networked Systems (P. Frasca and C. Canudas de Wit);
- IFAC Technical Committee 2.5 on Robust Control (P. Frasca);
- IFAC-TC7.1 Automotive Control (C. Canudas de Wit);
- IFAC-TC7.4 Transportation systems (C. Canudas de Wit).

C. Canudas de Wit is member of the advisory board (2017-21) of the project "Societal-Scale Cyber-Physical Transport Systems" supported by the Swedish Strategic Research Foundation, KTH Sweden.

P. Frasca is member of the "Comité de Direction du GdR MACS ", term 2019-2023.

P. Frasca reviewed project proposals for the ERC and the Italian Ministry of Scientific Research; A. Kibangou reviewed project proposals for ANR, NRF (South-African research agency), and ERC.

9.1.6. Research Administration

C. Canudas de Wit is a member of the COST-Inria-RA (Conseil d'Orientation Scientifique et Technologique, Inria Rhône-Alpes), since 2017.
F. Garin is member of two local committees at Inria Rhône-Alpes: Comité des Emplois Scientifiques (post-docs, délégations) since 2015 and Comité des Études Doctorales (PhD grants CORDI-S) since 2016.
A. Kibangou is:

- Elected member of the research department MSTIC (mathematics, information and communication sciences) of Univ. Grenoble Alpes
- Co-head of the PCS (Pervasive Computing Systems) action of Persyval-Lab
- Academic director (L2) IUT1 (GEII)
- Co-head for higher studies opportunities (Responsable poursuite d'études) (IUT1-GEII)

H. Fourati is

- Member of the Department of Electrical Engineering Council, IUT1 Grenoble, France (2018-2021)
- Member of CNU61 (Conseil national des universités, Génie informatique, Automatique et Traitement du Signal) since 2016.
- In charge of communication mission and visits to high school within the Department of Electrical Engineering, IUT1 Grenoble, France (2017-present).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master and PhD: M.L. Delle Monache, Traffic flow and crowd dynamics: modeling and computing, 18h, ED MSTII, Univ. Grenoble Alpes, France.

Master: F. Garin, Distributed Algorithms and Network Systems, 13.5h, M2, Univ. Grenoble Alpes, France.

Licence: H. Fourati, Mathématiques, 30h, L2, IUT1 (GEII1), Univ. Grenoble Alpes, France.

Licence: H. Fourati, Informatique Industrielle, 95h, L1, IUT 1 (GEII), Univ. Grenoble Alpes, France.

Licence: A. Kibangou, Automatique, 75h, L2, IUT1(GEII), Univ. Grenoble Alpes, France.

Licence: A. Kibangou, Mathématiques, 44h, L2, IUT1 (GEII), Univ. Grenoble Alpes, France.

Licence: A. Kibangou, Mathématiques, 126h, L1, IUT1 (GEII), Univ. Grenoble Alpes, France.

9.2.2. Supervision

PhD: Andrés Alberto Ladino Lopez, Traffic state estimation and prediction in freeways and urban networks, Univ. Grenoble Alpes, March 2018, co-advised by C. Canudas de Wit, A. Kibangou and H. Fourati.

PhD: Sebin Gracy, Input and state observability of linear network systems with application to security of cyber-physical systems, Univ. Grenoble Alpes, Nov. 2018, co-advised by A. Kibangou and F. Garin.

PhD: Stéphane Durand, Analysis of best response dynamics in potential games, Univ. Grenoble Alpes, Dec. 2018, co-advised by B. Gaujal and F. Garin.

PhD in progress: Stéphane Mollier, Aggregated Scale-Free Models for 2-D Large-scale Traffic Systems, from Oct. 2016, co-advised by C. Canudas de Wit, M. L. Delle Monache and B. Seibold.

PhD in progress: Nigina Toktassynova, Simulation and research of industrial flow control systems of the enterprise based on MES, from Oct. 2016, co-advised by H. Fourati and Batyrbek Suleimenov (Kazakh National Research Technical University).

PhD in progress: Nicolas Martin, On-line partitioning algorithms for evolutionary scale-free networks, from Dec. 2016, co-advised by C. Canudas de Wit and P. Frasca.

PhD in progress: Martin Rodriguez-Vega, Traffic density, traveling time and vehicle emission estimation in large-scale traffic networks, from Oct. 2017, co-advised by C. Canudas de Wit and H. Fourati.

PhD in progress: Muhammad Umar B. Niazi, State-state estimation design and optimal sensor placement algorithms for large-scale evolutionary dynamical networks, from Dec. 2017, co-advised by C. Canudas de Wit and A. Kibangou.

PhD in progress: Thembani Moyo, Origin and destination modeling and estimation for smart mobility, from May 2018, co-advised by A. Kibangou and W. Musakwa (Univ. of Johannesburg).

PhD in progress: Denis Nikitin, Scalable large-scale control of network aggregates, from Sept. 2018, co-advised by C. Canudas de Wit and P. Frasca.

PhD in progress: Liudmila Tumash, Traffic control in large-scale urban networks, from Sept. 2018, co-advised by C. Canudas de Wit and M. L. Delle Monache.

PhD in progress: Bassel Othman, Dynamic optimization of road traffic in a large-scale urban network from Oct. 2018, co-advised by C. Canudas de Wit and G. De Nunzio.

PhD in progress: Makia Zmitri, Estimating the attitude by IMU, magnetic and vision measures: an automatic control approach, from Oct. 2018, co-advised by H. Fourati and C. Prieur.

9.2.3. Juries

- P. Frasca was committee member of the PhD defence of Zhiyang Ju. Thesis: *Persistent Communication Connectivity of Multi-agent Systems*. University of Melbourne, Australia. PhD advisor: Dragan Nesic and Iman Shames. 2018

- P. Frasca was committee member of the PhD defence of Pierre-Yves Chevalier. Thesis: *Inhomogeneous Products of Stochastic Matrices with Application to Consensus Systems*. Université catholique de Louvain, Louvain-la-Neuve, Belgium. Ph.D. advisors: Julien Hendrickx and Raphael Jungers, June 2018

- P. Frasca was committee member of the PhD defence of Domenico Tangredi. Thesis: *Consensus in Heterogeneous Opinion Dynamics Networks*. University of Sannio, Benevento, Italy. Ph.D. advisor: Francesco Vasca, 2018.

- H. Fourati was committee member of the PhD defence of Fadoua Taia-Alaoui, IFSTTAR / Univ. Nantes, Dec. 2018.

- F. Garin was scientific assessor for the promotion of Maben Rabi to 'oavlönad docent', Chalmers University of Technology (Sweden), Jan. 2018.

- A. Kibangou was a reviewer of the PhD thesis of Thomas Brault "Étude des algorithmes de fusion de données pour estimer l'orientation d'un objet", Sorbonne Universités, defended November 8th, 2018.

- A. Kibangou was a reviewer of the thesis of Smart Dumba "Modelling Signalised Intersections' Capacity under the Impact of Minibus Public Transport in Harare, Zimbabwe", University of Zimbabwe. To be defended in January 2019.

9.3. Popularization

9.3.1. *Articles and contents*

P. Frasca has co-authored a column on the IEEE Control Systems Magazine about the activities of the Technical Committee on Networks and Communications Systems [67].

9.3.2. *Education*

M. L. Delle Monache gave a talk on "Les mathématiques cachées du trafic routier" to the high school teachers in the framework of the ISN Conference in collaboration with the Académie de Grenoble. The video of the conference is available at https://www.canal-u.tv/video/inria/les_mathematiques_cachees_du_trafic_routier.44275.

9.3.3. *Interventions*

Vadim Bertrand presented demos of the GTL-Ville:

- at *Club PTV Vision* (https://discover.ptvgroup.com/Club_PTV_Vision_2018), on Oct. 4th, in Paris
- at *Rencontres Inria-industrie* (https://www.inria.fr/innovation/recherche-partenariale-transfert/rencontres-inria-industrie/presentation), on Nov. 20th, in Paris

<p style="text-align:center">**NON-A POST Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

- Richard J.-P., EUCA-IEEE ECC, Limassol, Cyprus
- Richard J.-P., IFAC TDS, Budapest, Hungary
- Richard J.-P., IARA VEHICULAR, Venice, Italy
- Efimov D., IFAC CHAOS, Eindhoven, Netherlands
- Efimov D., IFAC MICNON, Guadalajara, Mexico

9.1.1.2. Reviewer

The members of the team serve as reviewers to all major conferences in the field: IEEE CDC, ECC, ACC *etc*.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- Polyakov A., International Journal of Robust and Nonlinear Control
- Polyakov A., Journal of Optimization Theory and Applications
- Efimov D., IFAC Journal on Nonlinear Analysis: Hybrid Systems
- Efimov D., Asian Journal of Control
- Efimov D., IEEE Transactions on Automatic Control

9.1.2.2. Reviewer - Reviewing Activities

The members of the team serve as reviewers to all major journals in the field: IEEE Trans. Automatic Control, Automatica, Systems & Control Letters, SIAM Journal on Optimization and Control, Int. Journal of Robust and Nonlinear Control *etc*.

9.1.3. Research Administration

- Richard J.-P., Investigator for the CNRS FR TTM
- Efimov D., Chair of EECI PhD Award

<p align="center" style="color:red">QUANTIC Project-Team</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Pierre Rouchon was the main organizer of the spring thematic quarter at Institut Henri Poincaré entitled "Measurement and control of quantum systems: theory and experiments" (16 April – 13 July 2018). This thematic quarter includes courses, lectures and conferences. In particular a research school of one week at CIRM, two 3-day workshops in May and June and the 2018 issue of PRACQSYS conference in July, were organized in this framework. This thematic quarter involved several hundred of participants. See IHP web page (http://www.ihp.fr/en/CEB/T2-2018), CIRM web page (https://conferences.cirm-math.fr/1732.html) and the specific quarter web site (https://sites.google.com/view/mcqs2018/home).

8.1.1.2. Member of the Organizing Committees

- Zaki Leghtas co-organized a conference on quantum computing ICOQC 2018 at ENS Paris (https://icoqc.sciencesconf.org).
- Mazyar Mirrahimi was a co-organizer of the PRACQSYS conference at IHP in July 2018 (https://sites.google.com/view/mcqs2018/pracqsys-2018).

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

Pierre Rouchon is member of the editorial board of Annual Reviews in Control.

8.1.2.2. Reviewer - Reviewing Activities

- Zaki Leghtas and Mazyar Mirrahimi were reviewer of Physical Review Journals.
- Pierre Rouchon and Alain Sarlette were reviewer for several automatic control and dynamical systems journals and conferences.

8.1.3. Invited Talks

- Zaki Leghtas: Sirteq 2018. Institut d'optique Paris. Invited by Patrice Bertet.
- Zaki Leghtas: ONE-QOS workshop. Max Planck, Erlangen, Germany. Invited by Florian Marquardt.
- Zaki Leghtas: IHP workshop on quantum control and feedback, Paris, France. Invited by Eleni Diamanti.
- Zaki Leghtas: LIA CNRS-Université de Sherbrooke workshop, Saint-Rémy, France. Invited by Denis Vion.
- Zaki Leghtas: University of Berkeley. Berkeley, USA. Invited by Irfan Siddiqi.
- Zaki Leghtas: Rigetti Quantum Computing. Berkeley, USA. Invited by Chad Rigetti.
- Pierre Rouchon: lecture at the QUACO ANR Meeting in Besançon, September 24-26, Models and feedback issues for open quantum systems.
- Pierre Rouchon: plenary speaker at Mexican Annual Conference on Automatic Control. 10-12 October 2018, San Luis Potosi, Dynamical models and feedback issues for super-conducting quantum circuits.
- Pierre Rouchon: 2-hour course in the Colloquium of the Physics Department, ENS-Paris, October 23 (introduction to quantum cryptography, computation and error correction).

- Alain Sarlette: dynamical systems seminar series, March 2018, Jussieu.
- Alain Sarlette: seminar at IHP trimester on Quantum Control, May 2018.
- Alain Sarlette: Praqcsys: Principles and Applications of Control in Quantum Systems, IHP, Paris, July 2018.
- Mazyar Mirrahimi: American Physical Society March Meeting, Los Angeles, March 2018.
- Mazyar Mirrahimi: Semi-plenary speaker at MTNS (Mathematical Theory of Networks and Systems), Hong Kong, July 2018.
- Mazyar Mirrahimi: Centre de Recherche Mathematique de Montreal, Octobre 2018.
- Mazyar Mirrahimi: 4-hour course at Institut d'Optique, Introduction to Quantum Computing, June 2018.
- Alain Sarlette: lectures on quantum control and quantum computing at the Ecole d'Automatique de Grenoble summer school, August 2018
- Pierre Rouchon, Alain Sarlette, Rémi Azouit, Paolo Forni and Francesca Chittaro have given a lecture series about "adiabatic elimination for open quantum systems" at the IHP trimester on Quantum Control.
- Jérémie Guillaud: Yale university, Nov 2018.

8.1.4. Research Administration

- Pierre Rouchon is a member of the scientific committee of LAGEP (Laboratoire d'Automatique et de Génie des Procédés) since 2017.
- Pierre Rouchon is a membre of the "Conseil Scientifique du DIM Math Innov" since 2017.
- Pierre Rouchon is a member of the "Conseil de la recherche de PSL " since 2016.
- Pierre Rouchon is a member of the "Conseil Scientifique du Conservatoire National des Arts et Metiers" since 2014.
- Mazyar Mirrahimi is the co-president of Inria's comité des emplois scientifiques.
- Mazyar Mirrahimi was a member of ANR Comité d'Evaluation Scientifique on Quantum Technologies.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Cycle Ingénieur : Mazyar Mirrahimi, Automatic Control with Applications in Robotics and in Quantum Engineering, 8 hours amphi and 8 hours TD, 3rd year, Ecole Polytechnique, France.

Cycle Ingénieur : Mazyar Mirrahimi, Contrôle de modèles dynamiques, 36 hours TD, 2nd year, Ecole Polytechnique, France.

Cycle Ingénieur : Mazyar Mirrahimi, Module algorithmique Quantum Control, 24 hours TD, 2nd year, Ecole Polytechnique, France.

Master: Mazyar Mirrahimi and Pierre Rouchon, Dynamics and control of quantum systems, 18 hours amphi, M2, Jussieu, France.

Cycle Ingénieur: Alain Sarlette, Probabilities and Stochastic Processes, 24 hours TD, Mines Paristech, France.

Master: Alain Sarlette, Robotics, 24 hours, Ghent University, Belgium.

Cycle Ingénieur : Zaki Leghtas, Quantum Mechanics and Statistical Physics, Mines ParisTech, 12 hours, France.

Cycle Ingénieur : Zaki Leghtas, Quantum Computing, Mines ParisTech, 20 hours, France.

8.2.2. Supervision

- PhD in progress : Gerardo Cardona, "Beyond static gains in analog quantum feedback control", advisors: Pierre Rouchon and Alain Sarlette, starting date: Nov 2016.
- PhD in progress: Michiel Burgelman, "A systematic study of strongly driven and dissipative quantum systems towards high-accuracy quantum control designs", advisors: Pierre Rouchon and Alain Sarlette, starting date: Nov 2018.
- PhD in progress: Vincent Martin, "Fault-tolerance of quantum systems under continuous-time feedback stabilization", advisors: Mazyar Mirrahimi and Alain Sarlette, starting date Oct 2018.
- PhD in progress: Jérémie Guillaud, "Modular architecture for quantum information processing", advisor: Mazyar Mirrahimi and Pierre Rouchon, starting date Oct 2017.
- PhD in progress: Lucas Verney, "Robust processing of quantum information with superconducting circuits", advisor: Mazyar Mirrahimi and Zaki Leghtas, starting date Oct 2016.
- PhD in progress: Raphaël Lescanne, "Engineering Multi-Photon Dissipation In Superconducting Circuits For Quantum Error Correction", advisors: Zaki Leghtas and Takis Kontos, starting date Sept 2016.
- PhD in progress: Marius Villiers, "Probing the spin entanglement of single Cooper pair", advisors: Zaki Leghtas and Takis Kontos, starting date: September 2018.
- Alain Sarlette has been supervising 2 PhD students with his former institution UGent. Arash Farnam has successfully defended his thesis about distributed systems control in October 2018. Simon Apers has successfully defended his thesis about quantum walks on graphs in November 2018.

8.2.3. *Juries*

Pierre Rouchon was the president of the jury for the Habilitation thesis of Fransceca Chirraro (université de Toulon) and member of the jury for the Habilitation thesis of Nadir Farhi (université Paris-Est).

8.3. Popularization

Alain Sarlette, 5 December 2018, prospective Ordinateur Quantique at the comité de pilotage du CETIM, Senlis.

<p style="text-align:center;">**RANDOPT Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

- Anne Auger is the General Chair of the forthcoming ACM GECCO 2019 conference, Prague CZ (largest and most prestigious conference in the Evolutionary Computation domain).

10.1.2. Member of the Organizing Committees

- Anne Auger, Dimo Brockhoff and Nikolaus Hansen, co-organizer of the ACM-GECCO-2018 workshop on Black Box Optimization Benchmarking, together with Julien Bect, Rodolphe Le Riche, Victor Picheny, and Tea Tušar
- Anne Auger, Dimo Brockhoff, Nikolaus Hansen, and Konstantinos Varelas, co-organizer of the ACM-GECCO-2019 workshop on Black Box Optimization Benchmarking, together with Tea Tušar
- Dimo Brockhoff: co-organization of the Lorentz Center workshop on Many-Criteria Optimization (MACODA), September 2019, with Boris Naujoks, Michael Emmerich, and Robin Purshouse

10.1.3. Scientific Events Selection

10.1.3.1. Chair of Conference Program Committees

- Anne Auger has been program chair of the PPSN 2018 conference, Coimbra, Portugal.
- Anne Auger was Theory track chair for the ACM GECCO 2018 conference, Kyoto, Japan.
- Nikolaus Hansen was ENUM track chair for the ACM GECCO 2018 conference, Kyoto, Japan.

10.1.3.2. Member of the Conference Program Committees

- Dimo Brockhoff and Nikolaus Hansen were members of the program committee of the PPSN 2018 conference.

10.1.3.3. Reviewer

- Dimo Brockhoff: GECCO'2018, GECCO'2018 student workshop, PPSN'2018, LeGO 2018, EMO'2019, and FOGA'2019

10.1.4. Journal

10.1.4.1. Member of the Editorial Boards

- Anne Auger and Nikolaus Hansen members of the editorial board of the Evolutionary Computation journal.

10.1.4.2. Reviewer - Reviewing Activities

- The three permanent members are frequent reviewers for the main two journals on Evolutionary Computation: IEEE transaction on Evolutionary Computation, Evolutionary Computation.
- Anne Auger is guest editor of Algorithmica special issue of papers selected from GECCO theory tracks 2018
- Anne Auger is guest editor of IEEE Transactions on Evolutionary Computation special issue on Theoretical Foundations of Evolutionary Computation 2018/2019

10.1.5. Invited Talks

- Dimo Brockhoff: "Benchmarking multiobjective optimizers: An algorithmic jam session of recent results", December 2018, Centre for Informatics and Systems, University of Coimbra, Portugal

10.1.6. Leadership within the Scientific Community

- Anne Auger, Elected Member of the ACM-SIGEVO executive board
- Dimo Brockhoff, member of the International Advisory Committee for EMO-2019 in East Lansing, USA

10.1.7. Scientific Expertise

- Anne Auger scientific expert for an audit on Artificial Intelligence of a large French industrial consortium.
- Dimo Brockhoff, external reviewer for the Luxembourg National Research Fund (FNR) in the CORE 2018 call

10.1.8. Research Administration

- Anne Auger, member of the conseil de laboratoire of the CMAP, Ecole Polytechnique.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: Anne Auger, Course on Derivative-free Optimization of AMS and Optimization masters, 22.5 hours M2, Paris-Saclay University
- Master: Anne Auger, exercises for the courses Introduction to Machine Learning (MAP 534), M2 X/HEC and Advanced Machine Learning (MAP 541), 30 hours, Ecole Polytechnique, France
- Master: Anne Auger, exercises for the courses Advanced Machine Learning (MAP 541), M2 X/HEC and Advanced Machine Learning (MAP 541), 30 hours, Ecole Polytechnique, France
- Master: Anne Auger, 2nd year students of Ecole Polytechnique, Datacamp (solving practical machine learning problems) MAP 583, 20 hours, Ecole Polytechnique, France
- Master: Anne Auger, "Advanced Optimization", 9h ETD, M2, Université Paris-Sud, France (joint course with D. Brockhoff)
- Master: Dimo Brockhoff, "Introduction to Optimization", 31.5h ETD, M2, Université Paris-Sud, France
- Master: Dimo Brockhoff, "Advanced Optimization", 22.5h ETD, M2, Université Paris-Sud, France (joint course with A. Auger)

10.2.2. Tutorials

- Dimo Brockhoff gave the tutorial "Evolutionary Multiobjective Optimization" at the GECCO-2018 conference in Kyoto, Japan [9]
- Nikolaus Hansen gave the tutorials "CMA-ES and Advanced Adaptation Mechanisms" [8] and "A Practical Guide to Experimentation (and Benchmarking)" [11] at the GECCO-2018 conference in Kyoto, Japan.

10.2.3. Supervision

- PhD in progress: Konstantinos Varelas, "Large-Scale Optimization, CMA-ES and Radar Applications", Dec. 2017, Anne Auger and Dimo Brockhoff
- PhD in progress: Cheikh Touré, "Linearly Convergent Multi-objective Stochastic Optimizers", Dec. 2017, Anne Auger and Dimo Brockhoff
- PhD in progress: Paul Dufossé, "Constrained Optimization and Radar Applications", Oct. 2018, Nikolaus Hansen
- PhD in progress: Marie-Ange Dahito, "Mixed-Integer Blackbox Optimization for Multiobjective Problems in the Automotive Industry", Jan 2019, Dimo Brockhoff and Nikolaus Hansen

10.2.4. Juries

- Anne Auger, member of Hiring committee for assistant professor positions for Toulouse 1 Capitole University, MCF 0225, section CNU 27
- Anne Auger, PhD jury of Asmaa Ghoumari, defense in Dec. 2018
- Dimo Brockhoff, PhD jury of Lukas Bajer, Charles University Prague, Czech Republic, defense in June 2018
- Dimo Brockhoff, PhD jury of Andreia P. Guerrero, University of Coimbra, Portugal, defene in December 2018

10.3. Popularization

10.3.1. Interventions

- National events: Cheikh Touré made an intervention on Poker for "college" students at the Fête de la Science (explaining relation between the game and probability)

RAPSODI Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. General Chair, Scientific Chair

Four scientific events were organized by RAPSODI members in the framework of the LabEx CEMPI thematic semester on Numerical Analysis and PDEs:

- the Mathematics-Enterprises Study Week, co-organized at LILLIAD Learning Center by E. Creusé from January 29 to February 2;

- the third edition of the ABPDE conference (on Asymptotic Behavior of systems of PDEs arising in physics and biology), co-organized at LILLIAD Learning Center by C. Cancès, C. Chainais-Hillairet, I. Lacroix-Violet, and T. Rey on August 28-31;

- the second edition of the One-day conference on Calculus of Variations, co-organized at Laboratoire Paul Painlevé by I. Lacroix-Violet and B. Merlet on October 12;

- the fifth edition of the Lille days on Numerical Analysis (dedicated to domain decomposition and its applications to PDEs), co-organized at Laboratoire Paul Painlevé by C. Calgaro Zotto and E. Creusé on November 13-14.

C. Cancès co-organized a research school on Mathematics for Nuclear Energy at the Roscoff Marine Station on July 2-6, in partnership with the GdR MaNu. C. Chainais-Hillairet was part of the scientific board for this event.

In the CANUM (national NUMerical Analysis Congress) at Cap d'Agde from May 28 to June 1, three mini-symposia were organized by members of the team: one by C. Cancès on cross-diffusion systems, one by S. Lemaire on polytopal discretization methods, and one co-organized by T. Rey on kinetic models.

E. Creusé co-organized the Maths Jobs Forum that was held in Paris on December 13.

A. Zurek co-organized the Young Mathematicians Regional Tournament that was held in Laboratoire Paul Painlevé on April 14-15.

10.1.1.2. Member of the Organizing Committees

The whole team RAPSODI was involved in the organization of the ABPDE III conference.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

C. Chainais-Hillairet is a member of the editorial board of the North-Western European Journal of Mathematics and of the International Journal on Finite Volumes.

10.1.2.2. Reviewer - Reviewing Activities

RAPSODI team members are regular reviewers for all the main international journals in numerical analysis and PDEs.

10.1.3. Invited Talks

C. Cancès was an invited speaker in the International workshop on PDEs, optimal transport, and applications, held on October 17-20 in Essaouira. He was also one of the speakers in the mini-symposium on polytopal discretization methods organized by S. Lemaire at CANUM (Cap d'Agde, May 28-June 1). He finally gave several seminars in Amiens, Orsay, Strasbourg, and Munich.

C. Chainais-Hillairet was invited to give a talk in a mini-symposium on finite volume methods at the fifteenth edition of the International Conference Zaragoza-Pau on Mathematics and its Applications held in Jaca on September 10-12. She also gave a seminar in Lyon (ICJ).

B. Gaudeul presented a poster at the AMaSiS (Applied Mathematics and Simulation for Semiconductors) conference held in Berlin on October 8-10.

M. Herda gave a talk in the same conference in Berlin, and another one for the Day of the Nord-Pas-de-Calais Mathematics Research Federation on October 3 in Lille. He was also one of the speakers in the mini-symposium on kinetic models co-organized by T. Rey at CANUM (Cap d'Agde, May 28-June 1).

I. Lacroix-Violet gave several seminars in Marseille (I2M), Dijon (IMB), Montpellier (IMAG), and Rennes.

S. Lemaire was invited to give a talk in a mini-symposium on polytopal discretization methods in the biennial Congress of the Italian Society of Applied and Industrial Mathematics (SIMAI) held in Rome on July 2-6. He also gave two seminars in Montpellier (IMAG), and Inria Paris, and gave a talk for the ANEDP team day at the Laboratoire Paul Painlevé.

D. Maltese gave a talk at CANUM (Cap d'Agde, May 28-June 1).

B. Merlet was an invited speaker in the congress Geometric Measure Theory in Verona held on June 11-15, and in the Workshop in Calculus of Variations organized at Paris-Diderot on June 25-27.

T. Rey was an invited speaker for the MAFRAN Days (Mathematical Frontiers in the Analysis of Many-particle Systems) held in Cambridge on September 24-26, and in the mini-workshop Innovative Trends in the Numerical Analysis and Simulation of Kinetic Equations organized in Oberwolfach on December 16-22. He also gave several seminars in Montpellier (IMAG), Paris-Dauphine (CEREMADE), Imperial College London, and Paris-Descartes.

A. Zurek was invited to give a talk in a special session on the mathematical problems arising from materials and biological science in the twelfth edition of the AIMS Conference on Dynamical Systems, Differential Equations, and Applications held in Taipei on July 5-9. He also presented a poster at CANUM (Cap d'Agde, May 28-June 1).

10.1.4. Research Administration

C. Cancès is the head of the MaNu research group (GdR MaNu) funded by the Institute for Mathematical Sciences and its Interactions (INSMI) of the French National Center for Research (CNRS).

E. Creusé has in charge to develop some actions promoted by AMIES (Agency for the Mathematics in Interaction with the Enterprise and the Society). More particularly, his action in 2018 was devoted to several characteristic points: management of some PEPS (First Support for Exploratory Projects), discussions to initiate collaborations between academic researchers in mathematics and industrial partners, participation to the monthly AMIES meeting, organization of the Mathematics-Enterprises Study Week in Lille in January as well as of the Maths Jobs Forum in Paris in December.

I. Lacroix-Violet, B. Merlet, and T. Rey are elected members of the Conseil du Laboratoire Paul Painlevé. I. Lacroix-Violet is also a member of the Jury de domaine.

T. Rey is in charge of the organization of the weekly seminar of the ANEDP team of the Laboratoire Paul Painlevé. He is also a member of the team of the Opération Postes.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

RAPSODI team members are strongly involved in teaching at the Université de Lille. C. Calgaro Zotto is in charge of the Master of Mathematical Engineering. B. Merlet is in charge of the Master 2 of Scientific Computing. E. Creusé was responsible of the "Cursus Master en Ingénierie Mathématiques" until August. He is since September director of the Mathematics Department of the Université Polytechnique Hauts-de-France. C. Cancès gave lectures at Centrale Lille. S. Lemaire gave lectures in the Master 2 of Scientific Computing.

C. Chainais-Hillairet gave 16h of courses in the international Summer School "The way to become a mathematician" in the Harbin Institute of Technology in July.

10.2.2. Supervision

Post-doc: F. Chave arrived in December to work on high-order polytopal discretization methods for electromagnetism; supervisors: E. Creusé and S. Lemaire.

PhD: L. Ferrari defended his PhD thesis on "Phase field approximations for branched transport problems" on October 5; advisors: A. Chambolle (CNRS & CMAP, École Polytechnique) and B. Merlet.

PhD: N. Peton defended his PhD thesis on "Numerical methods for a stratigraphic model with nonlinear diffusion and moving frontier areas" on October 12; advisors: C. Cancès, Q.-H. Tran (IFPEn), and S. Wolf (IFPEn).

PhD in progress: C. Colin-Lecerf, on the "Analyse numérique et simulations de modèles multi-fluides", since 10/01/2015; advisors: C. Calgaro Zotto and E. Creusé.

PhD in progress: A. Zurek, on the "Numerical and theoretical analysis of models describing the corrosion of materials", since 10/01/2016; advisors: C. Chainais-Hillairet and B. Merlet.

PhD in progress: B. Gaudeul, on the "Numerical approximation of cross-diffusion systems arising in physics and biology", since 09/01/2018; advisors: C. Cancès and C. Chainais-Hillairet.

Master internship: A. El Keurti, on the "Study of upwind finite volume schemes for nonlocal transport", from November 2017 to July 2018; advisor: T. Rey.

Master internship: A. Latrech, on the "Numerical study of local minimizers of a Bose–Einstein energy functional in 2D", from January to July; advisors: G. Dujardin (Inria Lille) and I. Lacroix-Violet.

Master internship: T. Ebrahimipourfaez, on "Entropy-diminishing finite volume schemes for cross-diffusion systems", from April to July; advisor: C. Chainais-Hillairet.

Master internship: B. Gaudeul, on "Numerical schemes for a Nernst–Planck–Poisson model", from April to July; advisor: C. Chainais-Hillairet.

Master internship: C. Marinel, on the "Implementation and parallelization of a finite element code with *a posteriori* error estimators", from June to August; advisor: E. Creusé.

Master internship in progress: N. Aghouzzaf, on the "Design of high-order numerical time integrators for kinetic equations", since December; advisor: T. Rey.

10.2.3. Juries

E. Creusé reported on O. Gorynina's PhD thesis, defended on February 22, 2018 at Université Bourgogne-Franche Comté. Title: Éléments finis adaptatifs pour l'équation des ondes instationnaire.

B. Merlet was a member of the jury of the PhD thesis of A. Julia, defended on October 9, 2018 at Sorbonne Paris Cité. Title: Functions with bounded variations on a current.

C. Calgaro Zotto and C. Cancès are members of the Jury de l'Agrégation de Mathématiques, which is a national hiring committee for the highest level of high-school teachers.

C. Cancès was part of the selection committee for an associate professor (MCF) position at the Laboratoire de Mathématiques d'Orsay.

C. Chainais-Hillairet was part of the selection committee for a full professor (PR) position at Aix-Marseille Université.

10.3. Popularization

C. Calgaro Zotto is in charge of the communication of the Laboratoire Paul Painlevé. She organizes various events which promote mathematics among young people:

- les "Mathématiques itinérantes";

- la "Semaine des mathématiques";
- la collection "Stages scientifiques en Seconde".

Members of the team participate regularly to these actions.

S. Lemaire gave a talk at Inria Lille for the internal scientific popularization event "30 minutes of Science" in June.

REALOPT Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

The Team has organized ISMP, the major Mathematical Programming conference (around 1900 people). ISMP is the triennial international congress of mathematical optimization, where scientists from all over the world as well as industrial practitioners of mathematical optimization meet in order to present their most recent developments and results and to discuss new challenges from theory and practice. It is the symposium of the Mathematical Optimization Society (MOS).

https://ismp2018.sciencesconf.org/

François Vanderbeck was Chair of the conference.

10.1.1.2. Member of the Organizing Committees

All members of the team have been member of ISMP Organizing Committee.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Olivier Beaumont: Program Chair HIPC https://hipc.org

10.1.2.2. Member of the Conference Program Committees

- Lionel Eyraud-Dubois: Euro-Par'18, ICPP'18,
    - IPDPS'18 http://www.ipdps.org
    - Euro-Par'18 https://europar2018.org
    - ICPP'18 http://oaciss.uoregon.edu/icpp18/index.php
- Pierre Pesneau: ISCO 2018
- Ruslan Sadykov, Boris Detienne, Pierre Pesneau, Lionel Eyraud-Dubois, Olivier Beaumont: https://ismp2018.sciencesconf.org
- François Clautiaux: http://roadef2018.labsticc.fr/wp/
- Olivier Beaumont:
    - SuperComputing'18 https://sc18.supercomputing.org
    - IPDPS'18 (primary PC member) http://www.ipdps.org
    - IPDPSW'18 http://www.ipdps.org/ipdps2018/2018_call_for_workshops.html
    - HeteroPar'18 https://hcl.ucd.ie/heteropar2018/
    - HPML'18 https://hpml2018.github.io

10.1.2.3. Reviewer

- Lionel Eyraud-Dubois: SC

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- Lionel Eyraud-Dubois: JOSH, TPDS

- François Clautiaux: European Journal of Operational Research, International Transactions on Operations Research, Asia-Pacific Journal of Operational Research
- Pierre Pesneau : Discrete Applied Math.
- Ruslan Sadykov: Transportation Science, European Journal of Operational Research, Journal of Scheduling, Operations Research Letters, Mathematical Programming Computation
- Olivier Beaumont: TPDS, IJHPCA

10.1.4. Invited Talks

- François Clautiaux: Invited seminar at Séminaire parisien d'optimisation (December 10th 2018)
- François Clautiaux: Invited talk at MEXICO working group (November 13th, 2018)
- Olivier Beaumont: Invited talk at the 13th Scheduling for Large Scale Systems Workshop, Lawrence Berkeley National Laboratory, California http://scheduling-workshop.tk
- Ruslan Sadykov: Invited talk at the seminar of the Faculty of Economics and Business, KU Leuven, Belgium (June 6th, 2018)

10.1.5. Leadership within the Scientific Community

François Clautiaux is Secretary of ROADEF, the French OR association

10.1.6. Research Administration

- Olivier Beaumont and François Clautiaux are WorkPackage leaders of the Idex Cluster SysNum https://sysnum.labex.u-bordeaux.fr/en/
- Olivier Beaumont is the head of Commission Jeunes Chercheurs and Commission Délégations at Inria Bordeaux Sud-Ouest.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : François Clautiaux, Grands Domaines de l'Optimisation

Master : François Clautiaux, Gestion des Opérations et Planification de la Production, 58 heqTD, M2, Université de Bordeaux

Master : François Clautiaux, Combinatoire et logistique, 29 heqTD, M2, Université de Bordeaux

Master : François Clautiaux, Introduction à la programmation en variables entières, 29 heqTD, M2, Université de Bordeaux

Master : François Clautiaux, Outils logiciels pour l'optimisation, 29 heqTD, M2, Université de Bordeaux

Master: François Clautiaux, Combinatoire et routage, 15 heqTD, ENSEIRB INPB

Master : Lionel Eyraud-Dubois et Olivier Beaumont, Approximation et BigData, 29 heqTD, M2, Université de Bordeaux

Licence : Pierre Pesneau, Grands Domaines de l'Optimisation, L1, Université de Bordeaux

Licence : Pierre Pesneau, Programmation pour le calcul scientifique, 24 heqTD, L2, Université de Bordeaux

Licence : Pierre Pesneau, Optimisation, 59 heqTD, L2, Université de Bordeaux

Master : Pierre Pesneau, Algorithmique et Programmation 1, 28 heqTD, M1, Université de Bordeaux

Master : Pierre Pesneau, Algorithmique et Programmation 2, 29 heqTD, M1, Université de Bordeaux

Master : Pierre Pesneau, Optimisation dans les graphes, 15 heqTD, M1, Université de Bordeaux

Master : Pierre Pesneau, Programmation linéaire, 15 heqTD, M1, Université de Bordeaux

DUT Informatique : Pierre Pesneau, Recherche Opérationnelle, 24 heqTD, IUT de Bordeaux

Master : Ruslan Sadykov, Introduction to Constraint Programming, 29 heqTD, M2, Université de Bordeaux

10.2.2. Supervision

PhD : Thomas Bellitto, Walks, Transitions and Geometric Distances in Graphs. 27/08/2018, Arnaud Pêcher (dir) and Christine Bachoc (dir).

PhD : Rodolphe Griset, Robust planning in Electricity production, 15/11/2018, Boris Detienne (dir) and François Vanderbeck (dir).

PhD : Quentin Viaud, Mathematical Programming Methods for Complex Cutting Problems, Université de Bordeaux, 11/12/2018, François Clautiaux (dir), Ruslan Sadykov (dir), François Vanderbeck (co-dir)

PhD : Jérémy Guillot, Résolution exacte de problèmes de couverture par arborescences sous contraintes de capacité, 18/12/2018, François Clautiaux (dir) and Pierre Pesneau (dir).

PhD in progress : Alena Shilova, Scheduling for Deep Learning Frameworks from October 2018, Olivier Beaumont (dir) and Alexis Joly (dir)

PhD in progress: Tobias Castanet, Use of Replication in Distributed Games from September 2018, Olivier Beaumont (dir), Nicolas Hanusse (dir) and Corentin Travers (dir).

PhD in progress : Imen Ben Mohamed, Location routing problems, from October 2015, Walid Klibi (dir), Ruslan Sadykov (dir), François Vanderbeck (co-dir).

PhD in progress : Guillaume Marques, Planification de tournées de véhicules avec transbordement en logistique urbaine : approches basées sur les méthodes exactes de l'optimisation mathématique, from September 2017, Ruslan Sadykov (dir) and François Vanderbeck (co-dir)

PhD in progress : Gaël Guillot, Aggregation and disaggregation methods for hard combinatorial problems, from November 2017, François Clautiaux (dir) and Boris Detienne (dir).

PhD in progress : Orlando Rivera Letelier, Bin Packing Problem with Generalized Time Lags, from May 2018, François Clautiaux (dir) and Ruslan Sadykov (co-dir), a co-tutelle with Universidad Adolfo Ibáñez, Peñalolén, Santiago, Chile.

10.2.3. Juries

- François Clautiaux HDR : Mahdi Moeini (Toulouse, rapporteur) ; PhD thesis: E´milie Joannopoulous (Rennes, rapporteur), Dehia Ait-Ferhat (Grenoble, rapporteur), Stefania Pan (Paris 13, rapporteur), Mikae¨l Capelle (Toulouse, examinateur), Pierre-Antoine Morin (Toulouse, examinateur)
- Ruslan Sadykov : PhD thesis of Daniel Kowalczyk (KU Leuven, Belgium)

10.3. Popularization

Organizations

- Local events: "Journée emploi maths et interaction 2018". This day aims to bring together students, researchers and practitioners in mathematics in the Bordeaux area. https://uf-mi.u-bordeaux.fr/sites/jemi/

Interventions

- National events: Fête de la Science in Bordeaux (P. Pesneau and F. Clautiaux)
- RealOpt participated to the events related to the anniversary of Inria BSO

<div align="center">

SELECT Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Sylvain Arlot co-organized (with Christophe Giraud and Gilles Stoltz) the conference "Deux complices en statistique" (Two days in honor of Pascal Massart and Lucien Birgé), at IHES (Bures-sur-Yvette) and IMO (Orsay).

9.1.1.2. Member of the Organizing Committees

- Gilles Celeux is one of the co-organizers of the international working group on model-based clustering. This year the workshop took place in Ann Arbor, USA.
- Sylvain Arlot is one of the co-organizers of the Junior Conference on Data Science and Engineering at Paris-Saclay (3nd edition in 2018).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Jean-Michel Poggi was a member of the Scientific Programme Committee, ENBIS 2018, Nancy, 2-6, September 2018, and member of the Scientific Committee of the summer school on Clustering, Data, Analysis And Visualization Of Complex Data, May 21-25, 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Gilles Celeux is Editor-in-Chief of the *Journal de la SFdS*. He is Associate Editor of *Statistics and Computing*, *CSBIGS*.

Pascal Massart is Associate Editor of *Annals of Statistics*, *Confluentes Mathematici*, and *Foundations and Trends in Machine Learning*.

Jean-Michel Poggi is Associate Editor of *Journal of Statistical Software*, *Journal de la SFdS*, and *CSBIGS*.

Sylvain Arlot is associate editor for the Annales de l'Institut Henri Poincaré B, Probability and Statistics.

9.1.3.2. Reviewer - Reviewing Activities

The members of the team have reviewed numerous papers for numerous international journals.

9.1.4. Invited Talks

The members of the team have given many invited talks on their research in the course of 2018.

9.1.5. Leadership within the Scientific Community

Jean-Michel Poggi is:

- Vice-President of ECAS (European Courses in Advanced Statistics)
- Council Member of the ISI (2015-19)
- Member of the Board of Directors of the ERS of IASC (since 2014)
- Council member of FENStatS (Federation of European National Statistical Societies)

9.1.6. Scientific Expertise

Jean-Michel Poggi was member of the Box Medal committee for 2018, and in the jury for the Marie-Jeanne Laurent Duhamel prize (SFdS).

9.1.7. Research Administration

Jean-Michel Poggi is the vice-president of ECAS (European Courses in Advanced Statistics) since 2015.

Sylvain Arlot coordinates (jointly with Marc Schoenauer, Inria Saclay) the math-STIC program of the Labex Mathématique Hadamard.

Christine Keribin is treasurer of the Société Française de Statistique (SFdS).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

SELECT members teach various courses at several different universities, and in particular the Master 2 "Mathématique de l'aléatoire" of Université Paris-Saclay.

9.2.2. Supervision

PhD: Neska El Haouij, 2014, Jean-Michel Poggi, Meriem Jaïdane, Raja Ghozi (ENIT Tunisie), and Sylvie Sevestre-Ghalila (CEA LinkLab). Defended in July 2018.

PhD: Florence Ducros, 2015, Gilles Celeux and Patrick Pamphile. Defended June 2018.

PhD in progress: Claire Brécheteau, 2015, Pascal Massart

PhD in progress: Hedi Hadiji, 2017, Pascal Massart

PhD in progress: Guillaume Maillard, 2016, Sylvain Arlot and Matthieu Lerasle

PhD in progress: Jeanne Nguyen, 2015, Claire Lacour and Vincent Rivoirard (Univ Paris Dauphine)

PhD in progress: Benjamin Goehry, 2015, Pascal Massart and Jean-Michel Poggi

PhD in progress: Tuan-Binh Nguyen, 2018, Sylvain Arlot and Bertrand Thirion

9.2.3. Juries

HDR: Emilie Lebarbier (Pascal Massart, referee; Sylvain Arlot, president)

Members of SELECT have participated in numerous juries during 2018.

SEQUEL Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. EWRL 2018

We organized the 14th European Workshop on Reinforcement Learning (EWRL) in October 2018 in Lille. 183 people registered. Despite its name, the audience goes really beyond Europe with 42 from North Amercia, 38 from France, 19 from Germany, 16 from the UK, 12 from Italy, 12 from Israel, 9 from Belgium, ... 40% of participants were students, mostly PhD students, but also some Master students. Among non students, 40% came from industry, the other 60% being academics. We had a quite unique panel of invited speakers highlighted by historical figures of reinforcement learning with Prof. Richard Sutton (U. Alberta and Deepmind), bandit theory with Tze Leung Lai (Stanford U.). EWRL is really the main scientific event on reinforcement learning in the world today.

After 2008 and 2015, this is the third time EWRL is organized in Lille.

10.1.1.2. General Chair, Scientific Chair

M. Valko was a program co-chair for CNRS Summer school on Networks, Graphs, and Machine Learning (RESCOM 2018)

10.1.1.3. Member of the Organizing Committees

- F. Strub, co-organizer of the workshop "Visually Grounded Interaction and Language (ViGIL)" at NIPS 2018
- M. Valko was an organizing co-chair of the ITS Workshop: Optimizing Human Learning (ITS 2018)
- R. Fruit, M. Seurin, M. Pirotta, F. Strub organized the 14th European Workshop on Reinforcement Learning

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Philippe Preux: SPC IJCAI 2018; PC of ICML, ECML, LOD, EWRL, and French speaking conferences: EGC, SFC JFPDA
- Michal Valko: Area Chair of NIPS 2018, Top 10 reviewer recognition for reviewing at ICML
- Emilie Kaufmann: PC Chair for WiML 2018, Top 10 reviewer recognition for reviewing at ICML
- Odalric-ambrym Maillard: PC chair for ALT

10.1.2.2. Reviewer

Members of SEQUEL have been involved in the following reviewing activities for conferences in 2018:

- AI&Stats, NIPS, ALT, ICML, COLT, IJCAI

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- The Annals of Statistics
- Journal of Machine Learning Research
- Machine Learning Research
- Bernoulli
- Annual Reviews in Control
- European Journal of Operation Research
- Information and Inference: a Journal of the IMA (Institute of Mathematics and its Application)
- Operations Research
- IEEE Transactions on Signal Processing

10.1.4. Invited Talks

- Odalric-Ambrym Maillard: invited Opponent for the PhD defence of Stefan Magureanu (Stockholm, Sweden), February 2018
- Odalric-Ambrym Maillard: invited speaker at LTCI, Telecom ParisTech, February 2018
- Odalric-Ambrym Maillard: invited speaker at Journées Probabilités et statistiques de Lille, June 22, 2018
- Odalric-Ambrym Maillard: invited speaker at RL Lab, McGill University, August 23, 2018
- Odalric-Ambrym Maillard: invited speaker at the 21st IBIS conference (Sapporo, Japan), November 06, 2018
- Odalric-Ambrym Maillard: invited speaker at the RIKEN Institute (Tokyo, Japan), November 07, 2018
- Michal Valko: *The power of graphs in speeding up online learning and decision making* Presented on October 23rd, DeepMind, London, UK (*DeepMind 2018*)
- Michal Valko: *Active block-matrix completion with adaptive confidence sets*, Presented on September 10–13th, 2018, International Workshop on Optimization and Machine Learning, CIMI, Toulouse (*CIMI 2018*)
- Michal Valko: *Online influence maximization*, Presented on May 14th, 2018, Workshop on Graph Learning, LINCS, Paris (*LINCS 2018*)
- Michal Valko: *Recommender systems*, Presented on March 22nd, 2018, Journée Big data, Polytech'Lille (*Polytech'Lille 2018*)
- Michal Valko: *Pliable rejection sampling*, Presented on February 8th, 2018 at GDR Isis, Télécom ParisTech in Paris (*ISIS 2018*)
- Michal Valko: *Graph Bandits*, Presented on January 7th, 2018 at MIST conference in Rajecká Lesná (*MIST 2018*)
- Pierre Perrault: *Stochastic multi-arm bandit problem and some extensions*, Presented on November, 23rd, 2018 at Lambda seminar at Université de Bordeaux (*Lambda 2018*)
- Emilie Kaufmann: *(Optimal) Best Arm Identification and applications to Monte-Carlo Tree Search*, presented on January, 18th, 2018 at the Probability and Statistics seminar of IECL, Nancy
- Emilie Kaufmann: *Bandits (for) Games*, presented on March 26th, 2018 at Amazon Research, Berlin
- Emilie Kaufmann, *Bandits (for) Games*, presented on April 25th, 2018 as an invited talk to the Workshop on Modern Challenges on Learning Theory at Univerisé de Montréal

- Emilie Kaufmann, *Bandits (for) Games*, presented on June 13th, 2018 as an invited talk to the Paris Symposium on Game Theory, Paris
- Emilie Kaufmann *New tools for Adaptive Testing and Applications to Bandit Problems*, presented on December 3rd, 2018 at the Probability and Statistics seminar of IRMA, Strasbourg

10.1.5. Scientific Expertise

- Philippe Preux was a member of the hiring committee for CR at Inria Nancy
- Philippe Preux was a member of the hiring committee for an associate professor at Université de Lille
- Philippe Preux evaluated submissions to ANRT (he also declined many such invitations due to lack of time)
- Philippe Preux was a member of an auditing committee of an international company which can not be named (NDA)
- Philippe Preux participates to a "AI mission" with an (other) international company which can not be named (NDA)
- Odalric-Ambrym Maillard evaluated a submission to OTKA (Hungarian ANR), and to ANR.
- M. Valko is an elected member of the evaluation committee and participates in the hiring, promotion, and evaluation juries of Inria, notably
    - Selection committee for Inria award for scientific excellence of confirmed researchers
    - Inria working group for the creation of team RandOpt
    - National committee for the secondments at Inria
- Michal Valko participates in a collaboration with an international company which can not be named (NDA)
- Emilie Kaufmann was a member of the hiring committee for an associate professor position at Université de Lille
- Emilie Kaufmann was a member of the hiring committee for an associate professor at ENS Paris (Computer Science departement)

10.1.6. Research Administration

- Philippe Preux is:
    - "délégué scientifique adjoint" of the Inria center in Lille
    - member of the Inria evaluation committee (CE)
    - member of the Inria internal scientific committee (COSI)
    - member of the scientific committee of CRIStAL
    - the head of the "Data Intelligence" thematic group at CRIStAL
- Michal Valko is a member of the Inria evaluation committee (CE)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: E. Kaufmann, Spring 2018, Data Mining, M1 Maths/Finances, Université de Lille (36 hours)

Master: E. Kaufmann, Spring 2018, Machine Learning, M2 Maths/Finances, Université de Lille (18 hours)

Master: M. Valko, 2018/2019: Graphs in Machine Learning, 36h eqTD, M2, ENS Cachan

Master: O. Maillard, Spring 2018: Sequential Learning course, parcours DAD, 30h eqTD, Ecole Centrale Lille.

Master: O. Maillard, January 2018: Sequential Learning tutorial, Technicolor, 6h eqTD, Rennes

10.2.2. Supervision

PhD completion: Merwan Barlier, Human-in-the loop reinforcement learning for dialogue systems, started Oct. 2014, advisor: Olivier Pietquin

PhD completion: Alexandre Bérard, Deep learning for post-editing and automatic translation, started Oct. 2014, advisor: Olivier Pietquin

PhD in progress: Lilian Besson, Bandit approach to improve Internet Of Things Communications, started Oct. 2016, advisor: Émilie Kaufmann, Christophe Moy (CentraleSupélec Rennes)

PhD in progress: Ronan Fruit, Exploration-exploitation in hierarchical reinforcement learning, Inria, started Dec. 2015, advisor: Daniil Ryabko, Alessandro Lazaric

PhD in progress: Guillaume Gautier, DPPs in ML, started Oct. 2016, advisor: Michal Valko; Rémi Bardenet

PhD in progress: Jean-Bastien Grill, Création et analyse d'algorithmes efficaces pour la prise de décision dans un environnement inconnu et incertain, Inria/ENS Paris/Lille 1, started Oct. 2014, advisor: Rémi Munos, Michal Valko

PhD in progress: Édouard Leurent, Autonomous vehicle control: application of machine learning to contextualized path planning, started Oct. 2017, advisor: Odalric Maillard, Philippe Preux, Denis Effimov (NON-A), Wilfrid Perruquetti (NON-A)

PhD aborted: Sheikh Waqas Akhtar, Bandits for non-stationarity and structure, started Oct. 2017, advisor: Odalric Maillard, Daniil Ryabko.

PhD in progress: Pierre Perrault, Online Learning on Streaming Graphs, started Sep. 2017, advisor: Michal Valko; Vianney Perchet

PhD in progress: Mathieu Seurin, Multi-scale rewards in reinforcement learning, started Oct. 2017, advisor: Olivier Pietquin, Philippe Preux

PhD in progress: Julien Seznec, Sequential Learning for Educational Systems, started Mar. 2017, advisor: Michal Valko; Alessandro Lazaric, Jonathan Banon

PhD in progress: Xuedong Shang, Adaptive methods for optimization in stochastic environments, started Oct. 2017, advisor: Émilie Kaufmann, Michal Valko

PhD in progress: Florian Strub, Reinforcement Learning for visually grounded interaction, started Jan. 2016, advisors: Olivier Pietquin and Jeremie Mary

PhD in progress: Kiewan Villatel, Deep Learning for Conversion Rate Prediction in Online Advertising, started Oct. 2017, advisor: Philippe Preux

PhD in progress: Yannis Flet-Berliac, start Oct. 2018

PhD in progress: Hassan Saber, start Oct. 2018, Structured Multi-armed bandits, advisor: Odalric Maillard, Philippe Preux.

PhD in progress: Omar Darwiche, start Oct. 2018, Sequential Learning in Dynamic Environments, advisor: Émilie Kaufmann, Michal Valko

10.2.3. Juries

PhD and HDR juries:

- É. Kaufmann:
    - Stefan Magureanu, KTH Stockholm, February 20th, 2018
    - Valentin Reis, LIG, Grenoble, September 28th, 2018
    - Maryam Aziz, Northestearn University (Boston), December 6th, 2018
- O. Maillard: Stefan Magureanu, February 20th, 2018
- Ph. Preux:

– Saeed Varasteh Yazdi, LIG, Grenoble

– Fabien Vilar, Marseille

– Merwan Barlier, Lille

- M. Valko:

– *Pierre Ménard*, Université Toulouse 3 Paul Sabatier, June 2018, Sur la notion d'optimalité dans les problèmes de bandits stochastiques. *Reviewer*

– *Mariana Vargas Vieyra*, Université Lille, September 2017, Adaptive graph learning with application to natural language processing. *Ph.D. mid-term evaluation reviewer*

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Philippe Preux chaired the Inria evaluation seminar of theme "Optimization, machine learning and statistical methods" in March 2018.

10.3.2. Articles and contents

- Ph. Preux interviewed for various journals ("Les échos", ...).

- Adobe research highlights M. Valko's work on online influence maximization presented (January 2018)

- Daniele Calandriello (supervised by A. Lazaric and M. Valko) wins the prize for the Best AI Thesis in France in 2018. Articles in:

– La Voix du Nord

– CNRS journal

– Newstank

– Lille1

– Actu

10.3.3. Education

- Ph. Preux presented and animated 3 sessions on AI at the "congrès annuel du réseau national professionnel des cultures scientifique technique et industrielle" (Amcsti)

10.3.4. Interventions

- Philippe Preux:

– presented AI related to health industry at the yearly general assembly of Eurasanté

– presented and animated 3 sessions on AI at the "congrès annuel du réseau national professionnel des cultures scientifique technique et industrielle" (Amcsti)

– participated to a panel at Conext forum (Lille)

- the work on Guesswhat?!:

– has been invited to be presented on the Inria booth during The Web Conf in Lyon

– is presented at the Inria showroom inaugurated in Dec. 2018 in Lille

10.3.5. Creation of media or tools for science outreach

- Ph. Preux was interviewed for a video about robots and AI

<p style="text-align:center">**SIERRA Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

> F. Bach: General Chair of ICML 2018 (Stockholm)

10.1.1.2. Member of the Organizing Committees

> Adrian Taylor, Session Organizer: *Computer-assisted analyses of optimization algorithms I & II*, International Symposium on Mathematical Programming, July 2018.

> F. Bach: Co-organization of the workshop "Horizon Maths 2018 : Intelligence Artificielle", November 23, 2018

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

> F. Bach: Program Chair of the Journées de Statistiques (Saclay)

10.1.2.2. Reviewer

> Conference on Learning Theory (COLT 2018): Pierre Gaillard, Alessandro Rudi

> Symposium on Discrete Algorithms (SODA 2019): Adrien Taylor,

> Neural Information Processing Systems (NIPS 2018): Pierre Gaillard, Alessandro Rudi

> Conference on Learning Theory (COLT 2018): Pierre Gaillard, Alessandro Rudi, Adrien Taylor

> Symposium on Discrete Algorithms (SODA 2019): Adrien Taylor

> International Conference of Machine Learning (ICML 2018): Pierre Gaillard, Alessandro Rudi

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

> F. Bach: Journal of Machine Learning Research, co-editor-in-chief

> F. Bach: Information and Inference, Associate Editor.

> F. Bach: Electronic Journal of Statistics, Associate Editor.

> F. Bach: Mathematical Programming, Associate Editor.

> F. Bach: Foundations of Computational Mathematics, Associate Editor.

> A. d'Aspremont: SIAM Journal on Optimization, Associate editor

> A. d'Aspremont: SIAM Journal on the Mathematics of Data Science, Associate Editor

> A. d'Aspremont: Mathematical Programming, Associate Editor

10.1.3.2. Reviewer - Reviewing Activities

> SIAM Journal on Optimization: Adrien Taylor

> Mathematical Programming: Adrien Taylor

> Journal of Optimization Theory and Algorithms: Adrien Taylor

> Journal of Machine Learning Research: Pierre Gaillard, Alessandro Rudi

> Applied Computational Harmonic Analysis: Alessandro Rudi

10.1.4. Invited Talks

F. Bach, Trends in Optimization Seminar, University of Washington, November 2018.

Pierre Gaillard. *Distributed averaging of observations in a graph: the gossip problem*. MNL Conference, Paris, November 2018.

Adrien Taylor, *Analysis and design of first-order methods via semidefinite programming*, Seminaire Parisien dOptimisation (SPO), Paris (France), November 2018.

F. Bach, Frontier Research and Artificial Intelligence, European Research Council, Brussels, October 2018.

F. Bach, IDSS Distinguished Speaker Seminar, MIT, October 2018.

F. Bach, Mathematical Institute Colloquium, Oxford, October 2018.

Adrien Taylor, *Convex Interpolation and Performance Estimation of First- order Methods* for Convex Optimization, IBM/FNRS innovation award, Brussels (Belgium), October 2018.

F. Bach, Workshop on Structural Inference in High-Dimensional Models, Moscow, September 2018.

F. Bach, Symposium on Mathematical Programming (ISMP), Bordeaux, plenary talk, July 2018.

Alexandre d'Aspremont, *Sharpness, Restart and Compressed Sensing Performance*, ISMP 2018, Bordeaux, July 2018.

Alessandro Rudi, *FALKON: An optimal method for large scale learning with statistical guarantees*, ISMP 2018, Bordeaux, July 2018.

Adrien Taylor, *Computer-assisted Lyapunov-based worst-case analyses of first- order methods*, International Symposium on Mathematical Programming, Bordeaux (France), July 2018.

F. Bach, SIAM Conference on Imaging Science, Bologna, Italy, invited talk, June 2018.

Pierre Gaillard. *Online prediction of arbitrary time-series with application to electricity consumption*. Conference on nonstationarity. Cergy Pontoise University. June 2018.

Adrien Taylor, *Convex Interpolation and Performance Estimation of First-order Methods for Convex Optimization*, International Symposium on Mathematical Programming: Tucker prize finalist, Bordeaux (France), July 2018.

Alexandre d'Aspremont, *An approximate Shapley-Folkman Theorem*, Isaac Newton Institute, Cambridge, June 2018.

F. Bach,Workshop on Future challenges in statistical scalability, Newton Institute, Cambridge, UK, June 2018.

Adrien Taylor, *Automated design of first-order optimization methods*, Operation Research Seminar, UCLouvain, Louvain-la-Neuve (Belgium), May 2018.

Adrien Taylor, *Automated design of first-order optimization methods*, LCCC Control Seminar, Lund University, Lund (Sweden), May 2018.

Pierre Gaillard. *Distributed learning with orthogonal polynomials*. Inria DGA meetup. May 2018.

F. Bach, Workshop on Optimisation and Machine Learning in Economics, London, March 2018.

Pierre Gaillard. *An overview of Artificial Intelligence*. Hackaton. PSL University. March 2018.

Alexandre d'Aspremont, *Regularized Nonlinear Acceleration*, US and Mexico Workshop on Optimization and its Applications, Jan 2018.

Alessandro Rudi, *Learning with Random Features*, Isaac Newton Institute, Cambridge, Jan 2018.

Pierre Gaillard. *Online nonparametric regression with adversarial data*. Smile seminar. Paris. Jan 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

F. Bach (together with N. Chopin), *Graphical models*, 30h, Master M2 (MVA), ENS Cachan, France.

F. Bach, *Optimisation et apprentissage statistique*, 20h, Master M2 (Mathématiques de l'aléatoire), Université Paris-Sud, France.

Alexandre d'Aspremont, *Optimisation Combinatoire et Convexe*, avec Zhentao Li, (2015-Present) cours magistraux 30h, Master M1, ENS Paris.

Alexandre d'Aspremont, *Optimisation convexe: modélisation, algorithmes et applications* cours magistraux 21h (2011-Present), Master M2 MVA, ENS PS.

F. Bach and P. Gaillard, *Apprentissage statistique*, 35h, Master M1, Ecole Normale Supérieure, France.

P. Gaillard (together with V. Perchet), *Prediction of individual sequences*, 21h, Master M2 MVA, ENS Cachan, France.

Gregoire Mialon, Python for Machine Learning, 21h, M2 MASH, Dauphine-ENS-PSL, Paris.

10.2.2. Supervision

Anaël Bonneton, PhD defended on July 2018, co-advised by Francis Bach, located in Agence nationale de la sécurité des systèmes d'information (ANSSI).

Damien Scieur, PhD defended on September 2018. *Sur l'accélération des méthodes d'optimisation*, supervised by Alexandre d'Aspremont and Francis Bach.

Jean-Baptiste Alayrac, PhD defended on September 2018, *Structured Learning from Videos and Language*, supervised by Simon Lacoste-Julien, Josef Sivic and Ivan Laptev.

Antoine Recanati, PhD. defended on November 2018. *Application du problème de sériation au séquençage de l'ADN et autres relaxations convexes appliquées en bioinformatique*, supervised by Alexandre d'Aspremont.

Rémi Leblond, PhD defended on November 2018, *Asynchronous Optimization for Machine Learning*, supervised by Simon Lacoste-Julien.

Mathieu Barre, PhD in progress *Méthodes d'extrapolation, au-delà de la convexité*, supervised by Alexandre d'Aspremont.

Grégoire Mialon, PhD in progress *Algorithmes d'optimisation, méthodes de régularisation et architectures pour les réseaux de neurones profonds dans un contexte où les données labellisées sont rares*, supervised by Alexandre d'Aspremont.

Radu-Alexandru Dragomir, PhD in progress *Non-Euclidean first-order methods*, supervised by Alexandre d'Aspremont and Jérôme Bolte.

Thomas Kerdreux, PhD in progress *Optimisation and machine learning*, supervised by Alexandre d'Aspremont.

Margaux Brégère, PhD in progress started September 2017, supervised by Pierre Gaillard, Gilles Stoltz and Yannig Goude (EDF R&D).

Raphaël Berthier, PhD in progress started September 2017, supervised by Francis Bach and Pierre Gaillard.

Loucas Pillaud-Vivien, PhD in progress, supervised by Francis Bach and Alessandro Rudi.

Alex Nowak, PhD in progress, supervised by Francis Bach and Alessandro Rudi.

Ulysse Marteau Ferey, PhD in progress, supervised by Francis Bach and Alessandro Rudi.

Dmitry Babichev, PhD in progress, started is September 2015, co-advised by Francis Bach and Anatoly Judistky (Univ. Grenoble).

Tatiana Shpakova, PhD in progress, started September 2015, advised by Francis Bach.

10.2.3. Juries

Alexandre d'Aspremont, Habilitation à diriger des recherches. Thomas Bruls, Genoscope, Université d'Evry.

10.3. Popularization

10.3.1. Creation of media or tools for science outreach

Design and implementation of a demonstration for the permanent exhibit at Palais de la Découverte: "L'apprenti illustrateur" (J.-B. Alayrac, F. Bach)

<div align="center">

SIMSMART Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- F. Cérou and M. Rousset have been the main organizer and scientific manager of the Workshop Simulation and probability: recent trends (5-8 June, Rennes) within the Thematic Semester 2018 of Labex Lebesgue.
- V.Monbet has organized a Workshop in Rennes "Fonctional Data Analysis 2018", Oct. 24-26, 2018, https://perso.univ-rennes1.fr/valerie.monbet/FDA2018/PEPS_FDA2018_Workshop.html.
- V.Monbet has organized a Workshop in Rennes on Statistics in Meteorology, Nov. 28-30 2018, https://spatiotempmeteo.sciencesconf.org/.

9.1.1.2. Member of the Organizing Committees

Cédric Herzet was part of the Conference Program Committee of the iTwist'18 Workshop

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

François Le Gland has given

- a 2nd year course on introduction to stochastic differential equations, at INSA (institut national des sciences appliquées) Rennes, within the GM/AROM (risk analysis, optimization and modeling) major in mathematical engineering,
- a 3rd year course on Bayesian filtering and particle approximation, at ENSTA (école nationale supérieure de techniques avancées), Palaiseau, within the statistics and control module,
- a 3rd year course on linear and nonlinear filtering, at ENSAI (école nationale de la statistique et de l'analyse de l'information), Ker Lann, within the statistical engineering track,
- a course on Kalman filtering and hidden Markov models, at université de Rennes 1, within the SISEA (signal, image, systèmes embarqués, automatique, école doctorale MATISSE) track of the master in electronical engineering and telecommunications,
- and a 3rd year course on hidden Markov models, at Télécom Bretagne, aka IMT Atlantique, Brest.

Cédric Herzet has given

- a Master course at INSA Rennes, option Génie Mathématique, cours de Parcimonie en traitement du signal et des images.
- a Master course at Ensai Rennes, Master international "Smart Data" , cours "Foundations of Smart Sensing".

9.2.2. PhDs of the team members

- Defended PhD: Kersane Zoubert–Ousseni, CEA LETI, Grenoble. Subject: Off–line indoor navigation   [1], supported by a CEA grant, with Christophe Villien (CEA LETI, Grenoble) as co-advisor. From Dec 2014 to Apr 2018. This PhD is related to our applicative/transfer activity on filtering.

- In progress: Thi Tuyet Trang Chau, IRMAR Rennes 1 University. Subject: new statistical methods for missing-data imputation and non-parametric state-space modeling, supported by Labex Lebesgue and Brittany Council, with Pierre Ailliot (UBO) as co-advisor. Since Oct 2015. This PhD is related to Objective 3.

- In progress: Audrey Cuillery, Inria rennes. Subject: Bayesian tracking from raw data, supported by a CIFRE grant from Naval Group (DCNS) Research, with Dann Laneuville (Naval Group) as co-advisor. Since May 2016. This PhD is related to our applicative/transfer activity on filtering.

- In progress: Audrey Poterie, IRMAR and INSA Rennes. Subject: extension of learning methods to grouped variables, supported by a French Research Ministry grant, with Jean-François Dupuy (INSA) and Laurent Rouvière (Rennes 2) as co-advisors. Since Oct 2015. This PhD is related to Objective 3.

- In progress: Yushun Xu, LAMA, Paris-Est University. Subject: Variance reduction and Langevin processes, supported by a French Research Ministry grant, with Pierre-André Zitt (LAMA) as a co-advisor. Since Sept 2015. This PhD is related to Objective 1 and Application 1.

- Starting: Gabriel Jouan, IRMAR, Rennes. Subject: parametric and non-parametric weather forecast corrections from catalogs of weather data records, supported by a CIFRE grant of Scalian Alyotech, with Soulvan Monnier (Scalian Alyothech) as co–advisor. Starting 2018. This PhD is related to our applicative/transfer activity, as well as to Objective 2 and Objective 3.

C. Herzet is the co-supervisor of two PhDs, one with Frédéric Champagnat (Onera, Palaiseau), and one with Charles Vanwynsberghe (ENSTA Bretagne) and Alexandre Baussard (IUT de Troyes).

9.2.3. Juries

- François Le Gland has been a member of the PhD defense committee of Nicolas Merlinge (université Paris Sud and Coventry University, advisers : Hélène Piet–Lahanier and James Brusey).

- Cédric Herzet has been a member of the PhD defense committee of Quentin Denoyelle, « Theoretical and Numerical Analysis of Super-Resolution without Grid », Paris-Dauphine, Thesis director : Gabriel Peyré.

SPHINX Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

"rQUACO" is the first meeting funded by the ANR QUACO. This 3 days workshop of quantum control gathers 25 physicists and mathematicians in September in Besançon and was co-organized by N. Boussaïd (UBFC Besançon), T. Chambrion (U. Lorraine) and S. Sugny (UBFC Dijon).

9.1.1.2. Member of the Organizing Committees

- Xavier Antoine was a member of the scientific committee of ECT2018, The 10th International Conference on Engineering Computational Technology, Barcelona, Spain, 4–6 September 2018. He was also a co-organiser of the workshop on Mathematical and Computational Methods for Quantum Systems, CRM Montréal, 11-14th December 2018.
- Thomas Chambrion was a member of the organizing committee of rQUACO, which took place under the framework of the ANR QUACO;
- David Dos Santos Ferreira was a co-organizer (with Laurent Thomann) of the "*Journées EDP*" (Obernai, June 2018);
- Julien Lequeurre and Alexandre Munnier were co-organizers of the JEF "Journées Jeunes Edpistes" (Mars 2018, Nancy https://jef18.sciencesconf.org).
- Julie Valein was a member of the organizing committee of the meeting "Contrôle et dynamique des EDP", which took place under the framework of the ANR ISDEEC, (28–30 March 2018, http://isdeec.math.cnrs.fr/rencontres.html).

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- Xavier Antoine is associate editor of "Multiscale in Science and Engineering" (Springer) and "International Journal of Computer Mathematics" (Taylor and Francis);
- David Dos Santos Ferreira is member of the editorial board of "Mathematical Control and Related Fields";
- Jean-Claude Vivalda is a member of the editorial board of the "Journal of Dynamical and Control Systems".

9.1.2.2. Reviewer - Reviewing Activities

- Jean-François Scheid is reviewer for the "Applied Mathematics and Optimization" journal;
- Jean-Claude Vivalda is reviewer for the "Mathematical reviews".

9.1.3. Invited Talks

- Xavier Antoine was invited to give a talk to
  - the mini-symposium "Waves and computation", Hong-Kong, 4-7 June, 2018;
  - the workshop "Méthodes numériques multi-échelles et/ou géométriques pour les équations de types cinétique ou Schrödinger,", Rennes, 12-15 June 2018;
  - the workshop "Modern Numerical Methods in Quantum Mechanics", 27-29 June 2018, Gdansk, Poland;
  - "Forum on Applied and Computational Mathematics", July 22-23, 2018, Beijing CSRC.

- Alexandre Munnier was invited to give a talk at the "Groupe de travail EDP of the IECL";
- Julie Valein was invited to give a talk at
    – the 14th Franco-Romanian conference on applied mathematics, (Bordeaux, Auguts 27–31 2018);
    – the conference "Analysis of PDEs : unique continuation, stabilization, control and dispersive properties", in honour of Pr. L. Robbiano – IHP, Paris, November 5–9 2018 (one hour plenary exposition);
    – 2nd DECOD Workshop (DElays and COnstraints in Distributed parameter systems) – Toulouse, November 21–23 2018 (45 minutes plenary exposition).
- Jean-Claude Vivalda was invited to give a talk at the "Séminaires et journées d'Equations aux Dérivées Partielles" in the maths laboratory of Versailles.

9.1.4. Leadership within the Scientific Community

- Xavier Antoine is the director of the maths laboratory IECL.
- David Dos Santos Ferreira is one of the coordinators of the GDR "Analyse des EDP". He is also the treasurer of the SMF (French mathematical society);
- Julien Lequeurre is responsable of the "Séminaire EDP de l'Institut Elie Cartan de Lorraine, site de Metz"
- Julie Valein is co-responsable of the "Séminaire EDP de l'Institut Elie Cartan de Lorraine, site de Nancy".

9.1.5. Scientific Expertise

Julie Valein participated in a associate professor position recruitment committee at Université de La Rochelle and at Université de Bordeaux (April-May 2018).

9.1.6. Research Administration

- Karim Ramdani is member of the board of the RNBM (Réseau National des Bibliothèques de Mathématiques) and is in charge of Open Access issues (with Benoît Kloeckner). Since October 2018, he is also member of the Working Group "Publications" of the national "Comité pour la Science Ouverte" of the french ministry of Higher Education, Research and Innivation.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Except L. Gagnon, K. Ramdadi, T. Takahashi and J.-C. Vivalda, SPHINX members have teaching obligations at "Université de Lorraine" and are teaching at least 192 hours each year. They teach mathematics at different level (Licence, Master, Engineering school). Many of them have pedagogical responsibilities.

9.2.2. Supervision

PhD defended :
- Boris Caudron, June 2018, (Thèse CIFRE Thalès) , supervisor: X. Antoine.
- Benjamín Obando defended his PhD thesis "Mathematical models for the study of granular fluids" at Santiago on 18th December 2018. Supervisors: Jorge San Martín (University of Chile) and Takéo Takahashi.

PhD in progress:
- Mohamed ID SAID, Embedded automatic control with limited computational resources, from October 2017, supervisors: T. Chambrion and G. Millerioux;
- PhD in progress: Meriem BOUGUEZZI, Reaction-diffusion system for the modeling of a corrosion phenomena, from november 2017, J.-F. Scheid (co-supervisor);

- PhD in progress: Imem JBIL, Myocardial infarction as a fluid-structure system : modeling and simulations, from mars 2017, J.-F. Scheid (co-supervisor);
- PhD in progress: Imene DJEBOUR, Control and inverse problems on fluid-structure interaction systems, from November 2017, supervisor : T. Takahashi.

9.2.3. *Juries*

- David Dos Santos Ferreira Jury was a member of the thesis jury of Matthieu Léautaud and Cristó bal Meroño.
- Takéo Takahashi reviewed the PhD theses of
    - Krisztián Benyó (defense on 25/09/2018 at Bordeaux);
    - Thi Minh Nhat Vo (defense on 04/10/2018 at Orléans);
    - Lamis Sabbagh (defense on 22/11/2018 at Montpellier).
- Julie Valein was a member of the thesis jury of Hawraa Nabolsi, defended in July 2018, at "Université de Valenciennes et du Hainaut-Cambrésis" (Title: "Contrôle optimal des équations d'évolution et ses applications.", Advisors : Luc Paquet and Ali Wehbe.)
- Xavier Antoine served as a referee for the PhD thesis of Huda Al Taie, (Dec. 2018, Université de Nice).

TAU Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Guillaume Charpiat Workshop Statistics/Learning at Paris-Saclay 2018

Isabelle Guyon Competition co-chair, ECML 2019

Michele Sebag Séminaire Annuel Académie des Technologies, 2018.

In 2016, Isabelle Guyon was Program Chair of NIPS (Neural Information Processing Systems) – with an increase of more than 40% in the number of submissions, 96% in terms of reviewers, and over 100% in terms of attendees as compared to the previous year. Lessons learned from the review process are described in a JMLR paper [19].

10.1.1.2. Member of Organizing Committees

Isabelle Guyon Advisory committee BayLearn 2018; Co-organizer WCCI 2018 Special Session on Intelligent Power Systems; Co-organizer WCCI 2018 Special Session on Machine Learning and Deep Learning Methods applied to Vision and Robotics (MLDLMVR); Co-organizer ECCV 2018 workshop Chalearn Looking at People: Inpainting and Denoising in the Deep Learning Age; Co-organizer 2018 Multimedia Information Processing for Personality & Social Networks Analysis Workshop at ICPR; Co-organizer NeurIPS 2018 workshop on Challenges in Machine Learning;

Marc Schoenauer Steering Committee, Parallel Problem Solving from Nature (PPSN); Steering Committee, Learning and Intelligent OptimizatioN (LION); organizer (with Herilalaina Rokotoarison), Workshop COSEAL, Paris, Sept. 17-18, 2018.

Michele Sebag President of Steering Committee, Eur. Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD).

10.1.2. Scientific Events Selection

10.1.2.1. Member of Conference Program Committees

All TAU members are members of the Program Committees of the main conferences in their respective fields of expertise.

10.1.2.2. Reviewer

All TAU member review papers for the most prestigious conferences in their respective fields of expertise.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Isabelle Guyon Action editor, *Journal of Machine Learning Research* (JMLR); series editor, *Springer series Challenges in Machine Learning* (CiML).

Marc Schoenauer Advisory Board, *Evolutionary Computation Journal*, MIT Press, and *Genetic Programming and Evolutionary Machines*, Springer Verlag; Action editor, *Journal of Machine Learning Research*(JMLR).

Michèle Sebag Editorial Board, Machine Learning, Springer Verlag.

Paola Tubaro Associate Editorial Board, *Sociology*, Sage; Member of Editorial Board, *Revue Française de Sociologie*, Presses de Sciences Po.

10.1.3.2. Reviewer - Reviewing Activities

All members of the team reviewed numerous articles for the most prestigious journals in their respective fields of expertise.

10.1.4. Invited Talks

Guillaume Charpiat *Introduction aux réseaux de neurones*, Séminaire Parisien de Mathématiques Appliquées à l'Imagerie, Paris, 3 May. 2018; *Recalage et mise à jour d'images à l'aide de réseaux de neurones*, Journée Extraction d'attributs et apprentissage pour l'analyse des images de télédétection, GDR ISIS, Paris, 18 Oct. 2018.

Flora Jay *Deep Learning Methods for Population Genetics: Inferring Changes Population Size*, Journée Inférences évolutives, GDR GE et AEIM, Paris, 16 Mai 2018; *Inferring past history from genetic data using ABC and Deep Learning approaches*, INRA GenPhySE Seminar, Toulouse, 12 Dec. 2018.

Isabelle Guyon *Codalab: crowdsourcing DataIA* DATAIA Institute Kick-Off (Data Science, Intelligence & Society), 15 Feb. 2018; *Contests of contests*, La Recherche scientifique « hors murs » au 21e siècle, Colloque de l'Académie des sciences, Fondation Del Duca, 29 Nov. 2018; *Evaluating causation coefficients*, NeurIPS 2018 workshop on causal learning, 7 Dec, 2018.

Michèle Sebag *Qualité de la vie et santé économique, étude causale*: Colloque de Cerisy (Sept. 18); séminaire Université Québec à Montréal (Dec. 18); *Causal Modeling*: KAUST Conference on Computational and Statistical Interface to Big Data (Mar. 18); Leiden wshop on Space Weather (2018); *MonteCarlo Tree Search for Algorithm Selection and Calibration*: Dagstuhl Seminar (Sept. 18); NIPS Wshop on AutoML (Dec. 18); *Ingénieures et Scientifiques*, ENPC (Juin 18). Exposés Journées Cabourg, Mar. 18; Rennes, Sep. 18; Toulouse, Oct. 18.

Marc Schoenauer *The Villani mission on Artificial Intelligence*, CISCO Heaadquarters, 9 Apr. 2018; *Le rapport Villani*, journée AFIA, 12 Apr. 2018; *Intelligence Artificielle : le rapport Villani*, Journée de la Recherche de l'Université de Brest, 25 May 2018; *Intelligence Artificielle, mythes et réalités*, Colloque Grands Projets et Systemes Complexes, Arcachon, 18 Jun. 2018; *Intelligence Artificielle, mythes et réalités*, Journée lab. CRISTAL (U. Lille), Gand, 6 Jul. 2018; *Shallow and Deep learning at TAU*, Keynote at the DATAIA-JST International Symposium on Data Science and AI, 10 Jul. 2018; *Une brève introduction à l'Intelligence Artificielle et au rapport Villani*, Académie des Technologies, 10 Oct. 2018; *Une brève introduction à l'Intelligence Artificielle*, Open-Lab PSA, 11 Oct. 2018; *A brief introduction to AI and Deep Learning*, Toulouse Symposium on Deep Learning, 18 oct. 2018; *A brief introduction to AI and Deep Learning*, PSA Stellab Seminar, Paris, 14 nov. 2018; *IA, une stratégie française : le rapport Villani*, Université Franco Italienne, Università Italo Francese, annual seminar, Paris, 21 Nov. 2018; *Some issues with Deep Learning*, Inria / Nokia-Bell Labs seminar, 27 Nov. 2018; *L'Intelligence Artificielle hier, aujourd'hui et demain*, 29e journée CASCIMODOT, Orléans, 12 Dec. 2018.

Paola Tubaro *Un champ de mines? Éthique, droit et politique dans la recherche sur les réseaux sociaux*, conférence MARAMI (Modèles & Analyse des Réseaux : Approches Mathématiques & Informatiques), Avignon, 17 Oct. 2018; *Modèles multi-agents et simulation*, Ecole thématique CNRS "Réseaux et complexité", 28 Sept. 2018; *Microworking in France: an inquiry into the human labour that makes AI possible*, OECD, Paris, 5 Dec. 2018; *Micro-work, artificial intelligence and the automotive industry*, Sant'Anna School of Advnced Studies, Pisa, 31 May 2018; *Online platform labor*, EIT Digital, Rennes, 14 Nov. 2018; *Les promesses et les périls du travail sur plateformes*, France Stratégie, 6 July 2018; *Faut-il interdire la parole problématique en ligne ?*, GEPS medical conference, Montpellier, 12 Jan. 2018

10.1.5. Leadership within the Scientific Community

Isabelle Guyon President and co-founder of ChaLearn, a non-for-profit organization dedicated to the organization of challenge.

Marc Schoenauer Chair of ACM-SIGEVO (Special Interest Group on Evolutionary Computation), 2015-2017, re-elected July 2017 (2-years term); Founding President (since 2015) of SPECIES (Society for the Promotion of Evolutionary Computation In Europe and Surroundings), that organizes the yearly series of conferences *EvoStar*.

Michèle Sebag Elected Chair of Steering Committee, ECML-PKDD; Head of the Research Programme, Institut de Convergence DataIA.

Paola Tubaro Convenor of the Social Network Analysis Group of British Sociological Association; co-founder of European Network on Digital Labor.

10.1.6. Scientific Expertise

Cécile Germain Evaluator for the H2020-2016-CNECT program; member of the DFG review panel within Germany's excellence strategy selection process.

Marc Schoenauer Member, Villani Mission on Artificial Intelligence [50] (see also the AIforHumanity Web Site); Conseil scientifique, MoveInSalcay platform, coordinated by Nokia-Bell Labs; Comité Scientifique IA, SCube (Scientipôle Savoirs & Société), Orsay; Scientific Committee, TrackML (see Section 7.6); Comité de sélection, Chaire ABEONA-ENS "Biais et Equité en IA"; Conseil Scientifique, Fondation de Recherche pour l'Aéronautique et l'Espace (FRAE).

Michèle Sebag Jury de sélection, LRI; ENS-Lyon; LIX-Ecole Polytechnique; LORIA; Univ. Dortmund; Univ. Liège. Evaluation NSERC, Canada.

10.1.7. Research Administration

Cécile Germain University officer for scientific computing; member of the Board of the Lidex *Center for Data Science*; member of the scientific council of faculty of Medicine (UPsud).

Isabelle Guyon Representative of UPSud in the DataIA *Institut de Convergence* Program Committee, University of Paris-Saclay.

Marc Schoenauer Deputy Scientific Director of Inria (in French, Directeur Scientifique Adjoint, DSA), in charge of AI.

Michele Sebag Deputy director of LRI, CNRS UMR 8623; elected member of the Research Council of Univ. Paris-Saclay; member of the STIC department council of Univ. Paris-Saclay; member of the Scientific Council of Labex AMIES, Applications des Mathématiques ds l'Industrie, l'Entreprise et la Société; member of the Scientific Council of IRT System'X; member of the CSFRS (Conseil supérieur de la formation et de la recherche stratégique).

Paola Tubaro Representative of CNRS in the DataIA *Institut de Convergence* Program Committee, University of Paris-Saclay; member of the Board, Maison des Sciences de l'Homme Paris-Saclay.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Philippe Caillou, Computer Science for students in Accounting and Management, 192h, L1, IUT Sceaux, Univ. Paris Sud.

Licence : Aurélien Decelle, Computer Architecture, 26h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Introduction to Machine Learning, 57h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Object-oriented programming , 26h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Computer Architecture, 26h, L3, Univ. Paris-Sud.

Licence : François Landes, Mathematics for Computer Scientists, 51h, L2, Univ. Paris-Sud.

Licence : François Landes, Machine Learning and Artificial Life, 48h, L2, Univ. Paris-Sud.

Licence and Polytech : Cécile Germain, Computer Architecture

Licence : Isabelle Guyon, Project: Resolution of mini-challenges (created by M2 students), L2, Univ. Paris-Sud.

Master : François Landes, Machine Learning, 22h, M1 Polytech, U. Paris-sud.

Master : Guillaume Charpiat and Victor Berger, Advanced Machine Learning, 34h, M2 Recherche, Centrale-Supélec.

Master : Guillaume Charpiat, Introduction to Deep Learning, 6h, M2 Recherche, Telecom.

Master : Aurélien Decelle, Machine Learning, 26h, M1, Univ. Paris-Sud.

Master : Aurélien Decelle, Probability and statistics, 26h, M1, Univ. Paris-Sud.

Master : Cécile Germain, Parallel Programming

Master : Isabelle Guyon, Project: Creation of mini-challenges, M2, Univ. Paris-Sud.

Master : Michèle Sebag, Machine Learning, 12h; Deep Learning, 9h; Reinforcement Learning, 12h; M2 Recherche, U. Paris-sud. Summer School Deep Learning, Genova (Italy), 5h.

Master : François Landes, Machine Learning, 9h, M2 Recherche, U. Paris-sud.

Master : Paola Tubaro, Start -up project for engineering students, 24h, Telecom ParisTech.

Master : Paola Tubaro, Sociology of social networks, 24h, M2, EHESS/ENS.

Master : Flora Jay, Population Genetics, 10h, M2, Univ. Paris-Sud.

Doctorate: Paola Tubaro, Research Methods, 12h, University of Insubria, Italy.

10.2.2. Supervision

PhD François GONARD, *Cold-start recommendation : from Algorithm Portfolios to Job Applicant Matching*, Université Paris-Saclay, May 2018

PhD Thomas SCHMITT, *Collaborative Matching of Job Openings and Job Seekers*, Université Paris-Saclay, June 2018

PhD Hoang M. LUONG, *Squaring the Circle in Modelling Corporate Governance, Market Structure and Innovation: A Tobin's Q Approach to R&D Investment when Network Effects Are Present*, Paola Tubaro, with M. Ugur and S. Gorgoni, University of Greenwich, London, UK, Oct. 2018.

PhD in progress Eléonore BARTENLIAN, *Deep Learning pour le traitement du signal*, 1/10/2018, Michèle Sebag and Frédéric Pascal (Centrale-Supélec)

PhD in progress Victor BERGER, *Variational Anytime Simulator*, 1/10/2017, Michèle Sebag

PhD in progress Leonard BLIER, *Vers une architecture stable pour les systèmes d'apprentissage par renforcement*, 1/09/2018, Yann Ollivier (Facebook AI Research, Paris) and Marc Schoenauer

PhD in progress Tony BONNAIRE, *Reconstruction de la toile cosmique*, from 1/10/2018, Nabila Aghanim (Institut d'Astrophysique Spatiale) and Aurélien Decelle

PhD in progress Benjamin DONNOT, *Optimisation et méthodes d'apprentissage pour une conduite robuste et efficace du réseau électrique par anticipation sur base de parades topologiques.*, 1/09/2015, Isabelle Guyon and Antoine Marot (RTE)

PhD in progress Balthazar DONON, *Apprentissage par renforcement pour une conduite stratégique du système électrique*, 1/10/2018, Isabelle Guyon and Antoine Marot (RTE)

PhD in progress Guillaume DOQUET, *ML Algorithm Selection and Domain Adaptation*, 1/09/2015, Michele Sebag

PhD in progress Victor ESTRADE *Robust domain-adversarial learning, with applications to High Energy Physics,* 01/10/2016, Cécile Germain and Isabelle Guyon.

PhD in progress Loris FELARDOS, *Neural networks for molecular dynamics simulations*, 1/10/2018, Guillaume Charpiat, Jérôme Hénin (IBPC) and Bruno Raffin (InriAlpes)

PhD in progress Giancarlo FISSORE, *Statistical physics analysis of generative models*, 1/10/2017, Aurélien Decelle and Cyril Furtlehner

PhD in progress Julien GIRARD, *Vérification et validation des techniques d'apprentissage automatique*, 1/10/2018, Zakarian Chihani (CEA) and Guillaume Charpiat

PhD in progress Diviyan KALAINATHAN, *Causal models and quality of life at work*, 1/10/2017, Michèle Sebag and Isabelle Guyon

PhD in progress Zhengying LIU, *Automation du design des reseaux de neurones profonds*, 1/10/2017, Isabelle Guyon

PhD in progress Nizam MAKDOUD, *Motivations intrinsèques en apprentissage par renforcement. Application à la recherche de failles de sécurité*, 1/02/2018, Marc Schoenauer and Jérôme Kodjabachian (Thalès ThereSIS, Palaiseau).

PhD in progress Marc NABHAN, *Sûreté de fonctionnement d'un véhicule autonome - évaluation des fausses détections au travers d'un profil de mission réduit*, 1/10/2017, Marc Schoenauer and Hiba Hage (Renault)

PhD in progress Anna PIAZZA, *Inter-Organisational Relationships and Organisational Performance: Network Analysis Applications to a Health Care System*, 01/09/2014, Paola Tubaro, with F. Pallotti and A. Lomi, at the University of Greenwich, London, UK

PhD in progress Adrian POL *Machine Learning Anomaly Detection, with application to CMS Data Quality Monitoring,* 01/10/2016, Cécile Germain.

PhD in progress Herilalaina RAKOTOARISON, *Automatic Algorithm Configuration for Power Grid Optimization*, 1/10/2017, Marc Schoenauer and Michèle Sebag

PhD in progress Théophile SANCHEZ, *Reconstructing the past: deep learning for population genetics*, 1/10/2017, Guillaume Charpiat and Flora Jay

PhD in progress Lisheng SUN, *Apprentissage Automatique: Vers une analyse de données automatisé*, 1/10/2016, Isabelle Guyon and Michèle Sebag

PhD in progress Corentin TALLEC, *Reinforcement Learning and Recurrent Neural Networks: Dynamical approaches*, 1/10/2016, Yann Ollivier

PhD in progress Marion ULLMO, *Detection et classification de la toile et des filaments cosmiques*, from 1/10/2018, Nabila Aghanim (Institut d'Astrophysique Spatiale) and Aurélien Decelle

PhD in progress Pierre WOLINSKI, *Learning the Architecture of Neural Networks*, 1/9/2016, Yann Ollivier (Facebook AI Research, Paris) and Guillaume Charpiat

10.2.3. Juries

- Guillaume Charpiat As a member of the "Commission Scientifique" of Inria Saclay: selection committee for post-docs and PhD students hiring; jury of the Gilles Khan PhD prize (SIF); jury for a "Maître de conférence" position at Université Paris-Sud.

- Cécile Germain PhD jury for Mehdi Cherti 26/01/18, Wenjie ZHENG, 13/06/2018; jury of the Telecom PhD prize 23/03/2018

- Isabelle Guyon PhD jury for Giorgos Borboudakis, 21 Nov. 2018, University of Crete, Heraklion, Greece; Master thesis jury for Marvin Lerousseau, 28 June 2018, INP Grenoble; Master thesis jury for Adrien Pavao, 5 Sep. 2018, U.P-Sud, Orsay.

- Michèle Sebag PhD reviewer: Antonio Vergari (Univ. Bari, Italy); Gaétant Hadjeres, LIX, Ecole Polytechnique; Romain Warlop, Univ. Lille. Pdt Jury: Hafiz Tiomoko, Centrale-Supélec; Stanislas Chambon, Telecom.

- Marc Schoenauer PhD jury for Wen SUN, Université d'Angers, 29/11/2018;

- Paola Tubaro PhD jury for Victorien Barbet, Aix-Marseille Université, 13/12/2018.

10.3. Popularization

10.3.1. Articles and contents

Isabelle Guyon

- Pionnière : Isabelle Guyon, professeur à l'université de Paris-Saclay, 7 Feb. 2018, Usine Nouvelle

- Isabelle Guyon veut démocratiser l'intelligence artificielle, Apr. 2018, Le Monde
- Portrait : Isabelle Guyon, sélectionneuse d'algorithmes, 16 May 2018, Industries et Technologie

Paola Tubaro *Notre vie privée, un concept négociable* [52], Antonio Casilli and Paola Tubaro, in *Le Monde*, Jan. 2018.

10.3.2. Interventions

Guillaume Charpiat Séminaire d'Actualité Critique, *L'intelligence artificielle, entre fantasmes et recherche*, ENS Paris, 5 Apr. 2018.

Isabelle Guyon *Codalab, createur de defis*, UniThe ou Café, Inria Saclay, 5 Apr. 2018

Marc Schoenauer

- Congrès Européen Ethique et Gouvernance 2018, OCDE, Paris, 30 Mar. 2018;
- Audition publique sur l'Intelligence Artificielle et le travail, Comité économique et social européen (CESE), Bruxelles, 30 May 2018;
- Public debate with Jean-Marc David, Convention Systematic, 5 Jun. 2018; Conférence Legrain, ENS Paris, 5 Jul. 2018;
- Prix Design et Science de l'Université Paris-Saclay, 11 Oct. 2018.

Michèle Sebag Usine Nouvelle; Podcast Science et Avenir, discussion avec Cédric Villani.

<p style="text-align:center;">**TOSCA Project-Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Promotion of Mathematics in the industry

- A. Lejay is member of the board of AMIES (Agence Mathématiques en Intéractions avec l'Entreprise et la Société).
- D. Talay continued to serve as a member of the Scientific Committee of the AMIES National Agency aimed to promote interactions between Mathematics and Industry.
- D. Talay continued to serve as the Vice-President of the Fondation d'Entreprise Natixis which aims to contribute to develop research in quantitative finance. He also serves as a member of the Scientific Committee of the Foundation.

8.1.2. Scientific Events Organisation

8.1.2.1. General Chair, Scientific Chair

- Etienne Tanré was the General Chair of the Fourth International Conference on Mathematical Neuroscience https://icmns2018.inria.fr/, held in Antibes-Juan les Pins, June 11-13 2018.

8.1.2.2. Member of the Organizing Committees

- M. Bossy was a co-organizer of the workshop on Wasserstein calculus and related topics, ICMS, Edinburgh, UK- 19 to 23 November 2018.
- C. Fritsch co-organizes with Marianne Clausel (Univ. de Lorraine) the weekly Seminar of Probability and Statistics of IECL, Nancy.
- C. Fritsch co-organized the Ada Lovelace Day held at Inria Nancy – Grand Est, October 9.

8.1.3. Scientific Events Selection

8.1.3.1. Member of the Conference Program Committees

- M. Bossy is member of the SMAI2019 Conference Scientific Committee.
- D. Talay is serving as a member of the "Perturbation Techniques in Stochastic Analysis and Its Applications" Conference Program Committee (Luminy, France, 2019).

8.1.4. Journal

8.1.4.1. Member of the Editorial Boards

- N. Champagnat serves as an associate editor of *Stochastic Models*.
- N. Champagnat serves as co-editor-in-chief with Béatrice Laurent-Bonneau (IMT Toulouse) of *ESAIM: Probability & Statistics*.
- A. Lejay is one of the three editors of the *Séminaire de Probabilités* and *Mathematics and Computers in Simulation* (MATCOM).
- D. Talay served as an Area Editor of *Stochastic Processes and their Applications*, and as an Associate Editor of *Probability, Uncertainty and Quantitative Risk*, *ESAIM Probability and Statistics*, *Stochastics and Dynamics*, *Journal of Scientific Computing*, *Monte Carlo Methods and Applications*, *Oxford IMA Journal of Numerical Analysis*, *SIAM Journal on Scientific Computing*, *Communications in Applied Mathematics and Computational Science*, *Éditions de l'École Polytechnique*. He also served as Co-editor in chief of *MathematicS in Action*.

8.1.4.2. Reviewer - Reviewing Activities

- N. Champagnat wrote reviews for *Annales de l'Institut Fourier*, *The Annals of Applied Probability* (three times this year), *Stochastic Processes and Their Applications*, *Electronic Journal of Probability* and *Frontiers of Mathematics in China*.

- C. Fritsch wrote reviews for *Applied Mathematics and Computation* and *PLOS ONE*.

- A. Lejay wrote reviews for *Proceedings of the Royal Society A*, *Mathematics and Computers in Simulation*, *Journal of Theoretical probability*, *Stochastic Processes and their Applications*, *Journal of computational physics*, *Journal of Functional Analysis*, *Electronic Journal of Probability*, *Journal of Optimization theory and applications*, *Physical Review E*, *Potential Analysis*, *Annals of Applied Probability*, *Annales de l'IHP, probabilités et statistique* and *Acta Mathematica Scientia*.

- D. Talay reported on applications to the Swiss National Science Foundation (SNSF).

- D. Talay reported on applications to the Research Grants Council (RGC) of Hong Kong.

- E. Tanré wrote reviews for *Annales Henri Lebesgue*, *The Annals of Applied Probability*, *Mathematics, MDPI*

- E. Tanré serves has a permanent reviewer of *Mathematical Reviews of the American Mathematical Society (MathSciNet)*.

- D. Villemonais wrote reviews for *Comptes-Rendus de l'Académie des Sciences de Paris*, *Journal of Advanced Probability*, *Electronic Journal of Probability*, *ESAIM: Probability & Statistics*, *Stochastic processes and applications*, *Markov Processes and Related Fields*, *The Annals of Applied Probability*.

8.1.5. Invited Talks

- N. Champagnat has been invited to give talks at the conference of *ANR NONLOCAL* in Chambéry in March, at the *Conference on Probability and Biological Evolution* at CIRM, Luminy in June, at *Journée mathématiques et informatique pour l'analyse des données et imagerie en oncologie* of the Cancéropôle Est at Institut de Cancérologie de Lorraine, Nancy in June, at the *MCQMC 2018* conference in Rennes in July, at the *Conference on Advances in Statistical Mechanics* at CIRM, Luminy in August, at the conference *Populations: Interactions and Evolution* at IHP, Paris in September and at the *ICMS workshop on Wasserstein calculus and related topics* at Bayes Center, Edinburgh in November.

- N. Champagnat has been invited to give a seminar talk at the *Groupe de travail PEIPS* at École Polytechnique in Palaiseau in February.

- N. Champagnat gave a colloquium talk at the *Colloquium - Mathematiques à Angers* in Angers in February.

- N. Champagnat has been invited to give a tutorial talk (mini-course) at the *Workshop on Mathematical Modeling with Measures: where Applications, Probability and Determinism Meet* at Lorentz Center, Leiden in December.

- Q. Cormier, P. Helson and E. Soret have presented three posters at the conference *International Conference on Mathematical Neuroscience* in Antibes Juan-les-Pins in June.

- C. Fritsch has been invited to give a plenary talk at the workshop *Modélisation stochastique et analyse en biologie* in Tours in May.

- C. Fritsch has been invited to give a plenary talk at the *third Mathematical Biology Modelling Days of Besançon* in June.

- C. Fritsch gave a talk at the *European Conference on Mathematical and Theoretical Biology* in Lisbonne in July.

- A. Lejay have been invited to give a mini-course "A short introduction to rough paths" in the *Rencontres Mathématiques de Rouen* in June 2018.

- A. Lejay have been invited to give a talk at the workshop *Random graphs and its applications for networks*, Saint-Étienne, October 2018.

- A. Lejay have been invited to give talks at the conference *Stochastics and PDE*, in Bucarest, September 2018 and at the conference *2th International Vilnius Conference on Probability Theory and Mathematical Statistics and 2018 IMS Annual Meeting on Probability and Statistics*, in Vilnius, June 2018.

- A. Lejay have been invited to give a seminar talk at the Mathematical Institute in Oxford, November 2018.

- E. Soret gave a lecture at the national conference *Journées de Probabilités* in Tours in June.

- D. Talay was an invited speaker at the 'Symposium on Optimal Stopping in Honor of Larry Shepp', Rice University in Houston, Texas, USA, 25-29 June 2018.

- D. Talay was an invited plenary speaker at the 9th International Conference on Stochastic Analysis and its Applications, Bielefeld, Germany, 3-7 September 2018.

- D. Talay was an invited speaker at the 'Wasserstein Calculus and Related Topics' Moscow-UK workshop on Stochastic Analysis, Edinburgh, UK, 19-23 November 2018.

- E. Tanré has given an invited talk at the *12th International Vilnius Conference on Probability Theory and Mathematical Statistics* and *2018 IMS Annual Meeting on Probability and Statistics* in Vilnius in July.

- E. Tanré has been invited to give a seminar talk in Lyon in October.

- M. Tomasevic gave a seminar at CMAP Laboratory, Ecole Polytechnique, France, in March.

- M. Tomasevic gave a lecture at the 'Jps-2018: Jeunes Probabilistes et Statisticiens 2018', Saint–Pierre d'Oléron, France, 13-18 May 2018.

- M. Tomasevic gave a lecture at the national conference *Journées de Probabilités* in Tours in June.

- M. Tomasevic gave a lecture at the 9th International Conference on Stochastic Analysis and its Applications, Bielefeld, Germany, 3-7 September 2018.

- M. Tomasevic gave a lecture at the 'Journée francilienne d'accueil des postdoctorants en mathématiques', Institut H. Poincaré, Paris, France, in October.

- D. Villemonais has been invited to give talks at the *Workshop on Particle systems and PDEs* at Bath University and at the conference *Populations: Interactions and Evolution* at IHP, Paris in September.

- D. Villemonais has been invited to give seminar talks at Warwick University, at the *Probability seminar* of London School of Economics and at the probability seminar of Université Paris-Descartes.

8.1.6. Leadership within the Scientific Community

- M. Bossy is serving as a vice president of the Inria Evaluation Committee.
- A. Lejay is head of the Probability and Statistics team of Institut Élie Cartan de Lorraine.
- D. Talay continued to chair the Scientific Council of the French Applied Math. Society SMAI.
- D. Talay served as a member of the scientific council of the Complex System academy of the UCA Idex.
- D. Talay served as a member of the committee in charge of preparing the application of Paris to the International Congress of Mathematicians 2022.
- D. Talay is serving as a member of the CMUP Advisory Commission (University of Porto).
- D. Talay is a member of the Comité National Français de Mathématiciens.

8.1.7. Scientific Expertise

- M. Bossy served as a committee member for Pierre Lafitte Prize 2019.
- M. Bossy participated in a Associated Professor position recruitment committee at CMA Mines-ParisTech.
- M. Bossy was member of the hiring committee 26 PR at Université d'Evry.

- C. Fritsch is member of the Ph.D. monitoring committee of Léo Darrigade (INRA).
- D. Talay served as a member of the committee for positions in Applied Mathematics at the Ecole Polytechnique.
- D. Talay served as a member of the HCERES evaluation committees for the LPSM Laboratory (Paris Sorbonne University) and the ENSTA mathematics department.
- D. Talay chaired the 2019 Pionneer ICIAM prize committee.

8.1.8. Research Administration

- N. Champagnat is a member of the *Comité de Centre*, the *COMIPERS* and the *Commission Information Scientifique et Technique* of Inria Nancy - Grand Est, *Responsable Scientifique* for the library of Mathematics of the IECL, member of the *Conseil du laboratoire* of IECL (as *responsable scientifique* of the library). He is local correspondent of the COERLE (*Comité Opérationel d'Évaluation des Risques Légaux et Éthiques*) for the Inria Research Center of Nancy - Grand Est.
- C. Fritsch is member of the *Commission du Développement Technologique* of Inria Nancy - Grand Est, of the *Commission du personnel* and the *Commission Parité-Égalité* of IECL. She is the local Raweb correspondent for the Inria Research Center of Nancy - Grand Est.
- A. Lejay is member of the Executive board of *LUE Impact project digistrust* (Univ. Lorraine), of the Conseil de Pôle AM2I (Univ. Lorraine) and of the CUMI (Inria NGE).
- D. Villemonais is responsible of the "ingénierie mathématique" cursus of École des Mines de Nancy and is elected member of the conseil de l'École des Mines de Nancy.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : M. Bossy *Stochastic Particle Methods for PDEs*, 18h, M2 Probabilité et Applications, Université Pierre et Marie Curie, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 13.5h, M1, École des Mines de Nancy, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 13.5h, M2, École des Mines de Nancy, France.

Master: N. Champagnat, *Problèmes inverses*, 22.5h, M1, École des Mines de Nancy, France.

Master: C. Fritsch, *Introduction to Quantitative Finance*, 3h, M1, École des Mines de Nancy, France.

Master: C. Fritsch, *Probability theory*, 61h, M1, École des Mines de Nancy, France.

Master: C. Fritsch, *Probability theory*, 40h, L3, École des Mines de Nancy, France.

Master: A. Lejay, *Simulation des marchés financiers*, 29h, M2, Master PSA, Université de Lorraine, France.

Master: D. Talay *Invariant measures of diffusion processes*, 18h, M2 Probabilité et Applications, Université Paris 6, France.

Master: E. Tanré (courses and exercices), *Advanced Numerics for Computational Finance*, 30h (20h + 10h), M2, Univ. Côte d'Azur (Mathmods Erasmus Mundus), France.

Master: E. Tanré, *Mathematical Methods for Neurosciences*, 20h, M2, ENS - Master MVA / Paris 6 - Master Maths-Bio, France.

Master: E. Tanré (courses) and M. Tomasevic (practical classes) *Numerical probability for mathematical finance*, 20h (8h + 12h), M2, Univ. Côte d'Azur (Master IMAFA), France.

8.2.2. Supervision

PhD in progress: Alexis Anagnostakis, *Étude du mouvement brownien collant*, Université de Lorraine, Octobre 2018, A. Lejay and D. Villemonais.

PhD: Antoine Brault, *Flots rugueux et inclusions différentielles perturbées*, Université Toulouse 3, Octobre 2018, A. Lejay and L. Coutin (Université Toulouse 3).

PhD in progress: Lorenzo Campana, *Stochastic modeling of non-spherical particles transport and deposition by turbulent flow*, Université Côte d'Azur, December 2017, M. Bossy.

PhD in progress: Quentin Cormier, *Biological Networks of Spiking Neurons*, September 2017, E. Tanré and R. Veltz (MathNeuro Inria team).

PhD in progress: Vincent Hass, *Individual-based models in adaptive dynamics and long time evolution under assumptions of rare advantageous mutations*, Université de Lorraine, October 2018, N. Champagnat.

PhD in progress: Pascal Helson, *Plasticity in networks of spiking neurons in interaction*, October 2016, E. Tanré and R. Veltz (MathNeuro Inria team).

PhD in progress: Rodolphe Loubaton, *Caractérisation des cibles thérapeutiques dans un programme génique tumoral*, Université de Lorraine, October 2018, N. Champagnat and L. Vallat (CHRU Strasbourg).

PhD: M. Tomasevic, *On a Probabilistic Interpretation of the Keller-Segel Parabolic-Parabolic Equations*, Université Côte d'Azur, November 2018, D. Talay.

8.2.3. Juries

- M. Bossy served as a referee for the Ph.D. theses of Meïssam Bahlali, *Adaptation de la modélisation hybride eulérienne / lagrangienne stochastique de Code Satrne à la dispersion atmosphérique de polluants à l'échelle micro-météorologique et comparaison à la méthode eulérienne* Université Paris-Est, October 19, 2018, and of Alexandre Zhou, *Etude théorique et numérique de problèmes non linéaires au sens de McKean en finance*, Université Paris-Est, October 17, 2018.

- M. Bossy served as an examiner for the Ph.D. thesis of Isaque Santa Brigida Pimentel, *Valorisation optimale asymptotique avec risque asymétrique et applications en finance*, Université Paris Saclay, October 16, 2018.

- M. Bossy served as an examiner for the HDR of Dario Vincenzi, *Dynamique Lagrangienne en Turbulence et Turbulence Elastique*, Université Côte d'Azur, December 14, 2018.

- N. Champagnat served as a referee for the Ph.D. theses of Simon Girel, *Modélisation de la réponse immunitaire T-CD8: Analyse mathématique et modèles multiéchelles*, Univ. Lyon 1, November 13, 2018 and of Paulien Jeunesse, *Analyse statistique autour du taux de mortalité*, Université Paris Dauphine, January 8, 2019.

- N. Champagnat served as an examiner for the Ph.D. thesis of Rim Touibi, *Sur le comportement qualitatif des solutions de certaines équations aux dérivées partielles stochastiques de type parabolique*, Université de Lorraine, December 8, 2018.

- A. Lejay served as an examiner for the Ph.D. theses of Rim Touibi, *Sur le comportement qualitatif des solutions de certaines équations aux dérivées partielles stochastiques de type parabolique*, Université de Lorraine, December 8, 2018, of Antoine Brault, *Flots rugueux et inclusions différentielles perturbées*, Université Toulouse 3, October 8, 2018, and of Guillaume Copros, *Convergence of generic infinite products of nonexpansive and uniformly continuous operators*, Université Toulouse 3, October 2018.

- A. Lejay served as an examiner for the Habilitation thesis of Renaud Marty, *Quelques contributions à l'étude et aux applications des processus multifractionnaires et de la longue dépendance*, Université de Lorraine, February 2018.

- D. Talay served as an examiner for the Ph.D. thesis of Xiaoli Wei, *Problèmes de Contrôle de type McKean–Vlasov et Applications*, Université Paris Diderot, December 2018.

- D. Talay served as an examiner for the Habilitation thesis of Guillaume Bernis, *Modélisation Probabiliste des Marchés de Crédit*, université Paris Panthéon Sorbonne, January 2018.
- D. Talay served as an examiner for the Habilitation thesis of Ludovic Goudenège, *Algorithmes Numériques pour des Problèmes Stochastiques*, université Paris Saclay, December 2018.
- D. Talay served as a referee for Ph.D. thesis of Igor Honoré, *Estimations Non Asymptotiques de Mesures Invariantes et Régularisation par un Bruit Dégénéré de Chaînes d'Equations Différentielles Ordinaires*, université Paris Saclay, December 2018.

8.3. Popularization

8.3.1. Interventions

- M. Bossy gave the plenary lecture for the Academic Awards Ceremony of the Olympics of Geosciences and Mathematics 2018.
- Q. Cormier has animated the Inria desk at *Fête de la Science*.
- E. Tanré has presented his researches at *Journées Portes Ouvertes - Inria Sophia-Antipolis*.

TRIPOP Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Member of the Editorial Boards

- B. Brogliato is Associate Editor at Nonlinear Analysis: Hybrid Systems.
- B. Brogliato is Associate Editor at ASME Journal of Computational and Nonlinear Dynamics.

9.1.1.2. Reviewer - Reviewing Activities

- A. Tonnelier has been reviewer for PRE (Physical Review E) and DCDS (Discrete and Continuous Dynamical Systems).
- G. James has been reviewer for IMA J. Appl. Math.
- V. Acary has been for Optimization Methods and Software, Nonlinear Dynamics, Applied Mechanics Reviews, IEEE Transactions on Robotics, Multibody Systems Dynamics, International Journal for Numerical Methods in Engineering, IFAC Conference on Modelling, Identification and Control of Nonlinear Systems, CDC 2018, SIMPAR 2018.
- B. Brogliato has been reviewer for IEEE Transactions on Automatic Control, IEEE Transactions on Robotics, IEEE Control Systems Letters, Automatica, SIAM Journal on Control and Optimization, Multibody System Dynamics.

9.1.2. Invited Talks

- G. James : invited talk at the International Symposium on Intrinsic Localized Modes (Kyoto, 01/18), speaker at the Conference on Advances in Nonsmooth Mechanics (Bristol, 06/18), lecture at the thematic school Méthodes de Dynamique Non-Linéaire pour l'Ingénierie des Structures, GDR Dynolin (Fréjus, 05/18).
- V. Acary : lecture at the thematic school Méthodes de Dynamique Non-Linéaire pour l'Ingénierie des Structures, GDR Dynolin (Fréjus, 05/18).

9.1.3. Leadership within the Scientific Community

- V. Acary is coordinator with R. Leine of the Europe Network for Nonsmooth Dynamics http://ennsd.gforge.inria.fr/.

9.1.4. Research Administration

- A. Tonnelier is member of the CED and the CLHSCT.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : G. James, Introduction to Dynamical Systems in UE MAP201, 18 hETD, L1, Université Grenoble Alpes.
- Licence : G. James, Normed Vector Spaces, 25 hETD, L2, Prépa INP, Grenoble.
- Master : G. James, Numerical Methods, 94 hETD, M1, Grenoble INP - Ensimag (1st year).
- Master : G. James, Dynamical Systems, 45 hETD, M1, Grenoble INP - Ensimag (2nd year).
- Master : Vincent Acary, 17H éq TD Systèmes dynamiques, ENSIMAG 2A.

- Master : Vincent Acary, 12H éq TD Systèmes dynamiques, Master ACSYON. Université de Limoges.

9.2.2. Supervision

Rami Sayoub, Influence of vibrations on multibody systems, September 2018, V. Acary and B. Brogliato.

Charlélie Bertrand, Mechanical model fro cable vibrations, October 2018, V. Acary and C.H. Lamarque.

Christelle Kozaily. Structural analysis for multi-mode DAE systems, Octobre 2018, V. Acary and B. Caillaud.

Alexandre Vieira. Commande optimale de systèmes linéaires de complémentarité, université Grenoble Alpes, 24 septembre 2018, B. Brogliato and C. Prieur.

9.2.3. Juries

- Vincent Acary, president of Ph.D. Thesis committee of Thomas Catterou (22 October 2018), Universite Aix–Marseille.
- Bernard Brogliato, examinateur of Ph.D. thesis of C. Beneux (12 July 2018), Université Lorraine.

TROPICAL Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Stéphane Gaubert is the coordinator of the Gaspard Monge Program for Optimization, Operations Research and their interactions with data sciences (PGMO), a corporate sponsorhip program, operated by Fondation Mathématique Jacques Hadamard, supported by Criteo, EDF, Orange and Thales, see http://www.fondation-hadamard.fr/fr/pgmo/.

10.1.1.2. Member of the Organizing Committees

- S. Gaubert co-organizes the "Séminaire Parisien d'Optimisation" at Institut Henri Poincaré. https://sites.google.com/site/spoihp/.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- S. Gaubert, Chair of the PGMO days, EDF Labs Paris Saclay, Nov 20-21, 2018. http://www.fondation-hadamard.fr/fr/pgmo/pgmodays

- S. Gaubert, coorganizer, with A. Daniilidis and S. Tapia, of the workshop "Dynamical Aspects in Variational Analysis", École polytechnique, Dec. 14th, 2018. http://www.cmap.polytechnique.fr/~gaubert/VariationalAnalysisWorkshop/index.html

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- S. Gaubert is member of the editorial committee of the collection Mathématiques et Applications, SMAI and Springer.

- S. Gaubert is associate editor of Linear and Multilinear Algebra.

- S. Gaubert is associate editor of RAIRO Operations research.

10.1.4. Invited Talks

- M. Akian
    - Majorization inequalities for valuations of eigenvalues, Mittag-Leffler institute, February 2018.

- X. Allamigeon
    - Log-barrier interior point methods are not strongly polynomial, Workshop on Tropical Algebra and Applications, Mittag-Leffler Institute, Stockholm, Sweden, January 2018
    - Log-barrier interior point methods are not strongly polynomial, Workshop on Algebraic and geometric aspects of semidefinite programming at ISMP, Bordeaux, France, June 2018
    - Performance evaluation of an emergency call center: tropical polynomial systems applied to timed Petri nets, Workshop on Tropical Mathematics & Optimisation for Railways, Birmingham University, UK, June 2018
    - First steps in the formalization of convex polyhedra in Coq, International Conference on Mathematical Software, Notre-Dame University, USA, July 2018

- S. Gaubert
    - Nonarchimedean convex programming and its relation to mean payoff games, invited plenary talk at Highlights of Logic, Automata, and Games, Berlin, September 2018.
    - Condition numbers in nonarchimedean semidefinite programming and their relation with stochastic mean payoff games, Mittag-Leffler institute, February 2018.
    - Inequalities for the spectral radii and spectral norms of nonnegative tensors, ISMP, Bordeaux, Invited session, July 2018.
    - Nonarchimedean Degenerations of Convex Programming – In Which Tropical Geometry Shows That Log-Barrier Interior Point Methods Are Not Strongly Polynomial, Computational and Applied Mathematics Colloquium, The University of Chicago, May 2018.

10.1.5. Leadership within the Scientific Community
- See Section 10.1.1.1 (coordination of PGMO).

10.1.6. Research Administration
- M. Akian :
    - Member of the "comité de liaison SMAI-MODE" since June 2015.
    - Member of the laboratory council of CMAP.
- S. Gaubert :
    - Chairman of the Gaspard Monge Program for Optimization, Operations Research and their interactions with data sciences (PGMO), see 10.1.1.1 for details.
    - Member of the scientific council of CMAP.
- X. Allamigeon:
    - Member of the scientific committee of Inria Saclay – Ile-de-France.
    - Member of the Applied Mathematics Department committee at Ecole Polytechnique.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching
- M. Akian
    - Course "Markov decision processes: dynamic programming and applications" joint between (3rd year of) ENSTA and M2 "Mathématiques et Applications", U. Paris Saclay, "Optimization", and shared with Jean-Philippe Chancelier (ENPC), 15 hours each.
- X. Allamigeon
    - Petites classes et encadrement d'enseignements d'approfondissement de Recherche Opérationnelle en troisième année à l'École Polytechnique (programme d'approfondissement de Mathématiques Appliquées) (niveau M1).
    - Cours du M2 "Optimisation" de l'Université Paris Saclay, cours partagé avec Manuel Ruiz (RTE) et Dominique Quadri (LRI, Université Paris Sud).
    - Co-responsabilité du programme d'approfondissement en mathématiques appliquées (troisième année) à l'École Polytechnique.
- J.B. Eytard
    - Cours de niveau L1-L2 à l'IUT d'Informatique d'Orsay (Univ. Paris-Sud), dans le cadre d'un monitorat (64h) (théorie des graphes, recherche opérationnelle, modélisation mathématique).
- S. Gaubert
    - Course "Systèmes à Événements Discrets", option MAREVA, ENSMP.

- Course "Algèbre tropicale pour le contrôle optimal et les jeux" of "Contrôle, Optimisation et Calcul des Variations" (COCV) of M2 "Mathématiques et Applications" of Paris 6 University and École Polytechnique.

- Lecture of Operations Research, third year of École Polytechnique. The lectures notes were published as a book [66].

- M. Skomra

  - TD de mathématiques à l'UPMC.

10.2.2. Supervision

- PhD : Eric Fodjo, registered at École Polytechnique, since October 2013, thesis supervisor: Marianne Akian, defended on Jul 13 2017.

- PhD : Mateusz Skomra, registered at Univ. Paris Saclay since October 2015, thesis supervisor: Stéphane Gaubert, cosupervision: Xavier Allamigeon, defended on Dec. 5, 2018.

- PhD : Jean-Bernard Eytard, registered at Univ. Paris Saclay since October 2015, thesis supervisor: Stéphane Gaubert, cosupervision: Marianne Akian, Mustapha Bouhtou, defended on Nov. 12, 2018.

- PhD in progress: Paulin Jacquot, registered at Univ. Paris Saclay since November 2016, thesis supervisor: Stéphane Gaubert, cosupervision: Nadia Oujdane, Olivier Beaude (EDF).

- PhD in progress: Benoît Tran, registered at Univ Paris-Est Marne La Vallée, since September 2017, thesis supervisor: Jean-Philippe Chancelier (ENPC), cosupervision: Marianne Akian.

- PhD in progress: Maxime Grangereau, registered at Univ. Paris Saclay since Jan 2018, thesis supervisor: Emanuel Gobet, cosupervision: Stéphane Gaubert.

- PhD in progress: Omar Saadi, registered at Univ. Paris Saclay since October 2018, thesis supervisor: Stéphane Gaubert, cosupervision: Marianne Akian.

- PhD in progress: Marin Boyet, registered at Univ. Paris Saclay since October 2018, thesis supervisor: Stéphane Gaubert, cosupervision: Xavier Allamigeon.

10.2.3. Juries

- M. Akian

  - Jury of the 2018 competition for CR2 positions of Inria Saclay–Île-de-France.
  - Jury of the PhD thesis of E. Fodjo (Ecole Polytechnique, thesis supervisor, July 2018).
  - Jury of the PhD thesis of H. Gerard (ENPC, reviewer, Oct. 2018).
  - Jury of the PhD thesis of J.B. Eytard (Ecole Polytechnique, examiner, Nov. 2018).

- X. Allamigeon

  - Comité de suivi doctoral de D. Rouhling (Inria Sophia, Mai 2018)
  - Jury of the PhD thesis of M. Skomra (Ecole Polytechnique, examiner, Dec. 2018).

- S. Gaubert

  - Jury of the HdR of Welington de Oliveira (Sorbonne Universités –Paris I– examiner, Déc. 2018)
  - Jury of the PhD thesis of J.B. Eytard (Ecole Polytechnique, examiner, Nov. 2018).
  - Jury of the PhD thesis of T. Roget (Ecole Polytechnique, examiner, Nov. 2018).
  - Jury of the PhD thesis of M. Skomra (Ecole Polytechnique, examiner, Dec. 2018).

10.3. Conferences, Seminars

- M. Akian

  - The operator approach to entropy games, International workshop on game theory, IHP, June 2018, Paris.

- – Majorization inequalities for valuations of eigenvalues, ANR/DFG PRCI Project Kick-off Meeting, July 2018, Bonn.
- – Tropical geometry, Optimal Control and Mean-payoff Games, Dagstuhl Seminar "Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods", Oct. 2018, Dagstuhl.

- X. Allamigeon
  - – Tropical Linear Optimization, Polytopes à Paris, Paris, France, January 2018.
  - – A formalization of convex polyhedra based on the simplex method, Séminaire de Géométrie Algorithmique et Combinatoire, Paris, France, March 2018.
  - – Log-barrier interior point methods are not strongly polynomial, Journée de rentrée du CMAP, Palaiseau, France, October 2018.
  - – First steps in the formalization of convex polyhedra in Coq, Seminar on Solvers Principles and Architectures, Rennes, France, October 2018.

- M. Boyet
  - – The shadow vertex algorithm solves colorful one-versus-all tropical polynomial systems, PGMO Days, Nov. 21, 2018, Palaiseau.

- J.B. Eytard
  - – A tropical approach to bilevel programming and a comparison with a competitive equilibrium problem, ROADEF, Feb. 2018, Université Bretagne Sud, Lorient.
  - – Tropical geometry applied to bilevel programming and an application to price incentives in telecom networks, JFRO (journées franciliennes de recherche opérationnelle) sur le thème "optimisation bi-niveaux", March 2018, CNAM, Paris.
  - – Tropical geometry and discrete convexity applied to bilevel programming, IWOBIP 18, June 2018, Lille.
  - – Tropical geometry applied to bilevel programming, ISMP, July 2018, Bordeaux.
  - – How to use tropical geometry to solve bilevel programming problems ?, PGMO Days, Nov. 21, 2018, Palaiseau.

- S. Gaubert
  - – Tropical spectrahedra and their relation with mean payoff games, University of Illinois at Chicago, May 2018.
  - – Tropical spectrahedra and their relation with mean payoff games, International workshop on game theory, IHP, June 2018.
  - – A convergent hierarchy of non-linear eigenproblems to compute the joint spectral radius of nonnegative matrices, 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS), Hong-Kong, Jul. 2018.

- P. Jacquot
  - – Fast Computation of Equilibria in Splittable Routing Games: Application to Electricity Demand Response, SMAI Mode, Autrans, March 2018
  - – Analysis of a Routing Game Model for Demand Side Management, ISMP, Bordeaux, July 2018.
  - – Routing Game on Parallel Networks: the Convergence of Atomic to Nonatomic, CDC, Miami, December 2018

- M. Skomra
  - – The condition number of stochastic mean payoff games, ISMP, Bordeaux, July 2018.
  - – Condition Numbers of Stochastic Mean Payoff Games and What They Say about Nonarchimedean Semidefinite Programming, 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS), Hong-Kong, July, 2018.

- A. Sagnier
    - Talk at Ohio State University on «An arithmetic site of Connes-Consani type for $\mathbb{Z}[\imath]$», January 2018.
    - Talk at Rutgers University on «An arithmetic site of Connes-Consani type for $\mathbb{Z}[\imath]$», January 2018
    - Talk at Johns Hopkins University on «An arithmetic site of Connes-Consani type for $\mathbb{Z}[\imath]$», January 2018
    - Short communication at Toposes in Como on «An arithmetic site of Connes-Consani type for $\mathbb{Z}[\sqrt{2}]$», Università degli Studi dell'Insubria, Como, June 2018
    - Short communication at the International Congress of Mathematicians, ICM 2018 on «An arithmetic site of Connes-Consani type for $\mathbb{Z}[\imath]$» , August 2018
    - Short communication at the Tensors conference on «Tropical tensor products» Polytecnico di Torino, Turin, September 2018.
    - Talk at University of Oslo on «An arithmetic site of Connes-Consani type for for number fields with narrow class number 1», November 2018.
- B. Tran
    - A Stochastic Min-plus Algorithm for Deterministic Optimal Control, ISMP, July 2018, Bordeaux.
- C. Walsh
    - Seminar, Université de Nantes, December 14, 2018. Title of the talk: "The horofunction boundary of Teichmüller space".

ABS Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. Member of the Organizing Committees

– Frédéric Cazals was member of the advisory board of:
- *Algorithms in Structural Bio-informatics*. The 2018/2019 edition (January 2019, CIRM, Marseille) focuses on RNA bioinformatics. See https://algosb2019.sciencesconf.org/.

7.1.2. Scientific Events Selection

7.1.2.1. Member of the Conference Program Committees

– Frédéric Cazals was member of the following program committees:
- Symposium On Geometry Processing
- Symposium on Solid and Physical Modeling
- Intelligent Systems for Molecular Biology (ISMB) / Protein Interactions & Molecular Networks
- IEEE International Conference on BioInformatics and BioEngineering

7.1.3. Journal

7.1.3.1. Reviewer - Reviewing Activities

– Frédéric Cazals reviewed for the following journals:
- Journal of computational geometry
- PLOS Computational Biology

– Dorian Mazauric reviewed for the following journal and conference:
- Theoretical Computer Science
- 16th Workshop on Approximation and Online Algorithms (WAOA 2018)

7.1.4. Invited Talks

– Frédéric Cazals gave the following invited talks:
- *Energy landscapes: sampling, analysis, comparison*, RNA Kinetics days, Ecole polytechnique, October 2018.
- *Randomized algorithms for volume/density of states calculations in high-dimensional spaces*: Energy landscapes, Kalamata, Greece, September 2018;
- *Randomized algorithms for volume/density of states calculations in high-dimensional spaces*: Advances in Computational Statistical Physics, CIRM, France, September 2018.
- *Understanding scoring/energy landscapes: a tale of local minima and density of states*, Meet-U: when proteins meet each other, January 2018, Paris.

7.1.5. Leadership within the Scientific Community

– Frédéric Cazals:
- 2010-.... Member of the steering committee of the *GDR Bioinformatique Moléculaire*, for the *Structure and macro-molecular interactions* theme.
- 2017-.... Co-chair, with Yann Ponty, of the working group / groupe de travail *(GT MASIM - Méthodes Algorithmiques pour les Structures et Interactions Macromoléculaires*, within the *GDR de BIoinformatique Moléculaire* (GDR BIM, http://www.gdr-bim.cnrs.fr/).

7.1.6. Research Administration

– Frédéric Cazals:

- 2017-.... President of the *Comité de suivi doctoral* (CSD), Inria Sophia Antipolis - Méditerranée. The CSD supervises all aspects of PhD student's life within Inria Sophia Antipolis - Méditerranée.
- 2018-.... Member of the *bureau du comité des équipes projets*.

– Dorian Mazauric:

- 2016-2019. Member of the *Comité de Centre*, Inria Sophia Antipolis - Méditerranée.
- 2018-.... Member of the *Commission de Développement Technologique*, Inria Sophia Antipolis - Méditerranée.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

- Master: Frédéric Cazals (Inria ABS) and Frédéric Chazal (Inria Saclay), *Foundations of Geometric Methods in Data Analysis*, Data Sciences Program, Department of Applied Mathematics, Ecole Centrale Paris. (http://www-sop.inria.fr/abs/teaching/centrale-FGMDA/centrale-FGMDA.html)
- Master : Dorian Mazauric, Algorithmique et Complexité, 36 h TD, niveau M1, École Polytechnique de l'Université Nice Sophia Antipolis, filière Sciences Informatiques, France.

7.2.2. Supervision

- **PhD:** Romain Tetley, *Mixed sequence-structure based analysis of proteins, with applications to functional annotations*, defended on the 21/11/2018. Université Côte d'Azur.
- **PhD in progress, 4th year:** Augustin Chevallier, *Random walks for estimating the volume of convex bodies and densities of states in high dimensional spaces*, defense scheduled in February 2019. Université Côte d'Azur.
- **PhD in progress, 2nd year:** Denys Bulavka, *Modeling macro-molecular motions*. Université Côte d'Azur. Under the supervision of Frédéric Cazals.
- **PhD in progress, 2nd year:** Méliné Simsir, *Modeling drug efflux by Patched*. Université Côte d'Azur. Thesis co-supervised by Frédéric Cazals and Isabelle Mus-Veteau, IPMC/CNRS.
- **PhD in progress, 1st year:** Timothée O'Donnel, *Modeling the influenza polymerase*. Université Côte d'Azur. Thesis co-supervised by Frédéric Cazals and Bernard Delmas, INRA Jouy-en-Josas.
- **PhD in progress, 1st year** : Thi Viet Ha Nguyen, Graph Algorithms techniques for (low and high) resolution models of large protein assemblies, Frédéric Havet (Inria/I3S project-team Coati) and Dorian Mazauric.

7.2.3. Juries

– Frédéric Cazals:

- Hugo Schweke, Paris-Saclay University, December 2018. Rapporteur on the PhD thesis *Développement d'une méthode* in silico *pour caractériser le potentiel d'interaction des surfaces protéiques dans un environnement encombré*. Advisors: Marie-Hélène Mucchielli-Giorgi and Anne Lopes.
- Julien Ogor, ENSTA Bretagne, May 2018. Rapporteur on the PhD thesis *Design of algorithms for the automatic characterization of marine dune morphology and dynamics*. Advisor: B. Zerr.
- Rodrigo Dorantes-Gilardi, University of Lyon, April 2018. Rapporteur on the PhD thesis *Bio-Mathematical aspects of the plasticity of proteins*. Advisors: L. Vuillon and C. Lesieur.

– Dorian Mazauric:

- Romain Tetley, Université Côte d'Azur, Novembre 2018. PhD thesis *Mixed sequence-structure based analysis of proteins, with applications to functional annotations*. Advisor: Frédéric Cazals.

7.3. Popularization

This part mainly concerns Dorian Mazauric.

7.3.1. Internal or external Inria responsibilities

- Member of Mastic Commission (Médiation et Animation scientifiques Inria Sophia Antipolis - Méditerranée).
- Coordinator of the popularization project GALEJADE (Graphes et ALgorithmes : Ensemble de Jeux À Destination des Écoliers (mais pas que)) founded by Inria, Fondation Blaise Pascal, and Université Côte d'Azur. See https://galejade.inria.fr.
- Coordinator of the internships for undergraduates of middle school (niveau collège, troisième) at Inria Sophia Antipolis - Méditerranée (12 interns during one week).

7.3.2. Articles and contents

Frédéric Cazals published the following opinion article:

- *Recherche et développement : les entreprises françaises n'ont pas de vision*, Le Monde, April 2018. See https://www.lemonde.fr/sciences/article/2018/04/20/r-d-les-entreprises-francaises-n-ont-pas-de-vision_5288104_1650684.html.

Dorian Mazauric published online contents and posters. See https://galejade.inria.fr.

7.3.3. Education

- Trainings for 100 future teachers at ÉSPÉ (École SupÉrieure du Professorat et de l'Éducation) of Académie de Nice.
- Two trainings for 60 teachers of Cycle 3 (Le Cannet).
- Trainings for 20 teachers at numeric culture week-end organised by Class'Code MED.

7.3.4. Interventions

- National events:
  - Fête de la Science : Village des Sciences de Vinon-sur-Verdon, Juan-les-Pins, Villeneuve-Loubet et Mouans Sartoux : *La magie des graphes et du binaire, Algorithmes grandeur nature et jeux combinatoires.*
  - Semaine des maths : Conferences and activities at Centre International de Valbonne. With Christophe Godin. *Réfléchir pour Calculer ou Calculer pour Réfléchir.*
  - Conferences and activities at salon Code & Play 2018. *Graphes et algorithmes ? Jeux grandeur nature : algorithme de plus court chemin, algorithme de tri avec des cerceaux et des lattes en plastique – La magie des graphes et du binaire : tours de magie.*
- In educational institutions:
  - Two trainings for 60 teachers of Cycle 3 (Le Cannet).
  - Trainings for 100 future teachers at ÉSPÉ (École SupÉrieure du Professorat et de l'Éducation) of Académie de Nice.
  - High school: Conferences at Centre International de Valbonne. *Pas besoin de réfléchir, les ordinateurs calculent tellement vite ? Théorie des graphes et algorithmique.*
  - Middle school: Conferences at collège Alphonse Daudet of Nice and conferences at collège Jules Verne of Cagnes-sur-Mer. *La magie des graphes et du binaire.*
  - Primary: Conferences at École élémentaire of Tourrettes-sur-Loup. With Florence Barbara.
- Welcoming of schoolchildren or the general public in an Inria center:
  - MathC2+ internship: Activity for 40 students (high school). With Maria Guramare. *Algorithmes grandeur nature pour le calcul du plus court chemin et pour trier.*

- Open days of Inria Sophia Antipolis - Méditerranée: *La magie des graphes, des algorithmes et du binaire*.

- Presentation for twelve interns of middle school (niveau collège, troisième) by Frédéric Cazals.

7.3.5. Creation of media or tools for science outreach

- Creation of the website of the popularization project GALEJADE (Graphes et ALgorithmes : Ensemble de Jeux À Destination des Écoliers (mais pas que)) founded by Inria, Fondation Blaise Pascal, and Université Côte d'Azur. See https://galejade.inria.fr.

- Development of wooden objects for the dissemination of the scientific culture: wooden plateau for graph algorithms and convex hull, chocolate bar game made by 3D printers, kakemonos... See https://galejade.inria.fr/francais-pret-de-materiel/.

<p align="center">**AIRSEA Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

E. Blayo, E. Cosme and A. Vidard organized a one-week school "Introduction to data assimilation" for doctoral students (Jan. 8-12, 2018).

9.1.1.2. Member of the Organizing Committees

E. Blayo and A. Vidard were members of the organizing committee of the 7th National Conference on Data Assimilation (CNA 2018), held in Rennes Sept. 26-28, 2018.

E. Blayo organized with Pr Hansong Tang (City University of New York) a mini-symposium on domain decomposition and model coupling issues for oceanic and atmospheric flows, within the 25th International Domain Decomposition Conference, DD XXV (St. John's, Canada, July 23-27, 2018).

L. Debreu was the co-organizer of the DRAKKAR workshop on global ocean simulations based on the NEMO platform. http://pp.ige-grenoble.fr/pageperso/barnierb/WEBDRAKKAR2018/

F. Lemarié and L. Debreu (with H. Burchard, K. Klingbeil and J. Sainte-Marie) have organized the international COMMODORE workshop on numerical methods for oceanic models (Paris, Sept. 17-19, 2018). https://commodore2018.sciencesconf.org/, see [12] for a summary of the scientific discussions.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Clémentine Prieur was a member of the confrence program committee of the annual conference of the GdR MASCOT NUM 2018, Nantes (France), march 21-23, 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

F. Lemarié is associate editor of the Journal of Advances in Modeling Earth Systems (JAMES)

C. Prieur is associate editor of the Annales Mathématiques Blaise Pascal, as far as of the journal Computational & Applied Mathematics, which was conceived as the main scientific publication of SBMAC (Brazilian Society of Computational and Applied Mathematics).

9.1.3.2. Reviewer - Reviewing Activities

F. Lemarié received a certificate for outstanding contribution in reviewing in recognition of the contributions made to the Ocean Modelling journal

F. Lemarié: reviewer for Journal of Computational and Applied Mathematics

E. Blayo: reviewer for Journal of Scientific Computing, Communications in Computational Physics

O. Zahm reviewed papers for: ESAIM: Mathematical Modelling and Numerical Analysis (M2AN), Journal Of Computational Physics, Journal on Uncertainty Quantification (JUQ), International Journal for Numerical Methods in Engineering, Aerospace Science and Technology, Computational and Applied Mathematics, Engineering Computations.

9.1.4. Invited Talks

E. Arnaud, M. Nodet. (Se) tromper avec les chiffres. Colloque "Sciences et esprit critique, interroger les certitudes", Maison pour la sciences, Académie de Grenoble, 8 nov. 2018, Grenoble

E. Arnaud. Estimation de paramètre sous incertitude. atelier incertitude du projet Idex trajectories, 17 mai 2018, Grenoble

F. Lemarié:

- Comod Workshop on "Coastal Ocean Modelling" in Hamburg (Germany) [16]
- Colloque de Bilan et de Prospective du programme LEFE in Clermond-Ferrand (France) [17]

C. Prieur:

- L'école Mathématiques pour l'énergie Nucléaire organied in partnership with GDR MaNu, July, 2-6, 2018.
- 13th International Conference in Monte Carlo & Quasi-Monte Carlo in Scientific Computing, July 1-6, 2018, Rennes, France.
- International workshop on Design of Experiments : New Challenges, April 30-May 4th, 2018, Luminy, France.
- Journée du groupe SIGMA of the SMAI, November, 30 2018, Jussieu (Paris).
- SIAM UQ 2018, 16-19 avril 2018, Garden Grove, Californie, US, invitation to participate in the "Advances in Global Sensitivity Analysis" session.
- Séminaire de Statistique d'Avignon, December, 10, 2018.
- Talk at the Issac Newton Institute in Cambridge (UK, June 2018).

9.1.5. Leadership within the Scientific Community

E. Blayo was the chair of the CNRS-INSU research program LEFE-MANU on mathematical and numerical methods for ocean and atmosphere http://www.insu.cnrs.fr/lefe until March 2018.

L. Debreu is the chair of the CNRS-INSU research program LEFE-MANU on mathematical and numerical methods for ocean and atmosphere http://www.insu.cnrs.fr/lefe since April 2018.

L. Debreu is the coordinator of the national group COMODO (Numerical Models in Oceanography).

L. Debreu is a member of the steering committee of the CROCO ocean model https://www.croco-ocean.org

C. Prieur chairs GdR MASCOT NUM. http://www.gdr-mascotnum.fr/doku.php.

9.1.6. Scientific Expertise

E. Arnaud, scientific evaluation for the AAP ANR 2018

E. Arnaud, C. Prieur, scientific expertise for the ANR project HIGH-TUNE

E. Arnaud, evaluation for the AAP Idex formation UGA 2018

F. Lemarié is a member of the CROCO (https://www.croco-ocean.org/) scientific committee in charge of the « numerical methods » topic.

F. Lemarié is a member of the NEMO (https://www.nemo-ocean.eu/) Developers Committee as external expert.

9.1.7. Research Administration

E. Blayo is a deputy director of the Jean Kuntzmann Lab.

E. Arnaud is in charge of the MAD (Modèles et algorithmes déterministes) department of Laboratoire Jean Kuntzmann

L. Debreu is a member of the scientific evaluation committee of the French Research Institute for Development (IRD).

L. Debreu is the chair of the French LEFE/MANU program on Applied mathematics and numerical methods for the ocean and the atmosphere. http://www.insu.cnrs.fr/lefe/presentation-manu

C. Prieur is a member of the Scientific Council of the Mathematical Society of France (SMF).

C. Prieur is a member of the Research Council of UGA.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

License: E. Arnaud, Mathematics for engineer, 50h, L1, Univ. Grenoble Alpes, France.

License: E. Arnaud, statisctics for biologists, 40h, L2, Univ. Grenoble Alpes, France.

Licence: M Nodet, Mathematiques pour l'ingenieur, 50h, L1, Univ. Grenoble Alpes

Licence: E. Blayo, Analyse approfondie, 80h, L1, Univ. Grenoble Alpes.

Licence : C.Kazantsev, Mathématiques outils pour les sciences et l'ingénierie, 76h, L1, Univ. Grenoble Alpes, France

Licence : C.Kazantsev, Mathématiques pour les sciences de l'ingénieur, 60h, L2, Univ. Grenoble Alpes, France

Master: E. Arnaud, Advising students on apprenticeship, 28h, M2, Univ. Grenoble Alpes, France.

Master: E. Arnaud, Inverse problem and data assimilation, 28h, M2, Univ. Grenoble Alpes, France.

Master: C. Prieur and O. Zahm, Model Exploration for Approximation of Complex, High-Dimensional Problems, 18h, M2, Univ. Grenoble Alpes-ENSIMAG, France.

Master: L. Debreu, Numerical methods for ocean models, 14h, M2, ENSTA Bretagne engineer schoold, Brest.

Master: E. Blayo, PDEs and numerical methods, 43h, M1, Univ. Grenoble Alpes and Ensimag engineer school.

Master: M Nodet Equations aux derivees partielles travaux pratiques, 18h, M1, Univ. Grenoble Alpes

Master: M Nodet Methodes inverses, 18h, M2, Univ. Grenoble, Alpes

Master: M Nodet taught was responsible for the 1st year of the applied mathematics master of Univ. Grenoble, Alpes

Doctorat: E. Blayo and A. Vidard, Introduction to data assimilation, 20h, Univ. Grenoble Alpes

Doctorat: M. Nodet, Data assimilation, 3h, Univ. Grenoble, Alpes

Doctorat: L. Debreu co-organized a one week doctoral training session on numerical modelling of atmospheric and oceanic flows (with F. Hourdin (LMD, Paris), G. Roullet (UBO, Brest) and T. Dubos (Ecole Polytechnique, Paris)).)

Doctorat: F.-X. Le Dimet, Data Assimilation, 16h, Harbin Institute of Technology.

E-learning : M.Nodet, Videos level L1, youtube channel https://www.youtube.com/channel/UCfYhfa8eKzdiM_MYAOoeMiQ

E-learning : E. Arnaud, Mathematics for engineer, L1, Pedagogical resources on http://math.u-ga.fr and videos for http://tinyurl.com/youtube-mat207

E-learning :E. Arnaud, Inverse problem and data assimilation, L2, Pedagogical resources on http://math.u-ga.fr.

9.2.2. Supervision

Intern: Natalie Noun, Characterization of coupling errors in ocean-atmosphere coupled models, M2R, mathématiques appliquées, Université Lyon 1, 6 months, A. Vidard and F. Lemarié.

PhD in progress: Victor Trappler, Parameter control in presence of uncertainties, October 2017, E. Arnaud, L. Debreu and A. Vidard.

PhD in progress: Adrien Hirvoas, Development of a data assimilation method for the calibration and continuous update of wind turbines digital twins, May 2018, E. Arnaud, C. Prieur, F. Caleyron

PhD in progress : Sophie Théry, Numerical study of coupling algorithms and boundary layer parameterizations in climate models. October 2017, E. Blayo and F. Lemarié.

PhD in progress : Emilie Duval, Coupling hydrostatic and nonhydrostatic ocean circulation models. October 2018, L. Debreu and E. Blayo.

PhD in progress: Long Li, Assimilation d'image pour le suivi de polluants, September 2017, A. Vidard, J.-W. Ma (Harbin University, China).

PhD in progress: Reda El Amri, Analyse d'incertitudes et de robustesse pour les modèles à entrées et sorties fonctionnelles, April 2016, Clémentine Prieur, Céline Helbert (Centrale Lyon), funded by IFPEN, in the OQUAIDO chair program.

PhD in progress: Maria Belén Heredia, A generic Bayesian approach for the calibration of advanced snow avalanche models with application to real-time risk assessment conditional to snow conditions, October 2017, Nicolas Eckert (IRSTEA Grenoble), Clémentine Prieur, funded by the OSUG@2020 Labex.

PhD in progress: Philomène Le Gall, Nonparametric non stationarity tests for extremes, October 2018, Clémentine Prieur, Anne-Catherine Favre (IGE, Grenoble), Philippe Naveau (LSCE, Paris), funded by the cross-disciplinary-project Trajectories from Idex Grenoble.

PhD in progress: Arthur Macherey, Uncertainty quantification methods for models described by stochastic differential equations or partial differential equations with a probabilistic interpretation, April 2018, Clémentine Prieur, Anthony Nouy (Ecole Centrale de Nantes), Marie Billaud Friess (Ecole Centrale de Nantes), funded by Inria and Ecole Centrale de Nantes.

PhD : Rémi Pellerej, Étude et développement d'algorithmes d'assimilation de données variationnelle adaptés aux modèles couplés océan-atmosphère, Université Grenoble-Alpes, Mars 2018, A. Vidard, F. Lemarié.

PhD : Charles Pelletier, Etude mathématique du problème de couplage océan-atmosphère incluant les échelles turbulentes, Université Grenoble Alpes, February 15, 2018, E. Blayo and F. Lemarié

9.2.3. Juries

E. Blayo:

- February 27, 2018: HDR thesis of Igor Gejadze, Univ. Grenoble Alpes (president)
- March 26, 2018: PhD thesis of Rémi Pellerej, Univ. Grenoble Alpes (president)
- June 28, 2018: PhD thesis of Pedro Colombo, Univ. Grenoble Alpes (president)
- July 3, 2018: PhD thesis of Matthieu Brachet, Université de Lorraine (referee)
- September 21, 2018: PhD thesis of Joseph Bellier, Univ. Grenoble Alpes (president)
- September 25, 2018: PhD thesis of Alexandre Vieira, Univ. Grenoble Alpes (president)

L. Debreu:

- November 12, 2018: PhD thesis of Thibaud Vandamme, Univ. of Toulouse (referee).

E. Arnaud, in charge of ATER recruitment in computer sciences, University Grenoble Alpes

E. Arnaud, member of a recrutment comitee for a "Maitre de conférences", University Grenoble Alpes

M. Nodet was a reviewer for the PhD of R. Ventura

M. Nodet was an expert at the TIPE jury (oral examination for the admission to Grandes Ecoles)

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

E.Kazantsev is a memeber of the Local Commission for Permanent Formation of Inria Grenoble - Rhône-Alpes.

9.3.2. Articles and contents

Blog : E. Blayo, Les big data peuvent-ils faire la pluie et le beau temps ?, October 25, 2018, http://binaire.blog.lemonde.fr/2018/10/25/les-big-data-peuvent-ils-faire-la-pluie-et-le-beau-temps/Binaire and https://theconversation.com/quand-les-big-data-font-la-pluie-et-le-beau-temps-105608The conversation

Interviews : E. Blayo, Carnets de campagne - France Inter, September 27, 2018

E. Arnaud, "Sans le numérique, pas de prévision météo !" Dossier C'est quoi le numérique. "Le dauphiné des enfants", numéro 14, novembre-décembre 2018, http://www.ledauphinedesenfants.ledauphine.com/numero-archive/dde2018_14#

In collaboration with teachers, M. Nodet wrote an article about how to set up a "glaciers" for secondary school teachers in Reperes IREM journal [31]

9.3.3. Education

E. Arnaud, animation of a "Laboratoire des mathématiques" in Lycée Pablo Neruda (Saint Martin d'Hères), on the subject of math and critical thinking.

C.Kazantsev is a member of an IREM group for creation of scientific activities for professional development of secondary schools teachers.

C.Kazantsev is the creator and animator of the mathematical club for motivated pupils aged from 8 up to 18 years. 10 meetings for about 20 pupils of 2 hours each have been organized on sunday morning during the year.

C.Kazantsev participated in the meeting "Espace Mathématique Francophone" EMF2018, Gennevilliers, October, 22-26, 2018. Presentation of animations and participation in the working group "Étude des processus de vulgarisation".

C.Kazantsev participated in the elaboration and planning of the permanent exposition of the "Salle de thé" group at the meeting IHP2020, 30 october, Institut Henri Poincaré, Paris.

9.3.4. Interventions

- National events:

  E. Arnaud, M. Nodet. (Se) tromper avec les chiffres. Colloque "Sciences et esprit critique, interroger les certitudes", Maison pour la sciences, Académie de Grenoble, 8 nov. 2018, Grenoble - intervention in a training days for teachers from Education Nationale

  M. Nodet facilitated a yearly math club with three secondary schools around Grenoble, aiming pupils to research open projects ("Math en Jeans" initiative)

  M. Nodet facilitated a workshop about "Math modelling, example with oceanography" for high school and secondary school teachers

  M. Nodet welcomed schoolchildren for short-time internship and offered a small workshop about oceanography

  E. Blayo gave several outreach talks, in particular for middle school and high school students, and for more general audiences.

  Ch. Kazantsev and E. Blayo are strongly involved in the creation of "La Grange des maths", a science popularization center that will be located in Varces (south of Grenoble), which will offer a huge variety of mathematical hands-on exhibits. See http://www.la-grange-des-maths.fr/

Ch. Kazantsev participated in the "Fête de la Science", Parvis de Sciences, October, 13.

Ch. Kazantsev participated in the "Fille et Maths" day, Decembre, 5, with the presentation of the "La Grange des Maths" center and its activities.

Ch. Kazantsev presented the exposition "La recherche se prend au jeu" at the "Culture and mathematical games Salon" by invitation of the Henri Poincaré Institute, Place St Sulpice, Paris, 24-27 May.

- Public exhibitions

    C.Kazantsev participated in the "Oriel des Maths" and in the "Forum des associations" with the presentation of the "La Grange des Maths" center and its activities. Varces, March, 11.

    C.Kazantsev participated at the "Raout de Domène" with the presentation of mathematical animations. Domene, September, 3.

    C.Kazantsev participated at the "Maths en ville" with the presentation of the "La Grange des Maths" center and its activities. Grenoble, November, 28.

- In educational institutions

    L. Debreu gave an introductary lecture on the finite element method at the Ecole des Pupilles de l'AIR (superior mathematics)

    C.Kazantsev presented mathematical animations to pupils of the Poussous scholl in Varces for about 80 children during 3 hours. Varces, March, 15.

9.3.5. Creation of media or tools for science outreach

C.Kazantsev participated in the edition of the Teachers notebooks which explain and advise how to use the "La Grange Suitcases" (sets of mathematical games, problems and animations) destined for primary and secondary schools teachers as well as for the general public.

C.Kazantsev participated in the creation of mathematical activities that can be autonomously used by schoolchildren of primary and secondary schools and by the general public.

E. Arnaud, in charge of the UGA Idex project math@uga : implementation of a collaborative moodle platform http://math.u-ga.fr to share pedagogical resources within teachers and towards students.

E. Arnaud, participation to UGA Idex projects Caseine and data@ugat

<p align="center" style="color:red">ANGE Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

- Y. Penel and J. Sainte-Marie organised (with E. Fernández-Nieto) the workshop "non-hydrostatic effects in oceanography " that took place at Sevilla univ. on 15-16th October and that gathered 35 international researchers [0].

- J. Sainte-Marie took part of the organization of the 6th EGRIN summer school that took place at Le Lioran from 18th to 21st of June and that gathered 40 researchers [0].

- J. Sainte-Marie took part of the organization of the Workshop COMMODORE "Community for the numerical modeling of the global, regional and coastal ocean" [0] (17-19/9/18).

- B. Haspot and Y. Penel organise the monthly ANGE seminar [0].

- J. Salomon co-organises the LJLL-Inria meetings [0] (twice a month).

- J. Salomon co-organised the minisymposium "Domain-decomposition methods for integral equation problems " at the 25th International Domain Decomposition Conference, DD XXV, in St. John's, Newfoundland, Canada, July 23-27, 2018.

- L. Boittin co-organises the Junior Seminar at Inria–Paris.

- M. Parisot and J. Salomon organise a workshop entitled "Scientific computing and optimisation processes for renewable energies" at Inria [0] on January 2018.

10.1.1. Journal

The summary of the reviewing activities of the team is given in the next table.

Member	Journal
Julien Salomon	CRAS, SIAM SISC
Cindy Guichard	J. Comp. Phys., J. Sci. Comp., CRAS, J. Comp. Math., Num. Math.
Jacques Sainte-Marie	M2AN, Computer and Fluids, Ocean Modelling, J. Comp. Phys., J. Sci. Comp. Adances in Comp. Math.
Martin Parisot	J. Hydraulic Research, Computers and Fluids, J. Comp. Phys., J. de Math. Pures et Appliquées
Vivien Mallet	ANR, Journal of Machine Learning Research
Edwige Godlewski	Sinum

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[0]https://team.inria.fr/ange/workshop-non-hydrostatic-effects-in-oceanography/
[0]https://indico.math.cnrs.fr/event/3345/overview
[0]https://commodore2018.sciencesconf.org/
[0]https://team.inria.fr/ange/gdt-slides/
[0]https://project.inria.fr/rencontresljll/fr/
[0]https://emrsim2018.sciencesconf.org/

10.1.2. Invited and contributed Talks

Conference	Location	Month	Members involved
Julien Salomon	7-th Parallel-in-time Integration Workshop (PinT 2018).	Roscoff, France	02-05/05/2018
Julien Salomon	25-th International Conference on Domain Decomposition Methods (DD25).	St-Johns, Canada	23-27/07/18
Julien Salomon	Séminaire du laboratoire de mathématiques Blaise Pascal.	Clermont-Ferrand, France	01/02/18
Julien Salomon	Séminaire du CMAP.	Palaiseau, France	15/5/18
Julien Salomon	Séminaire du Laboratoire J.-L. Lions	Paris, France	30/03/18
Julien Salomon	Séminaire du groupe d'analyse	Universität Konstanz	14/11/18
Fabien Wahl	Simulation et Optimisation pour les Energies Marines Renouvelables	Inria Paris	11/01/18
Fabien Wahl	GdT ANGE	Inria Paris	10/10/18
Fabien Wahl	EGRIN	Le Grand Lioran	18/06/18
Bilal Al Taki	Journée interne du LJLL	Paris diderot (P7)	05/04/18
Bilal Al Taki	Séminaire du laboratoire	Marseille	20/11/18
Frédéric Allaire	8th International Conference on Forest Fire Research (ICFFR)	Coimbra, Portugal	12-16/11/18
Virgile Dubos, Martin Parisot	Non-hydrostatic effects in oceanography	Séville, Espagne	15-16/10/18
Virgile Dubos	18th Spanish-French Sch. J-L. Lions, Num. Sim. in Phy. and Eng.	Las Palmas, Espagne	25-29/06/18
Cindy Guichard	rencontres Inria-LJLL en calcul scientifique	Paris	05/11
Cindy Guichard	Mini-symposium, CANUM	Cap d'Agde	29/05
Cindy Guichard	séminaire d'analyse numérique, CEA/DIF	Bruyères-le-Châtel	03/05/18
Cindy Guichard	journée interne du LJLL	Paris	05/04/18
Cindy Guichard	séminaire d'analyse numérique des EDP	univ. Orsay	22/03/18
Yohan Penel	Mini-symposium, CANUM	Cap d'Agde	29/05/18
Yohan Penel	GDR Manu (poster)	Roscoff, France	02/07/18
Yohan Penel	Workshop "non-hydrostatic effects in oceanography"	Séville, Espagne	16/10/18
Jacques Sainte-Marie	Plenary in " Free Surface Flows: from Hydrostatic to Non-Hydrostatic Models"	Saint-Malo	6/6/18
Jacques Sainte-Marie	Séminaire du laboratoire N. Oresme - université de Caen	Caen	12/02/18
Léa Boittin	GdT ANGE	Inria Paris	21/02/18
Léa Boittin	GTT LJLL	LJLL, Paris	30/1
Léa Boittin	CMWR XXII (poster)	Saint-Malo	04/06/18
Léa Boittin	EGRIN	Le Grand Lioran	18/6/18
Martin Parisot	Seminaire d'équipe LEMON	Montpellier	6/2/18
Martin Parisot	SIMAI-UMI Congres	Wroclaw, Poland	16-20/09/18
Martin Parisot	Séminaire du Laboratoire Jean Leray	Nantes	11/10/18
Martin Parisot	Conference Balance laws in fluid mechanics, geophysics, biology	Orléans	19-22/10/18
Martin Parisot	Séminaire "Math et Eau"	Montpellier	25/10/18
Martin Parisot	Colloque LEFE	Clermont-Ferrand	28-30/03/18
Martin Parisot	Workshop Non Hydro, Séville	Séville	10/18
Jacques Sainte-Marie	Séminaire du laboratoire de	Beyrouth université	19/12/2018

10.1.3. Leadership within the Scientific Community

Yohan Penel is a member of the Council Administration of SMAI (2015-2018).

10.1.4. Scientific Expertise

- Yohan Penel was rewiewer for the grant CNRS INSU LEFE
- Vivien Mallet was reviewer for ANR

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Member	Level	Institution	Duration	Type	Topic
J. Salomon	M2	Univ. Paris-Dauphine	15	CM	Cours de rentrée : méthodes numériques pour les EDP
J. Salomon	M2	Univ. Paris-Dauphine	30	CM	Méthodes numériques pour des modèles incluants des EDP
L. Lu	L1	SU	27.4	TD	Analyse et algèbre pour les sciences
B. Al Taki	L1	SU	36	TD	Analyse et algèbre pour les sciences
F. Allaire	L1	SU	38.5	TD	Calculus
V. Dubos	L3	Polytech Sorbonne	32	TP	Mathématiques appliquées
V. Dubos	M1	Polytech Sorbonne	14+22	CM+TP	Traitement numérique
V. Dubos	L3	Polytech Sorbonne	10	TP	Projet d'initiation
C. Guichard	M2	SU	22	CM+TD	Méthodes numériques
C. Guichard	M1	SU	58	TP	Fondements des méthodes numériques
C. Guichard	L3	SU	21	TP	Python
C. Guichard	M1	SU	18	CM	Mise en oeuvre de la méthode des éléments finis
B. Di Martino	L1	Univ. Corse	18	CM+TD	Techniques mathématiques et physiques pour les sciences de la vie
B. Di Martino	L2	Univ. Corse	72	CM+TD+TP	Analyse et TP Python Sage algèbre et analyse
B. Di Martino	L3	Univ. Corse	54	CM+TD+TP	Analyse numérique matricielle
B. Di Martino	M2	Univ. Corse	24	CM+TD+TP	Modélisation master Gestion Intégrée du Littoral et Valorisation Halieutique
Y. Penel	L2	SU	12	CM	Analyse vectorielle et intégrales multiples
Y. Penel	M1	Univ. Paris Descartes	37.5	CM+TD+TP	Modélisation déterministe en sciences du vivant
J. Sainte-Marie	M1	IPGP	40	CM	Modélisation des écoulements gravitaires
J. Sainte-Marie	M2	IPGP	30	CM et TP	Méthodes numériques, appli. géosciences
J. Sainte-Marie	M2	SU	20	CM	Méthodes numériques pour les systèmes hyperboliques Applications aux énergies renouvelables
N. Boulos	L1	Paris 13	48	TD	Mathématiques pour le parcours aménagé
L. Boittin	L3	SU	24,5	TD	Méthodes numériques pour les EDO
M. Parisot	L3	Polytech	46	CM+TP	Méthodes numériques

10.2.2. Supervision

Supervisor ANGE	Type	Name	Institution	Time	Title
JS	PhD	Sebastian Reyes-Riffo	Paris-Dauphine	2016-2019	Méthodes numériques pour les énergies marines renouvelables
JS, VM	PhD	Antoine Lesieur	Inria	2017-2020	Estimation d'état et modélisation inverse appliquées à la pollution sonore en milieu urbain
JS	PhD	Nadia Jbili	Paris-Dauphine	2016-2019	Contrôle optimal pour la résonance magnétique nucléaire
JS, JSM	PhD	Liudi Lu	Inria	2018-2021	Approches Lagrangiennes pour la modélisation et l'optimisation du couplage hydrodynamique-photosynthèse
JSM, VM	PhD	Frédéric Allaire	Inria	2017-2020	Quantification du risque incendie par méta-modélisation de la propagation de feux de forêt
YP, CG, JSM	PhD	Virgile Dubos	SU	2017-2020	Numerical methods for the elliptic/parabolic parts of non-hydrostatic fluid models
BDM, BH	Post Doc	Bilal AL Taki	Inria	09/17-12/18	Understanding and modeling the rheology of complex surface flow
NA, EA, MP	stage M2	Nelly BOULOS	Inria	04-08/2018	Analyse et simulation de modèles d'écoulement à surface libre intégrés selon la verticale
EA, MP, JSM, MOB	PhD	Léa Boittin	Paris 6	2015-2019	Modelling, analysis and efficient numerical resolution for erosion processes,
MP, NA, EA, MP	PhD	Nelly BOULOS	Paris 13	2018-2021	Modélisation et simulation numérique de la dynamique d'un acquifère érodable
VM	PhD	Ngoc Bao Tran Le	Inria	2016-2019	Uncertainty quantification based on model reduction for atmospheric dispersion
VM	Post Doc	Janelle Hammond	Inria	2017-2019	Uncertainty quantification, metamodeling and data assimilation applied to urban air quality
EA, MP,JSM	PhD	Léa Boittin	inria	2016-2019	Modelling, analysis and efficient numerical resolution for erosion processes

JS : J. Salomon, VM : Vivien Mallet, JSM : Jacques Sainte-Marie, YP : Yohan Penel, CG : Cindy Guichard, BDM : Bernard Di Martino, BH : Boris Haspot, NA: Nina Aguillon, EA : Emmanuel Audusse, MP : Martin Parisot, EG : Edwige Godlewski

10.2.3. Juries

Member	Date	Type (PhD, HdR)	role	Name	Institution	Title
JS	Novembre	PhD	rapporteur	Quentin Ansel	Univ. Dijon, TUM Munich	Optimal control ofinhomogeneous spin ensembles: Applications in NMR and Quantum optics
JS	Décembre	PhD	rapporteur	Pierre Terrier	ENPC, Université Paris-Est	Simulations numériques pour la prédiction de l'évolution microstructurale d'alliages ferritiques.Une étude de la dynamique d'amas.
JS	Décembre	PhD	rapporteur	Amina Benaceur	ENPC, Université Paris-Est	Réduction de modèles en thermique etmécanique non-linéaires
YP	Septembre	comité de mi-thèse	examinateur	Moustoifa Rafiou	Univ. Toulon	Modélisation et simulation numérique d'un écoulement à faible nombre de Mach. Application à un réacteur à eaux pressurisées.
JSM	Novembre	PhD	rapporteur	Nicolas Peton	IFPEN et univ. Paris-Saclay	Étude et simulation d'un modèle stratigraphique advecto-diffusif non-linéaire avec frontières mobiles
JSM	Janvier	PhD	président	Charles Demay	EDF et univ. Savoie Mont-Blanc	Modelling and simulation of transient air-water two-phase flows in hydraulic pipes
EG	mars	PhD	membre	Alexis Marboeuf	Ecole Polytechnique	Schémas ALE multi-matériaux totalement conservatifs pour l'hudrodynamique
EG	juillet	PhD	présidente	Camilla Fiorini	UVSQ	Analyse de sensibilité pour systèmes hyperboliques non linéaires
EG	octobre	PhD	présidente	Julie Llobell	UCA (Nice)	Schémas Volumes Finis à mailles décalées pour la dynamique des gaz
EG	novembre	PhD	présidente	Nicolas Cagnart	SU	Quelques approches non linéaires en réduction de complexité
EG	novembre	PhD	rapporteure	David Iampetro	AMU (EDF Saclay)	Contribution à la simulation

JS : J. Salomon, VM : Vivien Mallet, JSM : Jacques Sainte-Marie, YP : Yohan Penel, EG : Edwige Godlewski

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Julien Salomon is a member of the "Comité des usagers de la rue Barrault" in view of the move of Paris Inria Center to Rue Barrault.

10.3.2. Articles and contents

Julien Salomon wrote a vulgarization article "Décomposer et itérer pour résoudre un problème " for the CNRS website " Images des mathématiques " (12/2018)

10.3.3. Education

- Edwige Godlewski is the president of the "commission française pour l'enseignement des mathématiques" (CFEM)
- Jacques Sainte-Marie is a member of the "Groupe de travail : Recherche et développement durable" at the French Ministry of Research.

10.3.4. Interventions

- Julien Salomon took part of the "Salon Culture et Jeux mathématiques" - Stand AMIES (Paris, 24/05/18)
- Julien Salomon gave a talk at Waterford Kamhlaba United World College, Mbabane, Eswatini (Swaziland, 5/8/2018).
- Julien Salomon took part of "Fête de la science", and gave a talk at école rue st-Isaure, 18ème (Paris,11/10/2018)
- Léa Boittin 25/5/18 took part of the "Salon Culture et Jeux mathématiques" - Stand AMIES (Paris, 25/05/18)
- Vivien Mallet gave a talk "Bruit dans la ville", for the association "Versailles environnement initiative" (01/12/18)

10.3.5. Internal action

Julien Salomon gave talk (3.4.18) at the internal meeting "La demi-heure de science": "Décomposer et itérer pour résoudre un problème complexe, quelques exemples en calcul scientifique".

Anne Mangeney gave talk (4.9.18) at the internal meeting "La demi-heure de science": "Les ondes sismiques : une mine d'informations sur les risques naturels".

ARAMIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- S. Durrleman served as Program Chair for the eight International Workshop on Biomedical Image Registration (WBIR'18, Leiden, The Netherlands)
- F. De Vico Fallani served as Program Chair for the Network Neuroscience Satellite (NETSCI'18, Paris, France)
- F. De Vico Fallani served as Program Chair for the Brainhack Networks workshop (ICM, Paris, France)

10.1.1.2. Member of the Organizing Committees

N. Burgos co-organized the international workshop on Simulation and Synthesis in Medical Imaging (SASHIMI) 2018, a satellite workshop of MICCAI 2018.

S. Epelbaum was session co-chair at the Alzheimer Association International Conference in Chicago 14-18th July 2018

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- O. Colliot served as Program Committee member for the international conference SPIE Medical Imaging (Houston, USA, 2018) and for the international workshop PatchMI (Granada, Spain, 2018).
- F. De Vico Fallani served as Program Committee member for the following international conferences: NETSCI (Paris, 2018), Complex Networks (Cambridge, UK, 2018), ComplNet (Zaragoza, Spain, 2018)

10.1.2.2. Reviewer

- N. Burgos acted as a reviewer for the international workshops on Deep Learning in Medical Image Analysis (DLMIA) and on Simulation and Synthesis in Medical Imaging (SASHIMI).
- O. Colliot acted as a reviewer for the international conferences SPIE Medical Imaging, Annual meeting of the Organization for Human Brain Mapping (OHBM) and the international workshop PatchMI.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- S. Durrleman is associate editor of the journals: IEEE Transactions on Medical Imaging, and Neurons, Behavior, Data analysis, and Theory (NBDT)
- F. De Vico Fallani is associate editor of the journal PLoS One
- O. Colliot is a member of the Editorial Board of the journal Medical Image Analysis (Elsevier).
- S. Epelbaum is member of the editorial board for the "Médecine, Cognition et Vieillissement" Scientific Journal.

10.1.3.2. Reviewer - Reviewing Activities

- N. Burgos acted as a reviewer for IEEE Transactions on Medical Imaging; NeuroImage; Medical Image Analysis; Journal of Nuclear Medicine; IEEE Transactions on Radiation and Plasma Medical Sciences; IEEE Journal of Biomedical and Health Informatics; EJNMMI Physics; International Journal of Radiation Oncology, Biology, Physics; Sensors.

- Olivier Colliot acted as a reviewer for Medical Image Analysis, NeuroImage, NeuroImage: Clinical, IEEE Transactions on Medical Imaging.

- F. De Vico Fallani acted as a reviewer for IEEE TNRSE, Neuroimage, PLoS Comp Biol, PLoS One, Cereb Cortex.

- S. Epelbaum acted as a reviewer for Alzheimer's & Dementia, the Journal of Alzheimer's disease, Brain and BMJ Neurology.

10.1.4. Invited Talks

N. Burgos gave an invited lecture at the workshop on Machine Learning in Radiology in Lausanne, Switzerland, November 2018.

N. Burgos gave an invited presentation at the course "Pattern Recognition for Neuroimaging" at the Annual Meeting of the Organization for Human Brain Mapping, Singapore, June 2018.

O. Colliot gave an invited presentation at the Singapore-France Artificial Intelligence Workshop, Singapore, June 2018.

O. Colliot gave an invited presentation at the Netherlands-France "Erasmus-Descartes" Artificial Intelligence Workshop, Paris, France, November 2018.

S. Durrleman gave an keynote presentation at the MICCAI workshop ShapeMI (Shape in medical imaging), Granada, Septembre 2018, and an invited presentation at the Symposium on Multivariate analyses, Modelling and Machine Learning in Neuroimaging Research, University Paul Sabatier of Toulouse.

S. Epelbaum and S. Durrleman gave a plenary lecture at College de France for the colloquium "Imagerie médicale et apprentissage automatique : vers une intelligence artificielle ?"

F. De Vico Fallani gave invited lectures at CuttingEEG International conference (ICM, Paris, 2018)

F. De Vico Fallani gave a plenary lectures at Neurospin CEA Institute (Saclay, France)

10.1.5. Scientific Expertise

- Olivier Colliot is a member of the "Commission des emplois scientifiques" of the Inria Paris Center, in charge of evaluating applications for PhD fellowships, postdoc fellowships and secondments.

- Olivier Colliot acts as an expert for GENCI (the national facility for high-performance computing).

10.1.6. Research Administration

- S. Durrleman serves as the coordinator of the ICM Center for Neuroinformatics, and the scientific director of the iCONICS core facility on data management and analytics.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Olivier Colliot coordinates the course "Méthodes d'imagerie médicale" of the Master 2 in Computer Science of Sorbonne University.

Master: Olivier Colliot, Master in Computer Science, 4.5 hours (eqTD), Sorbonne University

Engineering school: Olivier Colliot, 3 hours (eqTD), Mines ParisTech

Medical school: Didier Dormont is the Director of the University Diploma (DIU) "Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Medical school: Didier Dormont, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Didier Dormont organizes and participates in the practical teaching of Neuroradiology for Medical Students in the Department of Diagnostic Neuroradiology of Pitié Salpêtrière University Hospital

Medical school: Didier Dormont organizes and participates in the practical teaching of Neuroradiology for Radiology Specializing Residents in the Department of Diagnostic Neuroradiology of Pitié Salpêtrière University Hospital

S. Durrleman, Geometrical approaches in Statistical Learning, 21 hours, Master 2 "Mathématiques, Vision, Apprentissage", ENS Paris Saclay, France.

Master: Stéphane Epelbaum, Master in Neuroscience, 4 hours (eqTD), Université Pierre et Marie Curie

Medical school: Stéphane Epelbaum gives lectures in Neurology on the topic of degenerative diseases for medical students of the UPMC (10 hours/year) and is regional supervisor of the national Inter University Diploma on Alzheimer's disease and Related disorders for Paris since 2015.

10.2.2. Supervision

PhD in progress : Giulia Bassignana, "Identification of driver nodes in biological networks", Inserm, started in 2017, advisors: Fabrizio De Vico Fallani, Olivier Colliot, Violetta Zujovic

PhD in progress : Tiziana Cattai, "Leveraging brain connectivity networks to detect mental states in brain-computer interfaces", Inria, started in 2017, advisor: Fabrizio De Vico Fallani

PhD in progress : Catalina Obando-Forero, "Graph models of cortical plasticity in temporal brain networks", Inria, started in 2015, advisor: Fabrizio De Vico Fallani

PhD in progress : Jeremy Guillon, "Méthode d'analyse multimodale de connectivités neuronales basée sur la théorie des réseaux complexes multicouches", Université Pierre et Marie Curie, started in 2015, advisors: Fabrizio De Vico Fallani and Mario Chavez

PhD Cifre in progress : Fanny Grosselin, "Fouille des données EEG et suivi longitudinal grande échelle pour le diagnostic et la prédiction du niveau de stress chez l'homme", EDITE Université Pierre et Marie Curie, started in 2016, advisors: Fabrizio De Vico Fallani and Mario Chavez,

PhD in progress : Junhao Wen, "Cortical morphometry for discovering new biomarkers of neurodegenerative diseases", Université Pierre et Marie Curie, Started in 2015, advisors: Olivier Colliot, Anne Bertrand and Stanley Durrleman

PhD in progress : Jorge Samper-Gonzalez, "Learning from heterogeneous data for prediction of Alzheimer's disease", Université Pierre et Marie Curie, Started in 2015, advisors: Olivier Colliot and Theodoros Evgeniou

PhD in progress : Alexandre Routier, "Multimodal neuroimaging for characterization of primary progressive aphasias", Université Pierre et Marie Curie, Started in 2015, advisors: Marc Teichmann, Olivier Colliot and Marie-Odile Habert

PhD in progress: Pascal Lu, "Machine learning from multimodal genetic and neuroimaging data for personalized medicine", Université Pierre et Marie Curie, Started 2016, advisor: O. Colliot

PhD in progress: Wen Wei, "Learning brain alterations in multiple sclerosis from multimodal neuroimaging data", Université de Nice Sophia-Antipolis, Started 2016, advisors: N. Ayache, O. Colliot and S. Durrleman

PhD in progress: Alexandre Bône, "Learning methods for the spatiotemporal analysis of longitudinal image data: application to the diagnosis, prognosis and monitoring of Alzheimer's disease", started 2016, advisors: O. Colliot and S. Durrleman

PhD in progress: Manon Ansart, "Automatic recommendation systems built on the statistical exploitation of longitudinal medical data sets", started 2016, advisors: D. Dormont and S. Durrleman

PhD in progress: Maxime Louis, "Learning spatiotemporal trajectories of iconic-geometric data sets", started 2016, advisors: S. Durrleman

PhD in progress: Igor Koval, "Construction of disease progression models from multimodal longitudinal data", started 2016, advisors: S. Allassonnière and S. Durrleman

PhD in progress: Raphael Couronné, "Spatiotemporal analysis of the progression of the Parkinson's Disease informed by multimodal longitudinal data", advisor: S. Durrleman

PhD in progress: Thomas Lartigue, "Mixture Models in Gaussian Graphical Models", advisors: S. Allassonnière and S. Durrleman

PhD in progress: Vianney Debavelaere, "Analysis of distribution of spatiotemporal trajectories in heterogeneous populations", advisors: S. Allassonnière and S. Durrleman

PhD in progress: Lou Albessard, "analyse de la covariation du crâne et de l'endocrâne dans le genre *Homo*", advisors: D. Grimaud-Hervé and S. Durrleman

PhD in progress: Johann Faouzi, "Machine learning approaches to predict impulse control disorders in Parkinson's disease", advisors: O. Colliot and J.-C. Corvol

PhD in progress: Simona Bottani, "Machine learning for differential diagnosis of neurodegenerative diseases from multimodal data", advisors: O. Colliot and N. Burgos

PhD in progress: Elina Thibeau–Sutre, "Unsupervised learning from neuroimaging data to identify disease subtypes in Alzheimer's disease and related disorders", advisors: D. Dormont and N. Burgos

PhD in progress: Federica Cacciamani, "Awareness for cognitive decline in the earliest stages of Alzheimer's disease", advisor: S. Epelbaum

10.2.3. Juries

- Olivier Colliot participated, as referee, to the PhD committee of Matthieu Van Houtte (University of Lille).
- Olivier Colliot participated, as examiner, to the HDR committee of Stanley Durrleman (Sorbonne University).
- Olivier Colliot participated to the progress report PhD committee of Ekaterina Kalinicheva (ISEP).
- S. Durrleman participated, as examiner, to the PhD committee of W. Huizinga at Erasmus University Rotterdam, The Netherlands.
- S. Durrleman participated, as co-supervisor, to the PhD committee of L. Albessard at Museum National d'Histoire Naturelle, Paris, France.
- Stéphane Epelbaum participated, as examiner, to the PhD committee of Benoît Souchet (CEA).
- Stéphane Epelbaum participated, as examiner, to the PhD committee of Adrien Julian (University of Poitiers).

10.3. Popularization

10.3.1. Articles and contents

- S. Durrleman's interviews were published in the magazines Le Point, Sciences et Avenir, Usine Nouvelle, Le Temps, revue Pharma, and were broadcasted on the radio France Culture. He published also an article in the special issue on artificial intelligence of the newspaper Libération.
- S. Durrleman did popularization presentations at Rotary Club Chamonix, Cercle des amis de l'ICM, and Salon de l'argus de l'assurance.
- F. De Vico Fallani did a popularization presentation at La Française - Investing group, Paris
- Olivier Colliot gave an interview for the TV channel France 5, for the program "Magazine de la Santé.
- Stéphane Epelbaum participated to multiple events dedicated to general audience outreach including: articles in journals (L'Express, Cerveau & Psycho, Sciences Avenir), Radio shows and podcasts (France inter: Grand Bien vous fasse, Figaro Live) and TV shows (Pourquoi docteur, Questions aux experts).

- The team contributed to the book "Le Grand Atlas du Cerveau" (Glénat).

10.3.2. Interventions

- O. Colliot gave a presentation to members of the German Bundestag, Paris, France, December 2018.
- Stéphane Epelbaum participated to a charity event at the Foire internationale d'Art Contemporain (FIAC) 2018 on the 20th of November 2018.

10.3.3. Internal action

- O. Colliot gave a presentation for the charity event ("Evènement solidaire" of Inria, September 2018.

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ATHENA Project-Team

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8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of Organizing Committees

- M. Clerc organized the "journées C@UCA" for Université Côte d'Azur in Fréjus, June 14-15, 2018.

8.1.2. Scientific Events Selection

8.1.2.1. Member of Conference Program Committees

- T. Papadopoulo is member of the Program Commitee of GRETSI 2019.

8.1.2.2. Reviewer

- M. Clerc serves several international conferences (ISBI, ICASSP, IEEE EMBS, IEEE NER).
- R. Deriche serves several international conferences (ISBI, MICCAI, ISMRM, ...) and international workshops (CD-MRI Miccai, MFCA Miccai...).
- T. Papadopoulo serves several international conferences (ICIP, ISBI, ICASSP, VISAPP).

8.1.3. Journal

8.1.3.1. Member of Editorial Boards

- M. Clerc is member of the Editorial Boards of the Journal of Neural Engineering, and of the journal Neurons, Behavior, Data and Theory.
- R. Deriche is member of the Editorial Board of the Journal of Neural Engineering, editorial board member at Springer for the book series entitled Computational Imaging and Vision and member of the Editorial Board of the Medical Image Analysis Journal

8.1.3.2. Reviewer - Reviewing Activities

- M. Clerc serves several international journals (Journal of Neural Engineering, NeuroImage, Physics in Medicine and Biology).
- R. Deriche serves several international journals (NeuroImage, IEEE Transactions on Medical Imaging, Magnetic Resonance in Medicine, Journal of Mathematical Imaging and Vision, Medical Image Analysis Journal, ...).
- T. Papadopoulo serves several international journals (IEEE access, Transactions on Pattern Analysis and Machine Intelligence, Frontiers in Neuroscience, Brain Topography, Transactions on Biomedical Engneering).

8.1.4. Invited Talks

- M. Clerc gave an invited talk at the ICM Colloquium, Paris, January 15, 2018.
- M. Clerc gave an invited talk at the ENS Data Science Colloquium, Paris, February 6, 2018.
- M. Clerc gave an invited talk at the SIAM Symposium on Imaging Sciences, Bologna, June 6, 2018.
- M. Clerc gave an invited talk at the Journées Scientifiques Inria, Bordeaux, June 27, 2018.
- M. Clerc gave an invited talk at the Colloque "Physique et Interrogations Fondamentales", Bibliothèque Nationale de France, Paris, Nov 10, 2018.
- M. Clerc gave an invited talk at the "Journées des Jeunes Mathématiciens et Jeunes Mathématiciennes", Orléans, Nov 29, 2018.

- R. Deriche gave an invited keynote speech at SPIE Medical Imaging,Houston, Texas United States (Feb. 12th, 2018).
- R. Deriche gave an invited keynote speech at EDITE ParisTech-Sorbonne Université, Paris (Dec. 10th, 2018).
- T. Papadopoulo gave an invited talk at "Inverse Problems: Modelling and Simulation", Malta (May, 2018) [20].

8.1.5. Leadership within the Scientific Community

- M. Clerc is the coordinator of the Inria Project-Lab BCI-LIFT.
- M. Clerc is on the board of the CORTICO association (Collectif pour la Recherche Transdisciplinaire sur les Interfaces Cerveau Ordinateur).
- R. Deriche is the P.I. of the ERC AdG COBCOM.

8.1.6. Scientific Expertise

- M. Clerc served Cordis-H2020 for FET-OPEN prosals evaluations.
- M. Clerc participated in an HCERES visiting commitee in November 2018 (CentraleSupélec).
- R. Deriche serves several international institutions in reviewing applications : ERC Grants, Swiss National Science Foundation, the Netherlands Organisation for Scientific Research (NWO).
- T. Papadopoulo served Cordis-H2020 for FET-OPEN prosals evaluations.

8.1.7. Research Administration

- M. Clerc was adjoint deputy director for Science of Inria Sophia Antipolis (until August 2018).
- M. Clerc was member of the Evaluation Committee of Inria (until August 2018).
- M. Clerc was member of the Commission Scientifique Interne of Inria (until August 2018).
- M. Clerc was vice-president of the CRCN Selection Committee in Inria Sophia Antipolis.
- M. Clerc was a member of the CRCN Selection Committee in Inria Grenoble.
- M. Clerc is member of the Scientific Council of Academy 4 of Université Côte d'Azur.
- M. Clerc is co-animator of a structuring program on Neurosciences at Université Côte d'Azur.
- R. Deriche is member of the Academic Council of UCA (Université Côte d'Azur).
- R. Deriche is member of the Scientific Council of Academy 2 *Complex Systems*, Université Côte d'Azur and member of the Scientific Council of Olea Medical Company (http://www.olea-medical.com/).
- T. Papadopoulo represents Inria at the Administration Council of the CIU Santé (till July 2018).
- T. Papadopoulo is member of the Software Development Committee at Inria.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: M. Clerc, Functional neuroimaging and data analysis, 36 ETD, MSc "Mod4NeuCog", Université Côte d'Azur, France.

Master: R. Deriche, Variational approaches and Geometrical Flows for Computational Brain Imaging, 36 ETD, M2 "Computational Biology and Biomedicine", Université Côte d'Azur, France.

Master: R. Deriche, Advanced Image Processing Techniques, 12 ETD, M1 International CBB & Ubinet, Université Côte d'Azur, France.

Master: T. Papadopoulo, *3D Computer Vision*, 12 ETD, M1 International Ubinet, Université Côte d'Azur, France.

Master: T. Papadopoulo, *Inverse problems for brain functional imaging*, 24 ETD, M2, Mathématiques, Vision et Apprentissage, ENS Cachan, France.

8.2.2. Supervision

PhD in progress: Thinhinane Megherbi, "HARDI & High Order Tensors", started Sept. 2011. Supervisors: Rachid Deriche & L. Boumghar (USTHB, Algiers)

PhD in progress: Abib Alimi, "Diffusion & PLI" started Nov, 1st, 2016, Université Côte d'Azur. Supervisor: Rachid Deriche.

PhD in progress: Matteo Frigo, "Structure & Function" started Nov, 1st, 2017, Université Côte d'Azur. Supervisor: Rachid Deriche.

PhD in progress: Isa Costantini, "Brain Connectomics" started Oct. 1st, 2016, Université Côte d'Azur.. Supervisor: Rachid Deriche.

PhD in progress: Kostiantyn Maksymenko, "Inverse problem in EEG/MEG/SSEG: towards a better consideration of anatomo-functional constraints", Université Côte d'Azur,, started Oct. 2016. Supervisors: Théodore Papadopoulo and Maureen Clerc.

PhD defended on Dec. 21st, 2018: Guillermo Gallardo Diez, "Connectivity-Based Brain Parcellation", started Nov. 2015, Université Côte d'Azur. Supervisors: D. Wassermann and R. Deriche

PhD defended on Dec. 11th, 2018: Nathalie Gayraud, "Structured Dictionary Learning", Université Côte d'Azur, started November 2015. Supervisor: Maureen Clerc.

PhD in progress: Federica Turi, "User-adapted Brain Computer Interaction", Université Côte d'Azur, started October 2016. Supervisor: Maureen Clerc.

PhD in progress: Sara Sedlar, "Reconstruction and analysis of dynamical functional networks from EEG, MEG and dMRI measurements", Université Côte d'Azur, started October 2018. Supervisors: Théodore Papadopolo and Maureen Clerc.

PhD in progress: Ivana Kojcic, "Estimation of cortical activity and of the structure–function link using EEG and dMRI", Université Côte d'Azur, started October 2018. Supervisors: Théodore Papadopolo and Samuel Deslauriers-Gauthier.

8.2.3. Juries

- M. Clerc participated as a reviewer in the HDR jury of Denis Schwartz at Sorbonne Université, Paris on November 7. 2018.

- M. Clerc participated as a reviewer in the PhD jury of Fardin Afdideh, Université Grenoble Alpes on October 12, 2018.

- M. Clerc participated as a reviewer in the PhD jury of Aldo Mora Sanchez at Sorbonne Université, Paris on November 19, 2018.

- M. Clerc participated in the PhD jury of Yousra Bekhti at Telecom ParisTech on March 22, 2018.

- M. Clerc participated in the PhD jury of Tom Dupré Latour at Telecom ParisTech on November 26, 2018.

- M. Clerc participated in the PhD jury of N. Gayraud at Université Côte d'Azur on December 11, 2018.

- R. Deriche participated as a reviewer in the HDR jury of G. Varoquaux at UPMC, Paris on May 23, 2018.

- R. Deriche participated in the HDR jury of D. Tschumperle at GREYC Ecole Nationale Supérieure d'Ingénieurs de Caen, Oct. 3, 2018.

- R. Deriche chaired the PhD jury of Lorenza Brusini at Università di Verona on April 19th, 2018.

- R. Deriche participated as a reviewer in the PhD jury of Chendi Wang at the University of British Columbia - Vancouver, CA on May 2018.

- R. Deriche participated in the PhD jury of G. Gallardo at Université Côte d'Azur on Dec. 21, 2018.

8.3. Popularization

8.3.1. Interventions

- M. Clerc participated in the Brain Awareness Week with a talk about Brain Computer Interfaces at CHU Nice Pasteur, March 16 2018.
- M. Clerc participated in the Brain Awareness Week with a talk about Music and the Brain at Villa Arson, Nice, March 17 2018.
- M. Clerc, T. Papadopoulo, F. Turi and R. Lacroix participated in the Fête de la Science with a BCI demo where the general public could test a P300 speller system.

<div align="center">**BEAGLE Project-Team**</div>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Guillaume Beslon co-organized a symposium on "in vivo, in vitro, in silico experimental evolution" during the World Evolution conference. Montpellier, August 2018.

9.1.1.2. Member of the Organizing Committees

- Hugues Berry was a member of the Local Organizing committee of MedInfo2019 (https://medinfo-lyon.org/)
- Eric Tannier was a member of the local Organizing committee of ICGT 2018 (https://projet.liris.cnrs.fr/~icgt2018/)
- Eric Tannier was a member of the local Organizing committee of RECOMB 2018 (http://recomb2018.fr/)
- Anton Crombach is a member of the organizing and scientific committee of the "Advanced Lecture Course on Computational Systems Biology", in Aussois, March 2019. Also,
- Anton Crombach is a member of the organizing committee of "Mathematical Models in Ecology and Evolution", that will take place in Lyon, July 2019.
- Guillaume Beslon served as a member of the Organizing Committee of ICSB (International Conference on Systems Biology), Lyon, October 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Christophe Rigotti was a member of the program committee of the 34rd ACM Symposium On Applied Computing.
- Eric Tannier was a member of the program committee of RECOMB Comparative Genomics
- Eric Tannier was a member of the program committee of ISMB

9.1.2.2. Reviewer

- Eric Tannier reviewed 3 conference articles for Recomb-CG, 3 conference articles for ISMB

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- H. Berry: Associate Editor for PLoS Computational Biology
- Eric Tannier : Recommender for Peer Community in Evolutionary Biology
- Eric Tannier : guest editor for a special issue of Discrete Mathematics and Theoretical Computer Science
- Carole Knibbe and Guillaume Beslon are guest editors for a special issue of the Artificial Life journal, in preparation.

9.1.3.2. Reviewer - Reviewing Activities

- Anton Crombach has reviewed two articles for Nature Communications and a book proposal for Springer-Verlag.

- Eric Tannier has reviewed articles fo Bioinformatics, Bulletin of mathematical biology, PeerJ, Genome biology and evolution, a book chapter for a book on genome evolution,

9.1.4. Invited Talks

- H. Berry - May 2018: Stochastic simulations of calcium signaling in fine astrocytic processes: spatial properties, invited talk at the workshop "Modelisation Stochastique en Biologie", Tours
- H. Berry - Nov 2018: "Modelling the signaling pathways of neuronal plasticity", invited talk at the 10ème journée ITMO Technologies pour la Santé, Strasbourg.
- E Tannier, December 2018: "Gene transfers can date the tree of life" Lille
- Eric Tannier, August 2018: "Treerecs: a fast and easy to use phylogenetic reconciliation software", for the "Software in phylogenomics" workshop, satellite of Evolution 2018, in Montpellier.
- Eric Tannier, February 2018: "Comparative Genomics on artificial life", ALPHY 2018, Montpellier
- Guillaume Beslon gave an invited Keynote at the 10th Symposium on Seach-Based Software Engineering (Montpellier, September 2018)
- Guillaume Beslon gave an invited Keynote at the First International TRANSIT workshop on Cross-disciplinary Research (TWCR 2018). York (UK), April 2018.
- Guillaume Beslon gave an invited conference for the Systems Biology research group, Université Pierre et Marie Curie, Paris, May 2018.

9.1.5. Scientific Expertise

- Guillaume Beslon was a member of the ANR CES45 panel (Mathématique, informatique, automatique, traitement du signal pour répondre aux défis de la biologie et de la santé)

9.1.6. Research and Teaching Administration

- Hugues Berry is Inria's Deputy Scientific Director for the field "Digital Health, Biology and Earth" and has been:
    - Inria's representative on the board of Aviesan
    - Conseiller Scientifique, ITMO Technologies pour la sante
    - Member of the Working Group for the prefiguration of the French Health Data Hub
    - Member of the Comité d'Orientation Scientifique et Stratégique, Institut Français de Bioinformatique (IFB)
    - Memnber of the Comité Directeur of GIS IBISA
    - Member of the Comité des Tutelles for INBS France Life Imaging, FranceBioImaging
    - Member of the steering committee for the Action de Recherche Prospective "Biologie Predictive" of INRA
    - Member of the "Commission des thèses" of the Doctoral School "Info-Maths" (ED 512)
    - Member of the Steering Commitee of GdR IMaBIO (Imagerie et Microscopie pour la BIOlogie, http://imabio-cnrs.fr)
- Eric Tannier is
    - Member of the committee for Open Science, Ministry of Research
    - Member of the Administration Council of Inria
    - Member of the scientific Committee of the Ethics Platform of Université de Lyon
    - Member and founder of the scientific committee of the GTGC (National Working group on Comparative Genomics)
- Guillaume Beslon is a member of the IRD Commission Scientifique Sectorielle 5 (CSS5, Science des données et des modèles). He served as a president of the hiring committee for a position of Chargé de Recherche number 12.

- Christophe Rigotti is an elected member of Insa Scientific board (Conseil Scientifique)
- Carole Knibbe is
    - Member of the Doctoral Studies Committee of Inria Grenoble-Rhone Alpes
    - Head of the Bioinformatics and Modeling master program of INSA-Lyon Since Sept 2017

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Audrey Denizot, enzymology and cellular biology, 64h, INSA Lyon

Licence: Christophe Rigotti, Object-Oriented Programming and Graphical User Interfaces, 86h, L2, Department 1er cycle of INSA-Lyon.

Licence: Christophe Rigotti, Simulation of Chemical Reactions, 26h, L2, Department 1er cycle of INSA-Lyon.

Licence: Christophe Rigotti, Numerical Modelling for Engineering, 60h, L2, Department 1er cycle of INSA-Lyon.

Master: Christophe Rigotti, Data Mining, 25h, M1, Bioinformatics and Modeling Department of INSA-Lyon.

Master: Eric Tannier, Bioinformatics, 12h INSA Lyon

Master: Eric Tannier, Bioinformatics, 12h M2 UCBL Lyon

Master: Eric Tannier, Ethique de la recherche, 2h, Lille

Licence: C. Knibbe, Fundamentals of algorithmics and programming, 80 heqTD, L3, Bioinformatics and Modelling program of INSA-Lyon

Licence: C. Knibbe, Architecture of computer systems, 19 heqTD, L3, Bioinformatics and Modelling program of INSA-Lyon

Licence: C. Knibbe, Software development, 32 heqTD, L3, Bioinformatics and Modelling program of INSA-Lyon

Licence: C. Knibbe, HTML/CSS, 4 heqTD, L3, Bioinformatics and Modelling program of INSA-Lyon

Master: C. Knibbe, Careers in bioinformatics and modelling, 20 heqTD, M1, Bioinformatics and Modelling program of INSA-Lyon

License: Jonathan Rouzaud-Cornabas, Object-Oriented Programming, 64h, L3, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, Advanced Operating System Programming, 64h, M1, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, Graphical User Interfaces, 64h, M1, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, High Performance Computing, 84h, M2, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, High Performance Computing, 84h, M2, Bioinformatics and Modeling Department, INSA de Lyon

CNRS GDR Calcul: Jonathan Rouzaud-Cornabas, High Performance Computing, 6h, CNRS

E-learning

Eric Tannier was in the pedagogical team of a Mooc "Ethique de la Recherche", for Ph-D students in France. 4000 participants. He participated to 2 introductory videos (7min).

9.2.2. Supervision

PhD in progress : Vincent Liard, Towards a quantitative digital genetics platform, INSA-Lyon, started Oct 2016, co-supervision: G Beslon, J Rouzaud-Cornabas, C Ofria (Michigan State University, BEACON Center

PhD : Tuan Nguyen, Handling data quality in extraction and selection of evolutions from displacement field time series obtained by satellite imagery, at LISTIC laboratory of University Grenoble Alpes co-supervised by C. Rigotti, defended 10 October 2018.

PhD in progress : Audrey Denizot Simulating calcium signaling in fine astrocytic processes, september 2016, Hugues Berry

PhD in progress : Theo Tricou, Lateral Gene Transfer as a document from extinct and unknown species, 2018-2020 Eric Tannier (50%)

PhD in progress : Alexandre Laverré, cross-influence between gene regulatory landscape and 1D-3D genome organization 2018-2020, Eric Tannier (40%)

M2 student Alexandre Laverré (Eric Tannier)

M1 student Adrien Stadler (Hugues Berry)

M2 student Elisa Denier (Eric Tannier)

M1 student Yvan Cluet (Anton Crombach)

M1 student Damien Agopian (Carole Knibbe)

9.2.3. Juries

- Hugues Berry- HDR: Samuel Bottani, Univ Denis Diderot, Paris, Nov 2018 (reviewer)
- Hugues Berry- PhD: Yi Cui, Univ Descartes, Paris, Dec 2018 (reviewer)
- Hugues Berry- PhD: Franziska Oschmann, TU Berlin, Oct 2018 (reviewer)
- Hugues Berry- search pannel: two assistant professor positions (Univ. Pierre et Marie Curie, INSA Lyon)
- Anton Crombach - tutor on the thesis committee of Elise Parey, IBENS, ENS Paris.
- Guillaume Beslon served as a member of the defence committee for the HDR of Alexandre Muzy. Nice, October 2018.
- Jonathan Rouzaud-Cornabas - Associate Professor Recruitment - Université de Toulouse

9.3. Popularization

9.3.1. Interventions

- Eric Tannier gave a series of four lectures at the Université Populaire de Lyon, on "science and democracy".
- Eric Tannier participated to a round table on scientific communication for the BMIC days, november 2018.
- Audrey Denizot has participated in the organization and animation of activities for children about research during the event "Dans la blouse d'un chercheur" in ENS de Lyon. More specifically, she worked on a project aiming at explaining to children what microbes are, where they are and if/when you should worry about them and what is immunodeficiency. She made a small movie about it.
- Audrey Denizot is a member of a public outreach association : DéMesures. She is in charge of collaborations with external entities, including laboratories, museums and artists collectives. Website: https://demesures.jimdo.com/ Facebook: https://www.facebook.com/DMesures/ Twitter: https://twitter.com/DMesures Radio podcasts: https://demesures.jimdo.com/radio-1/radio-brume/ Interviews are available on our YouTube channel: https://www.youtube.com/channel/UCIn3CucWk1mLgbzE0noO2Iw

- National events: Audrey Denizot organized several events including Fête de la Science 2017 and 2018 and A Nous de Voir 2018, as well as conducted projects such as radio podcasts on science/society topics, interviews of researchers, projects mixing Science and Art.

9.3.2. Creation of media or tools for science outreach

- In collaboration with Sylvain Charlat (LBBE, Lyon), we developed game to present the effect of random mutations on evolution to young children. The "GreenMice" game has been presented to the general public in the "Maison des Mathématiques et de l'Informatique" during the exhibition "Comme par hasard".

BIGS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

A. Gégout-Petit is ETC program coordinator of the European Meeting of Statisticians, Palermo, July 2019.

9.1.1.2. Reviewer - Reviewing Activities

All BIGS members are regular reviewers for journals in probability, statistics and machine learning as: Bernoulli, Scandinavian Journal of statistics, Stochastics, Journal of Statistical Planning Inference, Journal of theoretical Biology, IEEE Trans. Biomedical Eng., Theoretical Biology and Medical Modelling, Royal Society of Chemistry, Signal Processing: Image Communication, Mathematical Biosciences, LIDA, Annals of Applied Probability, Annals of Operations Research and Journal of Machine Learning Research, as well as conferences such as ICML, World IFAC Congress, FOSBE, ALCOSP...

9.1.2. Leadership within the Scientific Community

Anne Gégout-Petit is member of the board of the European Regional Council of the Bernoulli society.

9.1.3. Research Administration

Anne Gégout-Petit is member of "Bureau du comité des projets", centre Inria Nancy Grand-Est.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

R. Azaïs and B. Scherrer excepted, BIGS members have teaching obligations at "Université Lorraine" and are teaching at least 192 hours each year. They teach probability and statistics at different level (Licence, Master, Engineering school). Many of them have pedagogical responsibilities.

9.2.2. Supervision

- PhD : Clémence Karmann, "Network inference for zero-inflated models", Grant : Inria-Cordis. Advisors: A. Gégout-Petit, A. Muller-Gueudin.
- PhD : Florine Greciet, "Modèles markoviens déterministes par morceaux cachés pour la propagation de fissures", grant CIFRE SAFRAN AIRCRAFT ENGINES, Advisors : R. Azaïs, A. Gégout-Petit.
- PhD : Kévin Duarte, "Aide à la décision médicale et télémédecine dans le suivi de l'insuffisance cardiaque", Advisors : J.-M. Monnez and E. Albuisson.
- PhD : Pauline Guyot, "Modélisation et Simulation de l'Electrocardiogramme d'un Patient Numérique", Grant : CIFRE-Cybernano. Advisors: T. Bastogne, E. H. Djermoune.
- PhD: Nassim Shaki, "Détection de rupture dans des signaux multivariés pour la prédiction d'événement redouté à partir de paramètres physiologiques recueillis par capteurs connectés après greffe pulmonaire", grant Inria-Cordis. Advisors: A. Gégout-Petit, S. Mézières, M. d'Ortho.
- Benoît Lalloué, contract research engineer for two years, RHU Fight RF, supervised by Jean-Marie Monnez.
- Postdoc: Lionel Lenôtre, Telomer Modelling, grant LUE GEENAGE. Advisors: A. Gégout-Petit, D. Villemonais.
- Since October 15, 2018, Jean-Marie Monnez supervises the work in RHU Fight.

- Master: all BIGS members regularly supervise project and internship of master IMOI students.
- Engineering school: all BIGS members regularly supervise project of "Ecole des Mines ", ENSEM or EEIGM students.

9.2.3. Juries

- T. Bastogne participated to the jury of the Phd defense of Julie Kabil, Universite´ Lorraine, January 2018.
- A. Gégout-Petit participated to the jury of the Phd defense of Neska El Haouij, Université de Paris-Saclay, July 2018.
- A. Gégout-Petit participated to the jury of the Phd defense of Lucien Bacharach, Université de Paris-Saclay, September 2018.
- A. Gégout-Petit was reviewer and participated to the jury of the Phd defense of Maxime Redondin, Université Paris-Est, December 2018.
- A. Gégout-Petit participated to the jury of the Phd defense of Aurélie Marton, Université Lorraine, December 2018.
- A. Gégout-Petit was reviewer and participated to the jury of the HDR defense of Frédéric Bertrand, Université de Strasbourg, December 2018.
- JM Monnez was advisor and participated to the jury of the PhD defense of Kévin Duarte, December 2018.
- Bruno Scherrer was reviewer and participated to the jury of the Phd defense of Anna Harutyunyan, at Vrije Universiteit, Bruxelles, March 2018.

9.3. Popularization

- S. Ferrigno: Advisor of a group of students (EEIGM), "La main à la Pâte" project, elementary schools, Nancy, January-June 2018
- S. Ferrigno: Advisor of a group of students (EEIGM), "La main à la Pâte" project, Institut médico-éducatif (IME), Commercy, September-December 2018
- S. Ferrigno: Advisor of a group of students (EEIGM), "Utilisation de la technologie dans la médecine" Cgénial project, Collège Paul Verlaine, Malzéville, December 2018-February 2019.
- S. Ferrigno: Advisor of a group of students (EEIGM), "Le cartable connecté" Cgénial project, Collège de la Craffe, Nancy, December 2018-February 2019.

<h1 style="text-align:center; color:red;">BIOCORE Project-Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

O. Bernard is the Co-Chair of the next Dycops-CAB conference (CAB 2019 Florianópolis, Brazil, 23-26 April).

M. Chaves is organizing co-chair for the International Symposium on Molecular Logic and Computational Synthetic Biology (Santiago Chile, 17-18 December, 2018).

10.1.1.2. Member of the Organizing Committees

M. Chaves is part of the organizing committee for the Summer School on "Modélisation formelle des réseaux de régulation biologique" (Porquerolles, France, June 2019).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

O. Bernard is in the technical committee of the Computer Applied to Biotechnology (CAB) conferences, of the conference Foundations of Systems Biology in Engineering (FOSBE) and of the Algae Europe conference.

M. Chaves is a member of the program committee of Journées ouvertes de biologie informatique et mathématiques (JOBIM 2018, Marseille, France, 3-6 June; JOBIM 2019, Nantes). She is in the program committee of Foundations of Systems Biology in Engineering (FOSBE 2019).

J.-L. Gouzé is a member of the program committee for the International Conference on Positive Systems (POSTA 2018, Hangzhou, China, 25-27 August).

10.1.2.2. Reviewer

All BIOCORE members have been reviewers for the major 2018 conferences in our field: CDC, ECC, IFAC World Congress,...

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

M. Chaves is an Associated Editor of SIAM Journal on Applied Dynamical Systems (SIADS), since January 2015

S. Touzeau is an Academic Editor of PLOS ONE since August 2018

10.1.3.2. Reviewer - Reviewing Activities

All BIOCORE members have been reviewers for the major journals in our field: Automatica, IEEE Transactions on Automatic Control, Journal of Mathematical Biology, Mathematical Biosciences, New Phytologist,...

10.1.4. Invited Talks

O. Bernard was invited to give a conference on microalgae at Ecole Centrale de Paris ("Biotechnological challenge") "Use of microorganisms for biofuel production" (January, 16th, 2018).

O. Bernard was invited to give a conference at the PROMES Laboratory for solar ernergy (Odeillo) "Purple Sun-sharing photons between semi transparent PV panels and microalgae production" (July, 13rd, 2018).

M. Chaves and J. Roux gave a paired presentation on modeling heterogeneity in cell-death drug response at the group UCancer (a UCA structuring project) (December 2018).

M. Chaves gave a Colloquium at the Department of Mathematics at Universidade de Aveiro, Portugal (June 2018).

10.1.5. Other Selected Talks

M. Chaves gave a presentation on ANR project ICycle at the workshop ComplexDays, organized by Université Côte d'Azur (January 2018).

J.-L. Gouzé gave a talk at the SFBT meeting (St Flour, June 2018).

L. Chambon participated at the Workshop MOMI 2018 on the 26th and 27th of February, organised by Inria in Sophia-Antipolis about Mathematics in industry, where she presented a poster of her research. On the 18th and 19th of June, she presented a poster at the "Modelife Days" of the UCA Jedi Idex Core program "Modeling, physics and mathematics of living systems" in Nice.

10.1.6. Scientific Expertise

O. Bernard is a member of the scientific committee of the companies Inalve and BioEnTech.

J.-L. Gouzé was in several evaluation committees or juries: FWO, NWO, FNRS...

S. Touzeau evaluated a project for the "Centre d'excellence africain en Mathématiques, Informatique et Technologies de l'Information et de la Communication" (CEA-MITIC), Senegal.

10.1.7. Research Administration

O. Bernard represents Inria at the ANCRE (Alliance Nationale de Coordination de la Recherche pour l'Energie).

O. Bernard is a member of the ADT (Technological Development Actions) commission at Inria.

M. Chaves is a member of the COST-GTRI (working group on International Relations at Inria's council for scientific and technological orientation). The group is charged with evaluating Inria's Associated Teams.

M. Chaves is a member of the CLHSCT of Inria Sophia Antipolis (local committee for the safety of working conditions).

M. Chaves is in the Pedagogical Committee of the Master "Quantitative and Computational Sciences for Biomedical data", Université Côte d'Azur.

J.-L. Gouzé is in the Inria committee supervising the doctoral theses, and a member of the scientific committee of Labex SIGNALIFE of the University of Nice-Sophia-Antipolis, and of COREBIO PACA. He is in the scientific committee of Académie 4 of UCA-Jedi. He is a member of the board of the SFBT (French Speaking Society for Theoretical Biology).

F. Grognard is a member of the NICE committee, which allocates post-doctoral grants and fundings for visiting scientists at Inria Sophia Antipolis. He is a member of the scientific committee of the doctoral school "Sciences de la Vie" at the University of Nice-Sophia Antipolis.

Since 2015, F. Grognard is a member of the MBIA CSS (Specialised Scientific Commission), in charge of the research scientists evaluation at INRA. He is a member of the steering committee of Academy 3, Space, Environment, Risk & Resilience of UCA-JEDI. He is co-responsible of the development of the MSc Risk of UCA-JEDI.

L. Mailleret is the head of the M2P2 team (Models and Methods for Plant Protection) of ISA. He's in the Unit and scientific council of Institut Sophia Agrobiotech.

S. Touzeau is a member of the steering committee of the metaprogramme SMaCH *Sustainable Management of Crop Health*, INRA (since 2016).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: F. Grognard (45.5h ETD) and L. Mailleret (26h ETD), "Equations différentielles ordinaires et systèmes dynamiques", L3, 1st year Engineering in Modeling and Applied Mathematics, Polytech Nice Sophia, Université Nice Sophia Antipolis, France.

Master: O. Bernard (4.5h ETD), "Bioenergy from microalgae", M2, Master International Energy Management : alternatives pour l'énergie du futur, Ecole Nationale Supérieure des Mines de Paris, France.

Master: O. Bernard (18h ETD), "Modeling biotechnological processes", M2, Ecole CentraleSupelec, Saclay, France.

Master: F. Grognard (21h ETD) and L. Mailleret (21h ETD), "Bio-Mathématiques", M1, 2nd year Engineering in Modeling and Applied Mathematics, Polytech Nice Sophia, Université Nice Sophia Antipolis, France.

Master : J.-L. Gouzé (18h ETD), M. Chaves (12h ETD) "Modeling biological networks by ordinary differential equations", M1, 2nd year Engineering in Génie biologique, Polytech Nice Sophia, Université Nice Sophia Antipolis, France.

Master: S. Touzeau (27h ETD), "Analyse de données", M1, 2nd year Engineering in Génie biologique, Polytech Nice Sophia, Université Nice Sophia Antipolis, France.

10.2.2. Supervision

HdR : L. Mailleret. Modélisation et contrôle en dynamiques de populations. Applications en protection des plantes, 16 February 2018, Université Côte d'Azur.

PhD : S. Almeida. "Synchronization of biological oscillators: modeling, analysis and coupling of the mammalian cell cycle and circadian clock", 17 December 2018, Université Côte d'Azur. Supervisors: M. Chaves and F. Delaunay (Univ. Nice, iBV).

PhD : M. Caïa, "Characterization and modeling of a mixotrophic algae - bacteria ecosystem for waste recovery", 13 December 2018, Université Montpellier. Supervisors: J.-P. Steyer and O. Bernard.

PhD : C. Lopez-Zazueta. "Réduction dynamique de réseaux métaboliques par la théorie des perturbations singulières : application aux microalgues", 14 December 2018, Université Côte d'Azur. Supervisors O. Bernard and J.-L. Gouzé.

PhD : V. Burte. "Étude des stratégies de mouvement chez les parasitoïdes du genre Trichogramma : apports des techniques d'analyse d'images automatiques", 14 December 2018, Université Côte d'Azur. Supervisors V. Calcagno et L. Mailleret.

PhD in progress : M. Haond. "Causes et conséquences des fronts de colonisation poussés", since October 2015, Univ. Nice Sophia Antipolis. Supervisors: E. Vercken (UMR ISA), L. Mailleret and L. Roques (UR BioSP).

PhD in progress : L. Chambon. "Control of models of genetic regulatory networks", since October 2016, Université Côte d'Azur. Supervisor J.-L. Gouzé.

PhD in progress : L. Pereira. "Experimental and computational approaches to understanding the molecular origins of drug response heterogeneity, underlying resistance to cancer therapies", since October 2016, Université Côte d'Azur. Supervisors: M. Chaves and J. Roux (IRCAN, Nice).

PhD in progress: M. Gachelin, "Selection pressure to improve lipid productivity of microalgae", since March 2017, Sorbonne Université. Supervisors: O. Bernard and A. Sciandra.

PhD in progress : E. Firippi. "Mathematical analysis, control design and coupling for models of biological oscillators", since October 2017, Université Côte d'Azur. Supervisor: M. Chaves.

PhD in progress: A. Yabo, "Control and optimal control of bacterial growth", since October 2018, Université Côte d'Azur. Supervisors J.-L. Gouzé and J.-B. Caillau (McTao).

PhD in progress: A. Dos Reis de Souza, "Estimation and Control Methods for Microbial Communities", since October 2018, Université de Lille. Supervisors: J.-L. Gouzé and D. Efimov (Valse, Inria Lille).

PhD in progress: S. Nilusmas, "Gestion durable des nématodes à galles en cultures maraîchères : modélisation et optimisation du déploiement des résistances et des pratiques agronomiques", Université Côte d'Azur, since December 2016. Supervisors: S. Touzeau, C. Caporalino (ISA), V. Calcagno (ISA) and L. Mailleret.

PhD in progress: I. Tankam Chedjou, "Modeling, analysis and control of plantain plant-parasitic nematodes", University of Yaoundé 1, since December 2015. Supervisors: J.-J. Tewa, F. Grognard, L. Mailleret, S. Touzeau.

PhD in progress: Y. Fotso Fotso, "Modeling, analysis and control of coffee berry borers", University of Dschang, since January 2017. Supervisors: S. Bowong, B. Tsanou, F. Grognard, L. Mailleret, S. Touzeau.

10.2.3. Master thesis and internships

PFE: Adrien Boudin, "Controle optimal des ressources dans une cellule", EPU MAM, supervisors J.-L. Gouzé et JB. Caillau (McTao).

Engineer: Bruno Assis Pessi, "Modeling microalgal growth under a greenhouse", Ecole CentraleSupelec, supervisor O. Bernard.

M2: Jenna Balaguer, "Effect of background turbidity on microalgae growth", Sorbonne Université, supervisor O. Bernard.

M2: Jean-Baptiste Excoffier, "Modélisation in silico de médicaments, et personnalisation des traitements", Université Côte d'Azur, supervisors J.-L. Gouzé and F. Dayan (Exactcure).

M2: Pauline Clin, "Résistance systémique acquise, mélanges variétaux et épidémiologie évolutive des interactions plantes-pathogènes", Université de Rennes 1, supervisors F. Grognard and F. Hamelin (Agrocampus Ouest).

M1: David Davtian, "Modélisation multi-agent pour l'étude et l'optimisation des introductions biologiques", Université Côte d'Azur, supervisors L. Mailleret and F. Grognard.

M1: Thomas Brenière, "Physiologie de la plante attaqué par les nématodes: Modélisation et expérimentation", INSA Lyon, supervisors V. Baldazzi and C. Djian-Caporalino (ISA, INRA Sophia Antipolis).

Other: O. Bernard supervised a project involving 4 students from CentraleSupelec (first year of engineering school), 4 months, to design a system for detecting contamination in microalgae cultures.

10.2.4. Juries

V. Baldazzi and L.Mailleret participated in the thesis comitee of Marta Zaffaroni (INRA Avignon) in October 2018.

O. Bernard was reviewer for the PhD thesis of G. Jeanne "Optimization of bioprocess design: towards an intergated approach synthetic biology and process control". University Paris-Saclay (27 Sept. 2018).

M. Chaves was member of the jury for the PhD thesis of Sofia Almeida, December 2018.

J.-L. Gouzé and O. Bernard were in the jury of the PhD of Claudia Lopez Zazueta "Réduction dynamique de réseaux métaboliques par la théorie des perturbations singulières : application aux microalgues." Université Côte d'Azur, December 14, 2018.

J.-L. Gouzé was reviewer of the PhD of Hongjun Ji "Systèmes dynamiques coopératifs appliqués en biologie", Sorbonne Université, October 11, 2018.

S. Touzeau was the external examiner of Rebecca Bekker's MSc thesis in Applied Mathematics "Mathematical models of the epidemiological dynamics of soil-borne pathogens", University of Pretoria, South Africa, 2018.

S. Touzeau was a member of the selection committee MC 25–26 "Analyse des EDP pour la dynamique des populations", University of Bordeaux, France, 2018.

10.3. Popularization

10.3.1. Articles and contents

- A popularization paper has been published on the study of peach sugar metabolism [64].
- L. Mailleret was a co-author of the press kit "Les conquêtes de l'INRA pour le biocontrôle" [86].
- The activities related to microalgae have generated many articles in national newspapers (Le Monde, Nice Matin, ,...), and broadcasts on national TV (France 3). See, for instance, https://www.nicematin.com/vie-locale/ces-azureens-inventent-223249.

10.3.2. Interventions

- O. Bernard together with R. Lemée gave a general public conference on the topic "Les microalgues en Méditerranée: quels avenirs environnementaux, énergétiques, sanitaires et industriels?" (MA-MAC, Nice, 6 Apr 2018).
- L. Chambon and O. Bara participated in the open doors days of Inria Sophia-Antipolis on the 7th of October. L. Chambon presented a popularization poster about Biocore scientific methodologies to general public.
- L. Chambon represented Biocore, Inria in the national event "Fête de la Science" in Mouans-Sartoux and Juan-les-Pins (13th and 20th of October). She presented scientific popularization games and experiments to children and general public.
- L. Mailleret presented three Posters on biological control with predatory mites during the visit of the national press (AFP, France Inter, Le Parisien,...) at Institut Sophia Agrobiotech on the 30th of May 2018.

<p style="text-align:center;color:red;font-weight:bold;">BIOVISION Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. General Chair, Scientific Chair, Member of the Organizing Committees

- Bruno Cessac has co-organized the conference Inspire New Insights on Complex Neural Dynamics, Cergy-Pontoise, France, June 2018 https://inspire2018parisseine.wordpress.com/
- Bruno Cessac has co-organized the scientific event 2nd structuring event UCA Cognitive systems, normality and pathology of the human brain, computational neuroscience http://univ-cotedazur.fr/events/deuxieme-rencontre-c@uca
- Selma Souihel and Evgenia Kartsaki participated to the organizing committee of "Le MOnde des Mathématiques Industrielles (MOMI 2018)", a two-day workshop on applied and industrial mathematics. The workshop took place on the 26th and 27th of February, 2018 at the Inria Sophia Antipolis-Mediteranée research center. It was supported by Inria and financed by the Société des Mathématiques Appliquées (SMAI) as a BOUge tes Maths (BOUM) project, by the Agence pour les Mathématiques en Interaction avec l'Entreprise et la Société (AMIES) and by the Labex User Centric Network @ Sophia within the context of Investissement d'Avenir (IA) projects – projets "Laboratoires d'excellence", and by the Université Côte d'Azur within the context of the "Joint, Excellent and Dynamic Initiative" (JEDI) projects. In total, 3 keynote speakers, 8 industrial speakers and 80 participants (researchers, PhDs , and engineers) attended MOMI 2018.
- Pierre Kornprobst was a Technical Program Committee (TPC) member for the 25th European Signal Processing Conference (EUSIPCO 2017).

9.1.2. Reviewer

Bruno Cessac was a reviewer for the conference ICMNS, International Conference on Mathematical Neuro-Science .

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Pierre Kornprobst has been associate editor for the Computer Vision and Image Understanding Journal (CVIU) since Jul 2016.

9.1.4. Invited Talks

- B. Cessac, D. Karvouniari, L. Gil, O. Marre, S. Picaud. Multi scale dynamics in retinal waves, in: Inspire New Insights on Complex Neural Dynamics, Cergy-Pontoise, France, June 2018.
- B. Cessac, Ion channels and properties of large neuronal networks: a computational study of re.nal waves during development, in: Symposium on Ion channels and Channelopathies - IPMC, Sophia Antipolis, France, November 2018.

9.1.5. Research Administration

- The PhD Seminars of Inria Sophia Antipolis - Méditerranée are organized and held by PhD candidates every two weeks and aim to share knowledge, and to promote collaborations, all in a friendly and interactive way. Selma Souihel and Evgenia Kartsaki are current members of the organizing committee have been involved in the scheduling, communication and diffusion. These tasks include calls for presentations, calendar planning and promotion of each seminar. Finally, they are also involved in the organization of the MOMI 2018 conference.

- Bruno Cessac is a member of the scientific council of the Institut NeuroMod de "Modélisation en Neurosciences et Cognition".
- Pierre Kornprobst is an elected member of the Academic Board of UCA (since November 2015). The role of this council is to proceed with the appointment of selection committees and the recruitment of public servants. Also, it validates the global training offer of Nice area, is involved in the global policy of doctoral training, and awards research funding. The council meets one a month and each member also participate to the evaluation of research proposals submitted to UCA [JEDI] calls.
- Pierre Kornprobst has been a member of the Comité de Suivi Doctoral (CSD) since March 2017.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence :

- Selma Souihel "Advanced network administration and security: architecture of a company network, services installation and configuration, users management, system and network security, cryptography, virtual private networks and secured protocols, and supervision tools, Numeric transmission : data acquisition, satellite and cable transmission, numeric modulation", 1ere année de l'IUT, Département Réseaux et Télécommunications, 64h/year, 50 students.

Master 1: Bruno Cessac (with D. Karvouniari and F. Lavigne), *Introduction to Modelling in Neuroscience*, 36 hours, Master Mod4NeuCog, Université Nice Sophia Antipolis, France.

9.2.2. Supervision

- PhD defended on March 15th, 2018. Theodora Karvouniari, "Retinal waves in the retina: theory and experiments". Started in October 2014. Defense scheduled in March 2018. Supervisor, B. Cessac.
- PhD in progress: Selma Souihel, "Generic and specific computational principles for the visual anticipation of motion trajectories". Started in November 2016. Supervisor B. Cessac
- PhD in progress: Evgenia Kartsaki. "How Specific Classes of Retinal Cells Contribute to Vision: a Computational Model", Started in October 2017. Supervisor B. Cessac codirection with E. Sernagor, ION.

9.2.3. Juries

- Bruno Cessac was member of the Comité de suivi de thèse of Matthieu Sarrazin (U. Paris Sorbonne).
- Pierre Kornprobst was reviewer of the PhD of Charles Hessel, entitled "The automatic decomposition of an image in base and detail: Application to contrast enhancement", from Université de Paris-Saclay, Ecole Normale Supérieure de Paris-Saclay, France.
- Pierre Kornprobst was reviewer of the HDR of David Tschumperlé, entitled "Champs tensoriels pour la modélisation géométrique locale et non-locale des images et leurs applications", from Université de Caen, France.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- E. Kartsaki and S. Souihel are participating to the organization of the Inria Sophia PhD seminars.

9.3.2. Interventions

- The Biovision team participated to the "fête de la science 2018".

BONSAI Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- H. Touzet was the general chair for the satellites of RECOMB 2018 (Paris, April 2018)

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- RECOMB-Seq 2018 (R. Chikhi)

8.1.2.2. Member of the Conference Program Committees

- RECOMB-CG 2018 (J.-S. Varré)
- WABI 2018 (H. Touzet, M. Salson)
- ACM-BCB 2018 (R. Chikhi)
- HiCOMB 2018 (R. Chikhi)

8.1.2.3. Reviewer

- WABI 2018 (L. Noé, J.-S. Varré, R. Chikhi)
- ECCB 2018 (R. Chikhi)

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Review Editor in Frontiers in Genetics - Bioinformatics and Computational Biology (J.-S. Varré)

8.1.3.2. Reviewer - Reviewing Activities

- Algorithms (L. Noé)
- Bioinformatics (L. Noé, M. Salson, R. Chikhi)
- Frontiers in Immunology (M. Salson)
- Nucleic Acids Research (R. Chikhi)
- GigaScience (R. Chikhi)
- ACM Computing Surveys (R. Chikhi)
- Genome Biology (R. Chikhi)
- Journal of Discrete Algorithms (R. Chikhi)

8.1.4. Scientific Expertise

- Scientific consulting for Clarity Genomics start-up – Belgium (R. Chikhi)

8.1.5. Research Administration

- Member of the national scientific committee of INS2I–CNRS (H. Touzet)
- Member of the scientific committee of MBIA – INRA (H. Touzet)
- Head of the national CNRS network GDR Bioinformatique moléculaire (http://www.gdr-bim.cnrs.fr, H. Touzet)
- Co-head of the Lille Bioinformatics core facility, bilille (H. Touzet)

- Member of the CRIStAL Laboratory council (H. Touzet)

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Teaching in computer science:

License: J.-S. Varré, *Programming and algorithms*, 36h, L2 Computer Science, Univ. Lille.

License: J.-S. Varré, *Object oriented programming*, 36h, L2 Computer Science, Univ. Lille.

License: J.-S. Varré, *Algorithms and data structures*, 50h, L2 Computer science, Univ. Lille.

License: J.-S. Varré, *System*, 84h, L3 Computer science, Univ. Lille.

License: P. Marijon *Databases*, 36h, L3 Computer science, Univ. Lille.

License: Q. Bonenfant *Databases*, 36h, L3 Computer science, Univ. Lille.

Licence: M. Pupin, *Programming (Python)*, 78h, L1 Sciences, Univ. Lille.

Licence: M. Pupin, *occupational integration*, 30h, L3 computer science, Univ. Lille.

Master: : M. Pupin, *Programming (JAVA)*, 24h, M1 "Mathématiques et finance", Univ. Lille.

License: M. Salson, *Programming (Python)*, 42h, L1 Sciences, Univ. Lille.

License: M. Salson, *Coding and information theory*, 63h, L2 Computer science, Univ. Lille.

Master: M. Salson, *Software project*, 40h, M1 Computer science, Univ. Lille.

Teaching in bioinformatics:

- Master: M. Pupin, M. Salson *Bioinformatics*, 34h, M1 "Biologie-Santé", Univ. Lille.
- Master: M. Salson, *Algorithms for life sciences*, 20h, M2 Complex models, algorithms and data, Univ. Lille.
- Master: R. Chikhi, *Bioinformatics*, 20h, M1 Computer Science, Univ. Lille.

Teaching in skeptical thinking:

- Master: M. Salson, *Skeptical thinking*, 27h, M2 Journalist and Scientist, ESJ, Univ. Lille.

Formation for academics:

- Bilille permanent training: C. Saad (*Variants*, 13h), R. Chikhi (*De novo assembly* and *Metagenomics de novo assembly*, 8h), H. Touzet (*DNA analyis* and *Metagenomics*, 8h), M. Salson (*RNA-seq analysis*, 1h).
- (JC)2BIM summer school: H. Touzet organized a national summer school in bioinformatics (5-8 June, Frejus), that gathered 30 participants and 12 trainers (among them, R. Chikhi and M. Salson): http://www.gdr-bim.cnrs.fr/?page_id=560.
- Workshop on Genomics: R. Chikhi (*de novo assembly & k-mers*, 8h), Czech Republic, 2 weeks, 80 participants: http://evomics.org/workshops/workshop-on-genomics/2018-workshop-on-genomics-cesky-krumlov/.
- CGSI summer school: R. Chikhi (*de novo assembly, metagenomics*, two keynote lectures), Los Angeles, 4 weeks, 100 participants: http://computationalgenomics.bioinformatics.ucla.edu.

8.2.2. Teaching administration

Head of the licence semester "Computer Science – S3 Harmonisation (S3H)", Univ. Lille (L. Noé).

Member of faculty council (M. Pupin, J.-S. Varré).

Head of the 3rd year of licence of computer science, Univ. Lille (J.-S. Varré).

Head of the GIS department (Software Engineering and Statistics) of Polytech'Lille (S. Janot).

Head of the computer science modules in the 1st year of Licence, Univ. Lille (M. Pupin).

Head of the *Informatique au féminin*, Univ. Lille (M. Pupin).

8.2.3. Supervision

PhD: T. Rocher, Indexing VDJ recombinations in lymphocytes for leukemia follow-up, February 2018, M. Giraud, M. Salson.

PhD: C. Saad, Caractérisation des erreurs de séquençage non aléatoires, application aux mosaïques et tumeurs hétérogènes, September 2018, M.-P. Buisine, H. Touzet, J. Leclerc, L. Noé, M. Figeac.

PhD in progress: P. Marijon, Analyse de graphes d'assemblage issus du séquençage ADN troisième génération, 2016, R. Chikhi, J-S. Varré.

PhD in progress: Q. Bonenfant, Algorithmes pour l'analyse de séquençage ARN troisième génération, 2017/11/15, L. Noé, H. Touzet.

8.2.4. Juries

- H. Touzet was member of the PhD juries of Camille Marchet (University of Rennes 1), Magali Dancette (University of Lyon 1), Aurélien Quillet (University of Rouen).

- H. Touzet was member of hiring committees (professors) at University of Lille and University of Caen.

- J.-S. Varré was member of a hiring committee (professors) at University of Lille.

- L. Noé was member of a hiring committee (associate professor) at University of Lille.

- R. Chikhi was member of the PhD juries of Florian Plaza Onate (INRA MetaGenoPolis), Sorina Maciuca (Wellcome Trust, UK).

- R. Chikhi was member of a hiring committee (research engineer) at Institut Pasteur, Paris.

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

- Member of the CDT for Inria Lille (M. Pupin).

- Member of an Inria hiring committee (young researcher), Inria LNE (M. Pupin)

8.3.2. Education

- M. Pupin is the new leader of the collective *Informatique au féminin* from University of Lille, which was launched four years ago and whose goal is to organise computer science initiatives that reach teenage girls and female students. Among other actions, she is fully involved in the event *L codent, L créent* (she codes, she creates). This action aims to teach code to schoolgirls (13-15 years old), before they amass prejudices against computer science. 50 teenage girls were supervised by 11 female graduate computer science students, to create a proximity link between the young women. To emphasize the fact that coding is a creative and innovative pursuit, we chose to teach *Processing*, a programming language built for visual arts. After eight sessions of creative coding, a public exhibition was organized at the University with inspirational testimonies of women working in the field of computer science.

- The team participates to dissemination actions for high school students and high school teachers on a regular basis: multiple presentations on bioinformatics and research in bioinformatics with our dedicated "genome puzzles", visit of high school students in the team (M. Salson).

CAMIN Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. General Chair, Scientific Chair

Christine Azevedo organized a special session "Application of FES for lower limbs movement assistance" at ICNR conference (Pisa, Italy) on October 2018.

9.1.2. Member of the Conference Program Committees

- David Guiraud was Co-editor of the theme 6 at IEEE EMBC conference
- Daniel Simon is member of the ICINCO conference program committee
- David Andreu was member of the ERTS2 conference program committee

9.1.3. Reviewer

- Christine Azevedo was reviewer for IEEE EMBC, IROS, ICNR conferences
- David Guiraud was reviewer for IEEE EMBC and IEEE NER
- François Bonnetblanc was reviewer for IEEE EMBC
- Daniel Simon was reviewer for the IFAC CAMS, IFAC ICINCO, ECC and IEEE CCTA conferences
- David Andreu was reviewer for the ERTS2 conference

9.1.4. Member of the Editorial Boards

- Christine Azevedo is member if ERCIM News' Editorial Board as Inria representant.
- David Guiraud is Associate Editor of Journal of Neural Engineering and Medical and Biological Engineering and Computing.

9.1.5. Reviewer - Reviewing Activities

- David Guiraud is reviewer of several journals among which IEEE TNSRE, IEEE ACCESS, IEEE TCST, JNE, J. Of Neuroscience Method, Computer in Biology and Medicine, Science Advances (AAAS)...
- Daniel Simon was reviewer for IEEE Control Systems Technology and Real Time Systems.
- David Andreu was reviewer for Journal of Neural Engineering.

9.1.6. Invited Talks

François Bonnetblanc: University of British Columbia and Peter Wall Institute of Advanced Studies. "Awake Brain Surgery: the naked brain", 4 octobre 2018.
François Bonnetblanc : Karolinska Institute (Programme TOR). Neurosurgery Department, "Awake Neurosurgery and electrophysiology"). 5-9 novembre 2018.
Christine Azevedo was invited to give a lecture at Inria Rennes center "Pédalage assisté par stimulation électrique de muscles paralysés.".

9.1.7. Leadership within the Scientific Community

Christine Azevedo is member of the board of directors of International Functional Electrical Stimulation Society (IFESS).

9.1.8. Scientific Expertise

David Guiraud was reviewer for the ERC program (Starting and Advanced) in 2018

Christine Azevedo was examiner for APHP Delegation Clinical research and Innovation call for proposals for detached positions.

9.1.9. Research Administration

Christine Azevedo is member of Inria Evaluation Committee (CE). She participated in the competitive examinations for junior researcher recruitment in Inria Lille Center (April 2018) and Inria Grenoble Center (May 2018). She was also in the examination committee of CHRC and DR0 promotions as well as detachments. Christine Azevedo is member of Inria Ethical Committee (COERLE).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master SMH : David Guiraud, "Stimulation Electrique Fonctionnelle", 16h, M2, Université de Montpellier, France
- Master Neuroprothèses : Daniel Simon, "Control basics", 6.5h, M2, Université de Montpellier, France
- Master Neuroprothèses : Christine Azevedo, "Ethical considerations", 3h, M2, Université de Montpellier, France
- Master Neuroprothèses : François Bonnetblanc, "Motor Control", "Neuroplasticity", "Electrophysiology in Neurosurgery", 16h, M1, Université de Montpellier, France
- Master Mechanics and its Interactions : François Bonnetblanc, "Motor Control", 4,5h, M2, Université de Montpellier, Polytech, France
- DU Functional electrical stimulation : François Bonnetblanc, "Motor Control", "Neuroplasticity", "Electrophysiology in Neurosurgery", 12h, Université de Montpellier, France
- DU Functional electrical stimulation : David Andreu, "Neuroprosthesis: from functions to active medical implanted devices" , 6h, Université de Montpellier, France
- DU Functional electrical stimulation : David Guiraud, "Electrophysiology", "Biophysics", "Neuroprothesis", 6,5h, Université de Montpellier, France
- DU Functional electrical stimulation : Christine Azevedo, "Electrophysiology", "Functional Electrical Stimulation", "Clinical Applications", 7h, Université de Montpellier, France
- DU Functional electrical stimulation : Charles Fattal, "Functional Electrical Stimulation and Clinical Applications", 5h, Université de Montpellier, France

François Bonnetblanc is responsible for a DU about "Functional Electrical Stimulation"
D. Andreu teaches software engineering, real time OS, discrete event systems, control architectures, networks, neuro-prosthesis, 200 h, master and engineers degrees, Polytech Montpellier, France.

9.2.2. Supervision

- PhD: Benoît Sijobert, Assistive Control of Motion in SensoriMotor Impairments based on Functional Electrical Stimulation, Montpellier University, September 28th 2018, Christine Azevedo, David Andreu and Charles Fattal.
- PhD: Ibrahim Merzoug, Validation formelle des systèmes numériques critiques : génération d'espace d'états de réseaux de Petri exécutés en synchrone, Montpellier University, January 15th 2018, David Andreu and Karen Godary.
- PhD in progress: Antony Boyer, Neuroplasticity and recovery in remote (sub)cortical structures following wide-awake surgery of infiltrative low-grade gliomas: investigation of fMRI and EEG signals, 01/09/2016, François Bonnetblanc and Sofiane Ramdani.
- PhD in progress: Maxence Blond, Commande et modélisation d'un véhicule sous-marin, 18/01/2016, Daniel Simon, Vincent Creuze (LIRMM) and Ahmed Chemori (LIRMM).

- PhD in progress: Victor Vagne, "Couplage de la Spectroscopie en proche infrarouge et de la stimulation Transcrânienne (NIRS-tDCS) à courant continu dans l'Evaluation diagnostique de l'ischémie cérébrale lors d'un AVC", Oct. 2016, M. Hayashibe, D. Guiraud, Vincent Costalat (CHU Montpellier) and Emmanuelle Le Bars (CHU Montpellier)
- PhD in progress: XinYue Lu, Respiratory detection and monitoring Since March 2017, C. Azevedo Coste, T Similowski (Groupe Hospitalier Pitié-Salpêtrière), S Renaux (NEURORESP)
- PhD in progress (co-financing UM / Occitanie region): Vincent Iampietro, Contribution des méthodes formelles à la fiabilité des systèmes numériques complexes critiques : application aux dispositifs médicaux implantables innovants, since october 2018, D. Andreu, D. Delahaye (LIRMM).

9.2.3. *Juries*

Christine Azevedo was reviewer for the PhD thesis of Solenne Page (ISIR, UPMC University, Paris, France) "Control of a robotized walker based on postural characterization and application to obstacle avoidance." (May 2018).

Christine Azevedo was examiner in the defense committee of Mathilde Couraud (Bordeaux University, France) "Study of the sensori-motor control in a simplified artificial context with the aim to improve the control of myoelectric prostheses." (December 2018).

Christine Azevedo was examiner in the defense committee of Firas Kaddachi (Montpellier University, France) "Technological approach of early and non intrusive of health modification to better adapt services to elderly persons." (December 2018).

David Andreu was reviewer of the PhD thesis of T. Sotiropoulos (LAAS, Univ. Toulouse 3, France), "Test aléatoire de la navigation de robots dans des mondes virtuels." (May 2018).

9.3. Popularization

9.3.1. *Education*

Christine Azevedo Coste is mentor (2018-2019) for one Savanturiers project with Saussan school (CM1/CM2 level) https://les-savanturiers.cri-paris.org/

Christine Azevedo organized initiation sessions to informatics using Thymio robot at École Calendreta La Cardonilha (Mèze, France) in CP/CE1 level, 3 sessions of 2 hours (April 2018) .

Christine Azevedo organized initiation sessions to informatics using Thymio robot at École Valfalis (Montbazin, France) in CM1/CM2 level, 4 sessions of 2 hours (May-June 2018) .

As a COERLE member Christine Azevedo Coste was involved in one session on Ethics for phd students in Inria IRISA center (Rennes, france) (November 2018).

9.3.2. *Interventions*

- François Bonnetblanc : Pint of Science 16 mai 2018, François Bonnetblanc, Montpellier

<p align="center" style="color:red">CAPSID Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Marie-Dominique Devignes is a member of the Steering Committee for the European Conference on Computational Biology (ECCB; http://eccb.iscb.org/). She was co-organizer of the national Workshop on AI and Health in the frame of PFIA 2018 (https://pfia2018.loria.fr/journeeiasante/), and she co-organized the Journée Entreprises (Atelier Santé) of the Fédération Charles Hermite (http://www.loria.fr/wp-content/uploads/2017/12/Programme-Forum-FCH-Entreprises.pdf).

Malika Smaïl-Tabbone is a member of the steering committee of the Conférence Francophone sur la Recherche d'Information et ses Applications (CORIA).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Malika Smaïl-Tabbone is a member of the organizing committee for Inforsid 2018 and EGC 2018, and is in charge of the é-EGC winter school in Metz.

9.1.2.2. Reviewer

Marie-Dominique Devignes was a reviewer for IWBBIO and BIBM.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

David Ritchie is a member of the editorial board of Scientific Reports.

Sabeur Aridhi is a member of the editorial board of Intelligent Data Analysis.

9.1.3.2. Reviewer - Reviewing Activities

The members of the team have reviewed manuscripts for *Bioinformatics, BMC Bioinformatics, Computational and Structural Biotechnology Journal, Computational Biology and Chemistry, Evolutionary Bioinformatics, Journal of Computational Chemistry, Journal of Chemical Information and Modeling, Journal of Molecular Graphics and Modeling, Nucleic Acids Research, PLoS One, Proteins: Structure, Function & Bioinformatics,* and *Structure.*

9.1.4. Invited Talks

Marie-Dominique Devignes gave a presentation on accelerating precision medicine to the OLINK proteomics society in Uppsala, Sweden.

Malika Smaïl-Tabbone gave a talk on "Integrative Machine Learning Applied on Drug Side Effect Profiles" at WCP2018 (18th World Congress of Basic and Clinical Pharmacology) in Kyoto, Japan.

Isaure Chauvot de Beauchêne gave a presentation on docking by combinatorial assembly of fragments to the Centre de mathématiques et de leurs applications (CMLA) at ENS Cachan.

9.1.5. Scientific Expertise

Marie-Dominique Devignes reviewed grant applications for the ANR programme "Appel générique-JCJC".

Malika Smaïl-Tabbone reviewed grant applications for the ANR and for the Indo-French Centre for the Promotion of Advanced Research.

Sabeur Aridhi reviewed grant applications for the French Committee for the Evaluation of Academic and Scientific Cooperation with Brazil (COFECUB).

David Ritchie is a member of the Bureau of the GGMM (Groupe de Graphisme et Modélisation Moléculaire).

Isaure Chauvot de Beauchêne is the team's representative to the ELIXIR 3D-Bioinfo working group, which is an essential link between the national IFB and the European ELIXIR projects that aim to make bioinformatics software and platforms available to non-expert biologists.

9.1.6. Research Administration

Marie-Dominique Devignes is Chargée de Mission for the CyberBioHealth research axis at the LORIA and is a member of the "Comipers" recruitment committee for Inria Nancy – Grand Est.

David Ritchie is a member of the Commission de Mention Informatique (CMI) of the University of Lorraine's IAEM doctoral school. Until November 2018 he was a member of the Bureau of the Project Committee for Inria Nancy – Grand Est.

Sabeur Aridhi is responsible for the major in IAMD (Ingénierie et Applications des Masses de Données) at TELECOM Nancy (Univ. Lorraine), and a member of the "Commission du Développement Technologique" recruitment committee at Inria Nancy – Grand Est.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Sabeur Aridhi, *P*rogramming Techniques and Tools, 24 hours, L1, Univ Lorraine.
Licence: Sabeur Aridhi, *D*atabases, 82 hours, L1, Univ Lorraine.
Licence: Sabeur Aridhi, *M*assive Data Management, 68 hours, L2, Univ Lorraine.
Licence: Sabeur Aridhi, *N*oSQL Databases, 44 hours, L2, Univ Lorraine.
Licence: Sabeur Aridhi, *B*ig Data Hackathon, 8 hours, L3, Univ Lorraine.
Licence: Marie-Dominique Devignes, *R*elational Database Design and SQL, 30 hours, L3, Univ Lorraine.
Licence: Isaure Chauvot de Beauchêne, *T*D Bioinformatique et Modelisation, 10 hours, L3, Univ Lorraine.
Licence: Malika Smaïl-Tabbone, *R*elational Databases, 90 hours, L2, L3, Univ Lorraine.
Licence: Malika Smaïl-Tabbone, *N*oSQL Databases, 30 hours, M1, Univ Lorraine.
Licence: Malika Smaïl-Tabbone, *P*rogramming Techniques, 30 hours, L2, Univ Lorraine.
Master: Malika Smaïl-Tabbone, *K*DD and Data Mining Algorithms, 90 hours, M2, Univ Lorraine.
Master: Malika Smaïl-Tabbone, *D*atabases : Concepts and Techniques, 30 hours, M2, Univ Lorraine.
Master: Malika Smaïl-Tabbone, *O*ntology Management and Semantic Web Technologies, 30 hours, M2, Univ Lorraine.
Master: Sabeur Aridhi, *K*nowledge Discovery and Data Engineering, 10 hours, M2, Univ Lorraine.

9.2.2. Supervision

PhD in progress: Maria Elisa Ruiz Echartea, *M*ulti-component protein assembly using distance constraints, 01/11/2016, David Ritchie, Isaure Chauvot de Beauchêne.
PhD in progress: Kévin Dalleau, *C*omplex graph analysis for classification: application to disease nosography, 01/12/2016, Malika Smaïl-Tabbone, Miguel Couerceiro.
PhD in progress: Bishnu Sarker, *D*eveloping distributed graph-based approaches for large-scale protein function annotation and knowledge discovery, 01/11/2017, David Ritchie, Sabeur Aridhi.
PhD in progress: Antoine Moniot, *M*odeling protein / nucleic acid complexes by combinatorial structural fragment assembly, 01/11/2017, David Ritchie, Isaure Chauvot de Beauchêne.
PhD in progress: Athénais Vaginay, *M*odel selection and analysis for biological networks: use of domain knowledge and application to networks disturbed in diseases,

01/11/2017, Taha Boukhobza, Malika Smaïl-Tabbone.

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CARMEN Project-Team

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8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Selection

8.1.1.1. Chair of Conference Program Committees

N. Zemzemi organized a mini-symposium "inverse problems in cardiac electrophysiology" at the PICOF conference (Inverse Problems, Control and Shape Optimization conference), which was held at the American University of Beirut, Lebanon, June 18–20, 2018.

8.1.1.2. Member of the Conference Program Committees

M. Potse: track chair (modeling) for *International Congress of Electrocardiology*, Chiba, Japan, June 2018.

8.1.1.3. Reviewer

M. Potse, Y. Coudière: reviewers for *Computing in Cardiology*, Maastricht, The Netherlands, September 2018.

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

M. Potse: associate editor of *Frontiers in Cardiac Electrophysiology*.

M. Potse: section editor (Electrocardiology and Computing), *Journal of Electrocardiology*.

8.1.2.2. Reviewer - Reviewing Activities

L. Weynans: Computers and Fluids, Multiscale Modeling and Simulation

M. Potse: Heart Rhythm, Medical & Biological Engineering & Computing, Journal of Electrocardiology, Frontiers in Computational Physiology and Medicine, Mathematical Biosciences, American Journal of Physiology.

Y. Coudière: Journal of computational and applied mathematics, PLOS ONE, SMAI Journal of Computational Mathematics

N. Zemzemi: Inverse Problems, Europace, Inverse Problems in Science and Engineering, Mathematical Modelling of Natural phenomena.

M. Bendahmane: Afrika Matematika, Journal of Computational and Applied Mathematics, Journal of Theoretical Biology.

8.1.3. Invited Talks

L. Weynans. "Local Lubrication Model for Ellipsoidal Particles within an Incompressible Navier-Stokes Flow." Pre-meeting of the Fifth International Workshop on Modeling, Analysis, Simulations, and Applications of Inter-Facial Dynamics and FSI Problems (IMA-FSI), Chinese Academy of Sciences, Bejing.

L. Weynans. "Super-convergence of the gradient for the Shortley-Weller method." Fifth International Workshop on Modeling, Analysis, Simulations, and Applications of Inter-Facial Dynamics and FSI Problems (IMA-FSI), Chinese Academy of Sciences, Sanya, China, June 2018

M. Bendahmane, "Mathematical analysis and numerical simulation of optimal control in cardiac models." ENSA d'Essaouira, Université Cadi Ayyad, Morocco, April 2018.

M. Bendahmane, "Recent progress on Inverse problems in Electrocardiology." Université Cadi Ayyad, Morocco, December 2018.

M. Potse, "The lead field: modern applications of a classic." International Congress of Electrocardiology, Chiba, Japan, june 2018.

Y. Coudière, "Modeling the propagation of cardiac action potential in hearts with structural heterogeneities." 18ème Journée "Calcul scientifique et modélisation mathématique" aux journées scientifiques de l'Université d'Amiens, https://www.u-picardie.fr/recherche/presentation/actualites/18eme-journee-calcul-scientifique-et-modelisation-mathematique–514070.kjsp

Y. Coudière, "Modeling the propagation of cardiac action potential in hearts with structural heterogeneities." INdAM Workshop "Mathematical and Numerical Modeling of the Cardiovascular System," Roma, April 16–19, 2018 Istituto Nazionale di Alta Matematica (INdAM) http://www-dimat.unipv.it/workshoproma/

Y. Coudière, "Modeling the propagation of cardiac action potential in hearts with structural heterogeneities." QBIO2018 – Quantitative Biomedicine in Health and Disease, Bilbao, February 28th-March 1st, 2018. https://wp.bcamath.org/qbio/

Y. Coudière, "Simulation numérique en électrocardiologie." 2ième Edition "Rencontre Santé Civilo-Militaire du Sud-Ouest," 27 March 2018. https://sante.u-bordeaux.fr/Actualites/2eme-Edition-Rencontre-Sante-Civilo-Militaire-du-Sud-Ouest

N. Zemzemi gave a talk "Inverse problems in cardiac electrophysiology" at the LIRIMA evaluation seminar 18 and 19 september 2018,

8.1.4. Leadership within the Scientific Community

M. Potse: council member of the International Society of Electrocardiology.

Y. Coudière: committee member HCERES for the evaluation of the UMMISCO lab (http://www.ummisco.fr/) 27–28 February, 2018.

Y. Coudière: recruitment committee ATER, IUT de Bordeaux, May 2018

Y. Coudière: special recruitment committee for a permanent contract (LRU) for J. Bayer.

L. Weynans: local correspondent for SMAI.

N. Zemzemi: recruitment committee of permanent research scientists at Inria Bordeaux Sud-Ouest 2018.

8.1.5. Research Administration

L. Weynans: member of the "Conseil du département Sciences et Technologies" of Bordeaux University.

Y. Coudière: Scientific responsibility of the IMB (CNRS UMR 5251) team "Calcul Scientifique et Modélisation," $\sim$ 60 persons.

N. Zemzemi: Administration of the Inria associated team Epicard.

M. Leguèbe: co-organization of team "Calcul Scientifique et Modélisation" seminar (IMB, Université de Bordeaux).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

A. Karaoui, Initiation à l'informatique, 34h, L1 Université de Bordeaux, France

A. Gérard, TD Analyse Numérique, 48h, ENSEIRB-Matmeca, Bordeaux, France

A. Gérard, Équations différentielles, 20h, ENSEIRB-Matmeca, Bordeaux, France

A. Gérard, TP Programming in C++, 48h, ENSEIRB-Matmeca, Bordeaux, France

M. Leguèbe, Utilisation de plateforme industrielle pour le calcul intensif, 16h, M1, Université de Bordeaux, France

L. Weynans, Cours Programmation avancée pour le calcul scientifique, 24h, L3, Université de Bordeaux, France

L. Weynans, Introduction Analyse Numérique, 24h, L3, Université de Bordeaux, France

L. Weynans, Linear Algebra, L1, Université de Bordeaux, France

L. Weynans, encadrement de projets 1ère année Matmeca, 25h, L1, Université de Bordeaux, France

L. Weynans, TD approximation of partial differential equations, M1, Université de Bordeaux, France

L. Weynans, integration and rational fractions, 1st year prepa INP

N. Zemzemi, Optimisation et statistiques, 80h, ESSCA Bordeaux, France

N. Zemzemi, Computational modeling in medicine, 8h, PhD, Université de Bordeaux, France

N. Zemzemi, Modelling and numerical methods in cardiac electrophysiology, 14h, doctoral school, department of mathematics Puebla, Mexico,

M. Bendahmane, Algèbre Linéaire, CM/TD 36h, L2, Université de Bordeaux, France

M. Bendahmane, Fonctions de plusieurs variables et optimisation, TD 33h, L2, Université de Bordeaux, France

M. Bendahmane, Neurosciences computationnelles applications à l'ingénierie, CM/TD 30h, M2, Université de Bordeaux, France

M. Bendahmane, Séries et intégrales multiples, CM 27h, L2, Université de Bordeaux, France

M. Bendahmane, Séries et intégrales multiples, TD 25h, L2, Université de Bordeaux, France

M. Bendahmane, Mise à niveau L2, TD, 12h L2, Université de Bordeaux, France

M. Bendahmane, Neuropsychologie et Psychophysiologie, CM 7h L3, Université de Bordeaux, France

M. Bendahmane, Neuropsychologie et Psychophysiologie, TD 8h L3, Université de Bordeaux, France

Y. Coudière, GTA, 12h, L3, Université de Bordeaux, France

Y. Coudière, utilisation de plateforme de calcul intensif, 28h, M1, Université de Bordeaux, France

Y. Coudière, Éléments finis avancés, 36h, M2, Université de Bordeaux, France

Y. Coudière, Projets longs, 20h, INP-MATH

Y. Coudière, Enseignement scientifique Médecine, 4h, L2, Université de Bordeaux, France

Y. Coudière, responsible for Licence and Masters teaching at the Mathematics department, Université de Bordeaux, France

8.2.2. *Supervision*

PhD thesis, P-E. Bécue, "Modélisation et simulation de l'électrophysiologie cardiaque à l'échelle microscopique." Université de Bordeaux, 5 December 2018, supervised by Y. Coudière.

8.2.3. *Juries*

Y. Coudière: jury member for HDR, L. Weynans, "Prise en compte précise de géométries complexes pour l'approximation d'EDP sur grilles cartésiennes et leur simulation en calcul parallèle," Université de Bordeaux, 4 December 2018.

L. Weynans, M. Potse: jury members for PhD thesis of P-E. Bécue, "Modélisation et simulation de l'électrophysiologie cardiaque à l'échelle microscopique." Université de Bordeaux, 5 December 2018, supervised by Y. Coudière.

Y. Coudière, jury member (rapporteur) for the PhD thesis of S. Corre, Insa de Rennes, 19 October 2018.

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

- L. Weynans is responsible for the communication (*Chargé de communication*) of the IMB
- Exhibit at the open days on the occasion of the 10-years anniversary of the Inria center Bordeaux Sud-Ouest.

8.3.2. Interventions

L. Weynans:

- Organization of the day "Filles et Maths, une équation lumineuse"
- Several presentations for high-school students about scientific computing

CASTOR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

- IPL FRATRES Workshop 2018. Alsace, November 21-23 (https://team.inria.fr/ipl-fratres/2018-ipl-meetings-ipl-workshop-alsace/)
- Final Summary meeting, Inria Paris, November 19 (https://team.inria.fr/ipl-fratres/final-summary-meeting/)

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- C. Boulbe is layout editor of the free journal SMAI-Journal of Computational Mathematics.
- J. Blum is member of
    - the editorial board of the Journal of Scientific Computing (JSC),
    - the scientific committee of the collection "Mathématiques et Statistiques" of the ISTE publications,
    - editor in chief of the ISTE Open Science journal: "Mathématiques appliquées et stochastiques".
- F. Rapetti is member of the editorial board of the Advances in Computational Mathematics (ACOM) journal by Springer

9.1.2.2. Reviewer - Reviewing Activities

- Hervé Guillard has been reviewer for the Journal of Computational physics, Computers and Fluids and International Journal for Numerical methods in Fluids.

9.1.3. Invited Talks

- Hervé Guillard, "Low Mach and multiphase flows", Workshop on numerical and physical modeling in multiphase flows: a cross-fertilisation approach, Paris, February 1-2, 2018, https://workshopmultiphase.wixsite.com/mpf2018
- Hervé Guillard, "Tokamesh : A software for mesh generation in Tokamaks", Renewable Energy meets High Performance Computing: Final Conference of the Energy-Oriented Centre of Excellence, Nicosia, Cyprus, September 17-18, 2018, https://www.eocoe.eu/events/final-eocoe-conference-cyprus
- Jacques Blum, "Algorithmes de contrôle optimal pour l'identification de l'équilibre du plasma et pour l'optimisation de scénarios dans un Tokamak", Marseille, November 29, 2018, https://plasmas2018.sciencesconf.org/resource/page/id/3

9.1.4. Leadership within the Scientific Community

- H. Guillard is coordinator of the topic "Turbulence and transport of edge plasma" within the Fédération FR-FCM

9.1.5. Scientific Expertise

- H. Guillard has acted as scientific expert for the FRS-FNRS (Fonds de la Recherche Scientifique - FNRS Fédération Wallonie-Bruxelles) and PRACE (Partnership for Advanced Computing in Europe).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Ecole d'ingénieur: D. Auroux, Optimisation, 66h, M1, Polytech Nice, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: D. Auroux, Méthodes numériques, 36h, M2, Polytech Nice Sophia, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: D. Auroux, Projet, 35h, L3, Polytech Nice Sophia Antipolis, France

Master: J. Blum, Optimisation, 36h, M1, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: C. Boulbe, Analyse Numérique, 71.5h, L3, Polytech Nice Sophia Antipolis, France

Ecole d'ingénieur: C. Boulbe, Projet, 35h, L3, Polytech Nice Sophia Antipolis, France

Licence: S. Minjeaud, module Eléments de calcul différentiel, 18 h, L3, Université de Nice Sophia Antipolis, France.

Master: S. Minjeaud, module Méthodes numériques en EDP, 62 h, M1, Université de Nice Sophia Antipolis, France.

Licence: S. Minjeaud, module Compléments de calcul différentiel, 20 h, L3, Université de Nice Sophia Antipolis, France.

Master: B. Nkonga, Analyse Numérique, 40h, M1, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur/Master: B. Nkonga, Méthode des éléments finis, 24h, M2, Polytech Nice Sophia, France

Ecole d'ingénieur/Master: B. Nkonga, Eléments finis mixtes, 24h, M2, Polytech Nice Sophia, France

Licence: A. Sangam, Analyse, 40h, L1, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Analyse, 70h, L2, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Analyse Numérique, 86h, L3, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Projet tuteuré en laboratoire, 15h, L3 Physique, Université Nice Sophia Antipolis, France

Master: A. Sangam, Introduction to Finite Elements, 25h, M1, Université Nice Sophia Antipolis, France

9.2.2. Supervision

- PhD : Julie Llobel, "Schémas Volumes Finis à mailles décalées pour la dynamique des gaz", Université Cote d'Azur, Thierry Goudon et Sebastian Minjeaud
- PhD in progress : Ali Elarif, "Simulation numérique des instabilités magnétohydrodynamique dans les Tokamaks", since October 2017, Hervé Guillard
- PhD in progress: Xiao Song, "Model-based control-oriented scenario construction in tokamaks", since October 2016, Blaise Faugeras and Holger Heumann
- PhD in progress: Ashish Bhole, Numerical improvements and validations of the stabilized full MHD with applications to tokamaks, October 2017, Boniface Nkonga

9.2.3. Juries

- Hervé Guillard was referee in the HDR jury of Jean-Philippe BRAEUNIG, October 19, 2018, "Contributions à l'étude de schémas numériques de type Volumes Finis et de leurs applications pratiques".
- F. Rapetti was examinator in the jury of Matteo Valentinuzzi PhD defense at CEA in Cadarache on December, the 17th, 2018, "Numerical modelling of power flux densities on tokamak plasma facing components by using advanced coupling techniques for kinetic and fluid codes"

COFFEE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

We do not keep track of such activities.

10.1.1. Journal

10.1.1.1. Member of the Editorial Boards

T. Goudon is the founding editor and co-Editor in chief of SMAI Journal of Computational Mathematics.

10.1.2. Scientific Expertise

Thierry Goudon is member of the scientific board of CIRM and of FSMP.

10.1.3. Research Administration

- Roland Masson is the head of the team PDE and Numerical Analysis of the laboratory J.A. Dieudonné.
- Roland Masson is a member of the scientific committee of CERFACS.
- Roland Masson is scientific advisor at the scientific direction of Total.
- Thierry Goudon is member of the Evaluation Committee of Inria.
- Thierry Goudon is Scientific Officer at the French Ministry of Education and Research.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Members of the team are faculties of Université Côte d'Azur and they teach in all degrees of the University.

Florent Berthelin, Master 2 Mathématiques fondamentales, Université Côte d'Azur.

Florent Berthelin, Chair of the Master 2 Mathématiques fondamentales, Université Côte d'Azur.

Florent Berthelin, Analysis, L2, Université Nice Sophia Antipolis, 60h.

Thierry Goudon is President of the national competition to hire teachers (agregation de mathematiques).

Stella Krell, Linear Algebra, Master 1 enseignement, ESPE Nice, 23h.

Stella Krell, Didactics of mathematics, Master 1 EEF, Université Nice Sophia Antipolis, 43h.

Stella Krell, Theses and placement supervision, Master 2 EEF, Université Nice Sophia Antipolis, 12h.

Stella Krell, Preparation to mathematics agrégation interne, Université Nice Sophia Antipolis, 18h.

Stella Krell, Intervention, Master 2 enseignement, Université Nice Sophia Antipolis, 3h.

Stéphane Junca, Hyperbolic PDEs and mechanics, Master 2 MPA, Université Nice Sophia Antipolis, 36h.

Roland Masson, Numerical methods for PDEs, Master 2 MPA, Université Nice Sophia Antipolis, 36h.

Laurent Monasse, Introduction to dynamical systems, Ecole des Ponts ParisTech, 10h.

Laurent Monasse, Numerical analysis, L3, Université Nice Sophia Antipolis, 40h.

10.2.2. Supervision

PhD: Julie Llobell, Numerical schemes on staggered grids for conservation laws, Univ Nice Sophia Antipolis, 24 October 2018, Thierry Goudon and Sebastian Minjeaud

PhD: Laurence Beaude, Discretization of high energy geothermal systems in faulted porous media, Univ Nice Sophia Antipolis, 10 December 2018, Roland Masson, Konstantin Brenner, Simon Lopez and Farid Smai

PhD in progress: Kevin Atsou, Mathematical modeling of tumor growth, analysis and simulation, 01 October 2017, Thierry Goudon

PhD in progress: Billel Guelmame, Conservation laws in mechanics, 01 October 2017, Stéphane Junca

PhD in progress: Giulia Lissonni, DDFV methods and domain decomposition: applications in fluid mechanics, 01 September 2016, Stella Krell and Thierry Goudon.

PhD in progress: Leo Vivion, Dynamical model of a Lorentz gas: kinetic approach, analysis and asymptotic issues, 01 September 2017, Thierry Goudon

PhD in progress: Frédéric Marazzato, Modeling of fracture and fragmentation using a Discrete Element method, 01 October 2016, Alexandre Ern, Karam Sab and Laurent Monasse.

PhD in progress: Nadine Dirani, Effect of a shock wave on a structure with contact, 01 November 2018, Thierry Goudon and Laurent Monasse.

10.2.3. Juries

- Roland Masson:
    - Referee of the PhD of Florent Chave, 12/11/2018, Montpellier, "Méthodes Hybrides d'Ordre Elevé pour les problèmes d'interface".
    - Referee of the PhD of El Houssaine Quenjel, 15/12/2018, Meknes, Maroc "Volumes finis/Eléments finis pour des écoulements diphasiques compressibles en milieux poreux hétérogènes et anisotropes".
    - Referee of the PhD of Thibaut Lunet, 09/01/2018, Toulouse, "Stratégies de parallélisation espace-temps pour la simulation numérique des écoulements turbulents".

DRACULA Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. General Chair, Scientific Chair

- Olivier Gandrillon International Conference of Systems Biology 2018, Lyon, France http://icsb2018-france.com/.

7.1.1.2. Member of the Organizing Committees

- Fabien Crauste, International Conference of Systems Biology 2018, Lyon, France http://icsb2018-france.com/.
- Laurent Pujo Menjouet, co-organization of the minisymposium « Hematopoiesis and its disease » at ECMTB 2018, 11th European Conference on Mathematical and Theoretical Biology, Lisbon, Portugal, 23 – 27 July , 2018

7.1.2. Scientific Events Selection

7.1.2.1. Reviewer

M .Adimy : 2nd International Conference on Applied Mathematics (ICAM 2018), 2018 Fez-Morocco,

7.1.3. Journal

7.1.3.1. Member of the Editorial Boards

- O. Gandrillon Associate editor for BMC research notes
- M. Adimy Journal of Nonlinear Systems and Applications; Chinese Journal of Mathematics.
- L. Pujo Menjouet :Associate editor of PLOS ONE Journal of Thoerical Biology, Mathematical modelling of natural phenomena

7.1.3.2. Reviewer - Reviewing Activities

- O. Gandrillon : BioEssays, BioTechniques, BMC Bioinformatics, BMC Genomics, Cell Biology and Toxicology, Genes, Genomics, Journal of the Royal Society Interface, Journal of Theoretical Biology, Molecular BioSystems, Nature Communications, npj Systems Biology and Applications, Plos Computational Biology and Progress in Biophysics and Molecular Biology
- L. Tine Journal of Theoretical Biology
- T. Lepoutre Applied Mathematical Letters, Journal of Differential Equations, Siam Journal of Mathematical Analysis, Marrow
- L. Pujo Menjouet Journal of Theoretical Biology Bulletin of mathematical biology Journal of mathematical biology Plos computational biology
- S. Bernard J Theor Biol, Comput and Appl Math, J Roy Soc Interface

7.1.4. Invited Talks

- S Bernard, Modélisation mathématique de la croissance et de la réparation tissulaire, Fondation Les Treilles, Tourtour FR, 12-17/11/2018
- S Bernard, Workshop Mathematics of Biological rhythms, Northunbria University, Newcastle, 3-5/12/2018
- Thomas Lepoutre : Mathematical perspetives in the biology and therapeutics of cancer, Cirm, Luminy France, https://mathscancer.sciencesconf.org/

- Thomas Lepoutre : Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy, CMO, Oaxaca MEXICO, https://www.birs.ca/events/2018/5-day-workshops/18w5115
- Mostafa Adimy, 2nd International Conference on Applied Mathematics (ICAM 2018), Fez-Morocco.
- Mostafa Adimy, 2ème Colloque des Mathématiciens Marocains à l'étranger, Marrakech-Morocco.
- Mostafa Adimy, 8th Mathematical and Biological School (Programa Argentino BIOMAT), Córdoba-Argentina.
- Mostafa Adimy, Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy, Oaxaca, Mexico. https://www.birs.ca/events/2018/5-day-workshops/18w5115
- Laurent Pujo Menjouet, talk at the minisymposium « Topics in structured population dynamics » ECMTB 2018, 11th European Conference on Mathematical and Theoretical Biology, Lisbon, Portugal, 23 – 27 Juillet , 2018
- Laurent Pujo Menjouet, LIAM-IRC-MfPH 2018 Symposium in Structured population models: theory, numerics and applications, 27-29 août 2016

7.1.5. Leadership within the Scientific Community

- O . Gandrillon : Director of BioSyL, the Federative Research Structure for Systems Biology attached to University of Lyon
- T. Lepoutre : Head of the Groupe de Recherches CNRS MAMOVI on applied mathematical modelling in Life Sciences.

7.1.6. Scientific Expertise

- L. Pujo Menjouet: reviewer for ANR

7.1.7. Research Administration

- L.M. Tine :Membre conseil du département de Mathématiques, Lyon 1
- L.M. Tine Co-responsable de l'enseignement TMB (Techniques Mathématiques de Base) du portail PCSI.
- M. Adimy : Comité scientifique (COS) du centre Rhône-Alpes.
- M. Adimy : Comité scientifique (CS) de l'Institut Camille Jordan.
- M. Adimy : Comité des thèses de l'Institut Camille Jordan.
- M. Adimy : Comité d'évaluation de l'Université de Guyane.
- L. Pujo- Menjouet : Responsable de la filière mathématiques pour la biologie et la médecine pour le master 2 math en actions à l'université Claude Bernard Lyon 1,
- L. Pujo- Menjouet : correspondant mobilité international pour le département de mathématiques à l'université Claude Bernard Lyon 1,
- L. Pujo- Menjouet : directeur du portail mathématiques et informatique à l'université Claude Bernard Lyon 1,
- T. Lepoutre member of the CORDI-S commission.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Licence: Samuel Bernard: Algèbre Linéaire, 15h, L3, INSA

Licence: Samuel Bernard: EDO-EDP, 15h, L3, INSA

Licence : Ronan Duchesne, Anglais, 5h, L3

Licence : Ronan Duchesne, Modélisation des systèmes biologiques, 22h, L3

Licence : Ronan Duchesne, Bioinformatique, 20h, L3

Licence : Ronan Duchesne, Développement, 4h, L3

Licence : Simon Girel, Fondamentaux des mathématiques 1, 86h, L1, Université Lyon 1, France

Licence : Simon Girel, Introduction à l'analyse numérique, 10h, L1, Université Lyon 1, France

Licence: Laurent Pujo Menjouet, Fondamentaux des mathématiques I, 138h EQTD, L1, UCBL 1, FRANCE

Licence: Laurent Pujo Menjouet, Introduction à l'analyse numérique, 62h EQTD, L2, UCBL 1, FRANCE

Licence: Laurent Pujo Menjouet, bio-mathématiques et modélisation BISM, 10.5h EQTD, L3 UCBL 1, FRANCE

Licence: Laurent Pujo Menjouet, 3ème année biosciences BIM: EDO, 35h EQTD, INSA Lyon, FRANCE

Licence : L. M. Tine, Techniques mathématiques de base, 53h (EqTD), niveau L0, Lyon 1, France.

Licence : L. M. Tine, Techniques mathématiques de base, 62h (EqTD), niveau L1, Lyon 1, France.

Licence : L. M. Tine, Initiation LaTex+ stage, 12h (EqTD), niveau L3, Lyon 1, France.

Master : Samuel Bernard, Population Dynamics, 36h ETD, M2, UCBL, Lyon.

Master : Mostafa Adimy, Population Dynamics, 9h ETD, M2, UCBL, Lyon.

Master : Mostafa Adimy, Epidemiology, 12h ETD, M2, UCBL, Lyon.

Master : Ronan Duchesne, Biologie du développement, 12h, M1

Master : Ronan Duchesne, Statistiques, 2h, M1

Master : Ronan Duchesne, Adaptation, 2h, M1

Master : Ronan Duchesne, Practicals in statistics and modelling for the biosciences, 28h, M2

Master: Thomas Lepoutre, préparation à l'option pour l'agrégation, 45 h eq TD, M2 UCBL 1, FRANCE

Master: Laurent Pujo Menjouet, maths appliquées et statistiques: Systèmes dynamiques, 78h EQTD, M1, UCBL 1, FRANCE,

Master: Laurent Pujo Menjouet, master modélisation des systèmes complexes: modelling biology and medicine, M2, 9h EQTD, ENS-Lyon, FRANCE

Master: Laurent Pujo Menjouet,INSA 4ème année biosciences BIM: ED-EDP, 22h EQTD, M1 INSA Lyon, FRANCE

Master: L. M. Tine, Maths en action, Remise à niveau analyse, 12h (EqTD), niveau M2, Lyon 1, France.

Master: L. M. Tine, Maths en action, épidémiologie, 18h (EqTD), niveau M2, Lyon 1, France.

7.2.2. Supervision

PhD in progress: Aurélien Canet, "Contribution à l'étude de la quantification de la réponse d'une tumeur solide après un traitement par radiothérapie", Université Lyon, since January 2016, encadrants: Larry Bodgi, Nicolas Foray and Laurent Pujo Menjouet.

PhD in progress: Kyriaki Dariva , "Modélisation mathématique des interactions avec le système immunitaire en leucémie myéloide chronique". Université Lyon 1, September 2018, supervisor : Thomas Lepoutre

PhD in progress: Ronan Duchesne, "Vers un modèle multi-échelle de la différentiation cellulaire : Application à la différentiation érythrocytaire", École normale supérieure de Lyon and Université Lyon 1, since September 2016, supervisors: Olivier Gandrillon and Fabien Crauste.

PhD in progress: Alexey Koshkin, Inferring gene regulatory networks from single cell data , ENS de Lyon, since September 2018, supervisors : Olivier Gandrillon and Fabien Crauste.

PhD in progress : Paul Lemarre, " Modélisation des souches de prions". Université Lyon 1, since May 2017, supervisors Laurent Pujo Menjouet et Suzanne Sindi (University of California, Merced)

PhD : Arnaud Bonnafoux, Vers une inférence automatique de réseaux de gènes dynamiques à partir de « mégadonnées » temporelles discrètes acquises sur cellules uniques, Université Lyon 1, October 2018, Olivier Gandrillon (CIFRE with the COSMOTECH).

PhD : Loïs Boullu, Modélisation de la mégacaryopoïèse et applications aux maladies liées â la production des plaquettes, Université Lyon 1, November 2018, Laurent Pujo Menjouet and Jacques Bélair (co-tutelle avec l'Université de Montréal).

PhD : Simon Girel, Modélisation de la réponse immunitaire T CD8 : analyse mathématique et modèles multi-échelles, Université de Lyon, November 2018 , encadrant: Fabien Crauste.

PhD : Ulysse Herbach, Modèles graphiques probabilistes pour l'inférence de réseaux de gènes, Université Lyon 1, September 2018, Olivier Gandrillon, Thibault Espinasse (ICJ) and Anne-Laure Fougères (ICJ).

7.2.3. Juries

We separate the juries of team members from external participations. PhD Defense within the team in 2018

- Arnaud Bonnaffoux (O. Gandrillon supervisor),
- Lois Boullu (L. Pujo Menjouet supervisor, M. Adimy and F. Crauste examiners),
- Ulysse Herbach (O. Gandrillon supervisor)
- Simon Girel (F. Crauste supervisor L. Pujo Menjouet examiner).
- M. Adimy: PhD of Linlin Li, Mathematical analysis of a model of partial differential equations describing the adaptation of mosquitoes facing the usage of insecticides, University of Bordeaux, reviewer.
- M. Adimy: PhD of Zhengyang Zhang, A class of state-dependent delay differential equations and applications to forest growth, University of Bordeaux, examiner.
- V. Volpert: PhD of Guillaume Cantin, Étude de réseaux complexes de systèmes dynamiques dissipatifs ou conservatifs en dimension finie ou infinie. Application à l'analyse des comportements humains en situation de catastrophe. Université Le Havre Normandie, examiner.
- S. Bernard : Charles Rocabert, Etude de l'évolution de micro-organismes bactériens par des approches de modélisation et de simulation informatique, INSA Lyon, (examiner)

7.3. Popularization

7.3.1. Articles and contents

- L. Pujo Menjouet : interview dans Causette (hors série Juillet-Août 2018)
- L. Pujo Menjouet : interview dans le magazine Society (fin juillet 2018)

7.3.2. Interventions

- T. Lepoutre: Visite de l'inria pour les stagiaires de 3e de l'ICJ (plusieurs fois dans l'année, une matinée en général).
- T. Lepoutre: présentation de l'antenne et des équipes à deux classes lors du congrès Maths en Jeans (mars 2018)
- T. Lepoutre participation to MathaLyon interventions
- L. Pujo Menjouet : participation à Math en Jeans édition 2018 (collège de la côte Roannaise, Renaison)
- L. Pujo Menjouet : présentation de deux conférences au collège de Saint Bonnet le château le 21 juin 2018

<h1 style="color:red; text-align:center">DYLISS Project-Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Workshop on Systems Biology Chile-France, Co-organization (A. Siegel) [More details]

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- SWAT4HCLS (2018) Semantic Web and Tools for Health Care and Life Sciences (O. Dameron)
- BBCC (2018): Bioinformatica e Biologia Computazionale in Campania (O. Dameron)
- JFO (2018): Journées Francophones sur les Ontologies (O. Dameron)
- Journée IA et santé, organized by AFIA and AIM (O. Dameron)
- JOBIM (2018): French conference of Bioinformatics (A. Siegel)
- ISCB (2018) International Conference on Systems Biology (A. Siegel)
- WCB (2018) Workshop on Constraint-based methods in Bioinformatics (A. Siegel)
- BIOINFORMATICS (2018) (A. Siegel)
- ICGI 2016: The 13th International Conference on Grammatical Inference [F. Coste]

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- O. Dameron is an associate editor of the Journal of Biomedical Semantics
- A. Siegel is an academic editor of Genes (MDPI)

10.1.3.2. Reviewer - Reviewing Activities

- Artificial Intelligence in Medicine
- Briefings in Bioinformatics
- Journal of Biomedical Semantics
- Journal on Data Semantics
- Journal of Theoretical Biology
- Natural Computing
- PLOS One

10.1.4. Invited Talks

- Meziane Aite. Workshop France-Chile on Systems Biology. *Tools for metabolic network comparison at genome- scale: application on algaes*, Valparaiso, Chile.
- Maxime Folschette. 4th Annual Meeting of the Bioss Workgroup (Journées annuelles du GT Bioss). *GULA: Semantics-Free Learning of a Biological Regulatory Networks from a Synchronous, Asynchronous or Generalized State Graph*. Marseille.
- Clémence Frioux. Invited speaker of weekly seminar: Bioinformatics group at Laboratoire de Recherche en Informatique (LRI). *Investigating host-microbiota cooperation with gap-filling optimization problems*. Orsay.

- Clémence Frioux. Invited speaker at UMR NUtriomics, Institute of Cardiometabolism and Nutrition (ICAN). *Scalable and exhaustive screening of metabolic functions in microbiotas*. Paris.
- Clémence Frioux. Seminar in the Ecology group led by Pr. Pablo Marquet Universida Catolica de Chile. *Scalable and exhaustive screening of metabolic functions in microbiotas*. Santiago, Chile.
- Clémence Frioux. Workshop France-Chile on Systems Biology. *Scalable and exhaustive screening of metabolic functions in microbiotas*. Valparaiso, Chile.
- Clémence Frioux. Journées Scientifiques de Nantes. *Scalable and exhaustive screening of metabolic functions in carried out by microbial consortia*. Nantes.
- Marine Louarn. Workshop France-Chile on Systems Biology. *Integration of omics data for the specification of regulation networks in health; identification of regulatory mechanisms*. Valparaiso, Chile.
- Anne Siegel. National meeting of the French Society of Microbiology. *Several aspects of artificial intelligence : which perspectives for microbiology?*. Paris.
- Anne Siegel. Century Seminar. *Reasoning over biological systems with large-scale and incomplete data*. Marseille.
- Anne Siegel. Journées annuelles du GT Bioss. *Learning boolean rules for the regulatory control of metabolism : a case study*. Marseille.
- Anne Siegel. Séminaire INRA-CATI. *Metabolic network reconstruction for non-model organisms*. INRA.
- Anne Siegel. ECCB worshop Logical modeling of cellular networks. *Learning boolean rules for the regulatory control of metabolism : a case study*. Athens, Greece.
- Anne Siegel. Workshop France-Chile on Systems Biology. *Integrating and querying data with AskOmics*. Valparaiso, Chile.
- Nathalie Théret. *Causality analysis of TGF-β-dependent signaling pathways*. Workshop "Computational System Biology for Cancer", Paris.
- Nathalie Théret. *Computational modeling to identify biomarkers and targets* Workshop DHU2020, Nantes, France

10.1.5. Leadership within the Scientific Community

- Member of the steering committee of the International Conference on Grammatical Inference [F. Coste]
- The team was involved in the foundation of a national working group on the symbolic study of dynamical systems named bioss [web access]. The group gathers more than 170 scientists, from computer science to biology. Three meetings were organized this year (Rennes, Marseille, Paris). The group is supported by two French National Research Networks: bioinformatics (GDR BIM : bioinformatique moléculaire) and informatics-mathematics (GDR IM : Informatique Mathématique).

10.1.6. Scientific Expertise

10.1.6.1. International expertise

- Luxembourg, FNR. Core program [A. Siegel]
- Senegal, CEA-MITIC (Centre d'Excellence Africain en Mathématiques, Informatique et TIC [O. Dameron, reviewed 1 project]

10.1.6.2. National responsibilities

- **Scientific program committee** National Research Agency, CES 45 [A. Siegel]
- **Institutional boards for the recruitment and evaluation of researchers**.
  - National Council of Universities, section 65 [O. Dameron, nominated member].
- **Recruitment committees**.

- Inria Senior Researchers [national committee, A. Siegel]
- Inria Junior Researchers [Saclay, A. Siegel]
- Assistant Professor [Univ. Marseille, A. Siegel]

10.1.6.3. National scientific boards

- Animation of the Systems Biology working group of national infrastructure GDR IM and GDR BIM (Bioss, details above) [A. Siegel].
- Board of directors of the French Society for biology of the extracellular matrix [N. Théret].

10.1.6.4. Local responsibilities

- Scientific Advisory Board of Biogenouest [N. Théret]
- IRISA laboratory (computer science department of Univ. Rennes 1) council [A. Siegel]
- Responsability of the IRISA laboratory "Health-biology" cross-cutting axis [O. Dameron] [More details]
- Elected member of the social action services (ASUR) of Univ. Rennes 1 [C. Belleannée]
- Scientific committee of Univ. Rennes 1 school of medicine [O. Dameron, A. Siegel].

10.1.7. Research Administration

10.1.7.1. Inria Instances

- Inria National evaluation board [A. Siegel, nominated member].
- Equality and diversity Committee, Inria - Responsible of the working group focusing on recruitment procedures [A. Siegel].

10.1.7.2. Prospective working groups

- "Big & Open Data en recherche à l'horizon 2040" foresight working group of PROSPER network [F. Coste].

10.1.7.3. Inria local instances

- Gender equality commission, IRISA & Inria Rennes [A. Siegel, coordinator]
- Inria-Rennes Computer science infrastructure users commission - CUMI-R commission [F. Coste]
- Inria Rennes PHD recruitment (CORDIs) [C. Belleannée]

10.2. Teaching - Supervision - Juries

10.2.1. Teaching track responsibilities

- Coordination of the doctoral school "Biology and Health" of University of Bretagne Loire, Rennes Site 1 [N. Théret]
- Coordination of the master degree "Bioinformatics and genomics", Univ. Rennes1 [O. Dameron]

10.2.2. Course responsibilities

- "Internship", Master 1 in Computer Sciences, Univ. Rennes 1 [C. Belleannée]
- "Supervised machine learning", Master 2 in Computer Sciences, Univ Rennes 1 [F. Coste]
- "Atelier bioinformatique", Licence 2 informatique, Univ. Rennes 1 [O. Dameron]
- "Bioinformatique pour la génomique", 2nd year school of medicine, Univ. Rennes 1 [O. Dameron]
- "Bases de mathématiques et probablité" and "Méthodes en informatique", Master1 in public health, Univ. Rennes 1 [O. Dameron]
- "Intégration: Remise à niveau en informatique", Master 1 in bioinformatics, Univ. Rennes 1 [O. Dameron]
- "Programmation en Python", Master 1 in Public Health, Univ. Rennes 1 [O. Dameron]

- "Programmation impérative en Python", Master 1 in bioinformatics, Univ. Rennes 1 [O. Dameron]
- "Système informatique GNU/Linux", Master 1 in bioinformatics, Univ. Rennes 1 [O. Dameron]
- "Semantic Web and bio-ontologies", Master 2 in bioinformatics, Univ. Rennes 1 [O. Dameron]
- "Internship", Master 2 in bioinformatics, Univ. Rennes 1 [O. Dameron]
- Master: A. Siegel, Integrative and Systems biology, Master 2 in bioinformatics, Univ. Rennes 1 [A. Siegel]
- Micro-environnement Cellulaire normal & pathologique, Master 2 in Biologie cellulaire et Moléculaire, Univ. Rennes 1 [N. Théret]

10.2.3. Teaching

Licence: C. Belleannée, Langages formels, 20h, L3 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Projet professionnel et communication, 16h, L1 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Enseignant référent, 20h, L1 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Spécialité informatique : Functional and immutable programming , 42h, L1 informatique, Univ. Rennes1, France

Licence: O. Dameron, Biostatistiques, 12h, 1st year school of medicine, Univ. Rennes 1, France

Licence: O. Dameron, Bioinformatique pour la génomique, 2h, 2nd year school of medicine, Univ. Rennes 1, France

Licence: O. Dameron, "Atelier bioinformatique", 8h, Licence 2 informatique, Univ. Rennes 1, France

Master: O. Dameron, "Intégration: Remise à niveau en informatique", 14h Master 1 in bioinformatics, Univ. Rennes 1, France

Licence: C. Frioux, Projet Python, 18h, L3 ENSAI, France.

Licence: C. Frioux, Techniques d'optimsiation, 12h, L3 ENSAI, France.

Licence: M. Louarn, Introduction à la BioInformatique, 2h, L2 Informatique, Univ. Rennes 1, France.

Licence: M. Louarn, TPs Python, 8h, L1 Biologie, Univ. Rennes 1, France.

Licence: H. Talibart, Programmation scientifique Python, 24h, L1, Rennes1, France.

Licence: M. Wery, TPs Python, 36h, L1 Biologie, Univ. Rennes 1, France

Master: O. Dameron, "Programmation impérative en Python", 82.25h Master 1 in bioinformatics, Univ. Rennes 1, France

Master: C. Belleannée, Programmation logique avec contraintes et algorithmes génétiques, 40h, M1 informatique, Univ. Rennes1, France.

Master: C. Belleannée, Algorithmique du texte et bioinformatique, 10h, M1 informatique, Univ. Rennes1, France

Master: L. Bourneuf, Projet, 20h, M1 Santé Publique, France.

Master: F. Coste, Supervised machine learning, 15h, M2 Computer Sciences, Univ Rennes 1, France

Master: O. Dameron, "Object-oriented programming", 20h Master 1 in bioinformatics, Univ. Rennes 1, France

Master: O. Dameron, "Système informatique GNU/Linux", 20h, Master 1 in bioinformatics, Univ. Rennes 1, France

Master: O. Dameron, 8h, "Internship", Master 1 in bioinformatics, Univ. Rennes 1

Master: O. Dameron, "Bases de mathématiques et probablité", 18.75h, Master1 in public health, Univ. Rennes 1

Master: O. Dameron, "Programmation impérative en Python", 3h Master 1 in public health, Univ. Rennes 1, France

Master: O. Dameron, 21h, "Semantic Web and bio-ontologies", Master 2 in bioinformatics, Univ. Rennes 1

Master: O. Dameron, 10h, "Internship", Master 2 in bioinformatics, Univ. Rennes 1

Master: C. Belleannée, 20h, "Internship", Master 1 Computer Sciences, Univ. Rennes 1, France

Master: M. Louarn, Informatique Médicale Avancée, 2h, M1 Médecine, Univ. Rennes 1, France.

Master: M. Louarn, Object-oriented programming, 25h, M2 bioinformatique et génomique, Univ. Rennes 1, France.

Master: A. Siegel, Integrative and Systems biology, 25h, M2, Univ. Rennes 1, France.

Doctorat: A. Siegel, Reasoning over biological systems with large-scale and incomplete data, 3h, Thematic Research School on "advances in Systems & Synthetic Biology", Evry'18.

10.2.4. Supervision

PhD : Clémence Frioux, *Investigating host-microbiota cooperation with gap-filling optimization problems.*, started in Oct. 2015, defended on Nov. 19 2018, supervised by A. Siegel [11].

PhD in progress : Yann Rivault, *Analyse de trajectoires de soins à partir de bases de données médico-administratives : apport d'un enrichissement pas des connaissances biomédicales issues du Web des Données*, started in Oct. 2015, defense expected 28th January 2019, supervised by O. Dameron and N. Lemeur.

PhD in progress : Lucas Bourneuf, *Justifiable graph decomposition to assist biological network understanding*, started in Oct. 2016, supervised by J. Nicolas.

PhD in progress : Hugo Talibart, *Learning grammars with long-distance correlations on proteins*, started in Nov. 2017, supervised by F. Coste and J. Nicolas.

PhD in progress : Mael Conan, *Predictive approach to assess the genotoxicity of environmental contaminants during liver fibrosis*, started in Oct. 2017, supervised by S. Langouet and A. Siegel.

PhD in progress: Marine Louarn, *Intégration de données génomiques massives et hétérogènes, application aux mutations non-codantes dans le lymphome folliculaire*, started in Oct. 2017, supervised by A. Siegel, T. Fest (CHU) and O. Dameron.

PhD in progress : Méline Wery, *Methodology development in disease treatment projects.* , started in Oct. 2017, supervised by O. Dameron, C. Bettembourg (Sanofi) and A. Siegel.

PhD in progress : Nicolas Guillaudeux, *Comparer des structures de gènes pour la prédiction de transcrits isoformes codants et non-codants*, started in Oct. 2018, supervised by O. Dameron, C. Belleannée and S. Blanquart.

PhD in progress : Pierre Vignet, *Identification et conception expérimentale de nouveaux agents thérapeutiques à partir d'un modèle informatique des réseaux d'influence du TGF-β dans les pathologies hépatiques chroniques* , started in Dec. 2018, supervised by N. Théret and A. Siegel.

10.2.5. Juries

- *Referee of Ph-D thesis*. C. Biane, Univ Paris Saclay [A. Siegel]. A. Bonnafoux, ENS Lyon [A. Siegel]. B. Miraglio, Univ Nice [A. Siegel]. G Personeni, Univ. Lorraine [O. Dameron].
- *Member of Ph-D thesis juries*. C. Marchet, Univ Rennes [A. Siegel]. M. Pichene, Univ. Rennes [A. Siegel].
- *Refererr of habilitation thesis juries*. A. Baudot, Univ. Marseille.
- *Member of medicine doctorate juries* A. El Matoutat [O. Dameron].

10.2.6. Interns

- Internship, from Jan 2018 until Jun 2018. Supervised by I. Vigalatti and O. Dameron. Student: Guillaume Alviset. Subject: Selecting SPARQL endpoints for faster processing of federated queries.

- Internship, from Jan 2018 until Jun 2018. Supervised by A. Siegel. Student: Aurelien Cornet. Subject: Inférence de réseaux biologiques multi-échelles.

- Internship, from Apr 2018 until Jul 2018. Supervised by A. Siegel, F. Legeai and J. Bobe. Student: Clara Delahaye. Subject: Intégration des réseaux géniques de Oryzias latipes impliqués dans la fécondité et régulés par le microARN-202-5p.

- Internship, from Apr 2018 until Jul 2018. Supervised by A. Siegel and R. Munoz. Student: Emile Dumont. Subject: Reconstruction du réseau métabolique de bactéries cellulolytiques du rumen : exploration des voies de dégradation de la cellulose et de l'hémicellulose.

- Internship, from Jan 2018 until Jun 2018. Supervised by C. Frioux. Student: Enora Fremy. Subject: Etude du potentiel de coopération métabolique entre hôte et microbiote à l'échelle fonctionnelle.

- Internship, from Jan 2018 until Jun 2018. Supervised by C. Belleannée and S. Blanquart. Student: Nicolas Guillaudeux. Subject: Prédiction de transcriptome : analyse comparative multi-gènes, orthologues.

- Internship, from Apr 2018 until Jul 2018. Supervised by J. Got. Student: Teo Lemane. Subject: Curation du réseau métabolique de T. Lutea via des méthodes hétérogènes.

- Internship, from Jan 2018 until Jul 2018. Supervised by N. Théret, J. Nicolas and L. Bourneuf. Student: Linh Chi Nguyen. Subject: Compression of large interaction graphs for the identification of protein modules in the extracellular matrix.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Science en Cour[t]s (*http://sciences-en-courts.fr/*) Many of our on-going and former Ph-D students (M.Wery, L. Bourneuf, A. Antoine-Lorquin, C. Bettembourg, J. Coquet, V. Delannée, G. Garet, S. Prigent) have been heavily involved in the organization of a local Popularization Festival where Ph.D. students explain their thesis via short movies. The movies are presented to a professional jury composed of artists and scientists, and of high-school students. Previous years films can be viewed on the festival web-site [More details]

10.3.2. Interventions

- "J'peux pas j'ai informatique", Welcoming of high-school students to leverage stereotypes about computer sciences, Apr. 2018 [A. Siegel]

- Atelier Google Numerics, Rennes, table ronde *Enseigner le code dès le plus jeune âge*, Oct. 2018 [A. Siegel]

- "Rencontre des jeunes mathématiciennes", ENS Rennes, 2-days workshop for high-school girl students in mathematics. Introduction to gender stereotypes in mathematics, Nov. 2018 [A. Siegel]

10.3.3. Creation of media or tools for science outreach

- Le Language comme inspiration [youtube link] [H. Talibart]

- Les aventuriers du remède perdu [youtube link] [M. Louarn and M. Wery]

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EPIONE Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Member of the Organizing Committees

- M. Sermesant was a co-chair of the MICCAI 2018 Workshop Statistical Atlases and Computational Models of the Heart (STACOM 2018), which was held in Granada, September 16, 2018.

- H. Delingette was a member of the organizing committee of the scientific day at Inria Sophia Antipolis (September 10th) including two keynote speakers on "Digital privacy" and presenting the activities of the UCA academy on "Networks, Information and Digital Society".

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- H. Delingette was Workshop and Tutorial co-chair for the international conference Medical Image Computing and Computer Aided Intervention (MICCAI 2018) held in Granada, Spain from Sept. 16-20.

9.1.2.2. Reviewer

- M. Lorenzi was a reviewer for the conferences Neural Information Processing Systems (NIPS 2018), International Conference on Machine Learning (ICML 2018), Medical Image Computing and Computer Aided Intervention (MICCAI 2018), International Conference on Learning Representations (ICLR 2019), IEEE International Symposium of Biomedical Imaging (ISBI 2017-19).

- X. Pennec was a reviewer for Medical Image Computing and Computer Aided Intervention (MICCAI 2018) and the MICCAI workshop on Shape in Medical Imaging (ShapeMI 2018).

- M. Sermesant was a reviewer for Medical Image Computing and Computer Aided Intervention (MICCAI 2018) and the MICCAI workshop STACOM.

- H. Delingette was a reviewer for the International Symposium on Biomedical Imaging (ISBI'18), the international conference on computer-aided interventions (IPCAI'18), the conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2018), the International Conference on Computer Vision and Pattern Recognition (CVPR 2018).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- N. Ayache is the co-founder and the Co-Editor in Chief with J. Duncan (Professor at Yale) of Medical Image Analysis journal. This scientific journal was created in 1996 and is published by Elsevier.

- N. Ayache is a member of the editorial board of the following journals: Medical Image Technology (Japanese journal) and Journal of Computer Assisted Surgery (Wiley).

- H. Delingette is a member of the editorial board of the journal Medical Image Analysis (Elsevier).

- I. Strobant is editorial coordinator for Medical Image Analysis, Elsevier (since october 2001).

- X. Pennec is a member of the editorial board of the journal Medical Image Analysis (Elsevier), of the International Journal of Computer Vision (Springer), of the SIAM Journal on Imaging Sciences (SIIMS), and of the Journal of Mathematical Imaging and Vision (JMIV).

- M. Lorenzi is a member of the editorial board of the journal Scientific Reports (Nature Publishing Group); he is also member of the Board of Statisticians of the Journal of Alzheimer's Disease (IOS Press).

9.1.3.2. Reviewer - Reviewing Activities

- M. Lorenzi was a reviewer for the following journals: Neurobiology of Aging, Alzheimer's and Dementia, Journal of Alzheimer's Disease, Medical Image Analysis, IEEE Transactions on Medical Imaging, NeuroImage, International Journal of Computer Vision, Journal of Mathematical Image and Vision, Scientific Reports.

- Xavier Pennec was a reviewer for IEEE Transactions on Information Theory, The Annals of Applied Statistics, Linear Algebra and its Applications.

- M. Sermesant was a reviewer for the following journals: Nature Cardiology Reviews, Journal of the American College of Cardiology, IEEE Transactions on Medical Imaging, IEEE Transactions on Biomedical Engineering, Medical Image Analysis and Computers in Biology and Medecine.

- H. Delingette was a reviewer for the following journals: Medical Image Analysis (Elsevier), IEEE Transactions in Medical Imaging, IEEE Transactions in Biomedical Engineering.

9.1.4. Invited Talks

- **N. Ayache** gave the following plenary invited talks:
    - AI for Digital Patients, Int Conf on Image Comput. and Digital Medicine, Chengdu, China, 2018,
    - IA & Healthcare, IA Summit, Sophia Antipolis, 2018,
    - Patient numérique: images, apprentissage, intelligence artificielle, Collége de France 2018,
    - L'intelligence articifielle au coeur de la médecine de précision, Medicen, Paris, 2018.

- **M. Lorenzi** was a speaker for the panel IA & Santé of the SophIA Summit 2018, Sophia Antipolis, November 7th, 2018. He was also invited to give a lecture to the Armour College of Engineering of the Illinois Institute of Technology, Chicago, July 25th 2018, to the General Assembly of the European Clinical Project AMYPAD, Berlin, October 9th 2018, and to the Disease Progression Modeling Workshop of the European project EUROPOND, Geneva, February 19th, 2018.

- **X. Pennec** was invited speaker at the Mathematics and Image Analysis Conference (MIA 2018), 15-17 January 2018, Berlin (DE), at the MFO workshop on Nonlinear Data: Theory and Algorithms, Oberwolfach (DE), 22-28 April 2018, at the MFO workshop on Statistics for Data with Geometric Structure, Oberwolfach (DE), 21-27 January 2018.

- **M. Sermesant** was an invited speaker at the Fields Institute (Toronto) "Mathematics for Medicine" workshop, at the "Myocardial Function" workshop in Leuven, at the CardioFunxion Winter School in Lyon, at the "New Horizons in Heart Failure" conference in Paris, at the "Computing in Cardiology" conference in Maastricht, at the French Radiology Days meeting of Cardiac Imaging in Paris, at the PIC Marie Curie ITN meeting in Bordeaux.

- **H. Delingette** was a keynote speaker at the NAFEMS conference in Paris November 20th 2018, and an invited speaker at the SOFA workshop in Strasburg in November 2018, at the Data Science structuring program evaluation day in Sept. 2018.

- **N. Miolane** was invited speaker at the MFO workshop on Statistics for Data with Geometric Structure, Oberwolfach (DE), 21-27 January 2018, at the Workshop on Geometry in Machine Learning (GiMLi), July 15, 2018, Stockholm, Sweden and at the Seminar of John Hopkins University, Center of Imaging Science, May 19, 2018, Baltimore, USA.

9.1.5. Leadership within the Scientific Community

- **H. Delingette** is a member of the MICCAI Society Board of Directors.

9.1.6. Scientific Expertise

- **N. Ayache** is a member of the following scientific committes:
    - 2016 -: Scientific advisory committee for Région Ile de France (20 members),

– 2015 -: Research Committee of Fondation pour la Recherche Médicale (18 members),

– 2010 -: Scientific Advisory Boards in London (ICL,KCL,UCL), Oxford & Notthingham,

– 2009 - 2019: Advisory Committee, Japan Initiative in Computational Anatomy, MEXT.

- **M. Lorenzi** was reviewer of the funding agencies ANR (Agence Nationale de la Recherche, France) and an expert panel member for the evaluation of the projects submitted to the Flanders Research Foundation, Belgium. He is providing scientific consulting for the company MyDataModels through an Inria Tech research contract.

- **X. Pennec** was a member of the Junior researcher (CR) recruiting committee for Inria-Sophia Antipolis, for the Inria International Chairs Selection Committee, and an evaluator for the Netherlands Organisation for Scientific Research (NWO).

- **M. Sermesant** was an evaluator for the Wellcome Trust (UK) and the NSF (USA).

- **H. Delingette** was an evaluator for the Dutch research council NWO, and or the Research Council of KU Leuven.

9.1.7. Research Administration

- **Xavier Pennec** is co-director and at the board of the Ecole doctorale STIC of Université Côte d'Azur. He is a member of the Doctoral follow-up Committee (CSD) at Inria Sophia Antipolis, of the the "Comité de la Recherche Biomédicale en Santé Publique (CRBSP)" of the Nice hospitals and in charge of the relationships of Inria-Sophia with the Nice University Hospital (CHU). At University Côte d'Azur, he is a member of the executive committee of the Academy 4 (Living systems Complexity and diversity), of the Scientific committee of the Academy 2 (Complex Systems), and of the Advanced Research Program Committee.

- **Marco Lorenzi** is is a member of the local steering committee of the technological platforms (Comités Scientifiques de Pilotage des Plateformes) in charge of Cluster, Grid, Cloud, and HPC technologies. He is also member of the Scientific Board of the UCA NeuroMod Institute.

- **Hervé Delingette** is a member of the local committee in charge of the scientific selection of visiting scientists (Comité NICE) and the local committee on the immersive platform. He is the coordinator of the Academy of excellence on "Networks, Information and Digital Society" at the Université Côte d'Azur. He is member of the executive committee of the "Ecole Universitaire de recherche" entitled *Digital Systems for Humans* at Université Côte d'Azur. He is a representive of Inria at the Federation Hospitalo-Universitaire Oncoage led by the CHU Nice.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: H. Delingette and X. Pennec, Introduction to Medical Image Analysis, 21h course (28.5 ETD), Master 2 MVA, ENS Cachan, France.

Master: X. Pennec and H. Delingette, Advanced Medical Imaging, 21h course (28.5 ETD), Master 2 MVA and École Centrale de Paris, France.

9.2.2. Theses Defended

- Pamela Moceri, From normal right ventricle to pathology: shape and function analysis with different loading conditions using imaging and modelling. Started in 2015. Directed by M. Sermesant. Defended on January 25 2018.

9.2.3. PhD in progress

- Raphaël Sivera, Analyse statistique de l'évolution de structures morphologiques partir de séquences temporelles d'IRM, Université Côte d'Azur. Started in October 2015. Co-directed by N. Ayache and H. Delingette and co-supervised by M. Lorenzi and X. Pennec.

- Pawel Mlynarski, Tumor segmentation based on Random Forests and Convolutional Neural Networks trained on partially annotaded data, Université Côte d'Azur. Started in December 2015. Co-directed by N. Ayache and H. Delingette.

- Qiao Zheng, Deep learning for cardiac image analysis, Université Côte d'Azur. Started in January 2016. Co-directed by N. Ayache and H. Delingette.

- Shuman Jia, Population-based Model of Atrial Fibrillation: from Shape Statistics to Group-wise Physiology, Université Côte d'Azur. Started in 2016. Co-directed by M. Sermesant and X. Pennec.

- Wen Wei, Learning Brain Alterations in Multiple Sclerosis from Multimodal Neuroimaging Data, Université Côte d'Azur. Started in 2016. Co-directed by N.Ayache and O.Colliot.

- Julian Krebs, Robust image registration based on machine learning, Université Côte d'Azur. Started in 2016. Co-directed by H. Delingette and N. Ayache.

- Luigi Antelmi, Statistical learning on large databases of heterogeneous imaging, cognitive and behavioural data, Université Côte d'Azur. Started in 2017. Co-directed by P. Robert and N. Ayache and supervised by M. Lorenzi.

- Clément Abi-Nader, Statistical Learning of Heterogeneous Data in Large-Scale Clinical Databases, Université Côte d'Azur. Started in 2017. Co-directed by P. Robert and N. Ayache and supervised by M. Lorenzi.

- Jaume Banús Cobo, Heart & Brain: discovering the link between cardiovascular pathologies and neurodegeneration through biophysical and statistical models of cardiac and brain images, Université Côte d'Azur. Started in 2017. Directed by M. Sermesant and co-supervised by Marco Lorenzi.

- Tania-Marina Bacoyannis, Cardiac Imaging and Machine Learning for Electrostructural Tomography, Université Côte d'Azur. Started in 2017. Co-directed by M. Sermesant and H. Cochet.

- Nicolas Cedilnik, Personalised Modeling for Ventricular Tachycardia Ablation Planning, Université Côte d'Azur. Started in 2017. Co-directed by M. Sermesant and H. Cochet.

- Nicolas Guigui, Statistical estimation on Riemannian and affine symmetric spaces with applications to the statistical survey of the brain anatomy, Université Côte d'Azur. Started in 2018. Directed by X. Pennec.

- Benoît Audelan, Joint biological and imaging markers for the diagnosis of severe lung diseases. Started in 2018. Co-directed by H. Delingette and N. Ayache.

- Zihao WANG, Cochlear Implantation Modeling, Planning & Evaluation. Started in 2018. Directed by H. Delingette.

9.2.4. Juries

- Marco Lorenzi was a jury member for the PhD probation exam of Kurt Kutajar and Remi Domingues (EURECOM), Isa Costantini (Athena, Inria), and Radia Zeghari (CoBTeK, Inria, CHU Nice).

- Xavier Pennec was co-supervisor of the PhD thesis of Pauline Bezivin Frere (U. Orsay) defended in July 2018, reviewer for the PhD of Maël Dugast, INSA Lyon, FR, Dec. 2018 and for the PhD of Baptiste Moreau, University of Montpellier II, FR, March 2018. He was the president of the jury of the HDR of Laurent Risser (HDR), U. Toulouse, FR, November 2018.

- Hervé Delingette was a reviewer in the PhD thesis committee of C. Jaquet (ESIEE- Univ. of Paris-Est).

- Maxime Sermesant was a reviewer and a member of the PhD jury of Josselin Duchateau, Bordeaux University (Dec 20), a reviewer for the PhD of Sergio Sanchez, UPF Barcelona (Sep 21) and a member of the PhD jury of Ketan Bacchuwar, ESIEE (Jun 5).

9.3. Popularization

9.3.1. Interventions

- Nicolas Cedilnik, Pierre Tramaloni, Thomas Demarcy, Hervé Delingette and Maxime Sermesant organised a cardiac intervention simulator demo and a cochlear implant demo for the Science Festival at Inria (Dec 7).

- On April the 10th, during the "mathematics week", 2 PhD students (Nicolas Cedilnik and Raphael Sivera) met young pupils (age 8-10) at the ESPE (école supérieure du professorat et de l'éducation) Nice. The pupils were introduced to mathematical concepts in a practical way through the use of toys.

ERABLE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Giuseppe Italiano is member of the Steering Committee of the *Workshop on Algorithm Engineering and Experimentation (ALENEX)*, of the *International Colloquium on Automata, Languages and Programming (ICALP)*, and the Workshop/Symposium on Experimental Algorithms (SEA).
- Alberto Marchetti-Spaccamela is a member of the Steering committee of *Workshop on Graph Theoretic Concepts in Computer Science (WG))*, and of *Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems (ATMOS)*.
- Arnaud Mary is member of the Steering Committee of *Workshop on Enumeration Problems and Applications (WEPA)*.
- Marie-France Sagot is member of the Steering Committee of *European Conference on Computational Biology (ECCB)*, *International Symposium on Bioinformatics Research and Applications (IS-BRA)*, and *Workshop on Enumeration Problems and Applications (WEPA)*.
- Alexander Schönhuth is member of the Steering committee of the *Research in Computational Molecular Biology, satellite conference on massively parallel sequencing (RECOMB-seq)*.

9.1.1.2. Member of the Organizing Committees

- Marie-France Sagot was co-organiser of the Dagstuhl Seminar on "Algorithmic Enumeration: Output-sensitive, Input-Sensitive, Parameterized, Approximative", Dagstuhl Schloss, Oct 14 to 19, 2018.
- Alexander Schönhuth was main organiser of main organizer of the Lorentz workshop on "Single Cell Data Science", Lorentz center, Leiden, June 4-8, 2018.
- Leen Stougie was member of the Organizing Committee of the *3rd Highlights of Algorithms (HALG 2018) conference* in the Free University of Amsterdam, June 4-6, 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Giuseppe Italiano was a member of the Program Committee of *ISAAC*,*STOC*, *ICALP*, and *WALCOM* in 2018.
- Arnaud Mary was a member of the Program Committee of *CIAC* in 2018.
- Nadia Pisanti was a member of the Program Committee of *BIOINFORMATICS*, *FUN*, *ISBRA*, *BIOKDD*, *CIBB*, *Hi BI BI* in 2018.
- Marie-France Sagot was a member of the Program Committee of *SEA*, *CIAC*, *WABI*, *WEPA*, in 2018.
- Alexander Schönhuth was a member of the Program Committee of *RECOMB*, *ISMB*, *GCB* (German bioinformatics conference), and *ISMCO* (International Symposium on Mathematical and Computational Oncology) in 2018.

9.1.2.2. Reviewer

Members of ERABLE have reviewed papers for a number of workshops and conferences including: *CPM*, *ISMB*, *RECOMB*, *WEPA*, *WABI*.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Pierluigi Crescenzi is member of the Editorial Board of *Journal of Computer and Systems Science and Electronic Notes on Theoretical Computer Science*.

- Roberto Grossi is member of the Editorial Board of *Theory of Computing Systems (TOCS)* and pf *RAIRO – Theoretical Informatics and Applications*.

- Giuseppe Italiano is member of the Editorial Board of *Algorithmica* and *Theoretical Computer Science*.

- Alberto Marchetti-Spaccamela is member of the Editorial Board of *Theoretical Computer Science*.

- Arnaud Mary is Editor-in-Chief of a special issue of *Discrete Applied Mathematics* dedicated to *WEPA* 2016.

- Nadia Pisanti is since 2012 member of Editorial Board of *International Journal of Computer Science and Application (IJCSA)* and since 2017 of *Network Modeling Analysis in Health Informatics and Bioinformatics*.

- Marie-France Sagot is member of the Editorial Board of *BMC Bioinformatics*, *Algorithms for Molecular Biology*, and *Lecture Notes in BioInformatics*.

- Leen Stougie is member of the Editorial Board of *AIMS Journal of Industrial and Management Optimization*.

- Cristina Vieira is Executive Editor of *Gene*, and since 2014 member of the Editorial Board of *Mobile DNA*.

9.1.3.2. Reviewer - Reviewing Activities

Members of ERABLE have reviewed papers for a number of journals including: *Theoretical Computer Science*, *Algorithmica*, *Algorithms for Molecular Biology*, *Bioinformatics*, *BMC Bioinformatics*, *Genome Biology*, *Genome Research*, *IEEE/ACM Transactions in Computational Biology and Bioinformatics (TCBB)*, *Molecular Biology and Evolution*, *Nucleic Acid Research*.

9.1.4. Invited Talks

Giuseppe Italiano gave an Invited Talk on "2-Connectivity in Directed Graphs" at the *17th International Symposium on Experimental Algorithms (SEA 2018)* (http://cs.gssi.it/sea2018/, in L'Aquila, Italy, June 27–29, 2018.

Vincent Lacroix gave an Invited Presentation on "Traitement des données -omics" at the "9ème réunion annuelle Institut Thématique Multi-Organismes Technologies pour la Santé", https://its.aviesan.fr/index.php?pagendx=1046.

Alexander Schönhuth gave Invited Talks at the CONTRA workshop, Warszaw (organisers: Jens Lagergren, Ewa Szczurek, Niko Beerenwinkel), in September and at Harvard Medical School, Boston, in October.

Leen Stougie gave an Invited Talk on "A decomposition theory for vertex enumeration of convex polyhedra" at the *Martin Dyer Day and Queen Mary Algorithms Day*, Queen Mary University, London, UK, July 16-17, 2018. He gave Invited Lectures on "Full-length de novo viral quasispecies assembly through variation graph construction" at the *4th Dutch Bioinformatics & Systems Biology Conference*, De Werelt, Lunteren, Netherlands, May 15; on "Polynomial time vertex enumeration of convex polytopes of bounded branch-width" at the Department of Mathematics, University of Bremen, Germany, Sept 11; and on "Algorithmic Problems in Biological Networks" at the *9th Networks Day*, Hortus Botanicus, Leiden, Netherlands, Sept 19, 2018.

Fabrice Vavre gave Invited Talks on "Impact du microbiote sur l'évolution et la diversité des insectes" at the *Colloque de la Société Francophone de Microbiologie*, Paris, Oct 1-3, 2018; and on "Evolution of host-microbiota interactions: what insects tell us about selection levels?" at the Journées de l'IXXI, Lyon, Oct 16, 2018.

9.1.5. Scientific Expertise

Giuseppe F. Italiano is member of the Council of the European Association for Theoretical Computer Science. Leen Stougie is member of the General Board of the Dutch Network on the Mathematics of Operations Research (Landelijk Netwerk Mathematische Besliskunde (LNMB)).

9.1.6. Research Administration

Hubert Charles is director of the Biosciences Department of the Insa-Lyon and co-director of studies of the "Bioinformatique et Modélisation (BIM)" track.

Giuseppe Italiano is member of the Advisory Board of MADALGO - Center for MAssive Data ALGOrithmics, Aarhus, Denmark.

Alberto Marchetti-Spaccamela was Director of the Department of Computer Engineering and Management Antonio Ruberti at Sapienza University from 2013 until end of May 2018.

Nadia Pisanti is since November 1st 2017 member of the Board of the PhD School in Data Science (University of Pisa jointly with Scuola Normale Superiore Pisa, Scuola S. Anna Pisa, IMT Lucca).

Marie-France Sagot is member of the Advisory Board of CWI, Amsterdam, the Netherlands, and chair of the CSS for MBIO at Inra.

Alexander Schönhuth is member of the Scientific Board of BioSB (the Dutch organisation for bioinformatics) since May 2017.

Leen Stougie is since April 2017 Leader of the Life Science Group at CWI.

Alain Viari was until Feb 2018 Deputy Scientific Director at Inria responsible for the ICST for Life and Environmental Sciences. He thus represented Inria at several national instances related to Life Sciences and Health (Allenvi, Aviesan, Ibisa, etc.). He is member of a number of scientific advisory boards (IRT (Institut de Recherche Technologique) BioAster; Centre Léon Bérard). He also coordinates together with J.-F. Deleuze (CNRGH-Evry) the Research & Development part (CRefIX) of the "Plan France Médecine Génomique 2025".

Fabrice Vavre is President of the Section 29 of the CoNRS and participated to the HCERES Evaluation Committee of the IAME Laboratory (UMR1137, Dir. E. Denamur), Paris, Mar 1-2, 2018.

Cristina Vieira is member of the "Conseil National des Universités" (CNU) 67 ("Biologie des Populations et Écologie"), and since 2017 member of the "Conseil de la Faculté des Sciences et Technologies (FST)" of the University Lyon 1.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

9.2.1.1. France

The members of ERABLE teach both at the Department of Biology of the University of Lyon (in particular within the BISM (BioInformatics, Statistics and Modelling) specialty, and at the department of Bioinformatics of the Insa (National Institute of Applied Sciences). Cristina Vieira is responsible for the Master Biodiversity, Ecology and Evolution (https://www.bee-lyon-univ.fr/). She teaches genetics 192 hours per year at the University and at the ENS-Lyon. Hubert Charles is responsible for the Master of Modelling and Bioinformatics (BIM) at the Insa of Lyon (http://biosciences.insa-lyon.fr/). He teaches 192 hours per year in statistics and biology. Vincent Lacroix is responsible for several courses of the Master in Bioinformatics (https://www.bioinfo-lyon.fr/) (L3: Advanced Bioinformatics, M1: Methods for Data Analysis in Genomics, M1: Methods for Data Analysis in Transcriptomics, M1: Bioinformatics Project, M2: Ethics). He teaches 192 hours per year in bioinformatics. Arnaud Mary is responsible for two courses of the Bioinformatics Curriculum at the University (L2: Introduction to Bioinformatics and Biostatistics, M1: Object Oriented Programming) and one at Insa (Discrete Mathematics). He taught 198 hours in 2018. Blerina Sinaimeri taught 36 hours in 2018 on graph algorithms for the M1 students of the Master in Bioinformatics, and on Discrete Mathematics at Insa. Fabrice Vavre taught 20h at the Master level.

The ERABLE team regularly welcomes M1 and M2 interns from the bioinformatics Master.

Vincent Lacroix was an instructor in NGS data analysis training for the CNRS Formation in the last 4 years since 2015, a course coordinated by Eric Rivals from the LIRMM, Montpellier (https://www.france-bioinformatique.fr/fr/formations/bioinformatique-pour-traitement-donn%C3%A9es-s%C3%A9quen%C3%A7age-ngs.

All French members of the ERABLE team are affiliated to the doctoral school E2M2 (Ecology-Evolution-Microbiology-Modelling, http://e2m2.universite-lyon.fr/).

9.2.1.2. Italy & The Netherlands

Italian researchers teach between 90 and 140 hours per year, at both the undergraduate and at the Master levels. The teaching involves pure computer science courses (such as Programming foundations, Programming in C or in Java, Computing Models, Distributed Algorithms) and computational biology (such as Algorithms for Bioinformatics).

Dutch researchers teach between 40 and 270 hours per year, again at the undergraduate and Master levels, in pure computer science (*e.g.* Algorithm Engineering, Randomised Algorithms), applied mathematics (*e.g.* Operational Research, Advanced Linear Programming) and computational biology (*e.g.* Biological Network Analysis).

9.2.2. Supervision

The following PhDs were defended in ERABLE in 2018:

- Damiano di Francesco Maesa, University of Pisa, co-supervisors: Laura Ricci and Andrea Marino, Oct 2018.

- Mattia Gastaldello, Sapienza University of Rome and University of Lyon 1 (funded by "Vinci Program-Université Franco-Italienne", co-supervisors: Tiziana Calamoneri, Sapienza University of Rome; Marie-France Sagot), Feb 2018.

- Scheila Gabriele Mucha, Federal University of Rio Grande do Sul, Brazil (PhD scholarship from Brazil with one year spent as "sandwich PhD" in France funded by Capes, and 6 more months funded by a grant from ERABLE, co-supervisors: Arnaldo Zaha, Federal University of Rio Grande do Sul; Marie-France Sagot), Sept 2018.

The following are the PhDs in progress:

- Marianne Borderes, University Lyon 1 (funded by ANR Technology Spock, co-supervisors: Susana Vinga – Instituto Superior Técnico at Lisbon; Marie-France Sagot)

- Audric Cologne, University of Lyon 1 (funded by Inserm and Inria, co-supervisors: Patrick Edery – Federation of Health Research of Lyon-Est, Vincent Lacroix)

- Leandro Ishi Soares de Lima, University of Lyon 1 (funded by the Brazilian "Science without Borders" program, co-supervisors: Giuseppe Italiano, Vincent Lacroix, Marie-France Sagot)

- Carol Moraga Quinteros, University of Lyon 1 (funded by Conicyt Chile, co-supervisors: Rodrigo Gutierrez – Catholic University of Chile, Marie-France Sagot)

- Henri Taneli Pusa, University of Lyon 1 (funded by H2020-MSCA-ETN-2014 project MicroWine, co-supervisors: Alberto Marchetti-Spaccamela, Arnaud Mary, Marie-France Sagot)

- Camille Sessegolo, University of Lyon 1 (funded by ANR Aster; co-supervisors: Vincent Lacroix, Arnaud Mary)

- Yishu Wang, University Lyon 1 (funded by Ministère de l?Enseignement supérieur, de la Recherche et de l?Innovation, co-supervisors: Mário Figueiredo – Instituto Superior Técnico at Lisbon; Marie-France Sagot; Blerina Sinaimeri)

- Irene Ziska, University Lyon 1 (funded by Inria Cordi-S, co-supervisors: Susana Vinga – Instituto Superior Técnico at Lisbon; Marie-France Sagot)

Besides the PhD students indicated above, who are physically located within one of the premises of ERABLE, the project-team has PhD students in co-supervision who spend the majority or the whole of their time in the premises of other teams. These include: Rita Ramos (funded by Portuguese FCT, co-supervisors: Claudia Nunes dos Santos – ITQB Lisbon, Marie-France Sagot), and André Veríssimo (funded by Portuguese FCT, co-supervisors: Susana Vinga – Instituto Superior Técnico in Lisbon, Marie-France Sagot).

9.2.3. *Juries*

The following are the PhD or HDR juries to which members of ERABLE participated in 2018.

- Giuseppe Italiano: External Examiner of the PhD of Daniel Wolleb-Graf, ETH, Zurich, Switzerland, Dec 3, 2018.

- Marie-France Sagot: External Reviewer of the PhD of Clémence Frioux, University of Rennes 1, France, Nov 19, 2018.

- Leen Stougie: Member of the Committee of the PhD of Bart Kamphorst, Technical University Eindhoven, Netherlands, May 2018; Member of the Committee of Gregorios Koumoutsos, Technical University Eindhoven, Netherlands, Sept 2018.

- Fabrice Vavre: External Reviewer of the HDR Committee of Thierry Lefevre, Univ of Montpellier, France, March 3, 2018.

9.3. Popularization

9.3.1. *Interventions*

Blerina Sinaimeri and Ricardo Andrade participated to the Inria Fête de la Science in October 2018. Blerina Sinaimeri and Mariana G. Ferrarini presented the research topics of the team in an event for welcoming international scientists at the Espace Ulys of the University of Lyon. The presentation was entitled "ERABLE : A bio-info symbiosis" and discussed mainly about the multidisciplinarity of the ERABLE Team. Finally, Mariana Galvao Ferrarini participated in the Fête de la Science INRA at the Mediathéque de Bron in October 2018.

Fabrice Vavre participated to the Forum des métiers, Collège Clément Marot, on "La recherche au CNRS".

<p align="center" style="color:red">FLUMINANCE Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- J. Erhel organized with J-R. de Dreuzy (OSUR), T. Le Borgne (OSUR) and G. Pichot (Inria) the international conference CWMR (Saint-Malo, France, June 2018).
- J. Erhel organized with T. Faney (IFPEN) and A. Michel (IFPEN) a workshop on reactive transport (Paris, France, February 2018).
- E. Mémin organized the national colloquium on data assimilation (Rennes, september 2018).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Jocelyne Erhel

- international advisory committee of the parallel CFD conferences (Indianapolis, USA, May 2018).
- program committee of the workshop Visualization in Environmental Sciences 2018 (co-event of EuroVis)
- scientific committee of the conference JEMP (Nantes, October 2018)
- Scientific Committee of the workshop "Parallel solution methods for systems arising from PDEs" (Marseille, september 2019)

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Jocelyne Erhel

- member of the editorial board of ETNA.
- member of the editorial board of ESAIM:Proceedings and Surveys.

Etienne Mémin

- Associate editor for the Int. Journal of Computer Vision (IJCV)
- Associate editor for the Image and Vision Computing Journal (IVC)

9.1.3.2. Reviewer - Reviewing Activities

Jocelyne Erhel: Reviewer for the journals Computational Geosciences, Software X, Parallel Computing
Dominique Heitz: Reviewer for Exp. in Fluids, Fire Technologies
Etienne Mémin: Reviewer for Tellus-A, Journ. of Fluid Mech., Im. Vis. Comp., Exp. in Fluids, Journ. of Comp. Phys.
Gilles Tissot: Reviewer for Journal of Sound and Vibration, Fluid Dynamics Research.

9.1.4. Invited Talks

Werner Bauer

- Gung Ho Network Meeting, UK, July 2018

Jocelyne Erhel

- Workshop on analysis, Rennes, France, January
- Scientific Days of Inria, Bordeaux, France, June

Dominique Heitz

- CCFTL 2018, Dourdan, France, September 17-21, 2018. Keynote lecture
- Active Flow and Combustion Control 2018, TU Berlin, Germany, September 19-21, 2018. Keynote lecture

Roger Lewandowski

- Colloquium Virginia Tech (mars 2018)
- Colloquium Pisa (Novembre 2018)
- Kolmogorov Days in Évry 2018, September 26-28, 2018, Évry , France.

Etienne Mémin

- Classical and Modern Results in Nonlinear Filtering and Applications, Imperial College London, November 2018, GB.
- ECCM - ECFD 2018 - 6th European Conference on Computational Mechanics - 7th European Conference on Computational Fluid Dynamics. Glasgow, GB.
- In Particle methods and data assimilation, Imperial College London, May 2018, GB.

9.1.5. *Leadership within the Scientific Community*

- J. Erhel is scientific coordinator of the website Interstices (since June 2012). https://interstices.info.

9.1.6. *Scientific Expertise*

- J. Erhel is a member of the scientific council of IFPEN, since April 2016.

9.1.7. *Research Administration*

Jocelyne Erhel

- correspondent of Maison de la Simulation for Inria Rennes.
- correspondent of AMIES for Inria Rennes, from September 2015.
- member of the maths thesis committee of IRMAR, from January 2017.

Dominique Heitz

- Responsible of the Irstea ACTA Team
- Member of Pôle Cristal scientific council
- Member of Irstea OPAALE research unit Executive Committee
- Member of Irstea center of Rennes Executive Committee

Roger Lewandowski

- Président du Comité de liaison du groupe GAMNI-SMAI
- Président of the Blaise Pascal award jury
- Président of GAMNI-SMAI PhD thesis award
- Corresponding person of the SMAI in Rennes
- Responsible of the group "Mathematical modeling" of IRMAR
- Member of the scientific council of IRMAR,
- Member of Mathematical teaching council of U. Rennes I
- Member of the scientific council of the Henri Lebesgue Centre

Etienne Mémin

- Member of the scientific council of LEFE-MANU action of CNRS INSU
- Member of the comity GAMNI-SMAI

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Jocelyne Erhel, Optimisation, 24h, niveau L3, ENSAI Rennes

Licence : Dominique Heitz, Mécanique des fluides, 30h, niveau L2 INSA Rennes

Master: Jocelyne Erhel, arithmétique flottante, 4h, niveau M1, INSA Rennes

Master : Dominique Heitz, Mécanique des fluides, 25h, niveau M1, Dep GMA INSA Rennes

Master: Roger Lewandowski, Euler and the Navier-Stokes equations, M2, master « fondamental mathematics ».

Master : Etienne Mémin, Analyse du mouvement, Master Informatique, 15h, niveau M2, Université de Rennes 1.

Master : Etienne Mémin, Vision par ordinateur , 15h, niveau M2, ESIR Université de Rennes 1.

Master : Gilles Tissot, mathematics for acoustics, 20h, niveau M1, Université du Mans.

9.2.2. Supervision

PhD in progress: Pierre-Marie Gibert, University of Lyon, October 2015, co-advisors D. Tromeur-Dervout and Jocelyne Erhel.

PhD in progress: Bastien Hamlat, University of Rennes 1, October 2016, co-advisors Jocelyne Erhel and A. Michel.

PhD in progress : Benoit Pinier, Scale similarity and uncertainty for Ocean-Atmosphere coupled models, started October 2014, supervisors: Roger Lewandowski, Etienne Mémin

PhD in progress : Pranav Chandamouli, Turbulent complex flows reconstruction via data assimilation in large eddy models, started October 2015, Dominique Heitz, Etienne Mémin.

PhD in progress : Romain Schuster, Large-scale fluid motion estimation, started October 2016, Dominique Heitz, Etienne Mémin.

PhD in progress : Long Li, Data assimilation and stochastic transport for the upper ocean dynamics, started November 2017, Etienne Mémin.

PhD in progress : Yacine Ben Ali, Variational assimilation of RANS models for wind engineering, started November 2017, Dominique Heitz, Etienne Mémin, Gilles Tissot.

PhD in progress : Dinh Duong Nguyen, Regular and singular solutions of Navier-Stokes equations with eddy viscosity, started September 2017 , Roger Lewandowski.

PhD in progress : Robin Billard, Modelling of non-conventional perforated acoustic liners, Université du Mans, started December 2017, Gilles Tissot.

9.2.3. Juries

Johan Carlier

- Kevin Chatelain, PhD, Polytech'Orléans, (examinateur)

Jocelyne Erhel

- Jérôme Carrayrou, HdR, Univ. Strasbourg (examinatrice)
- Nicolas Peton, PhD, Univ. Paris (rapporteur)
- Samuel Corre, PhD, INSA Rennes (examinatrice)
- G. Moreau, PhD, Univ. Lyon (examinatrice)

Dominique Heitz

- Jianhua Fan, PhD, INSA de Rennes (Rapporteur).

Roger Lewandowski

- Charles Pelletier, PhD Univ. Grenoble Alpes(Rapporteur)

Etienne Mémin

- Pranav Chandramouli, PhD U. Rennes I (Examinateur)
- Musaab Khalid, PhD U. Rennes I (Examinateur),

9.3. Popularization

9.3.1. *Internal or external Inria responsibilities*

Jocelyne Erhel

- member of the Inria local committee for health and safety (référent chercheur) 2016-2018.
- member of the Inria administrative commission (CAP) for researchers, from January 2016.
- member of the Inria national committee for secondment, 2016.

Etienne Mémin

- Responsible of the "Commission Développement Technologique" Inria Rennes
- Member of the "Commission Personnel" Inria-IRISA Rennes

9.3.2. *Education*

Jocelyne Erhel

- présidente du jury du rallye de mathématiques du CNED, since 2017.

9.3.3. *Interventions*

Jocelyne Erhel

- talk about melting ice caps, general public, Musée des Arts et Métiers, March 2018.
- talk about spreading epidemics, stage de collégiens, January and February 2018.
- contribution to website redesign of Interstices, 2017-2018.

9.3.4. *Creation of media or tools for science outreach*

Jocelyne Erhel

- scientific coordinator of the website Interstices (since June 2012).
- contribution to website redesign of Interstices, 2017-2018.

GALEN-POST Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

R. Güler organized the Workshop "COCO + Mapillary Joint Recognition Challenge" at ECCV 2018, September 2018, Munich, Germany.

R. Güler organized the Workshop "Posetrack Challenge Articulated People Tracking in the Wild", at ECCV 2018, September 2018, Munich, Germany.

F. Malliaros was a member of the organizing committee of the 3rd International Workshop on Learning Representations for Big Networks (BigNet), The Web Conference (WWW), Lyon, France, 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

H. Talbot chaired the 2nd Workshop on Reproducible Research in Pattern Recognition organized at ICPR 2018, Beijing, China.

10.1.2.2. Member of the Conference Program Committees

H. Talbot. Member of the board and program committee for the International Symposium in Mathematical Morphology, to take place in Saarbrücken, Germany, May 2019.

E. Chouzenoux. Member of the technical committees "Signal Processing Theory and Methods" of the IEEE Signal Processing Society and "SAT Signal and Data Analytics for Machine Learning" of EURASIP.

F. Malliaros. Member of the program committee at: AAAI Conference on Artificial Intelligence (AAAI), The Web Conference (WWW), Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), Conference on Neural Information Processing Systems (NeurIPS), International Conference on Complex Networks and Their Applications (Complex Networks)

10.1.2.3. Reviewer

The members of the team reviewed numerous papers for several international conferences, such as for the annual conferences on Computer Vision and Pattern Recognition (CVPR), Medical Image Computing and Computer Assisted Intervention (MICCAI), Neural Information Processing Systems (NIPS) and International Conference on Learning Representations (ICLR), IEEE International Conference and Acoustics Speech and Signal Processing (ICASSP), IEEE International Conference on Image Processing (ICIP), IEEE Statistical Signal Processing workshop (SSP), European Signal Processing Conference (EUSIPCO), Joint Urban Remote Sensing Event (JURSE).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Hugues Talbot: Senior Area Editor for IEEE Signal Processing Letters

Maria Vakalopoulou: Lead Guest Editor for the special issue on Remote Sensing, in Computer Vision and Image Understanding (CVIU)

Emilie Chouzenoux: Associate Editor of the IEEE Transactions on Signal Processing

Jean-Christophe Pesquet: Associate Editor of the SIAM Journal on Imaging Sciences

10.1.3.2. Reviewer - Reviewing Activities

H. Talbot: IEEE Pattern Analysis and Machine Intelligence, IEEE Transaction on Image Processing, Computer Vision and Image Understanding, J. on Mathematical Imaging and Vision, Signal Processing Letters, Transactions on Signal Processing.

M. Vakalopoulou: International Journal of Computer Assisted Radiology and Surgery (IJCARS), IEEE Trans. on Geoscience and Remote Sensing (TGRS), Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), ISPRS Journal of Photogrammetry and Remote Sensing, Computer Methods and Programs in Biomedicine (CMPB), Pattern Recognition Letters, Computer Vision and Image Understanding (CVIU), SPIE Optical Engineering (OE), Remote Sensing MDPI.

E. Chouzenoux: IEEE Trans. on Image Processing, IEEE Trans. Signal Processing, SIAM Journal on Imaging Science, Journal of Optimization Theory and Applications, Journal of Global Optimization.

J.-C. Pesquet: IEEE Trans. on Signal Processing, IEEE Trans. on Image Processing, IEEE Trans. on Information Theory (IEEE-TI), Signal Processing, SIAM Journal on Optimization, SIAM Journal on Imaging Sciences, Journal of Mathematical Imaging and Vision, Journal of Optimization Theory and Applications, Mathematical Programming.

F. Malliaros: Data Mining and Knowledge Discovery (DAMI), ACM Transactions on Knowledge Discovery from Data (TKDD).

M. C. Corbineau: Signal Processing: Image Communication (SPIC), Computer Vision and Image Understanding (CVIU).

M. Papadomanolaki: Computer Vision and Image Understanding (CVIU), Journal of Basic and Applied Research International, Journal of Geography, Environment and Earth Science International.

M. Sahasrabudhe: Computer Vision and Image Understanding (CVIU).

D. Khuê Lê-Huu: IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), International Journal of Computer Vision (IJCV).

10.1.4. Invited Talks

J.-C. Pesquet:
SAMSI workshop on Operator Splitting Methods in Data Analysis, Raleigh, March 2018,
New York University, March 2018,
Entropy workshop, Barcelona, May 2018,
SIAM Conference on Imaging Science, Bologna, Italy, June 2018,
Aalto University, Helsinki, October 2018,
Polish Science Academy, Warsaw, December 2018.

H. Talbot:
Heartflow, Redwood City, California, April 2018,
Imperial College, London, October 2018,
Institut Henri Poincaré, Paris, December 2018.

E. Chouzenoux:
CRIStAL, Lille, February 2018,
Ann Arbor University, USA, April 2018,
International Conference Inverse Problems: Modeling and Simulation (IPMS 2018), Malta, 21st-25th May 2018,
Heriot Watt University, Edimburg, UK, June 2018,
SIAM Conference on Imaging Science, Bologna, Italy, June 2018.

F. Malliaros:
The Web Conference, Lyon, France, April 2018,
Paris Descartes University, Paris, France, May 2018,
ACM International Conference on Information and Knowledge Management (CIKM), Turin, Italy, October 2018.

E. Oyallon:
SONY CSL, Paris, January 2018,
DeepMind CSML Seminar Series, January 2018,
Imaging in Paris Seminar, IHP, January 2018,
Criteo, Paris, May 2018,
SequeL, Lille, May 2018,
GE Healthcare, Bures-sur-Yvette, June 2018,
NAVER LABS, Grenoble, June 2018,
GT DeepNet, LRI/TAO, Gif-sur-Yvette, December 2018,
GREYC, Caen, December 2018.

M. Vakalapolou:
ONERA, March 2018,
Telecom ParisTech - LTCI, May 2018,
CNRS Workshop on Artificial Intelligence and its Applications, CentraleSupélec, July 2018.

A. Celikkanat:
Paris-Saclay Junior Conference on Data Science and Engineering (JDSE2018) (Poster), Orsay, France, 13-14th September 2018.

M. C. Corbineau:
SIAM Conference on Imaging Science, Bologna, Italy, June 2018.

R. A. Guler:
Inria Paris, March 2018,
University of Amsterdam, April 2018
Max Planck Institute for Intelligent Systems, Tubingen, July 2018.

10.1.5. Leadership within the Scientific Community

J.-C. Pesquet is senior member of the Institut Universitaire de France and a Fellow of IEEE.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Corbineau, Marie-Caroline and Pesquet, Jean-Christophe. Advanced course on Optimization, 33h, M1, CentraleSupélec, FR

Master : Chouzenoux, Emilie and Pesquet, Jean-Christophe and Corbineau, Marie-Caroline. Foundations of Distributed and Large Scale Computing, 26h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec, MVA ENS Cachan, Master Optimization Paris Sud and ESSEC Business School, FR

Master: Pesquet, Jean-Christophe. Introduction to Optimization, 6h, MVA ENS Cachan, FR

Master: Malliaros, Fragkiskos. Machine Learning, 27h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC Business School, FR

Master: Malliaros, Fragkiskos. Network Science Analytics, 27h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC Business School and M.Sc. in Artificial Intelligence, CentraleSupélec, FR

Master: Malliaros, Fragkiskos. Introduction to Machine Learning, 33h, 2nd year course at CentraleSupélec, FR

Master: Malliaros, Fragkiskos. Mathematical Modeling of Propagation Phenomena – Propagation on Graphs, 15h, 1st year course at CentraleSupélec, FR

Master: Sahasrabudhe, Mihir: Programming and Languages, 24h, M.Sc. in Data Science and Business Analytics, CentraleSupélec and ESSEC Business School, FR

Master: Sahasrabudhe, Mihir and Battistella, Enzo: Introduction to Machine Learning, 28h, 2nd year CentraleSupélec, FR

Master: Chouzenoux, Emilie. Advanced Machine Learning, 24h, 3rd year CentraleSupélec, FR

Master: Papadomanolaki, Maria. Deep Learning, 3rd year CentraleSupélec and MVA ENS Cachan, FR

Master: Marmin, Arthur, Cours de soutien de mathématiques, 28h, 2nd year CentraleSupélec, FR

Master: Celikkanat, Abdulkadir. Network Science Analytics, 20h, M.Sc. in Data Sciences and Business Analytics, ESSEC and 3rd year CentraleSupélec, FR

Master: Celikkanat, Abdulkadir. Mathematical Modeling of Propagation Phenomena - Propagation on Graphs, 12h, 3rd year CentraleSupélec, FR

Master: Estienne, Théo. Deep Learning, 7h30, 3rd year CentraleSupélec, FR

Master: Papadomanolaki, Maria. Deep Learning, 7h30, 3rd year CentraleSupélec, FR

Master: Oyallon, Edouard. Deep Learning, 12h, 3rd year CentraleSupélec, FR

Master: Oyallon, Edouard. Deep Learning, 1h, MVA ENS Cachan, FR

Master: Vakalopoulou, Maria. Deep Learning, 12h, 3rd year CentraleSupélec, FR

Master: Vakalopoulou, Maria. Introduction to Machine Learning, 12h, 2nd year CentraleSupélec, FR

Master: Talbot, Hugues. Discrete Optimisation, 2nd year course, CentraleSupelec, 30h, FR

Master: Talbot, Hugues. Big Data, Techniques and Platforms, M.Sc in Data Science and Business Analytics, CentraleSupelec and ESSEC Business School, 30h, FR

10.2.2. Lecturing activities

Chouzenoux, Emilie and Talbot, Hugues. Enjeux et technologies de l'intelligence artificielle. CentraleSupélec Exed, 2 days ($\times$2), FR.

Oyallon, Edouard. Introduction to Deep Learning. Ateliers Statistiques de la Société Française de Statistique, 2 days, IHP, Paris, FR.

Oyallon, Edouard. Advanced Deep Learning. Mathematical Coffees, 3 hours, Huawei, Paris, FR.

Chouzenoux, Emilie. Parallel Stochastic Computing. Mathematical Coffees, 3 hours, Huawei, Paris, FR.

Vakalopoulou, Maria. Introduction to Computer Vision, Applications to Medical Images. Summer School on Artificial Intelligence, 5 hours, CentraleSupélec, FR.

Pesquet, Jean-Christophe. Proximal Splitting Methods in Image Processing, Lake Como School of Advanced Studies on Computational Methods for Inverse Problems in Imaging, 12 hours, May 2018, Italy.

10.2.3. Supervision

PhD (defended) : Siddhartha Chandra, Deep Structured Prediction for Dense Labeling Tasks in Computer Vision, 2014-2018, supervised by Iasonas Kokkinos. Defended on 11st May 2018.

PhD (defended) : Stefan Kinauer, Représentations à base de parties pour la vision 3D de haut niveau, 2014-2018, supervised by Iosinas Kokkinos. Defended on 31st August 2018.

PhD (defended) : Afef Cherni, Méthodes modernes d'analyse de données en biophysique analytique, 2015-2018, supervised by Emilie Chouzenoux and Marc-André Delsuc (IGBMC, Strasbourg). Defended on 20th September 2018.

PhD (defended): Clara Jaquet. Vers la simulation de perfusion du myocarde à partir d'image tomographique scanner. 2014-2018. Supervised by Hugues Talbot and Laurent Najman (ESIEE). Defended on 13 December 2018.

PhD in progress : Mihir Sahasrabudhe, Understanding Correlations in High-Dimensional Spaces and their Applications in Medical Imaging and Computer Vision, 2015-2019, supervised by Nikos Paragios

PhD in progress : Marie-Caroline Corbineau, Fast online optimization algorithms for machine learning and medical imaging, 2016-2019, supervised by Emilie Chouzenoux and J.-C. Pesquet

PhD in progress : Loubna El Gueddari, Parallel proximal algorithms for compressed sensing MRI reconstruction - Applications to ultra-high magnetic field imaging, 2016-2019, supervised by J.-C. Pesquet and Ph. Ciuciu (Inria PARIETAL)

PhD in progress: Diane Genest. Imagerie du Modele alevin de poisson / Application a la toxicologie du developpement. 2016-2019. Supervised by Hugues Talbot and Jean Cousty (ESIEE).

PhD in progress: Daniel Antunes: Contraintes géométriques et approches variationnelles pour l'analyse d'image. 2016-2019. Supervised by Hugues Talbot and Jacques-Olivier Lachaud (U. Savoie-Mont Blanc)

PhD in progress: Guillaume Chassagnon, Development of new quantitative imaging biomarkers for obstructive and interstitial lung diseases, 2016-2019, supervised by N. Paragios

PhD in progress: Maïssa Sghaier, clinical Task-Based Reconstruction in tomosynthesis, 2017-2020, supervised by E. Chouzenoux, J.-C. Pesquet and G. Palma (GE Healthcare)

PhD in progress: Arthur Marmin, Rational models optimized exactly for chemical processes improvement, 2017-2020, supervised by Marc Castella (Telecom Paristech) and J.-C. Pesquet

PhD in progress: Roger Sun, Deep learning and computer vision approaches on medical imaging and genomic data to improve the prediction of anticancer therapies' efficacy, 2017-2020, supervised by N. Paragios

PhD in progress: Marie-Charlotte Poilpre: Méthode de comparaison faciale morphologique, adaptée aux expertise judiciaires, basée sur la modélisation 3D. 2017-2020. Supervised by Hugues Talbot and Vincent Nozick (U. Paris-Est)

PhD in progress: Théo Estienne, Improving anticancer therapies efficacy through Machine Learning on Medical Imaging & Genomic Data, 2017-2020, supervised by N. Paragios

PhD in progress: Abdulkadir Celikkanat, Representation learning methods on graphs, 2017-2020, supervised by N. Paragios (TheraPanacea, Paris) and F. Malliaros

PhD in progress: Maria Papadomanolaki, Change Detection from Multitemporal High Resolution Data with Deep Learning, 2017-2021, supervised by M. Vakalopoulou and K. Karantzalos (National Technical University of Athens).

PhD in progress: Enzo Battistella, Development of novel imaging approaches for tumour phenotype assessment by noninvasive imaging 2017-2020, supervised by M. Vakalopoulou and N. Paragios.

PhD in progress: Thank Xuan Nguyen. Détection et étude morphologique des sources extra-galactiques par analyse variationnelle. 2018-2021. Supervised by Hugues Talbot and Laurent Najman (ESIEE)

PhD in progress: Marvin Lerousseau. Apprentissage statistique en imagerie médicale et en génomique pour prédire l'efficacité des thérapies anti-tumorales. 2018-2021. Supervised by Nikos Paragios (Therapanacea), Eric Deutch (IGR) and Hugues Talbot.

PhD in progress: Yunshi Huang, Majorization-Minimization approaches for large scale problems in image processing, 2018-2021, supervised by E. Chouzenoux.

PhD in progress: Georgios Panagopoulos, Influence maximization in social networks, 2018-2021, supervised by F. Malliaros and M. Vazirgiannis (Ècole Polytechnique).

10.2.4. Juries

The faculty members of the team participated to numerous PhD Thesis Committees, HDR Committees and served as Grant Reviewers.
Emilie Chouzenoux, Marie-Caroline Corbineau, Fragkiskos Malliaros, Edouard Oyallon, Jean-Christophe Pesquet, Mihir Sahasrabudhe and Hugues Talbot were part of the jury committee for several end-of-course internship presentations in CentraleSupélec.

10.3. Popularization

10.3.1. Interventions

Enzo Batistella, Marie-Caroline Corbineau, Théo Estienne and Maria Vakalopoulou have participated at the 'Demi-journée Recherche' organised by CentraleSupélec for the first year students of the school.

GENSCALE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

- JOBIM 2018: French symposium of Bioinformatics [P. Peterlongo]
- 2018 IEEE International Conference on Bioinformatics and Biomedicine [D. Lavenier]
- 9th International Workshop on Biological Knowledge Discovery from Big Data [D. Lavenier]
- International Work-Conference on Bioinformatics and Biomedical Engineering [D. Lavenier]
- 11th International Conference on Bioinformatics and Computational Biology (BICOB-2019) [R. Andonov]

10.1.1.2. Reviewer

- RECOMB 2018 [P. Peterlongo]
- SEQBIO 2018 [P. Peterlongo]
- RCAM 2018 [P. Peterlongo]
- ECCB 2018 [P. Peterlongo]

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

- Bioinformatics [P. Peterlongo, D. Lavenier]
- BMC Bioinformatics [D. Lavenier]
- BMC Genomics [D. Lavenier, F. Legeai]
- Briefing in Bioinformatics [D. Lavenier]
- Current Bioinformatics [D. Lavenier]
- IEEE/ACM Transactions on Computational Biology and Bioinformatics [D. Lavenier]
- Nature Scientific Reports [F. Legeai]

10.1.3. Invited Talks

- C. Marchet, *A highly scalable data structure for read similarity computation and its application to marine holobionts*, EEB group meeting, Brussels (Belgium), July 8th 2018
- C. Marchet, *CARNAC-LR: clustering genes expressed variants from long read RNA sequencing*, team TIBS seminar, Rouen (France), February 27 2018
- P. Peterlongo, *DiscoSnp++, de novo Variant predictions*, Tara Oceans Polar Circle Consortium, Paris (France), January 2018
- P. Peterlongo, *Extract information from short metagenomic reads*, Workshop GDR GE Rennes, 4e colloque Génomique environnementale, October 2018.
- D. Lavenier, *GenScale and its life science interactions*, bioinformatics workshop, IFREMER, June 2018

10.1.4. Leadership within the Scientific Community

- P. Peterlongo. member of the Scientific Advisory Board of the GDR BIM (National Research Group in Biology, Informatic and Mathematic)

- C. Lemaitre. Animator of the Sequence Algorithms axis (seqBIM GT) of the GDR BIM (National Research Group in Biology, Informatics and Mathematics)
- F. Legeai. Animator of the INRA Center for Computerized Information Treatment "BBRIC".

10.1.5. Scientific Expertise

- Expert for the MEI (International Expertise Mission), French Research Ministry [D. Lavenier]
- Member of the Scientific Council of BioGenOuest [D. Lavenier]
- Member of the Scientific Council of the Computational Biology Institute of Montpellier [D. Lavenier]
- Member of the Scientific Council of Agrocampus Ouest (Institute for life, food and horticultural sciences and landscaping) [J. Nicolas]
- Chapter "Artificial Intelligence and Bioinformatics" to appear in 2019 in the 3-volume book "A Guided Tour of Artificial Intelligence Research", H. Prade, P. Marquis and O. Papini eds, Elsevier. [35]

10.1.6. Research Administration

- Member of the CoNRS, section 06, [D. Lavenier]
- Member of the CoNRS, section 51, [D. Lavenier]
- Corresponding member of COERLE (Inria Operational Committee for the assesment of Legal and Ethical risks) [J. Nicolas]
- Member of the steering committee of the INRA BIPAA Platform (BioInformatics Platform for Agro-ecosystems Arthropods) [D. Lavenier]
- Member of the steering committee of The GenOuest Platform (Bioinformatics Resource Center BioGenOuest) [D. Lavenier]
- Scientific Advisor of The GenOuest Platform (Bioinformatics Resource Center BioGenOuest) [J. Nicolas]
- Representative of the environnemental axis of UMR IRISA [C. Lemaitre]
- AGOS first secretary [P. Peterlongo]
- Organisation of the weekly seminar "Symbiose" [P. Peterlongo]
- In charge of the bachelor's degree in the computer science department of University of Rennes 1 (90 students) [R. Andonov]
- Member of the Council of Administration of ISTIC [R. Andonov]
- Representative of non-permanent members in the Inria Rennes center commitee [S. Letort]

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : R. Andonov, Graph Algorithms, 60h, L3, Univ. Rennes 1, France.

Licence : W. Delage, J. Gautier, Biostatistic, 60 h, L2, Univ. Rennes 1, France.

Licence : W. Delage, Bioinformatics, 8 h , L2, Univ. Rennes 1, France.

Licence : K. Da Silva, Algorithms and Complexity, 36 h, L3, ENSAI, Rennes, France.

Master : R. Andonov, S. Francois, Operational research, 82h, M1 Miage, Univ. Rennes 1, France.

Master : L. Lecompte, Python for ecologists, 24h, M1, Univ. Rennes 1, France.

Master : L. Lecompte, P. Peterlongo, Algorithms on Sequences, 52h, M2, Univ. Rennes 1, France.

Master : C. Guyomar, statistical learning, 32h, M1, Univ. Rennes, France.

Master : P. Peterlongo, Experimental Bioinformactics, 24h, M1, ENS Rennes, France.

Master : F. Legeai, RNA-Seq, Metagenomics and Variant discovery, 12h, M2, AgroCampusOuest, National Superior School Of Agronomy, Rennes, France.

Master : R. Andonov, Advanced Algorithmics, 25h, Univ. Rennes 1, France.

Master : D. Lavenier, Memory Efficient Algorithms for Big Data, Engineering School, ESIR, Rennes

Training : C. Lemaitre, P. Peterlongo, GATB Programming Day, 8h (April 18), Paris, France.

10.2.2. Supervision

PhD : C. Guyomar, Bioinformatic tools and applications for metagenomics of bacterial communities associated to insects, Univ Rennes, 07/12/2018, J.C. Simon, C. Mougel, C. Lemaitre. [8]

PhD : C. Marchet, Nouvelles méthodologies pour l'assemblage de données de séquençage polymorphes, Univ Rennes, 20/09/2018, P. Peterlongo. [9]

PhD in progress : S. François, Combinatorial Optimization Approaches for Bioinformatics, 01/10/2016, R. Andonov.

PhD in progress : L. Lecompte, Structural Variant detection in long-read sequencing data, 01/09/2017, D. Lavenier and C. Lemaitre.

PhD in progress : W. Delage, De novo local assembly approaches for the detection of complex genomic variations in rare diseases, 01/10/2017, J. Thévenon and C. Lemaitre.

PhD in progress: K. da Silva, METACATALOGUE: un nouveau cadre pour l'exploration de données de séquençage du microbiote intestinal, 01/10/2018, M. Berland, N. Pons and P. Peterlongo.

PhD in progress: R. Kar, Assembly and annotation of heterozygous insect genomes, 15/08/2018, F. Legeai, D. Tagu and P. Peterlongo.

PhD in progress: G. Siekaniec, Caractérisation différentielle de souches d'espèces bactériennes, 01/10/2018, E. Roux and J. Nicolas.

10.2.3. Juries

- *Member of Habilitation thesis jury*. Thomas Bruls, Univ. Paris-Saclay [D. Lavenier]
- *Member of Ph-D thesis juries*. Yoann Seelheuthner, University Paris-Saclay [C. Lemaitre].
- *Referee of Ph-D thesis*. Antoine Recanati, ENS Paris [D. Lavenier], Nicolas Dierckxsens, Univ. Libre de Bruxelle [D. Lavenier], Chadi Saad, Univ. Lille [J. Nicolas], Florian Plaza Oñate, INRA MetaGenoPolis [P. Peterlongo]
- *Member of Ph-D thesis committee*. Chi Nguyen Lam, Univ. Brest [D. Lavenier], Benjamin Churcheward, Univ. Nantes [D. Lavenier], Guillaume Gautreau, CEA, Genoscope [P. Peterlongo], Victor Gaborit, Univ. Nantes [P. Peterlongo], Afaf Saaid, Univ. Paris Saclay, Ecole Polytechnique [P. Peterlongo], Magali Dancette, Univ. Claude Bernard Lyon 1 [P. Peterlongo]

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Member of the Interstice editorial board [P. Peterlongo]

10.3.2. Interventions

- In educational institutions : Participation to operation "A la découverte de la recherche" in high schools [P. Peterlongo]

10.3.3. Creation of media or tools for science outreach

- Short Movie "Les mutations génétiques, des événements spontanés à la thérapie génique", presented at Sciences en Courts, a local contest of popularization short movies made by PhD students (http://sciences-en-courts.fr/) [L. Lecompte, W. Delage].

<h1 style="text-align:center; color:red">IBIS Project-Team</h1>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of organizing committees

IBIS members	Conference, workshop, school	Date
Hidde de Jong	CompSysBio: Advanced Lecture Course on Computational Systems Biology, Aussois	Apr 2019

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committees

IBIS member	Conference, workshop, school	Role
Eugenio Cinquemani	European Control Conference (ECC 2019)	Associate editor

8.1.2.2. Member of conference program committees

IBIS member	Conference, workshop, program
Eugenio Cinquemani Hidde de Jong	ECC 2019, CMSB 2018 and 2019, HSB 2019, SASB 2018 CMSB 2108 and 2019, FOSBE 2019, HSB 2019, MLCSB 2018, ISMB Network Biology 2018, WML 2018

8.1.3. Journal

8.1.3.1. Member of editorial boards

IBIS member	Journal
Johannes Geiselmann	Frontiers in Microbiology (review editor)
Hidde de Jong	Journal of Mathematical Biology
Hidde de Jong	Biosystems (reviews editor)
Hidde de Jong	ACM/IEEE Transactions on Computational Biology and Bioinformatics

8.1.4. Scientific evaluation and expertise

IBIS member	Organism	Role
Johannes Geiselmann	INRA	Member scientific advisory committee Microbiologie, Adaptation, Pathogénie
Johannes Geiselmann	UMR5240 CNRS-UCBL-INSA-BayerCropScience	Member scientific council
Hidde de Jong	Microbiology and Food Chain Department, Inra	Member scientific council
Hidde de Jong	Univ Grenoble Alpes	Member scientific council of Pôle MSTIC
Delphine Ropers	INRA-Inria	Member selection committee PhD grants

8.1.5. Invited talks and other presentations

Eugenio Cinquemani

Title	Event and location	Date
Estimation du bruit extrinsèque dans l'expression génique dans des cellules individuelles	Invited talk Journées Apprentissage de modèles statistiques et stochastiques à partir de données biologiques (ASSTABIO), Rennes	Mar 2018
Real-time control of synthetic microbial communities	Presentation Journée InBio, Lyon	Apr 2018
Towards automated control of synthetic E. coli communities	Presentation Journées GDR BIOSS-IA	Dec 2018

Hidde de Jong

Title	Event and location	Date
Carbon catabolite repression and diauxic growth in E. coli	Invited talk Principles of Microbial Adaptation, Lorentz Center, Leiden, the Netherlands	Mar 2018
Optimal control of bacterial growth for the maximization of metabolite production	Presentation SMAI-MODE 2018, Autrans	Mar 2018
Analysis and control of bacterial regulatory networks	Presentation Journée InBio, Lyon	Apr 2018
Global physiological effects and the analysis of gene regulatory networks	Invited talk 1st International Plant Systems Biology Meeting, Conférence Jacques Monod, Roscoff	Sep 2018
Natural and synthetic control of resource allocation in bacteria	Invited talk Molecular Logic and Computational Synthetic Biology workshop, Santiago de Chile	Dec 2018

Stephan Lacour

Title	Event and location	Date
Influence des ARNs non-codants réprimant CsgD sur la production de curli par Escherichia coli	Poster Ecole Thématique de Microbiologie Moléculaire, Carry-Le-Rouet	Oct 2018

Aline Marguet

Title	Event and location	Date
Estimation statistique dans une population structurée branchante	Seminar Institut Fourier, Grenoble	Jan 2018
Loi des grands nombres pour des processus de branchement structurés	Seminar Institut de Mathématiques de Toulouse	Mar 2018
Loi des grands nombres pour des processus de branchement structurés	Seminar Institut de Recherche Mathématique Avancée, Strasbourg	Mar 2018
Loi des grands nombres pour des processus de branchement structurés	Seminar Institut Montpelliérain Alexander Grothendieck, Montpellier	Mar 2018
Estimation statistique dans une population branchante structurée par une diffusion	Presentation journées MAS du groupe Modélisation Aléatoire et Statistique, Dijon	Aug 2018
Estimation statistique dans une population branchante structurée par une diffusion	Seminar Institut de Mathématiques de Dijon, Dijon	Aug 2018

Marco Mauri

Title	Event and location	Date
Analysis of dynamics of membrane-protein microdomains in bacteria	Poster annual Deutsche Physikalische Gesellschaft (DPG) meeting, Berlin	Mar 2018

Michel Page

Title	Event and location	Date
WellInverter: A web application for the analysis of fluorescent reporter gene data	Poster journéé Institut Français de Bioinformatique (IFB), Paris	Dec 2018

Corinne Pinel

Title	Event and location	Date
Présentation des techniques de génie génétique utilisées au sein du LIPhy	Presentation at the kick-off meeting of the network Ingénierie des Génomes des Micro-organismes (IGM), Paris	Sep 2018

Delphine Ropers

Title	Event and location	Date
Quantitative modelling of metabolism, gene expression and growth	Presentation Journée InBio, Lyon	Apr 2018

Etienne Thibault

Title	Event and location	Date
Coordination de la stabilité des ARNms et la physiologie cellulaire durant des transitions de taux de croissance	Presentation working group BIOSS of GDR IM/BIM, Marseille	Jul 2018
Coordination de la stabilité des ARNms et la physiologie cellulaire durant des transitions de taux de croissance	Poster at ICSB 2018, Lyon	Oct 2018
Coordination de la stabilité des ARNms et la physiologie cellulaire durant des transitions de taux de croissance	Seminar LISBP, INRA-INSA, Toulouse	Dec 2018

8.1.6. Research administration

IBIS member	Committee	Role
Eugenio Cinquemani	Inria Grenoble - Rhône-Alpes	Member Comité des Emplois Scientifiques (CES)
Eugenio Cinquemani	Inria Grenoble - Rhône-Alpes	Member Comité des Utilisateurs des Moyens Informatiques (CUMI)
Eugenio Cinquemani	Inria	Member Comité Administrative Paritaire (CAP)
Eugenio Cinquemani	Inria Grenoble - Rhône-Alpes	Member Comité Développement Technologique (CDT)
Hidde de Jong	Inria Grenoble - Rhône-Alpes	Member scientific council (COS)
Hidde de Jong	Inria	Member working group on International Relations of Conseil d'Orientation Scientifique et Technique (COST)
Delphine Ropers	Inria	Member of Commission d'évaluation d'Inria
Delphine Ropers	Inria	Member of Groupe de travail plan stratégique
Delphine Ropers	Inria Grenoble - Rhône-Alpes	Référente chercheurs
Delphine Ropers	Inria Grenoble - Rhône-Alpes	Member of Comité des études doctorales (CED)

8.1.7. Recruitment committees

IBIS member	Organism	Recruitment
Johannes Geiselmann Delphine Ropers	Inria	Chargés de recherche (jury d'admissibilité)
Delphine Ropers	Inria Grenoble - Rhône-Alpes	Chargés de recherche (jury d'admissibilité)
Delphine Ropers	INSA de Lyon	Assistant professor

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Four members of the IBIS team are either full professor or associate professor at Univ Grenoble Alpes. They therefore have a full teaching service (at least 192 hours per year) and administrative duties related to the organization and evaluation of the university course programs on all levels (from BSc to PhD). Besides the full-time academic staff in IBIS, the following people have contributed to courses last year.

Eugenio Cinquemani

Course: Stochastic modelling of gene regulatory networks, M2, BIM, INSA de Lyon (6 h)

Course: Statistics for systems biology, M1, Master Approches Interdisciplinaires du Vivant, CRI/Univ Paris Descartes (20 h, also in charge of 20 h of practicals)

Course: Modelling and identification of metabolic networks, M1, Phelma, INP Grenoble (4 h)

Hidde de Jong

Course and practicals: Modeling and simulation of gene regulatory networks, M2, BIM, INSA de Lyon (20 h)

Delphine Ropers

> Course and practicals: Modelling in systems biology, M1, Phelma, INP Grenoble (16 h)

> Course and practicals: Cell systems biology and modelling cell functions, M1, Master ingéniérie de la santé, Univ Grenoble Alpes (14 h)

> Course: Modeling and simulation of genetic regulatory networks, M2, INSA de Toulouse (4 h)

Thibault Etienne

> Practicals: Mathématiques et statistique appliquées aux sciences humaines et sociales (practicals), L1 and L3, Univ Grenoble Alpes (56 h)

> Course and practicals: Construction et analyse de plasmides in silico, M1, Master ingéniérie de la santé, Univ Grenoble Alpes (10 h)

8.2.2. *Supervision*

> PhD in progress: **Thibault Etienne**, Analyse intégrative de la coordination entre stabilité des ARNm et physiologie cellulaire chez *Escherichia coli*. Supervisors: Delphine Ropers and Muriel Cocaign-Bousquet (INRA Toulouse)

> PhD in progress: **Joël Espel**, RNA engineering: Design of the dynamical folding of RNA and of RNA switches. Supervisors: Alexandre Dawid (Univ Grenoble Alpes) and Johannes Geiselmann

> PhD in progress: **Antrea Pavlou**, Experimental and computational analysis of bacterial self-replicators. Supervisors: Hidde de Jong and Johannes Geiselmann

8.2.3. *Juries*

PhD thesis committees

IBIS member	Role	PhD student	University	Date
Johannes Geiselmann	Rapporteur	Clea Lachaux	Univ Paul Sabatier Toulouse	Sep 2018
Johannes Geiselmann	Président	Tomas Andersen	Univ Grenoble Alpes	Oct 2018
Hidde de Jong	Président	Alexandre Rocca	Univ Grenoble Alpes	May 2018
Hidde de Jong	Rapporteur	Jonathan Behaegel	Univ Côte d'Azur	Oct 2018

Habilitation (HDR) committees

IBIS member	Role	PhD student	University	Date
Johannes Geiselmann	Rapporteur	Fabien Letisse	Univ Paul Sabatier Toulouse	Oct 2018

PhD advisory committees

IBIS member	PhD student	University
Johannes Geiselmann	Alain Lombard	Univ Grenoble Alpes
Johannes Geiselmann	Shiny Martis	INSA de Lyon
Hidde de Jong	Céline Hernandez	ENS Paris
Hidde de Jong	Charlotte Coton	INRA Moulon
Stephan Lacour	Julien Trouillon	CEA Grenoble
Delphine Ropers	Manon Barthe	Univ de Toulouse
Delphine Ropers	Irene Ziska	Univ de Lyon

8.2.4. *Teaching administration*

Yves Markowicz is director of the BSc department at Univ Grenoble Alpes.

Michel Page is coordinator of the master Systèmes d'information et d'organisation at the Institut d'Adminstration des Entreprises (IAE), Univ Grenoble Alpes.

Eugenio Cinquemani organizes a module on statistics in systems biology at CRI/Univ Paris Descartes.

Delphine Ropers organizes a module on the mathematical modeling of biological systems at PHELMA, INP Grenoble.

Hidde de Jong organizes with Daniel Kahn a module on the modeling of genetic and metabolic networks at INSA de Lyon.

8.3. Popularization

8.3.1. Creation of media or tools for science outreach

Hidde de Jong presented the work of IBIS in the framework of the communication action "Mon équipe en 180 secondes". The video is on-line at the following address: https://videotheque.inria.fr/videotheque/media/47816;jsessionid=D615F60B85E6C88DEDD129AD56E4431E

LEMON Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Event Organisation

10.1.1.1. Member of Organizing Committee

Gwladys Toulemonde is chair of the organizing committee of the international conference METMA IX (June 2018, Montpellier).

10.1.2. Journal

10.1.2.1. Member of Editorial Board

Antoine Rousseau is member of DCDS-S editorial board

Gwladys Toulemonde is guest editor (with L. Bel, AgroParisTech) of the Special Issue entitled "Space-time modeling of rare events and environmental risks" which will be published in Spatial Statistics.

10.1.2.2. Reviewer - Reviewing Activities

Carole Delenne is a reviewer for Journal of Hydraulic Research, Water (2 manuscripts/year)

Vincent Guinot is a reviewer for Journal of Hydrology, Advances in Water Resources, Mathematical Problems in Engineering (3 manuscripts/year)

Antoine Rousseau is a reviewer for Journal of Hydrology and Environmental Modeling & Assessment (2 manuscripts/year)

10.1.3. Leadership within the Scientific Community

Antoine Rousseau is the scientific coordinator of the the research line *advanced modeling for marine energy* at MERIC (Santiago, Chile).

10.1.4. Scientific Expertise

Antoine Rousseau is member of the scientific board of Fondation Blaise Pascal

Carole Delenne was reviewer for the STIC-AmSud Program

Gwladys Toulemonde is appointed by the Occitanie region to the scientific board in charge of innovation projects in the field of intelligent systems and digital data chain

Gwladys Toulemonde is member of the scientific committee of Spatial Statistics 2019 (Sitges, Spain)

10.1.5. Research Administration

Vincent Guinot is head of the ETH team at HSM (10 staff members),

Vincent Guinot is a member of the HSM steering board,

Antoine Rousseau is head of the LEMON team at Inria CRI-SAM (5 staff members),

Antoine Rousseau is a member of the Inria CRI-SAM steering board (*Comité des Projets*)

Gwladys Toulemonde is elected member of the IMAG board (UMR 5149)

Gwladys Toulemonde is elected member of the MIPS Scientific Department (Mathematics, Computer Science, Physics and Systems), a component of the University of Montpellier

Gwladys Toulemonde is elected member of the French Statistical Society board (*Société Française de Statistique, SFdS*)

Gwladys Toulemonde is elected member of Environment group of the French Statistical Society board (*Société Française de Statistique, SFdS*)

Gwladys Toulemonde is elected member of the liaison commitee of the MAS Group (*Modélisation Aléatoire et Statistique*), SMAI (*Société de Mathématiques Appliquées et Industrielles*)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Three LEMON permanent members (out of four) are university staff and have teaching duties. Most of their lectures are given at master level at Polytech Montpellier in the departments Informatics and Management (IG), Water Sciences and Technologies (STE) and Water and Civil Engineering (EGC) as well in other courses of University of Montpellier. Carole Delenne is also teaching manager of the department EGC at Polytech. The teaching load is summarized in Table 1 .

Table 1. Teaching

Antoine	Teaching M1 level: 0 to 30 hrs/year
	Student supervision: 50 hrs/year
Carole	Teaching L1-M2 level: 200-250 hrs/year
	hydraulics, applied mathematics, informatics
	Student tutorship and supervision: 50-100 hrs/year
Gwladys	Teaching L3/M1/M2 level: 200-250 hrs/year
	mathematics, probability, statistics, data mining
	Student tutorship and supervision: 50-100 hrs/year
Vincent	Teaching L3/M1/M2 level: 290 hrs/year
	Student tutorship and supervision: 50-100 hrs/year

10.2.2. Supervision

Gwladys Toulemonde is responsible for student recruitment at the IG department (Polytech Montpellier).

Gwladys Toulemonde co-supervises a PhD thesis in an established collaboration with Sanofi and is also involved in two other industrial collaborations (BALEA, Twin Solutions)

Gwladys Toulemonde advises a post-doctoral fellow since october 2017 on spatio-temporal extreme processes to assess flood hazards (NUMEV funding until Oct 2018)

10.2.3. Juries

Antoine Rousseau was appointed internal member of a recruitment campaign at Inria (CR2 at Inria CRI-SAM)

10.3. Popularization

Antoine Rousseau is member of the editorial board of Interstices and the Binaire Blog in Le Monde.

10.3.1. Internal or external Inria responsibilities

Antoine Rousseau is member of "Bureau du Comité des Équipes-Projet" in the research center of Sophia-Antipolis Méditerranée.

10.3.2. Interventions

Antoine Rousseau has given lectures in the following events:

- Fête de la Science (Genopolys Montpellier) and Semaine des maths (Collège Les Fontanilles, Castelnaudary)
- FUTUR·E·S in La Villette (Paris) for a demo of Tsunamilab
- another Tsunamilab demo for Region Occitanie (November 30th, Port Barcarrès)
- Centre d'Alembert (Orsay-Saclay)
- public schools of Aubais (Gard) and Castelnaudary (Aude)

10.3.3. Internal action

- Antoine Rousseau gave a talk in the Café des Sciences at Inria Rocquencourt, March 20th.

10.3.4. Creation of media or tools for science outreach

- Antoine Rousseau has contributed to the development of Tsunamilab in collaboration with Inria Chile
- Antoine Rousseau is a co-administrator of the association Le Calendrier Mathématique

<p style="text-align:center">**LIFEWARE Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Philippe Dague and François Fages were co-organizers of the Workshop on Computational Systems Biology for Cancer CSBC, Institut des Systèmes Complexes, Paris, France, 24-26 jan. 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Gregory Batt was member of the scientific program committee of
  - the 19th International Conference on Systems Biology (ICSB 2018), Oct 28 - Nov 1, Lyon, France
- François Fages was member of the program committee of
  - VEMDP'18 Verification of Engineered Molecular Devices and Programs. July 19, 2018, Oxford, United Kingdom. An affiliated workshop of CAV 2018.
  - CMSB'18 16th International Conference on Computational Methods in Systems Biology. 12th-14th September 2018, Faculty of Informatics, Masaryk University, Brno, CZ.
  - MCU'18 8th International Conference on Machines, Computations and Universality, June 28-30, 2018, Fontainebleau, France.
  - IJCAR'18 9th International Joint Conference on Automated Reasoning, part of the Federated Logic Conference FLOC'18, July 14-17, 2018, Oxford, UK.
  - DataMod'18 7th International Symposium "From Data to Models and Back", 25-26 June 2018, Toulouse, France
  - WCB'18 13th International Workshop on Constraint-based Methods for Bioinformatics, Oxford co-located with FLOC'18, July 2018.

9.1.2.2. Reviewer

- Jakob Ruess has reviewed scientific articles for
  - the 57th IEEE Conference on Decision and Control (CDC 2018), Dec. 17-19, Miami, USA;
  - the 17th European Control Conference (ECC 2019), June 25-28, Naples, Italy;
  - the Bioinformatics conference, Feb 22-24 2019, Prague, Czech Republic.
- Sylvain Soliman reviewed papers for
  - IJCAR and CMSB.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- François Fages is member of
  - the Editorial Board of the Computer Science area of the Royal Society Open Science journal, since 2014;
  - the Editorial Board of the journal RAIRO OR Operations Research, since 2004.

9.1.3.2. Reviewer - Reviewing Activities

In addition to their Editorial Board and Program Committee duties,

- Grégory Batt reviewed journal articles for *ACS Synthetic Biology, Cell Systems, Nature Communications, and Current Opinion in Systems Biology*;

- François Fages reviewed journal articles for *PLOS Computational Biology, Interface Focus, Natural Computing, BMC Systems Biology* and the book *Automated Reasoning for Systems Biology and Medicine*;

- Jakob Ruess reviewed journal articles for *PLOS Computational Biology, Journal of Mathematical Biology, Journal of Computational Physics, Processes, and Entropy*;

- Sylvain Soliman reviewed journal articles for *Journal of Theoretical Biology* and *Transactions in Computational Biology and Bioinformatics*.

9.1.4. Invited Talks

- Virgile Andreani gave an invited talk on *Modèles de résistance bactérienne aux antibiotiques to Journée apprentissage de modèles statistiques et stochastiques à partir de données biologiques*, Mar 2018, Rennes, France;

- Grégory Batt gave invited talks on
  - *Balancing a genetic toggle switch by real-time control and periodic stimulations*, IEEE Conference on Control Technology and Applications (CCTA 2018), Aug 21-24 2018, Copenhagen, Denmark
  - *Impact of phenotypic variability on commitment to apoptosis, Computational Systems Biology of Cancer*, Sept 2018, Paris
  - *Balancing a genetic toggle switch by real-time control and periodic stimulations*, iSSB / Genoscope seminar, Dec 2018, Evry, France

- François Fages gave invited talks on
  - *Vers une informatique de la cellule: programmes biochimiques naturels et synthétiques*, Conférence de rentrée de l'ENS Paris-Saclay (3h), Sep. 2018;
  - *Modeling and Design of Biological Systems*, Discrete Models and Formal Verification in Biology, Cambridge, UK, août 2018;
  - *Modeling and Design of Biological Systems*, Summer school on New strategies in medical diagnosis and personalized medicine, Ninh Binh, Vietnam, Jul. 2018;
  - *Computer-Aided Biochemical Programming of Synthetic Micro-reactors as Diagnostic Devices*, Groupe de Travail sur la biologie systémique symbolique, GT BIOSS, Marseille, Jul. 2018;
  - *Turing Completeness of Continuous Chemical Reaction Networks, an Informatic Perspective to Systems Biology and Synthetic Biology*, MODELIFE days, Université Provence Alpes Côte d'Azur, Nice, June 2018;
  - *A Constraint-based Implementation of Tropical Equilibrations in BIOCHAM towards integrating Stability Conditions for Computing Correct Model Reductions*, Scientific Meeting, Bonn, Allemagne, March 2018;
  - *From Turing Completeness of Continuous CRN to Abstract CRN Synthesis Workflow*, Formal Methods for the Synthesis of Biomolecular Circuits, Dagstuhl, Allemagne, Feb. 2018;
  - *Coupled Models of the Cell Cycle and Circadian Clock for Chronotherapy Optimization*, Computational Systems Biology for Cancer, Paris, Jan. 2018.

Jakob Ruess gave invited talks on
  - *Virtual reality for bacteria*, C3BI Seminar, Feb 2018, Paris, France.

– *Shaping bacterial population behavior through computer-interfaced control of individual cells*, Symposium on "Cybergenetics-at the interface between living and non-living regulatory systems" at the Annual Meeting of the German Association for General and Applied Microbiology (VAAM), Apr 2018, Wolfsburg, Germany.

9.1.5. Leadership within the Scientific Community

- Grégory Batt is
  - co-responsible of the working group on Symbolic Systems Biology (GT Bioss), gathering >150 researchers in 25 research teams; and member of
  - the Technical Committee on Systems Biology of IEEE and CSS societies;
  - the scientific board of the French research network on Systems and Synthetic Biology (GdR BioSynSys), gathering 40 labs and 300 researchers;
  - the scientific board of the French research network on Bioinformatics (GdR BIM), gathering 56 labs and several hundreds of researchers;
  - the scientific committee of the Advanced Course on Computational Systems Biology summer school, Aussois, 2019;
  - the scientific committee of the Curie International Course on Systems Biology of Cancer, Paris, 2018.
- François Fages is member of
  - the Steering Committee of the International Conference on Computational Methods in Systems Biology, CMSB, since 2008.
  - the Think Tank of the structuring program MODELIFE "Modélisation physique et Mathématique du vivant", Université Provence Alpes Côte d'Azur.

9.1.6. Scientific Expertise

- Grégory Batt
  - was responsible for the Predictive Systems Biology chapter of the 2018-2022 strategic plan of Inria;
  - was reviewer and panel member of the ITMO Cancer/Inserm call on single-cell approaches to cancer;
  - and reviewer for the MIT International Science & Technology Initiatives (MISTI) Global Seed Funds and for the Leverhulme Trust.
- François Fages
  - was member of the Comité de sélection Maître de Conférence, ENS Paris-Saclay;
  - of the thesis advisory committee of one PhD student;
  - and evaluator of one European Research Council ERC Consolidator Grant;
  - one European Research Council ERC Starting Grant;
  - and one DigiCosme, Univ. Paris-Saclay project.
- Jakob Ruess has been a member of thesis advisory committee for two PhD students.

9.1.7. Research Administration

- François Fages is member of the "Comité des Projets du centre" Inria Saclay-IdF
- Sylvain Soliman is member of the "Commission Scientifique" of Inria Saclay-IdF

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Grégory Batt (coordinator and teacher: 35h) and Jakob Ruess (25h), *Computational Biology*, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master: Grégory Batt (3h) *Synthetic Biology and Control course in Molecular and Cellular Biology* Sorbonne Université, Paris.

Master: François Fages (coordinator module 24h and teacher 12h) *C2-19 Biochemical Programming*, Master Parisien de Recherche en Informatique (MPRI), Paris.

Master: François Fages (co-coordinator module 36h and teacher 18h) and Sylvain Soliman (co-coordinator, teacher 18h) INF555 - Constraint-based Modeling and Algorithms for Decision Making ProblemsMaster Artificial Intelligence, Ecole Polytechnique.

Master Modélisation en Pharmacologie Clinique et Epidémiologie Villejuif. François Fages (3h) Méthodes de modélisation informatique des processus cellulaires: cycle cellulaire et horloge circadienne,

Bachelor 2: Eléonore Bellot (teacher 64h) *CSE201 Object-oriented Programming in C++* TD and project supervision

Thematic Research School: Advances in systems and synthetic biology, Evry. François Fages and Sylvain Soliman (3h) *BIOCHAM Workshop*

9.2.2. Supervision

PhD in progress: Virgile Andreani, Calibration efficace de modèles de résistance bactérienne aux antibiotiques à l'aide d'un plan d'expériences optimal, ED STIC, Ecole Polytechnique, Sept. 2016, Gregory Batt

PhD in progress: Sebastian Sosa, "Understanding cost of protein production in yeast", ED FdV, Université Sorbonne Paris Cité, Feb. 2018, Gregory Batt

PhD in progress: Chetan Aditya, "Control of heterogenous synthetic microbial systems", ED FdV, Université Sorbonne Paris Cité, Feb. 2018, Gregory Batt

PhD in progress: Elise Weill, "Optimal control of partial differential equation systems: Application to heterogeneous cell populations", ED STIC, Ecole Polytechnique, Oct. 2018, Frédéric Bonnans and Gregory Batt

PhD in progress: Arthur Carcano, "Iterative design of single-cell experiments to learn single-cell models of biological systems", ED FdV, Université Sorbonne Paris Cité, Oct. 2018, Jakob Ruess and Gregory Batt

PhD in progress : Eléonore Bellot, "Réduction de modèles différentiels par résolution de contraintes d'algèbre tropicale (min,+)", ED STIC, Ecole Polytechnique, Sept. 2018, F. Fages & S. Soliman (50-50%)

PhD in progress : Jérémy Grignard, "Apprentissage de modèles à partir de données pour la conception d'expériences de criblage et la recherche de médicaments", ED STIC, Ecole Polytechnique, dec. 2018, F. Fages & T. Dorval, Servier (50-50%)

PhD in progress : Julien Martinelli, "Apprentissage de modèles mécanistes à partir de données temporelles, application à la personnalisation de la chronothérapie des cancers", ED STIC, Ecole Polytechnique, oct. 2018, F. Fages & A. Ballesta, Inserm (50-50%)

Master's Thesis in progress : Elisabeth Degrand, "Evolving Chemical Reaction Networks", KTH Stockholm, Sweden, F. Fages & M. Hemery (50-50%)

9.2.3. Juries

- Grégory Batt participated in the jurys of
    - HdR of Benjamin Pfeuty, Université de Lille, *Rapporteur*, 23/11/2018
    - PhD of Arnaud Bonnaffoux, ENS de Lyon, *Président du Jury*, 12/10/2018
    - PhD of Alexandre Deloupy, Sorbonne Université, *Rapporteur*, 14/12/2018

- François Fages participated in the jurys of
    - HDR Thi Bich Han Dao, Université d'Orléans, *Président du jury*, 14 mars 2018.
    - PhD Alexandre Rocca, Université Grenoble, *Rapporteur*, 7 mai 2018.
    - PhD Benjamin Miraglio, Université de Nice, *Rapporteur*, 16 février 2018.
- Jakob Ruess was member of the jury of the PhD thesis of Mathieu Pichené, 25/06/2018.

9.3. Popularization

9.3.1. Articles and contents

Our publication on distinguishing resistance from resilience to antibiotic treatments [6] has been the object of a press release, institutional communications (at Inria and at Institut Pasteur), and some press attention, including notably by the UK daily mail journal.

9.3.2. Interventions

- Eléonore Bellot and Elise Weill participated at Fête de la Science in October 2018 at Inria Saclay île-de-France.
- Eléonore Bellot has received college school students for a visit to our research team on the design of logical gates in synthetic biology and their simulation in BIOCHAM.
- François Fages has received college school students for a visit to our research team with the question "Can we program any function ?", answered negatively by proving Cantor's theorem.

9.3.3. Creation of media or tools for science outreach

- François Fages has created several BIOCHAM notebooks associated to his course at MPRI and available online.
- François Fages and Sylvain Soliman have created one BIOCHAM tutorial notebook presented at ASSB 2018 and available online.

<div align="center">

M3DISIM Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

R. Chabiniok, Organization of "MRI & Modelling workshop" related to the Inria Associate Team ToFMOD at Inria Paris-Saclay where hosting 14 international speakers from France, UK, USA, Switzerland, Chile, Czech Republic from the domains of MRI, cardiology and modelling (June 21)

R. Chabiniok, Co-chair of the section"Groupe de recherche en imagerie cardiaque" at French Congress of Radiology (Journées Francophones de Radiologie, JFR), Paris (October 12-15)

D. Chapelle, Co-chair of organising committee for VPH2020 Conference (Paris, August 2020)

D. Chapelle, Session co-chair in VPH18 Conference

M. Genet, Session co-chair at the 8th World Congress on Biomechanics, Dublin (July)

F. Clément, Session *Methodological developments for Systems Biology (A)*, ICSB 2018

P. Moreau, Session co-chair in VPH18 Conference

10.1.1.2. Member of organizing committees

M. Genet, Co-organizer of the Paris-Saclay University Biomechanics Seminar Series

A. Le Gall, Member of the organizing committee of WEARe 2018

A. Le Gall, Member of the organizing committee of the youth session of the national congress of the french society anesthesiology, intensive care, and peri-operative medicine

A. Le Gall, Member of the organizing committee of the youth days of teaching of the national congress of the french society anesthesiology, intensive care, and peri-operative medicine

P. Moreau, Member of the a organizing committee of the VPH2020 conference (Paris, August 2020)

P. Moreau, Member of the organizing committee of the Inria-Saclay teams (Poems-M3disim-Defi) scientific computing seminar

10.1.2. Scientific events selection

10.1.2.1. Reviewer

F. Clément *American Control Conference* 2019

P. Moreau, reviewer for VPH18

10.1.3. Journal

10.1.3.1. Member of editorial boards

D. Chapelle, Member of the editorial board of journal *Computers & Structures*

D. Chapelle, Member of the editorial board of journal *ESAIM: M2AN*

10.1.3.2. Reviewer - Reviewing activities

J.M. Allain, reviewer for "Acta Biomateriala", "Journal of the Mechanical Behavior of Biomedical Materials" and "Journal of Applied Mathematics and Mechanics"

R. Chabiniok, reviewer for "Biomechanics and Modeling in Mechanobiology", "Transations Of Society For Modeling And Simulations" and "Journal of Imaging"

D. Chapelle, reviewer for "Biomechanics and Modeling in Mechanobiology", "Computers & Structures", "International Journal for Numerical Methods in Biomedical Engineering", "Meccanica"

F. Clément, Reviewer for "Journal of Mathematical Biology", "PLOS Computational Biology"and "Endocrinology"

M. Genet, Reviewer for "Biomechanics and Modeling in Mechanobiology"

S. Imperiale, reviewer for "Journal of Mathematical Analysis", "Journal of Computational Acoustics", "SIAM Journal on Scientific Computing" and "SIAM Journal on Numerical Analysis"

P. Moireau, reviewer for "AMSES" and "IEEE Control Systems Letters"

F. Robin, Reviewer for "Journal of Mathematical Biology"

10.1.4. Invited talks

J. M. Allain, invited seminar at Century institut, France.

F. Caforio, seminar tours at the School of Biomedical Engineering and Imaging Sciences, King's College London, UK, Simula Research Laboratory, Oslo, Norway and KFU university, Graz, Austria

R. Chabiniok, seminar tours at Institute for Clinical and Experimental Medicine, Mathematical Institute of Charles University and Children's Heart Center at Motol University Hospital, Prague, Czech Republic

R. Chabiniok, invited lectures at Journées Francophones de Radiologie diagnostique et interventionnellle), France and at International Symposium on Modeling, Simulation and Optimization of the Cardiovascular System, Lukasklause Magdeburg, Germany

D. Chapelle, invited seminars at Politecnico di Milano (MOX), and for Dassault-Systèmes' Living Heart Project

M. Genet, invited seminar at the School of Biomedical Engineering and Imaging Sciences, King's College London, UK

S. Imperiale, invited lecture at ICERM, Brown University, USA

P. Le Tallec, seminar tours at University of Michigan, Michigan State University, Notre Dame University and University of Wisconsin at Madison, USA

P. Le Tallec, invited lecture at Charif University, Iran

P. Moireau, invited lectures at VPH18, CEMRACS2018 Luminy and FoMICS Summer School

P. Moireau, invited seminars at MOX, Politecnico di Milano, Italy and LMT, ENS Cachan, France

F. Robin invited seminar at Institut Élie Cartan de Lorraine, Nancy

10.1.5. Leadership within the scientific community

D. Chapelle, Member of the board of directors of the VPH Institute

D. Chapelle, Member of the steering committee of the BioMedical Engineering Institute coordinated by Ecole Polytechnique

F. Clément, member of the direction and scientific board of GdR REPRO

A. Le Gall, Chair of youth committee of SFAR (French Society of Anesthesia and Reanimation)

P. Le Tallec, Director of LMS (Solid Mechanics Laboratory) Ecole Polytechnique

P. Le Tallec, President of the Mechanics department at University Paris-Saclay

P. Moireau, Member of the steering committee of Department of Mathematics of Université Paris Saclay and Jacques Hadamard Foundation

10.1.6. Scientific expertise

R. Chabiniok, Honorary medical consultant at Saint-Thomas hospital (King's College London)

R. Chabiniok, scientific consultant for the joint project of Institute for Clinical and Experimental Medicine in Prague (IKEM) and Czech Technical University

F. Clément, Reviewer for ANR

F. Clément, expert of the BCDE (Cell Biology, Development and Evolution) ITMO (Multi OrganizationThematic Institute) of the French National Alliance for Life and Health Sciences Aviesan.

F. Clément, expert for the INRA scientific prospective on predictive approaches in biology and ecology

S. Imperiale, Consultant for CEA

P. Le Tallec, Consultant for CEA

P. Le Tallec, Consultant for Michelin

P. Moireau, Reviewer for ANR

10.1.7. Research administration

J.M. Allain, Scientific Advisory Board, chair BioMecAM

R. Chabiniok, in charge of the objectives of Inria Associate team ToFMOD (with UT Southwestern Medical center Dallas, USA)

R. Chabiniok, in charge of coordination of clinical-modeling projects in the MΞDISIM team, Inria Saclay

D. Chapelle, Head of Science of Inria Saclay-Ile-de-France, and member of the Inria Evaluation Committee

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Bachelor: J.M. Allain, "Introductory Projects in Physics", 10h, (L1), École Polytechnique, France

Bachelor: J.M. Allain, "Classical Mechanics", 32h, (L2), École Polytechnique, France

Bachelor: F. Caforio, "PEIP1 S2 M2 – Mathematical analysis in two and three dimensions, linear algebra in Rn", 22h, (L1), Polytech Paris-Sud, France

Bachelor: F. Caforio, "Math 255 – Differential calculus for physics (mathematical analysis in two and three dimensions)", 42h, (L2), Université Paris-Sud, France

Bachelor: M. Genet, "Continuum Mechanics I", 40h, (L3), École Polytechnique, France

Bachelor: M. Genet, "Modeling and Simulation in Industrial Mechanics", 36h, (L3), École Polytechnique, France

Bachelor: S. Imperiale, "MA102 – Analyse pour les EDP", 24h, (L3), ENSTA ParisTech, France

Bachelor: F. Kimmig, "Modeling and simulation in industrial mechanics", 32h, (L3), École Polytechnique, France

Bachelor: P. Le Tallec, "MEC 431 – Mécanique des Milieux Continus 2", (L3), École Polytechnique, France

Bachelor: P. Le Tallec, "Continuum mechanics", 32h, (L3), Shanghai ParisTech, China

Bachelor: P. Moireau, "MAP 431 – Analyse variationnelle", 40 h, (L3), Ecole Polytechnique, France

Bachelor: P. Moireau, "MODAL 472 – Expérimentation numérique pour les EDP", 40 h, (L3), Ecole Polytechnique, France

Bachelor: F. Robin, "General mathematics", 13h, (L1), Sorbonne Universités, France

Bachelor: F. Robin, "Probability and differentiel equation", 22h (L2), Sorbonne Universités, France

Bachelor: F. Robin, "Power series and integral with parameters", 20, (L2), Sorbonne Universités, France

Master: J.M. Allain, "Projects in Mechanics", 6h, (M1), École Polytechnique, France

Master: J.M. Allain, "Cellular motility", 32h, (M2), École Polytechnique, France

Master: J.M. Allain, "Supervision of the Experimental Center", 45h, (M1), École Polytechnique, France

Master: D. Chapelle: "Biomechanical Modeling of Active Tissues", 33h, (M2), Université Paris-Saclay, France

Master: M. Genet, "Plasticity and Fracture", 18h, (M1), École Polytechnique, France

Master: S. Imperiale, "MA2610 Calcul Scientifique – Mécanique des solides", 4h, (M1), Centrale/Supelec, France

Master: S. Imperiale, "Simnum – Programmation C++", 18h, (M1), ENSTA ParisTech, France

Master: P. Le Tallec, "Nuclear Energy on Continuum Mechanics",15h, (M2), INSTN, France

Master: P. Moireau, "Biomechanical Modeling of Active Tissues", 12h, (M2), Université Paris-Saclay, France

Master: P. Moireau, "Méthodes et problèmes inverses en dynamique des populations", 12h, (M2), UPMC, France

Master: P. Moireau, "AMS305 – Complétion de données et identification dans les problèmes gouvernés par des équations aux dérivées partielles", 16h, (M2), Université Paris-Saclay, France

10.2.2. Supervision

PhD in progress: E. Berberoglu (ETHZ, Switzerland), "Image Guided Computational Cardiac Mechanics", started February 2017, supervisors: M. Genet and S. Kozerke (ETHZ, Switzerland)

PhD in progress: F. Caforio, "Modélisation mathématique et numérique de la propagation d'ondes élastique dans le coeur", started: Nov. 2015, supervisors: D. Chapelle and S. Imperiale

PhD in progress: C. Della Valle, "Modélisation et estimation des dynamiques d'assemblage de proteines", supervisors: M. Doumic and P. Moireau, Université Paris Sciences et Lettres,

PhD in progress: C. Giraudet, "Cornea biomechanics", started 10/2018; supervisors: J.M. Allain and P. Le Tallec

PhD in progress: M. Gusseva, "Cardiac Biomechanical Modeling for Chronic Ventricular Loading", supervisors: R. Chabiniok, D. Chapelle, T. Hussain, Université Paris-Saclay, started in December 2017

PhD: U. Khristenko, Université Paris-Saclay, P. Le Tallec, defended Jan 17th

PhD in progress: F. Kimmig, "Multi-scale modeling of muscle contraction – From stochastic dynamics of molecular motors to continuum mechanics, in interaction with experimental assays", supervisors: M. Caruel and D. Chapelle, Université Paris-Saclay, started in September 2016

PhD in progress: A. Le Gall, "Cardiac modelling for monitoring purposes during general anaesthesia and at Intensive Care Unit", supervisors: R. Chabiniok, D. Chapelle, E. Gayat, Université Paris-Saclay, started in November 2016

PhD in progress: C. Patte, "Lung multiscale poromechanical modeling: from breathing to pulmonary fibrosis-induced chronic remodeling", started November 2017, supervisors: M. Genet and D. Chapelle

PhD in progress: F. Robin "Multiscale modeling of the morphodynamics in ovarian follicles", started October 2016, supervisors: F. Clément & Romain Yvinec [INRA]

PhD in progress: N. Tueni, "Multiscale modeling of cardiac mechanics", started January 2018, supervisors: M. Genet and J.-M. Allain

PhD in progress: F. Wijanto, "Modélisation multi-échelle des fibres de collagènes", started: Sept. 2015, supervisors: J.-M. Allain and M. Caruel

Supervision of a project research in CEMRACS 2018 " Multiscale population dynamics : interactions between scales in developmental and reproductive biology" (F. Clément, M. Postel and R. Yvinec)

10.2.3. Juries

D. Chapelle, PhD Jury of A. Marboeuf, Ecole Polytechnique, March 8

P. Le Tallec, PhD reviewer of R. Mlika, INSA Lyon, Jan 24

P. Le Tallec, PhD Jury of Q. Pierron, ENSTA ParisTech, May 18

P. Le Tallec, PhD reviewer of L. Poirel, Inria Bordeaux, Nov 28

P. Moireau, PhD Jury of U. Khristenko, Université Paris-Saclay, Jan 17th

P. Moireau, PhD Jury of T. Kritter, Bordeaux University, Oct 1st

10.3. Popularization

J.M. Allain, Co-authored a popularization paper in the "Reflets de la Physique" journal (january-february 2018)

D. Chapelle, Interview in *Sciences et Avenir* (November issue)

M. Genet, Presentation at JeudiX—Research Days at École Polytechnique

C. Patte, Fête des Sciences day, organized by Inria. October 11th

<p style="text-align:center;color:red;font-weight:bold;">MAGIQUE-3D Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Reviewer

Members of Magique 3D have been reviewers for the following journals:

- Applicable Analysis
- Applied Numerical Mathematics
- Computers and Geosciences
- Geophysical Journal International
- IMA Journal of Numerical Analysis
- International Journal for Numerical Methods in Engineering
- Journal of Computational Physics
- Journal of Inverse and Ill-posed Problems
- SIAM Journal of Numerical Analysis
- SIAM Journal on Scientific Computing
- Wave Motion

9.1.2. Leadership within the Scientific Community

Hélène Barucq is elected member of the Liaison Committee of SMAI-GAMNI (Society of Applied and Industrial Mathematics - Group for promoting the Numerical Methods for Engineers).

9.1.3. Scientific Expertise

- Julien Diaz was expert for the evaluation of Millennium Science Initiative project for the government of Chile.
- Since 2017, Hélène Barucq has been chairwoman of the committee which evaluates research projects in Mathematics, Computer Science, Electronics and Optics to be funded by the Regional Council New Aquitaine

9.1.4. Research Administration

- Julien Diaz is elected member of the Inria Technical Committee and of the Inria Administrative and Scientific Boards.
- Justine Labat is elected member of Laboratory Commitee of UPPA
- Justine Labat organized the seminar of PhD students of LMAP
- Juliette Chabassier is member of the Inria BSO Young Researcher Committee and of the Inria BSO Center Committee. She is member of the Workgroup for sustainable development at Inria Bordeaux Sud-Ouest.
- Victor Péron is appointed member of the CJC (Commission Jeunes Chercheurs) of Inria Bordeaux Sud-Ouest.
- Hélène Barucq is member of the monitoring and studies forward unit of Inria. She is the scientific head of the project DIP since its creation in 2009.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Julien Diaz, Transformées, 24h Eq. TD, M1, EISTIA, France

Licence : Marc Duruflé, Équations différentielles, 20h Eq. TD, L3, Enseirb-MatMeca, France

Licence : Marc Duruflé, Algorithmique Numérique, 30h Eq. TD, L3, Enseirb-MatMeca, France

Licence : Marc Duruflé, Mathématiques pour les sciences du milieu naturel, 30h Eq. TD, L3, Ensegid, France

Master : Marc Duruflé, Calcul scientifique en C++, 96h Eq. TD, M1, Enseirb-MatMeca, France

Licence : Marc Duruflé, Calcul scientifique en Fortran90, 20h Eq. TD, L3, Enseirb-MatMeca, France

Master : Florian Faucher, Inversion / optimisation, 10.5h Eq. Cours et TD, M2, Université de Pau et des Pays de l'Adour, France

Licence : Justine Labat, Algèbre pour l'informatique, 19.5h Eq. TD, L1, UPPA, France

Licence : Justine Labat, Introduction aux Probabilités, 12.5h Eq. TD, L2, UPPA, France

Licence : Victor Péron, Analyse 2, 39 Eq. TD, L1, UPPA, France

Licence : Victor Péron, Mathématiques appliquées, 15 Eq. TD, L1, UPPA, France

Licence : Victor Péron, Courbes et calcul intégral, 19.5 Eq. TD, L2, UPPA, France

Licence : Victor Péron, Analyse numérique des systèmes linéaires, 48.75 Eq. TD, L3, UPPA, France

Licence: Géométrie analytique, 20h Eq. TD, UPPA, France

Master : Victor Péron and Sébastien Tordeux, Analyse numérique des EDP 1: différences finies, 75 eq. TD, Master1, UPPA, France

Master : Victor Péron and Sébastien Tordeux, Introduction aux phénomènes de propagation d'ondes, 38 eq. TD, Master 2, UPPA, France

Master : Robin Tournemenne, Math-Info, 64h eq. TD, L3+M1, ENSAM Bordeaux, France

9.2.2. Supervision

PhD : Izar Azpiroz Iragorri, Contribution to the Numerical Reconstruction in Inverse Elasto-Acoustic Scattering, February 28th, Hélène Barucq, Julien Diaz and Rabia Djellouli (CSUN).

PhD : Elvira Shishenina, Discrétisation espace-temps d'équations d'ondes élasto-acoustiques dans des bases TREFFTZ-DG polynomiales, December 7th, Hélène Barucq and Julien Diaz.

PhD in progress : Hamza Alaoui Hafidi, Imagerie ultrasonore tridimensionnelle dans les milieux hétérogènes complexes, October 2015, Marc Deschamps, Michel Castaings, Eric Ducasse, Samuel Rodriguez (I2M), Hélène Barucq, Marc Duruflé, Juliette Chabassier (Magique 3D).

PhD in progress : Aurélien Citrain, Déformation 3D de maillages en imagerie sismique, Méthodes d'inversion sismique dans le domaine fréquentiel , October 2016, Hélène Barucq and Christian Gout.

PhD in progress : Alexandre Gras, Hybrid resonance for sensing applications, IOGS, October 2017, Philippe Lalanne(IOGS), Marc Duruflé, Hélène Barucq (Magique 3D)

PhD in progress : Pierre Jacquet, ,October 2017, Hélène Barucq and Julien Diaz.

PhD in progress : Justine Labat, Diffraction of an electromagnetic wave by small obstacles, Université de Pau et des Pays de l'Adour, October 2016, Victor Péron and Sébastien Tordeux

PhD in progress: Victor Martins Gomez, Experimental characterization and modeling of seismo-electromagnetic waves, Université de Pau et des Pays de l'Adour, October 2018, Hélène Barucq and daniel brito (LFCR)

PhD in progress : Rose-Cloé Meyer, Modeling of conducting poro-elastic media using advanced numerical methods , Université de Pau et des Pays de l'Adour, October 2018, Hélène Barucq and Julien Diaz

PhD in progress : Nathan Rouxelin, Advanced numerical modeling of acoustic waves propagating below the surface of the Sun, Université de Pau et des Pays de l'Adour, October 2018, Hélène Barucq and Juliette Chabassier

PhD in progress : Chengyi Shen, Approches expérimentale et numérique de la propagation d'ondes sismiques dans les roches carbonatées, October 2016, Julien Diaz and Daniel Brito (LFCR).

Master 2 internship : Rose-Cloé Meyer, Analyse de performances de schémas à pas de temps locaux pour la simulation numérique de phénomènes de propagations d'ondes, Enseirb-Matmeca, Sept. 2018.

Master 2 internship : Nathan Rouxelin, Comparaison des modèles de Galbrun et d'Euler linéarisé dans le contexte de l'héliosismologie , Insa Rouen, Sept. 2018.

Master 2 internship: A discontinuous Galerkin Trefftz type method for solving the Maxwell equations, INSA Toulouse, Sept 2018

Master 2 internship : Auxence MBaimou: Models for plates and beams, application to the piano bridge, Marseille University, Sept. 2018.

L3 internship : Jérémy Martin, Sept. 2018.

9.2.3. *Juries*

- Hélène Barucq : (Insa de Rouen et ENSA d'Agadir (Maroc)) "De l'optimisation pour l'aide à la décision. Application au problème du voyageur de commerce probabiliste et l'approximation de données", PhD thesis, December 12th 2018

- Hélène Barucq : Bruno Weber (Université de Strasbourg) "Optimisation de code Galerkin discontinu sur ordinateur hybride. Application à la simulation numérique en électromagnétisme", PhD thesis, November 26th 2018

- Hélène Barucq : Florent Masmoudi (Université de Toulouse) "Non intrusive reduced order models", PhD thesis, July 9th 2018

- Hélène Barucq : Boris Caudron (Université de Nancy) "Couplages FEM-BEM faibles et optimisés pour des problèmes de diffraction harmoniques en acoustique et en électromagnétisme, PhD thesis, June 25th 2018

- Julien Diaz : Florian Monteghetti (Université de Toulouse), Analysis and Discretization of Time-Domain Impedance Boundary Conditions in Aeroacoustics, October 15th 2018

- Sébastien Tordeux: Hélène Canot (Université de Bretagne Sud) Méthodes d'homogénéisation et simulations numériques appliquées à la réponse électromagnétique des matériaux multi échelles

- Juliette Chabassier : Antoine Bensalah (Université Paris Saclay) Une approche nouvelle de la modélisation mathématique et numérique en aéroacoustique par les équations de Goldstein, 6 july 2018

- Victor Péron : Mostafa Shahriari (Basque Center for Applied Mathematics, BCAM), Fast One-Dimensional Finite Element Approximation of Geophysical Measurements, November 14th 2018

9.3. Popularization

9.3.1. *Interventions*

- Justine Labat participated in scientific 'speed datings' during the 'Filles et Maths' day at Pau in May 2018.

- Justine Labat animated the stand in Mathematics during 'Le Village des Sciences' day at Pau in October 2018.

- Sébastien Tordeux gave a talk on numerical analysis in the Cercle Sofia Kovalevskaïa of Toulouse in May 2018
- Juliette Chabassier participated to a movie - debate event in Cognac in march 2018.
- Juliette Chabassier animated a workshop around virtual piano during the Inria "10 years night" in september 2018.
- Juliette Chabassier animated a workshop around virtual piano during the Inria "fête de la science" in october 2018.
- Robin Tournemenne animated a workshop around virtual piano during the Inria "fête de la science" in october 2018.
- Juliette Chabassier animated a workshop around virtual piano during the Inria "open doors day" in october 2018.
- Juliette Chabassier welcomed L3 students around a virtual piano workshop in december 2018.

MAMBA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Jean Clairambault, with Jean-Frédéric Gerbeau, Huaxiong Huang, Benoît Perthame and Sivobal Sivaloganathan: organisers of the First Inria-Sorbonne-Université-Fields Institute international workshop on mathematics in medicine, Fields Institute, Toronto, January 31 to February 2, 2018. http://www.fields.utoronto.ca/activities/17-18/math-medicine

- Jean Clairambault, with Guillemette Chapuisat, Florence Hubert, Urszula Ledzewicz and Vitaly Volpert: organisers of the International 5-day workshop on Mathematical perspectives in the biology and therapeutics of cancer, CIRM Luminy, July 9-13, 2018. https://mathscancer.sciencesconf.org/

- Jean Clairambault, with Tomás Alarcón and Thomas Hillen: organisers of the BIRS-CMO 5-day workshop on Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy (18w5115), Casa Matemática Oaxaca (Mexico), November 25-30, 2018. http://www.birs.ca/events/2018/5-day-workshops/18w5115

- Benoît Perthame, Luis Almeida, Diane Peurichard and Delphine Salort: organizers of the workshop 'Asymptotic approaches to spatial and dynamical organizations', july 2018, LJLL, Sorbonne Université, and organizers of the math-bio working group at LJLL, Sorbonne Université

- Diane Peurichard, Dirk Drasdo: organizers of the internal seminar 'Open MAMBA seminar' (https://team.inria.fr/mamba/open-mamba-seminar/)

- Marie Doumic, with Doron Levy (U. of Maryland, USA), M. Bergmann (Med. University of Vienna) and N. Mauser (Wolfgang Pauli Institute, Vienna) organised a workshop on "Mathematical Models in Cancer", on July 20th and 21st, 2018.

- Marie Doumic, together with J. Haskovec (KAUST Univ., Saoudi Arabia), M.-T. Wolfram (Univ. of Warwick, UK), K. Fellner (Univ. of Graz, Austria) and L. Neumann (U. of Innsbruck, Austria), organised a workshop on "Applied PDEs and kinetic equations: from physics to life sciences and beyond", in the honor of C. Schmeiser's 60th birthday.

- L. Almeida, B. Perthame, D. Peurichard and D. Salort have organized the international conference "Asymptotic approach to spatial and dynamical organizations", 4-6 july 2018 (60 participants)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Philippe Robert was in the PC of the conference "Stochastic Networks" held in Edimburgh 25-29 June 2018.

- Pierre-Alexandre Bliman was in the Editorial Board of the conference "European Control Conference", Limassol, 12-15 June 2018.

- Dirk Drasdo was member of the Program committee of the SBMC 2018 (Bremen, Germany), July 4-6, 2018.

10.1.2.2. Reviewer

- Pierre-Alexandre Bliman, reviewer for the conferences IEEE Conference on Decision Control, European Control Conference, Indian Control Conference, Joint 9th IFAC Symposium on Robust Control Design and 2nd IFAC Workshop on Linear Parameter Varying Systems

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Philippe Robert is Associate Editor of the journal "Queueing Systems, Theory and Applications".

- Benoît Perthame is co-editor in chief of Acta Applicandae Mathematicae (Springer).

- Dirk Drasdo is associate editorial member of J. Theor. Biol. and Royal Society Open Science.

- Luis Almeida is Associate Editor of the Journal of Dynamics and Games AIMS.

10.1.3.2. Reviewer - Reviewing Activities

- Jean Clairambault, reviewer for different journals in 2018: PLoS Computational Biology, PLoS One, Integrative Biology, Applied Mathematical Modelling, Letters in Biomathematics, Journal of Theoretical Biology, Bulletin of Mathematical Biology, Mathematical Biosciences and Engineering

- Pierre-Alexandre Bliman, reviewer for the journals Automatica, Proceedings of the Royal Society of Edinburgh, Systems and Control Letters

- Diane Peurichard: reviewer for Journal of the Royal Society Interface, Processes, Computation

- Marie Doumic, reviewer for J. Math. Biol., SIAM App. Math., Ann. IHP, M2AN, Inverse Problems

10.1.4. Invited Talks

- Jean Clairambault: Workshop "Computational Systems Biology for Cancer", Paris, January 2018; Spring school "Mathematical Modelling of Tumour Growth and Therapy", CRM, Bellaterra (UAB, Barcelona), April 2018; Workshop "Modelling Biological Phenomena from Nano to Macro Scales", The Fields Institute, Toronto, May 2018; 4th Annual workshop on mathematics in medicine: mathematical models in cancer, Wolfgang Pauli Institut, Vienna, July 2018; Seminar, DIMEAS, Politecnico di Torino, October 2018; Mathematical and Computational Biology Workshop, Tirana, October 2018; International Conference on Applied Mathematics, Fes (Morocco), October 2018 ; Seminar on mathematical modelling of tissue growth, Les Treilles (Tourtour, France), November 2018; Workshop on Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy, CMO, Oaxaca, November 2018 (see above: organisation of scientific events); International Program in Mathematical Biology Sep.-Dec. 2018, Institut Mittag-Leffler (Stockholm), December 2018

- Diane Peurichard: Oct 16-18 PSU-P6 workshop "Mathematics of living matter", Penn State; Jul 23-Jul 27 11th ECMTB Conference, Lisbon, Portugal; Apr 30 May 04 Workshop "Collective dynamics and self-organization in biological sciences", Edinburgh, Scotland.

- Marie Doumic: Keynote speaker at the BIOMATH 2018 conference, Sofia, Bulgaria, June 25-29 2018; 3h Minicourse for the Doctoral School of Vienna, Weissensee, July 2-5; Workshop "Collective dynamics and self-organisation in biological sciences", Edinburgh, April 30-May 4

- Dirk Drasdo: Paris, France, Sanofi, 7/11, Seminar: Spatial-temporal MultiScale-multilevel modeling OF DRUG-INDUCED LIVER DAMAGE and ITS Regeneration : Steps towards a VIRTUAL Liver; Paris, France, Ecopa, 6/11, Symposium: how new experimental tools in life science challenge the 3R vision. (5/6.11): Spatial-temporal MultiScale-multilevel modeling of APAP damage and its consequence on ammonia detoxification : Steps towards a virtual Liver; Palaiseau, France, Ecole Polytechnique, 19/10, Guess lecture. Integrated and spatial-temporal multiscale modeling of liver guide in vivo experiments in healthy & chronic disease states: a blue print for systems medicine?; Rome, Italy, 10/10, Mathematics for Biomedicine, 8-11/10: Integrated and spatial-temporal multiscale modeling of liver guide in vivo experiments in healthy & chronic disease states: a blue print for systems medicine?; Pisa, Italy, 5/10, Multiscale modeling and simulations to bridge molecular and cellular scales, 1-5/10: Multi-scale and integrated mathematical modeling of liver function and regeneration: Using mathematical models to guide experiments; Heidelberg, Germany, 1/11, BIOMS-Symposium 2018, 1-2/11: Multi-scale and integrated mathematical modeling of liver function and regeneration: Using mathematical models to guide experiments; Inst. Pasteur, France

20/9, Inst. Seminar: From systems biology to systems medicine: an example: Paracetamol overdose-caused damage & its regeneration: Virtual experiments in organ micro-architectures; Paris, France, 14/4, EASL, 11-14/4: Parameterization of liver metabolism; Lyon, France : From systems biology to systems medicine: an example: Paracetamol overdose-caused damage & its regeneration: Virtual experiments in organ micro-architectures

10.1.5. Leadership within the Scientific Community

Dirk Drasdo is member of the scientific leadership board of the German flagship project LiSyM (Liver Systems Medicine) financed by BMBF (Germany)

10.1.6. Scientific Expertise

- Jean Clairambault and Dirk Drasdo: members of the ANR CES 45 (mathematics and digital sciences for health and biology) selection committee
- Jean Clairambault: member of the review committee for the German FZJ (ForschungsZentrum Jülich)-BMBF funding measure "Demonstrators for Individualised Medicine" within the Framework of the Research and Funding Concept "e:Med Ð Paving the Way for Systems Medicine", Frankfurt, September 2018
- Jean Clairambault: member of the review committee for the German DLR (Deutsches Zentrum für Luft und Raumfahrt)-BMBF initiative "Systems medicine research consortia", Berlin, November 2018
- Jean Clairambault: representative of Inria (until June 2018) to the expert group of the ITMO Cancer (Aviesan) and member of the steering committee of the HTE program (2016-2020)
- Diane Peurichard and Marie Doumic: Ambassadeur FSMP for Austria
- Diane Peurichard: member of the selection committee Sorbonne Université, maitre de conference position
- Diane Peurichard: member of the Inria scientific selection committee (CORDI-S PhD, post-docs, delegation)
- Benoît Perthame has been member of the "Chern Prize" committee awarded at ICM 2018 in Rio.

10.1.7. Research Administration

- Pierre-Alexandre Bliman: Coordinator of the ECOS-Nord project C17M01 "News methods for controle of dengue and arboviroses epidemics".
- Marie Doumic: nominated in Dec. 2018 at the Scientific Council of INSMI, CNRS.
- Dirk Drasdo is member of the scientific leadership board of the German flagship project LiSyM (Liver Systems Medicine) financed by BMBF (Germany).
- Dirk Drasdo guides a research group bi-localized at Inria de Paris and IfADo, Dortmund, currently composed of 3 research engineers, 3 postdocs.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Philippe Robert, "Large Stochastic Networks", 24h, M2, Sorbonne Université, France.

Master: Marie Doumic, "Inverse problems in Biological Dynamics", 24h, M2, Sorbonne Université, France

Jean Clairambault: teaching in Spring school "Mathematical Modelling of Tumour Growth and Therapy" (4 one-hour lectures), UAB, Barcelona, April 2018 (see above); Fall teaching (3 one-hour lectures), Politecnico di Torino, October 2018 (see above)

Licence : Pierre-Alexandre Bliman, "Calculus 3", 90h, L2 and "Analyse", 60h, L3, Fundação Getulio Vargas, Rio de Janeiro, Brazil

Master : Diane Peurichard, "Fondements des méthodes numériques", 20h, "Calcul matriciel numérique" 20h

Licence : Diane Peurichard, Licence: "Introduction to Python" 20h

Master : Dirk Drasdo, "Agent-based models of tissue organization", UPMC M2 course, Paris **24 h / yr**

10.2.2. Supervision

PhD : Wen Sun, "A study of interacting stochastic networks : large scale, long time behavior and fluctuations", Sorbonne Université, June, 11, 2018, Philippe Robert

PhD : Veronica Quintuna Rodriguez, "New Network / IT Command: Virtualized Function Performance for a Programmable Infrastructure", Sorbonne Université, October 3, 2018, Fabric Guillemin and Philippe Robert.

PhD in progress : Gaëtan Vignoud, "Plasticity of Stochastic Neural Networks", September 1st, 2018, Philippe Robert, Laurent Venance

Jean Clairambault: supervision of the M2 ('mathematics of modelling') internship of Loïs Naudin: "Modélisation du métabolisme énergétique tumoral glycolytique vs. respiratoire oxydatif" and of two groups of four students of the L3 unit 3M101: "Excitabilité cellulaire : une première approche des systèmes dynamiques" and "Étude des équations de Lotka-Volterra"

Jean Clairambault: Supervision of PhD students Camille Pouchol (with Michèle Sabbah and Emmanuel Trélat, ED 386, Sorbonne Univerité, thesis defence June 2018: "Analysis, control and optimisation of PDEs, application to the biology and therapy of cancer" [1] and Ghassen Haddad (ED 386, Sorbonne Université, and Université Tunis-El Manar, co-supervisor: Slimane Ben Miled), thesis defence planned in December 2018: "Optimisation du traitement du cancer")

Internship: Supervision of Valeria Caliaro, M1 student from University of Verona (3months internship) on interacting particle networks, Diane Peurichard

Internship: Supervision of S. Zhenyu, M1 student from LJLL, Sorbonne University (3months internship) on coarse graining of a fluid filled with obstacles, Diane Peurichard

Diane Peurichard, Luis Almeida, Benoit Perthame: supervision of project CEMRACS (6weeks)

PhD defended: Noémie Boissier PhD defence in June 2018, supervision by D. Drasdo and I. Vignon-Clementel

PhD in progress: Adrian Friebel, "Software of image processing and analysis of liver tissue at histological scales", supervision by D. Drasdo and S. Hoehme

Internship: Ismael Gonzalez Valverde,PhD student from Zaragoza by Paul Van Liedekerke and Dirk Drasdo.

10.2.3. Juries

- Ph.D thesis of C. Pouchol, defended on June 29th: participation in the committee of J. Clairambault and B. Perthame.
- Ph.D thesis of M. Strugarek, defended on September 7th: participation in the committee of M. Doumic and B. Perthame.
- Dirk Drasdo was in 2018 member of the ANR-grant selection committee for mathematical modeling in medicine and biology.

10.3. Popularization

10.3.1. Interventions

- Marie Doumic: participation in a round table on December 13th, in Forum Emploi Maths, La Villette, Paris; Participation in a round table on "Science Meets Medicine", May 29th, in Vienna; presentation to a 12-year old class of pupils of mathematics for biology.
- Several Mamba members have taken part to the activities of the year of mathematical biology declared by European Mathematical Society.
- Dirk Drasdo on liver research and EASL: https://www.inria.fr/centre/paris/actualites/dirk-drasdo-et-ses-recherches-sur-le-foie

MATHNEURO Team

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific Events Organisation

6.1.1.1. Member of the Organizing Committees

Olivier Faugeras and Romain Veltz were on the Advisory Board of the 4th International Conference on Mathematical Neuroscience, held in Antibes Juan les Pins (France), June 11 - 13, 2018.

6.1.2. Scientific Events Selection

6.1.2.1. Member of the Conference Program Committees

Mathieu Desroches was on the Program Committee of the 4th International Conference on Mathematical Neuroscience, held in Antibes Juan les Pins (France), June 11 - 13, 2018.

Mathieu Desroches was on the Scientific Committe of the 2nd International workshop in Neurodynamics (Ndy'18), held in Castro-Urdiales (Spain), September 26-29, 2018.

6.1.3. Journal

6.1.3.1. Member of the Editorial Boards

Olivier Faugeras is the co-editor in chief of the open access Journal of Mathematical Neuroscience. This journal has obtained in 2018 an Impact Factor of 2.4.

6.1.3.2. Reviewer - Reviewing Activities

Fabien Campillo acts as a reviewer for Journal of Mathematical Biology.

Mathieu Desroches acts as a reviewer for Physica D, SIAM Journal on Applied Dynamical Systems (SIADS), PLoS Computational Biology, Journal of Mathematical Biology, Journal of Neurophysiology, Journal of Mathematical Neuroscience, Nonlinear Dynamics.

Olivier Faugeras acts as a reviewer for the Journal of Mathematical Neuroscience, the Journal of Computational Neuroscience, the SIAM Journal on Applied Dynamical Systems (SIADS).

Martin Krupa acts as a reviewer for Nonlinearity, Proceedings of the National Academy of Sciences of the USA (PNAS), the SIAM Journal of Applied Dynamical Systems (SIADS).

Romain Veltz acts as a reviewer for Neural Computation, eLIFE, SIADS, PNAS, Journal of the Royal Society Interface.

6.1.4. Invited Talks

Pascal Chossat, "Stability of Simple and Pseudo Simple Heteroclinic Cycles in $\mathbb{R}^4$", Perspectives in Nonlinear Science Workshop, Cargese (France), March 2018.

Pascal Chossat, "Computational aspects of equivariant bifurcation theory", Colloque *Symmetry and Computation*, CIRM (France), April 2018.

Pascal Chossat, "Geometry in neurosciences: the example of the visual cortex" (plenary talk), *Systèmes dynamiques et systèmes complexes - Une conférence pour célébrer les 60 ans de Jean-Marc Gambaudo*, Nice (France), Juin 2018.

Pascal Chossat, "Perception of images by the visual cortex: geometry in neuroscience" (plenary talk), *VI Iberoamerican meeting Geometry, Mechanics and Control*, Guanajuato (Mexico), August 2018.

Pascal Chossat, "Transitions de phase dans le plan hyperbolique, application à la détection des textures par le cortex visuel primaire", Colloque *Géométrie et représentation de la couleur*, UPMC, November 2018.

Mathieu Desroches, "Canards and spike-adding in neural bursters", MURPHYS-HSFS-2018 meeting, CRM, Barcelona (Spain), May 2018.

Mathieu Desroches, "Three-Timescale Dynamics: Canards and Spike Adding", New Trends in Mathematical Biology, CRM, Barcelona (Spain), June 2018.

Olivier Faugeras, "Predicting neuronal correlations in large size networks based on meanfield analysis", Workshop *Mean-field Approaches to the Dynamics of Neuronal Networks*, EITN, Paris (France), January 2018.

Olivier Faugeras, "Neural networks do not become asynchronous in the large size limit when synaptic weights are correlated: there is no propagation of chaos", Worshop *InSpire – New Insights on Complex Neural Dynamics*, , Cergy (France), June 2018.

Olivier Faugeras, "Neural networks do not become asynchronous in the large size limit: there is no propagation of chaos", ICMNS 2018, Antibes (France), June 2018.

Elif Köksal Ersöz, "Anticipation via canards", MURPHYS-HSFS-2018 meeting, CRM, Barcelona (Spain), May 2018.

Elif Köksal Ersöz, "Anticipation via canards in excitable systems", XXIII National Conference on Statistical Physics and Complex Systems, Parma (Italy), June 2018.

Elif Köksal Ersöz, "Canard mediated mixed-mode bursting oscillations in a rate model", European Conference on Mathematical and Theoretical Biology (ECMTB 2018), Lisbonne (Portugal), July 2018.

Elif Köksal Ersöz, "Canard mediated mixed-mode bursting oscillations in a rate model", 2nd International workshop in Neurodynamics (Ndy'18), Castro-Urdiales (Spain), September 2018.

Martin Krupa, "Heteroclinic chains in a model of associative memory", Systèmes dynamiques et systèmes complexes - Une conférence pour célébrer les 60 ans de Jean-Marc Gambaudo, Nice (France), June 2018.

Romain Veltz, "On a toy network of neurons interacting through nonlinear dendritic compartments", ICMNS 2018, invited talk, June 2018.

Romain Veltz, "On a toy network of neurons interacting through nonlinear dendritic compartments", Mean-field approaches to the dynamics of neuronal networks, EITN, 2018.

Romain Veltz, "On a toy network of neurons interacting through nonlinear dendritic compartments", Systèmes dynamiques et systèmes complexes - Une conférence pour célébrer les 60 ans de Jean-Marc Gambaudo, Nice (France), June 2018.

Romain Veltz, "Models of neurons interacting through nonlinear dendritic compartments", Séminaire de Probabilités et Statistique, LJAD, Université de Nice Sophia Antipolis, October 2018.

6.1.5. Scientific Expertise

Fabien Campillo was member of the local committee in charge of the scientific selection of visiting scientists (Comité NICE)

Fabien Campillo was member of the HCERES visiting committee for the evaluation of the INRA Research Unit MAIAGE.

Fabien Campillo was member of the visiting committee of the LIRIMA International Laboratory.

Mathieu Desroches was on the Advisory Board of the Complex Systems Academy of the UCA[JEDI] Idex.

Olivier Faugeras made a presentation in front of the CCNE (Comité Consultatif National d'Ethique) reporting on the work made by the group "éthique et IA" that he was the president of at the *Académie des Sciences de Paris* in preparation of their revision of the law on bioethics.

Olivier Faugeras was the President of the study group "Intelligence artificielle" of the *Académie des Sciences de Paris*. As such, he led the audition of experts of this research field, namely for 2018, Jean Ponce, Stéphane Mallat and Francis Bach. This study group has also produced a report for the 2019 G7 meeting.

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

Chalk-learning

Master 2 MVA/UPMC: Romain Veltz, Mathematical Methods for Neurosciences, 20 hours, Paris, France.

Master 1 BIM/UPMC: Mathieu Desroches, Modèles Mathématiques et Computationnels en Neuroscience (Lectures and example classes), 20 hours, Paris, France.

Master 1 BIM/UPMC: Elif Köksal Ersöz, Modèles Mathématiques et Computationnels en Neuroscience (Labs), 10 hours, Paris, France.

Mini-course (Master's level), Basque Center for Applied Mathematics: Mathieu Desroches (together with Serafim Rodrigues), Introduction to mathematical neuroscience: neuronal models and their bifurcations, 10 hours, Bilbao, Spain.

6.2.2. Supervision

PhD in progress: Axel Dolcemascolo, "All optical neuromimetic devices", started in January 2016, co-supervised by Romain Veltz and Stéphane Barland (INLN). Successfully defended on 14 December 2018.

PhD in progress: Louisiane Lemaire, "Multi-scale mathematical modeling of cortical spreading depression", started in October 2018, co-supervised by Mathieu Desroches and Martin Krupa.

PhD in progress: Yuri Rodrigues, "Towards a model of post synaptic excitatory synapse", started in March 2018, co-supervised by Romain Veltz and Hélène Marie (IPMC, Sophia Antipolis).

PhD in progress: Halgurd Taher, "Next generation neural-mass models", started in November 2018, co-supervised by Simona Olmi and Mathieu Desroches.

PhD in progress: Pascal Helson, "Study of plasticity laws with stochastic processes", started in September 2016, co-supervised by Romain Veltz and Etienne Tanré (Inria TOSCA).

PhD in progress: Quentin Cormier, "Biological spiking neural networks", started in September 2017, co-supervised by Romain Veltz and Etienne Tanré (Inria TOSCA).

PhD in progress: Samuel Nyobe, "Inférence dans les modèles de Markov cachés : Application en foresterie", started in October 2017, co-supervised by Fabien Campillo, Serge Moto (University of Yaoundé, Camerun) and Vivien Rossi (CIRAD).

6.2.3. Juries

Mathieu Desroches was president of the Jury of the PhD of Dora Karvouniari (Inria Biovision Team) entitled "Mathematical modeling of retinal waves", Inria Sophia Antipolis, 15 March 2018.

Pascal Chossat was jury member for the HDR of Philippe Beltrame, Université d'Avignon, 30 November 2018.

Romain Veltz was Examiner for A. Dolcemascolo's PhD thesis defence entitled "Semiconductor lasers to model and control cells and excitable networks", which took place on 14 December 2018.

6.3. Popularization

6.3.1. Interventions

National events: Romain Veltz participated at the conference "Fête de la Science".

6.3.2. Internal action

Romain Veltz gave a talk at "Café des sciences" about "Vers un modèle de synapse excitatrice"

<p style="text-align:center; color:red;">**MIMESIS Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Reviewing Activities

Members of the teams regularly provide reviews for:

- Int. Conferences and journals on Information Processing in Computer-Assisted (miccai, ipcai, media,
- Interventions, Workshop on Virtual Reality Interaction and Physical Simulation (eurographics, vriphys, ...)
- International Conference on Robotics and Automation (iros, icra,..)

10.1.1.2. Member of the Organizing Committees

Stéphane Cotin participated to the organization of the Patient-specific Computational Biomechanics Symposium at World Congress on Computational Mechanics (WCCM 2018).

10.1.2. Journal

Member of the Editorial Boards: Hadrien Courtecuisse was program chair for the international conference Eurographics 2018.

10.1.3. Invited Talks

- 2018 Stéphane Cotin: Invited lecture – workshop on "Virtual and Augmented Reality" (Toulouse, France)
- 2018 Stéphane Cotin: Invited lecture - Academy of Sciences (Paris, France)
- 2018 Stéphane Cotin: Invited lecture - BEST symposium (Strasbourg, France)

10.1.4. Scientific Expertise

Stéphane Cotin provide provides scientific expertise for the startup Insimo.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Igor Peterlik, Modélisation des systèmes vivants, 17h, M2, University of Strasbourg

Master : Igor Peterlik, Visualisation des données et simulation, 10h, M1, University of Strasbourg

Master : Hadrien Courtecuisse, Real time simulation, 30h, M2, University of Strasbourg

Master : Hadrien Courtecuisse, Visualisation des données et simulation, 10h, M2, University of Strasbourg

Master : Hadrien Courtecuisse, Visualisation des données et simulation, 10h, M1, University of Strasbourg

10.2.2. Supervision

PhD: Yinoussa Adagolodjo, Coupling between robotics and medical simulation for automated procedures, 01/02/2016, supervised by Hadrien Courtecuisse.

PhD in progress: Jaime Garcia Guevara, Augmented ultrasound imaging for hepatic surgery, 01/09/2015, supervised by Stéphane Cotin, Marie-Odile Berger.

PhD in progress: Raffaella Trivisonne, Computer-aided vascular interventions, 01/09/2015, supervised by Stéphane Cotin and Erwan Kerrien.

PhD in progress: Nicolas Golse, Navigation using the augmented reality during hepatic surgery, 01/09/2016, supervised by Stéphane Cotin.

PhD in progress: Sergei Nikolaev, Characterization of boundary conditions for biomechanical modeling of liver, 01/05/2017, supervised by Stéphane Cotin, co-supervised by Igor Peterlik and Hadrien Courtecuisse.

PhD in progress: Jean-Nicolas Brunet, Characterization of boundary conditions for biomechanical modeling of liver, 01/09/2017, supervised by Stéphane Cotin.

PhD in progress: Andrea Mendizabal, Numerical simulation of soft tissues and machine learning, 01/09/2017, supervised by Stéphane Cotin.

PhD in progress: Paul Baksic, Robotic assistance for percutaneous surgerygical interventions in deformable structures – Application to radiofrequency ablation, 01/10/2018, supervised by Hadrien Courtecuisse.

10.2.3. Juries

Hadrien Courtecuisse was a member of jury of the PhD defense of Yinoussa Adagolodjo and Fanny Morin. Strasbourg University and Grenoble University.

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MNEMOSYNE Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

X. Hinaut: organisation of the Workshop on Language and Robotics (follower of the ML-HLCR workshop at IROS 2017), at IROS, 1st of October 2018, Madrid, Spain, http://iros2018.emergent-symbol.systems/. http://iros2018.emergent-symbol.systems/.

10.1.1.2. Member of the Conference Program Committees

F. Alexandre: TAIMA'18; SAB'18; X. Hinaut: ICDL-Epirob'18; N. Rougier: WSOM'18;

10.1.1.3. Reviewer

X. Hinaut: ICDL-epirob'18; CogSci'18; IJCNN'18; ESANN'18;

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Frédéric Alexandre: Academic Editor for PLOS ONE; Review Editor for Frontiers in Neuro-robotics;
- Nicolas Rougier: Editor in chief for ReScience, Academic editor for PeerJ, review editor for Frontiers in Neurorobotics.
- Xavier Hinaut: guest editor in the Journal Advanced Robotics of a special issue on "Machine Learning Methods for High-Level Cognitive-Capabilities-in-Robotics"

10.1.2.2. Reviewer - Reviewing Activities

- F. Alexandre: Elife; EMBC; Frontiers in Neurobotics; Neurobiology of Disease; PLoS ONE
- André Garenne: Journal of Integrative Neuroscience
- Xavier Hinaut: Adaptive Behavior; Applied Science; Cognitive Computation; Cognitive Systems (CogSys); Neural Networks; ReScience; Transactions in Human-Robot Interaction (THRI); Transactions in Cognitive Developmental Systems (TCDS);
- Nicolas Rougier: Frontiers in Neuroinformatics, Frontiers in Neurobotics, Frontiers in Computational Neuroscience, PLOS Computational Biology, PeerJ;
- Thierry Viéville: Frontiers in Neuroinformatics, Frontiers in Neurobotics, Frontiers in Computational Neuroscience

10.1.3. Invited Talks

F. Alexandre:

- "When cognitive neursciences revisit Artificial Intelligence", Big Data Seminar of the Labri, February 8 and 22 (in two parts);
- "Understanding or transforming the human being ?", Annual meeting of the International Catholic Center for cooperation with UNESCO, Paris, May 4;
- "Modelling the medial prefrontal cortex for the motivated behaviour of an autonomous agent in the Minecraft video game", Symposium «Frontiers in medial prefrontal cortex research», Bordeaux, September 6;
- "Modeling the functional organization of the medial and ventral prefrontal cortex", Symposium on Cognitive Systems, Chemnitz (Germany), September 13;
- "Does Artificial Intelligence learn from its errors ?", Colloquium Cathy Dufour on Artificial Intelligence, University of Lorraine, November 16;
- "The contributions of Machine Learning to research on neurodegenerative diseases", in the annual meeting of the Bordeaux Initiative for Neurodegenerative Disorders (BIND), about Technological Innovations and Neurodegenerative Diseases (November, 23);

Ikram Chraibi Kaadoud: La Grande Jonction (Bordeaux);

Silvia Pagliarini at the European Birdsong Meeting, Odense, Denmark;

N. Rougier:

- Berstein Conference / PhD symposium (Berlin);
- ICML, Workshop on reproducibility in Machine Learning (Stockholm);
- Loria (Nancy);
- Digital Aquitaine / Club Commerce Connecté (Bordeaux);
- Phiteco conference (Compiègne);

10.1.4. Leadership within the Scientific Community

X. Hinaut:

- President of the association MindLaBDX: "open citizen lab" in Cognitive Sciences and Artificial Intelligence in Bordeaux.
- member of the Administration Committee of Fresco association (French Federation of students in Cognitive Science)

Nicolas Rougier: Editor in chief for ReScience

10.1.5. Scientific Expertise

F. Alexandre is the french expert for Mathematics and Computer Science of the PHC (Hubert Curien Program) Utique for scientific cooperation between France and Tunisia. He is also an expert for the Association Robert Debré for Medical Research.

Nicolas Rougier: UNESCO; Engineering and Physical Sciences Research Council (UK); Assistance Publique Hopitaux de Paris; Eurostars program (Eureka).

10.1.6. Research Administration

- F. Alexandre is member of the Inria Evaluation Committee, Deputy Scientific Delegate and Vice-head of the Project Committee of Inria Bordeaux Sud-Ouest (until september2018); member of the Inria monitoring and forecasting cell; Corresponding scientist for Bordeaux Sud-Ouest of the Inria COERLE ethical committee; Member of the national Inria committee for international chairs; Member of the local Inria committee for young researchers hiring; Member of the steering committee of the regional Cluster on Information Technology and Health; of the regional Cluster on Robotics; Expert of the ITMO 'Neurosciences, Sciences Cognitive, Neurologie, Psychiatrie'
- N. Rougier is vice-head of the Mnemosyne team-project; elected member of the Inria Evaluation Committee; IES referent for Inria Bordeaux Sud-Ouest; Member of the commitee for researcher recruitment; Member of the steering committee for the BioComp CNRS consortium; Editor in chief and co-founder of ReScience.
- Thierry Viéville is in charge of the http://classcode.fr project and in charge, for Inria, of the creation of a Master SmartEdTech at UCA within the scope of his mission for the Inria Sophia Antipolis - Méditérannée direction.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Many courses are given in french universities and schools of engineers at different levels (LMD) by most team members, in computer science, in applied mathematics, in neuroscience and in cognitive science. Thierry Viéville is teaching computer thinking in the Msc #CreaSmartEdtech ("Digital Expertise", "Educational Informatics" including Artificial Intelligence and Ontologies, "Digital Intedisciplinary Project ") and is co-orgazning this Master of Science [29]. In addition, this year, N. Rougier gave tutorials to the Advanced Python

Programming for Science summer school (Camerino, Italy) and a Digital Typography course (SIGGRAPH, Vancouver, Canada). In May, X. Hinaut gave an invited course on Echo State Networks in the Neural Networks lecture of the Master of Science on Intelligent Adaptive Systems of the University of Hamburg. F. Alexandre, X. Hinaut and N. Rougier have been participating and teaching to the "Robotics and Social Interactions" summer school (October 1-4, Moliets-et-Maa). We can also mention that S. Pagliarini (PhD student) was selected to participate to the OIST Computational Summer Course (June 24-July 15, Okinawa, Japan).

10.2.2. Juries

In addition to several juries in France, we can note a reviewing and participation to a PhD defense in Germany (F. Alexandre)

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Thierry Viéville is in charge of mission regarding e-education in particular the collaborations with the UCA university on these subjects, more precisely the LINE laboratory ESPE of Nice where he is affected at 20%, for the creation and co-direction of the MSc and the relation with EducAzur, and the actions within the Class´Code project.

10.3.2. Articles and contents

- For online publications: F. Alexandre in Usbek & Rica (June 8) and Inriality (May 17): https://usbeketrica.com/article/2067-la-singularite-empire-des-machines and https://www.inriality.fr/informatique/informatique-ia-intelligence-artificielle/2067-la-singularite-ou/;
- Interviews in order to popularize: F. Alexandre in La Tribune newspaper (September 10): https://objectifaquitaine.latribune.fr/innovation/2018-09-10/inria-bordeaux-10-ans-de-recherches-a-la-pointe-du-numerique-789911.html; I. Chraibi Kaadoud and A. Garenne in blog scilogs about neural networks: http://www.scilogs.fr/intelligence-mecanique/architecture-reseaux-de-neurones-de-choix/; http://www.scilogs.fr/intelligence-mecanique/architecture-des-reseaux-de-neurones-reseaux-de-neurones-artificiels-classiques-2-3/ and http://www.scilogs.fr/intelligence-mecanique/architecture-des-reseaux-de-neurones-reseaux-de-neurones-impulsionnels-3-3/; X. Hinaut about organizing a Hackathon in https://pixees.fr/hack1-cerveau/; N. Rougier in CNRS website (September 21): http://www4.cnrs-dir.fr/insb/recherche/parutions/articles2018/t-boraud.html and in Le Monde newspaper (September 19): https://www.lemonde.fr/sciences/article/2018/09/19/les-emotions-au-coeur-de-l-apprentissage_5357127_1650684.html; Thierry Viéville is co-editor and/or co-author of about two papers per month on http://binaire.blog.lemonde.fr.

10.3.3. Education

F. Alexandre: Teaching to the high-school professors in Philosophy of the academy of Poitiers about Artificial Intelligence (April, 25); Thierry Viéville has realized more than ten session of formation (over 400 teachers involved) within the scope of the Class´Code project, and co-organized two of them.

10.3.4. Interventions

- National events: participation of the team on the NeuroCampus to the Week of the Brain (Semaine du Cerveau: March 19-23); to the Declics program for high-schools (http://www.cerclefser.org/fr/declics/, Nov. 22); Fête de la Science at Inria Bordeaux and Cap Sciences in October: The humanoid Nao robot was listening to the instructions and learning names of objects. This demo was performed by X. Hinaut and A. Strock with a German collaborator from the University of Hamburg (J. Twiefel).
- Public exhibitions:
  - "Brain and Artificial Intelligence" at Regional Headquarters in Limoges (Feb. 2);

– "What is the usefulness of Artificial Intelligence ?" at Café des Sciences in Soustons (Dec. 12) (F. Alexandre);

– Science pour tous (Bordeaux), Machine learning (Communauté Urbaine de Bordeaux), AI Unplugged (Bordeaux), Déambulation autour de l'IA (Bordeaux), L'intelligence artificielle en question (Paris) (N. Rougier);

– Participation to the Neurocampus Day (S. Pagliarini, poster "Learning an inverse model for vocal production: toward a bio-inspired model");

– Thierry Viéville: Interventions on artificial Intelligence and the development of critical thinking on large audience popularization events (Universcience, Médiathèque de Bordeaux, Semaine du Cerveau, Fête de la Science, Select Sophia-Antipolis, more than 200 persons involved) and three interactive talks in high-school (more than 150 students involved).

– T. Firmo Drumond and B. Teja Nallapu prepared and presented a demo for the 10 years of the Bordeaux Inria Centre (September 27).

– N. Rougier and X. Hinaut participated to a theater performance on AI, showing the state of work of an artistic residence in November.

10.3.5. Internal action

- Internal meetings: T. Firmo Drumond presented Deep Learning to the Inria Bordeaux Café des Sciences (March 22);
- Nicolas Rougier gave a talk about scientifc fraud and misconduct at the institute of neurodegenerative diseases.

10.3.6. Creation of media or tools for science outreach

Thanks to fundings from the Bordeaux Museum of Science Cap Sciences (http://www.cap-sciences.net/) and from the Foundation Blaise Pascal (https://www.fondation-blaise-pascal.org/), we have begun to design a software tool to run small demonstrative scenarios, to help everyone discover the brain functions at the origin of our sensorimotor and vital cognitive behaviors (instinctive and motivated behavior, selection of embodied action, emotional decision-making, seat of self-awareness, etc.). This resource is for a wide audience to whom we can show scenarios, but also co-build multi-media resources to share methods and knowledge (participatory scientific mediation approach) and to discuss these topics. It is also at the disposal of scientific mediators (researchers and beyond) who wish to co-construct such resources, or to present research results involving the animation of anatomy of the nervous system as well as of users or authors of computer code who want to reuse shared technologies to derive other applications, in particular become familiar with the specification languages (here JSON and markdown).

MONC Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

C. Poignard was one of the chair of the CEMRACS 2018 about "Numerical and mathematical modeling for biological and medical applications: deterministic, probabilistic and statistical descriptions"

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

S. Benzekry was in the Scientific Committee of the "Third MB2 conference (Mathematical Biology Modeling days of Besançon)" held in June 2018 in Besançon, France.

10.1.2.2. Reviewer

B. Denis de Senneville was a reviewer for the IEEE International Symposium on Biomedical Imaging (ISBI) held in April 2018 in Washington DC, USA.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- S. Benzekry is a member of the Editorial Board of "Mathematical Biosciences and Engineering"
- C. Poignard is a member of the Editorial Board of "Discrete and Continuous Dynamical Systems-S"

10.1.3.2. Reviewer - Reviewing Activities

- S. Benzekry served as a reviewer for PLoS Computational Biology, Medical Image Analysis, Cancer Chemotherapy and Pharmacology, Oncotarget and Applicandae Mathematica.
- B. Denis de Senneville served as a reviewer for IEEE Transactions on Medical Imaging, Physics in Medicine and Biology and Journal of Medical Imaging.
- O. Saut served as a reviewer for PLOS One and Computational and Applied Mathematics.

10.1.4. Invited Talks

- S. Benzekry: Jan 2018, Conference on Statistics and Health, Toulouse, France
- S. Benzekry: Feb 2018, CMM-Fields-Inria Workshop on Mathematics for Medicine, Toronto, Canada
- S. Benzekry: Jun 2018, 3rd Mathematical Biology Modelling Days, Besançon, France
- O. Saut: Computational Systems Biology of Cancer, Institut Curie, France
- S. Benzekry: Jun 2018, Mathematical perspectives in the biology and therapeutics of cancer, Marseille, France
- C. Poignard: Jul. 2018, Mathematical perspectives in the biology and therapeutics of cancer, Marseille, France
- S. Benzekry: Jul 2018, Annual Workshop on Mathematics in Medicine, Wolfgang Pauli Institute, Vienna, Austria
- C. Poignard: Aug. 2018, The XIVth Franco-Romanian Conference in Applied Mathematics, Bordeaux, France
- O. Saut: Sep 2018, Virtual Physiological Human Conference (VPH), Zaragoza, Spain

- B. Denis de Senneville: Oct. 2018, Partial Differential Equations for Social and Biological Events, Osaka, Japan
- C. Poignard: Oct. 2018, Partial Differential Equations for Social and Biological Events, Osaka, Japan
- S. Benzekry: Nov 2018, Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy, Oaxaca, Mexico

10.1.5. Leadership within the Scientific Community

- S. Benzekry was nominated expert within the scientific board of the national multi-thematic institute (ITMO) Cancer of the French alliance for health sciences (AVIESAN).

10.1.6. Scientific Expertise

- B. Denis de Senneville was a grant reviewer for the Swiss National Science Fundation.
- B. Denis de Senneville was in the selection committee for an Assistant Professor position in Bordeaux University.
- C. Poignard was in the Inria CRCN National selection committee

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : S. Benzekry, Ordinary Differential Equations, 20h, L3, INP Bordeaux, France

Licence : C. Poignard, Undergraduate teaching in Numerical and Applied Mathematics, 80h, L3-M1, INP Bordeaux, ENSAM, France

Licence : B. Denis de Senneville, Probability and Statistics, 30h, L3, INP Bordeaux, France

Master : A. Collin, TP C++, 96h, niveau M1, INP Bordeaux, France

Master : A. Collin, Cours de maillage, 36h, niveau M2, INP Bordeaux, France

Master : A. Collin, Encadrement de projets, 30h, niveaux M1, M2, INP Bordeaux, France

Doctorat: S. Benzekry, Computational modeling in medicine, 6h, Université de Bordeaux, France

10.2.2. Supervision

PhD : T. Kritter, *Utilisation de données cliniques pour la construction de modèles en oncologie*, Université de Bordeaux, 01/10/2018, under the supervision of Olivier Saut et de Clair Poignard

PhD in progress : C. Nicolò, *Mathematical modeling of systemic aspects of cancer and cancer therapy*, 2016 - 2019, under the supervision of S. Benzekry and O. Saut

PhD in progress: S. Corridore, *Mathematical Model for Electroporation*, 2016 - 2019, under the supervision of A. Collin, C. Poignard.

PhD in progress: C. Perier, *Combining texture analysis and modeling for evaluation of therapies and clinical outcome*, under the supervision of B. Denis de Senneville and O. Saut, 2016 - 2019.

PhD in progress: A. Crombé, *Beyond radiomics for soft-tissue sarcoma*, 2017-2020, under the supervision of O. Saut.

PhD in progress: C. Vaghi, Improving intra-tumor drug distribution of anti-cancer nanoparticles by data-informed mathematical modeling, Nov 2017 - Nov 2020, under the supervision of S. Benzekry and C. Poignard.

10.2.3. Juries

- S. Benzekry: Committee member of the PhD thesis of A. Rodallec (Aix-Marseille University)
- A. Collin: Committee member of the PhD thesis of T. Kritter (Bordeaux University)
- B. Denis de Senneville: Committee member of the PhD thesis of C. Zachiu

- C. Poignard: Reviewer of the PhD thesis of A. Auvray (Ecole Centrale de Lyon)
- C. Poignard: Committee member of the PhD thesis of T. Kritter (Bordeaux University)
- O. Saut : Committee member of the Phd thesis of J-E Bibault (Univ. Sorbonne Paris Cité).
- O. Saut : Committee member of the PhD thesis of Alexis Arnaud (Grenoble Alpes University).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- S. Benzekry is a member of the local Inria commission of informatical tools users (CUMI)
- C. Poignard is an elected member of Inria's national evaluation committee.

10.3.2. Interventions

- O. Saut: Fête de la Science, Cap Science, Bordeaux.

<p align="center">**MORPHEME Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

Eric Debreuve was a member of the Program Committee of ACIVS 2018 (Advanced Concepts for Intelligent Vision Systems) and Reconnaissance des Formes, Image, Apprentissage (RFIAP).

9.1.1.2. Reviewer

Laure Blanc-Féraud was a reviewer for the conferences IEEE ICIP and ICASSP.

Eric Debreuve was a reviewer for the conferences IEEE International Symposium on Biomedical Imaging (ISBI) and IEEE International Conference on Image Processing (ICIP).

Xavier Descombes was a reviewer for ISBI18, ICASSP18 and ICIP18.

Grégoire Malandain was a reviewer for the conferences EMBS, ISBI and MICCAI.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Laure Blanc-Féraud was Associated Editor for the journals SIAM Imaging Sciences. She was also responsible of the editorial field "Image" of the SCIENCES new editorial project of ISTE/WILEY Group which concerns the publication of collections of multi-authored titles in the fields of pure and applied sciences, health and humanities.

Xavier Descombes is Associated Editor for the journal Digital Signal Processing.

9.1.2.2. Reviewer - Reviewing Activities

Laure Blanc-Féraud was a reviewer for the Journal of Optimization Theory and Applications.

Eric Debreuve was a reviewer for the journals Digital Signal Processing (Elsevier) and Pattern Recognition (Elsevier).

Xavier Descombes was reviewer for the journals IEEE TMI and Digital Signal Processing.

Grégoire Malandain was reviewer for the journal IEEE TMI.

9.1.3. Invited Talks

Florence Besse gave a talk "Modeling Cell fate" at the Jacques Monod Conférence, November 2018.

Laure Blanc-Féraud was invited to the Workshop on Computational Methods for Inverse Problems in Imaging, Como Italy, 16-18 July 2018, and to the OSA Imaging and Applied Optics Congress, Orlando, USA, 25-28 June 2018.

Xavier Descombes was invited to give a talk at Tlemcen Univeristy during the Biomedical Doctoral School day. He was invited to give a talk at the SIAM conference on Imaging Science in Bologna. He was also a speaker during the C@UCA days in Fréjus and during Modelife days in Nice, workshops organized within the UCA Jedi Idex.

9.1.4. Leadership within the Scientific Community

Laure Blanc-Féraud is the directrice of the GdR 720 ISIS of CNRS (see website gdrisis.fr).

Xavier Descombes is member of IEEE BISP (Biomedical Imaging Signal Processing) Technical Committee.

Grégoire Malandain is member of the IEEE/EMB Technical Committee on Biomedical Imaging and Image Processing (BIIP). He is an member of the Scientific Committee of the MIA department of INRA.

9.1.5. Scientific Expertise

Laure Blanc-Féraud was president of the HCERES expert committee visit of the LTCI Lab (4-6 Dec.). She is a member of the ANR scientific evaluation committee ASTRID. She was part of the selection committee of section 61 of CNU for a professor position in Paris-Est University. She was expert for the CPER Numeric of Poitiers. She was member of the Commission d'admission CRCN of CNRS INS2I. Laure Blanc-Féraud was expert for the Italian Ministery of Research (MUIR) and for the FNRS (Belgium).

Xavier Descombes is an expert for the DRRT (Paca, Ile de France, Bretagne). He is member of the committee "Mathématiques et Sciences du Numérique pour la santé et la biologie" of ANR. He was in the HCERES committee to evaluate MAP5 laboratory.

9.1.6. Research Administration

Xavier Descombes is member of the "comité des projets" of Inria CRISAM. He is a member of the Comité Permanent des Ressources Humaines (CPRH), UNS, section 61.

Eric Debreuve is a member of the Comité Permanent des Ressources Humaines (CPRH), UNS, section 61.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Arne Bechensteen, Outils pour la physique, 42h, L1, Polytech Nice Sophia, France

Licence: Arne Bechensteen, Programmation impérative PeiP1, 12h, L1, Polytech Nice Sophia, France

Master: Arne Bechensteen, Traitement Numérique des Images, 10h, M2, Polytech Nice Sophia, France

Master: Florence Besse, genetic tools for the study of neuronal networks, 4h, Université Côte d'Azur, France.

Master: Florence Besse, RNA localization and neuronal morphology, 4h, Université Côte d'Azur, France.

Master: Laure Blanc-Féraud, management of the module Traitements numériques des images (24h), teaching 5h CM.

Master : Eric Debreuve, scientific image processing, 9h EqTD, master SVS, Université Côte d'Azur, France

Master/Engineer : Debreuve, data mining, 27h EqTD, M2/Engineer 5, Université Côte d'Azur, France

Master: Xavier Descombes, Traitement d'images, Analyse de données, Techniques avancées de traitement d'images, 10h Eq. TD, Niveau M2, ISAE, France.

Master: Xavier Descombes, Traitement d'images, master VIM, 12h Eq. TD, Niveau M2, Université Côte d'Azur, France.

Master: Xavier Descombes, Bio-imagerie, master IRIV, 6h Eq. TD, Niveau M2, Université de Strasbourg, France

Master: Xavier Descombes, Analyse d'images, master GBM, 9h Eq. TD, Niveau M2, Université Côte d'Azur, France.

Master: Xavier Descombes, Traitement d'images scientifiques, master SVS, 6h Eq. TD Niveau M2, Université Côte d'Azur.

Master : Anca Grapa, Traitement d'images, master GBM, 12h Eq. TD, Niveau M1, Université Côte d'Azur, France.

Master : Anca Grapa, Compression, Analysis and Visualization of Multimedia Content, master SSTIM (GMD), Niveau M2, 14h Eq. TD, PolyTech Nice Sophia, France.

9.2.2. Supervision

PhD in progress: Arne Bechensteen, TIRF-MA and super-resolution by sparse estimation method, 2 October 2017, Laure Blanc-Féraud, Gilles Aubert, Sébastien Schaub.

PhD in progress: Anca-Ioana Grapa, Characterization of the organization of the Extracellular Matrix (ECM) by Image Processing , 19 September 2016, Laure Blanc-Féraud, Xavier Descombes, E. van Obberghen, (iBV).

PhD in progress: Sarah Laroui, Classification and modelling of botrytis cinerea fungi growth from microscope images: toward the establishment of links between phenotypes and antifongic molecules, 1st August 2018, Eric Debreuve, Xavier Descombes

PhD in progress: Emmanuelle Poulain, Fluoroscopy/CTA dynamic registration, 1st february 2016, Grégoire Malandain.

9.2.3. Internships

Baptiste Pouthier, Hierarchical deep learning for zooplankton image classification, Polytech Nice-Sophia Antipolis, UNS/UCA - MAM4, Eric Debreuve (sup.).

Simon Bahadoran, Deep learning for PALM superresolution in fluorescence microscopy. Supervisors: Laure Blanc-Féraud, Eric Debreuve.

Cédric Girard Riboulleau, Morphological tracking of organoids for the prostate cancer, Master BIM, Université Côte D'Azur, Xavier Descombes (sup.).

Guillaume Lavisse, Detection, classification and characterization of mitochondrial networks: application to Alzheimer desease and cancer, Master BIM, Université Côte D'Azur, Xavier Descombes (sup.).

Raphael Pages, Quantitative analyse of vesicles transport within the Left/Right organizer in the zebrafish, Master MAPI3, Université Paul Sabatier Toulouse, Xavier Descombes (sup.).

9.2.4. Juries

Laure Blanc-Féraud participated to the PhD thesis committees of Clara Barbanson (Télécom Paris-Tech & ONERA) as member, Quentin Denoyelle (Ceremade, Dauphine University) as president, William Meiniel (Pasteur Institute) as president, and to the HDR jury of Nabil El Korso (Paris Nanterre university) as member.

Xavier Descombes participated to the PhD committes of Agustina Razetti (Morpheme) as supervisor, Tran Thi Nhu Hoa (IPAL, Singapore and Sorbonne University), Amine Benomar (Tlemcen University, Algeria) and Jessica Sodjo (Bordeaux University) as a reviewer and Jean-Dominique Favreau (Titane, Inria) as an examinator. He was reviewer in the HDR juries of Sylvain Faisan (Strasbourg University) and Adel Hafiane (Orléans University).

Grégoire Malandain participated as reviewer to the PhD thesis committee of Ketan Bacchuwar (Paris Est univ.), Marc Filippi (Grenoble Alpes univ.), Julie Robic (Paris Est univ.), as member to the PhD thesis committee of Bertha Mayela Toledo Acosta (Rennes I univ.), and as reviewer to the HDR thesis committee of Antoine Vacavant (Clermont Auvergne univ.).

9.3. Popularization

9.3.1. Interventions

The Morpheme team took part in "La fête de la Science" both at Inria and during the "Village de la Science" in Juan-Les-Pins. Sarah Laroui, Somia Rahnmoun and Arne Bechensteen were holding a stand in these events.

MOSAIC Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- Romain Azaïs is a member of the organizing committee of the *Journées de Statistique 2019* in Nancy.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- C. Godin is:
    - Associate Editor of the journal Frontiers in Plant Sciences, section Plant Biophysics and Modeling.
    - Review Editor of the journal Frontiers in Plant Sciences, section Plant Systems and Synthetic Biology.
    - Member of the Editorial Advisory Board of the new journal *in silico* Plants.
    - Associate Editor of a special issue of the Bulletin of Mathematical Biology on Multi-scale modelling of Tissue Growth and Shape.
- Olivier Ali: Review Editor in *Plant Biophysics & Modeling for Frontiers* since January 2018

9.1.2.2. Reviewer - Reviewing Activities

All team members are regularly involved in reviewer activities for academic journals from different scientific fields: Current Biology, Annals of Applied Probability, Journal of Theoretical Biology, Physical Review Letters, Journal of BioPhysics, Physical Review A, etc.

9.1.3. Invited Talks

- Romain Azaïs:
    - *Arbres de Galton-Watson conditionnés par la taille ou la hauteur : estimation via les modèles limites*. Journée de rencontres scientifiques autour de la statistique pour la biologie et la médecine, Poitiers, February 2018.
    - *Quelques pistes pour l'analyse de données arborescentes*. Rencontres Statistiques Lyonnaises, March 2018 (I/II) and May 2018 (II/II).
    - *Un nouvel éclairage sur le subtree kernel pour données arborescentes*. Séminaire de Probabilités et Statistiques de l'Université de Montpellier, September 2018.
    - *Average number of crossings and rupture detection for piecewise-deterministic processes*. International conference STODEP, Rouen, October 2018.
- Christophe Godin:
    - *Can we manipulate tree forms like numbers?*, co-authored with Romain Azaïs. Workshop on Mathematics for Developmental Biology, BIRS Center for Mathematics in Banff, Canada, Dec. 2017.
    - *Functional-Structural modeling of plants*, co-authored with Arezki Boudaoud. Phytobiom days in Lyon. France, April 2018.

- *Phyllotaxis at the era of molecular and computational biology: the revival of an old enigma*, co-authored with Teva Vernoux. Jacques Monod series of international conferences in Roscoff, France, Sept 2018.
- *Coupling mechanical and hydraulic processes in multicellular models of plant development*, co-authored with Ibrahim Cheddadi. Workshop on the Contribution of cell mechanics to cell fate determination and tissue integrity: from an interdisciplinary point of view. Fondation des Treilles, France, Oct. 2018.

- Bruno Leggio (with J. Laussu, E. Faure, C. Godin and P. Lemaire): *Reproducible epidermal morphogenesis in ascidians: an active-reactive mechanical model*. Cell Cycle Day 2018, Montpellier, September 2018.

9.1.4. Scientific Expertise

- C. Godin
  - is a member of the International Scientific Advisory Committee of the Plant Phenotyping and Imaging Research Centre (P2IRC), Saskatchewan, Canada.
  - is a member of the Scientific Board of the Plant Biology and Breeding Department of INRA (BAP).
  - has reviewed a project for the Strategic Basic Research programme of the Flanders fundation for research (FWO), Belgium.

9.1.5. Research Administration

- C. Godin
  - is a member of the Project Committee at Grenoble Rhone-Alpes Research Center.
  - is a member of the Steering Committee of the RDP Lab., Lyon.
  - is a member of the Scientific board of the modeling axis of Labex NUMEV and a member of the direction board of the institut de biologie computationnelle (IBC) in Montpellier.
  - has been President of the 2018 CRCN Selection Jury at Inria Sophia Antipolis-Méditerranée

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Romain Azaïs:
  - *Colles de Mathématiques*, CPGE PCSI, Lycée Jean Perrin, Lyon.
  - One-day course on *Statistical learning*, Bioinformatics Summer School, Angers, July 2018.
- Guillaume Cerutti: *Practicals in modeling for Biosciences*, M2 ENS de Lyon (20h TP)
  Coordinator: Arezki Boudaoud, RDP, ENS de Lyon.
- Christophe Godin:
  - Co-organized with Patrick Lemaire the International Spring School on *Animal and Plant Morphogenesis*, one week in March, Paris ENS Master, Montpellier, France.
  - *Introduction to Microscopy image analysis*. Master Biology ENS de Lyon (2h).
- Bruno Leggio:
  - Conception and supervision of practicals for masters and PhD students during the 2018 *Interdisciplinary spring school on animal and plant morphogenesis*, Hameau de l'Etoile, Montpellier, France, March 2018.
  - One-day class for biophysics students at the University of Montpellier on the *modeling of morphogenesis*, December 2018.

9.2.2. Supervision

- PhD (2015 – 2018): Sarah Bertrand (LIRIS, Université Lumière Lyon 2). *Analyse d'images pour l'identification multi-organes d'espèces végétales*. Guillaume Cerutti. Supervisors: Laure Tougne (LIRIS, Université Lumière Lyon 2) and Guillaume Cerutti.

- PhD in progress (2015 – 2019): Florine Greciet (IECL, Université de Lorraine and Safran). *Modèles markoviens déterministes par morceaux cachés pour la caractérisation de contrainte admissible en fatigue des matériaux*. Supervisors: Anne Gégout-Petit (Inria team BIGS, IECL, Université de Lorraine) and Romain Azaïs.

- Master 1 (3 months in 2018): Florian Ingels. *Méthodes à noyau pour données arborescentes*. Supervisor: Romain Azaïs.

- Licence 3 (2 months in 2018): Clément Legrand. *A COMPLETER*. Supervisor: Christophe Godin.

- Niveau à completer (durée à compléter): Tony Vincent Ang. *A COMPLETER*. Supervisors: Christophe Godin and Frédéric Boudon.

- Niveau à completer (durée à compléter): Renan Berruex. *A COMPLETER*. Supervisors: Christophe Godin and Frédéric Boudon.

- Penser à Hadrien Oliveri, Katia Mirande, Anne Schneider

9.3. Popularization

9.3.1. Articles and contents

- Christophe Godin
  - made a presentation at *My team in 180 seconds*, June 2018 (in French).
  - wrote a paper *Pourquoi les Plantes font des maths* co-authored with Fabrice Besnard and Teva Vernoux, that was published in Pour La Science (Aug 2018) and in the hors-série issue on *La révolution végétale* (Nov 2018). (Nov 2018)

9.3.2. Interventions

- O. Ali has been an invited speaker for an art/science conference and debate organized by the modern art museum of Lyon, October 2018.

- Romain Azaïs won a special mention in the comics contest *Maths et Polar* organized by the website *Image des Mathématiques* of the CNRS, April 2018.

- Guillaume Cerutti, Christophe Godin and Jonathan Legrand have been involved in Déclics initiatives (presentation and discussion with high school students in order to promote science and research careers), October and December 2018.

- Christophe Godin gave an invited 2 hours seminar to 4 classes of high-school students for the Math week (March) at the Lyce ́e International de Valbonne, France.

- H. Oliveri took part in the Class'Code Initiative, a Mooc produced by Inria and OpenClassRoom providing supports and guidelines for people wanting to teach computer science to young childrens.

<p style="text-align:center;color:red;">NEUROSYS Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

Laurent Bougrain is a member of the Board of Directors of the scientific society CORTICO for the promotion of Brain-Computer Interfaces in France.

Laurent Bougrain is a member of the steering committee of the research network in neuroscience of the university of Lorraine.

Laure Buhry is an elected member of the "Pôle Scientifique AM2I" council of university of Lorraine.

Sébastien Rimbert is an elected member of the doctoral school IAEM of university of Lorraine.

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Laurent Bougrain is a member of the organization committee of the scientific days of the research network in neuroscience of the university of Lorraine, June 14th 2018 (topic: learning and memory) & December 18th 2018 (topic: motor system).

9.1.1.2. Member of the Organizing Committees

- Laure Buhry is a member of the organization committee of the IPAC seminar (Image, Perception, Action et Cognition).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Laurent Bougrain is a member of the program committee of the IEEE conference on System, Man and Cybernetics.

9.1.3. Invited Talks

- Laurent Bougrain, Brain-Computer Interfaces, Oct. 4th 2018, Yamazaki Lab, Kuytech, Japan
- Laurent Bougrain, Brain-Computer Interfaces, Oct. 5th 2018, Natsume Lab, Kuytech, Japan
- Laurent Bougrain, Neuronal effect therapeutic hypnosis and anesthesia on the movement intention, scientific days of the research network in neuroscience of the university of Lorraine, Dec. 18th 2018 (topic: motor system).

9.1.4. Leadership within the Scientific Community

Laurent Bougrain is a member of the Board of Directors of the scientific society CORTICO for the promotion of Brain-Computer Interfaces in France.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Engineering school: L. Bougrain, Brain-Computer Interfaces, 4.5h, 3rd year, Supelec, France

Engineering school: L. Bougrain, Artificial Intelligence, 61h, 3rd year, Telecom Nancy, France

Engineering school: A. Aussel, Python, Ecole des Mines, Nancy, France

Master: L. Buhry, Algorithms for Articifial Inteligence, 31h, Master of cognitive science, 1st year, University of Lorraine, France

Master: L. Buhry, Fondamental Artificial Intelligence and data mining, 18h, Master of cognitive science,1st year1, University of Lorraine, France

Master: L. Buhry, Formalisms for representation and reasoning, 25h, Master of cognitive science,1st year1, University of Lorraine, France

Master: L. Buhry, Memory and Machine Learning, 38h, Master of cognitive science, 1st year, University of Lorraine, France

Master: L. Buhry, Computationnal Neurosciences, 25h, Master of cognitive science, 2nd year/SCMN, University of Lorraine, France

Master: L. Bougrain, Learning and reasoning in the uncertain, 32h, Master of computer science, 2nd year, University of Lorraine, France

Master: S. Rimbert, Brain-Computer Interface, 17h, Master of cognitive sciences, 2nd year, University of Lorraine, France

Master: A. Aussel, Computational Neuroscience, Master of cognitive sciences, 2nd year, University of Lorraine, France

Licence: S. Rimbert, Introduction to Neurosciences, 15h, Licence of cognitive sciences, 1st year, University of Lorraine, France

Licence: L. Buhry, Programmation Python, 37h, level L1 MIASHS, University of Lorraine, France

Licence: L. Buhry Probability and statisticss, 30h, level L1 MIASHS, University of Lorraine, France

Licence: L. Buhry, Artificial Intelligence and problem solvinges, 25h, level L3 MIASHS, University of Lorraine, France

Licence: L. Bougrain, programming on mobile devices, 17h, Licence of computer science, 3rd year, University of Lorraine, France

9.2.2. Supervision

PhD in progress: Amélie Aussel, Extraction of electrophysiological markers and mathematical modelling of the epileptic hippocampus, October 1st 2016, Laure Buhry and Radu Ranta (CRAN).

PhD in progress: Sébastien Rimbert, Study of the dynamic of cerebral motor patterns during general anesthesia, January 1st 2016, Axel Hutt and Laurent Bougrain.

PhD in progress: Oleksii Avilov, methods for on-line detection of neural rythm changes in the motor system: application to brain-computer interfaces, June 1st 2018, Patrick Hénaff, Laurent Bougrain and Anton Popov (Kiev polytechnic institute).

PhD in progress: Nathalie Azevedo Carvalho, a biologically plausible computer model of pathological neuronal oscillations observed in Parkinson's disease, November 1st 2018, Dominique Martinez and Laure Buhry.

9.2.3. Juries

Ph.D. thesis jury: Louis Korczowski, Methods for multi-subject electroencephalography and application to brain-computer interfaces, university Grenoble-Alpes, October 17th 2018, L. Bougrain (member)

9.3. Popularization

Neurosys' activities. Artificial Intelligence, IoT and robotics for health,association ATD quart-monde, June 10th 2018 (L. Bougrain)

NUMED Project-Team (section vide)

<p style="text-align:center; color:red">PARIETAL Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Bertrand Thirion co-organized the "Imagerie médicale et apprentissage automatique : vers une intelligence artificielle ?" colloque at Collège de France on May, 2nd, 2018.

10.1.1.2. Member of the Organizing Committees

Demian Wassermann: MICCAI 2018

Gaël Varoquaux: PyParis 2018

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Philippe Ciuciu: Chairman of scientific oral sessions in ISBI 2018 (Washington DC) and EUSIPCO 2018 (Roma)
- Bertrand Thirion: Member of Program Committee for the OHBM 2018 meeting (Singapore),
- Gaël Varoquaux: program committee of NIPS, ICML, ICLR.
- Alexandre Gramfort: program committee of NIPS, ICML, ICLR.
- Demian Wassermann: ISMRM 2018

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Philippe Ciuciu: Associate Editor for EUSPICO 2018, Roma
- Philippe Ciuciu: Associate Editor for ISBI 2019, Venice
- Alexandre Gramfort: Editor, NeuroImage, Journal of Machine Learning Research (JMLR), Frontiers in Brain Imaging Methods
- Bertrand Thirion: Editor, Frontiers in Brain Imaging Methods

10.1.3.2. Reviewer - Reviewing Activities

- Philippe Ciuciu is reviewer for Nature Communication, Biological Pysichiatry, Plos Computational Biology, Scientific Reports, Journal of Neuroscience, IEEE Trans Signal Processing, IEEE Signal Processing Letters, IEEE Trans Medical Imaging, Frontiers in Neuroscience, Magnetic Resonance in Medicine, SIAM Imaging Science
- Gaël Varoquaux: Nature Methods, JMLR, PLOS Bio, NeuroImage, IEEE TBME, IEEE TMI, Annals of Applied Statistics, Biological Psychiatry, MedIA, Science, GigaScience
- Alexandre Gramfort: JMLR, PLOS Computational Biology, NeuroImage, IEEE TBME, IEEE TMI, IEEE TSP, MedIA, NIPS, ICML, ICLR, ICASSP, Scientific Reports, Frontiers in Brain Imaging Methods, Journal of Neuroscience Methods
- Bertrand Thirion: Nature communications, Neuroimage, Medical Image Analysis, IEEE TMI, PNAS, PLOS Comp Bio, Brain Structure and Function, NIPS, ICML, IPMI, OHBM, PRNI, AISTATS

- Denis Engemann PLOS Biology, PLOS Computational Biology, Scientific Reports, Neuroimage, Neuroimage Clinical, Human Brain Mapping, Journal of Machine Learning Research, Brain Topography, Brain Connectivity, Journal of Alzheimer's Disease, Neuroscience of Consciousness, PLOS ONE, Frontiers in Neuroscience, Journal of Computational Neuroscience, Psychiatry and Clinical Neurosciences, Sensors

- Demian Wassermann: NeuroImage, MRM, JMRI, Brain Structure and Function, Cortex, MedIA.

10.1.4. Invited Talks

- Philippe Ciuciu, May 2018: Keynote Lecture at the 8th International Conference on New Computational Methods for Inverse Problems, "Distribution-controlled and optimally spread sampling trajectories for accelerated Magnetic Resonance Imaging" (http://complement.farman.ens-cachan.fr/documents_web_NCMIP_2018/NCMIP_2018_program.pdf)

- Philippe Ciuciu, Nov 2018: Heriott-Watt University, "SPARKLING: variable-density k-space filling curves for accelerated T2*-weighted MRI"

- Philippe Ciuciu, Dec 2018: SHFJ, CEA Orsay, "Recent Advances in Compressed Sensing MRI for Highly Accelerated T2* -weighted Imaging"

- Denis Engemann, Dec 2018, ICM, Paris, MEG user day, 'Preparing data for source reconstruction: dos and donts'

- Denis Engemann, Nov 2018, ICM, Paris, 'Machine Learning with MEG EEG in Cognitive Neurology. Challenges and Opportunities'

- Denis Engemann, Nov 2018, Paris Machine Learning Meetup, invited talk, 'Random forest methods for EEG-based diagnosis of disorders of consciousness'

- Denis Engemann, Oct 2018, CRNL, Lyon, invited talk, 'Large-Scale Analysis of MEG/EEG in Cognitive Neurology. Challenges and Opportunities'

- Denis Engemann, Oct 2018, CRNL, Lyon, 3-day MNE-Python training workshop

- Denis Engemann, Apr 2018, Hôpital Erasme, Brussels, invited talk, 'The Challenge of Large-Scale and Population Analysis using MEG/EEG' LCFC

- Alexandre Gramfort, Fév 2018, invited talk, séminaire du Centre de Mathématiques Appliquées (CMAP) de l'Ecole Polytechnique

- Alexandre Gramfort, Mars 2018, invited talk, conseil d'administration Institut National du Cancer (INCA), Paris

- Alexandre Gramfort, Mars 2018, invited talk, Center for Data Science, Grenoble

- Alexandre Gramfort, June 2018, invited talk, ICML workshop of reproducibility in machine learning, Stockholm

- Alexandre Gramfort, June 2018, oral presentations, OHBM Conference, Singapore

- Alexandre Gramfort, June 2018, invited talk, DTU, Copenhagen

- Alexandre Gramfort, Aug 2018, oral presentations, Biomag International Conference, Philadelphia

- Alexandre Gramfort, Sept 2018, invited talk, Imperial College, UK

- Alexandre Gramfort, Sept 2018, invited talk, BCG Gamma FreshFromTheLabs Conference, Paris

- Alexandre Gramfort, Oct 2018, invited talk, Universität Heidelberg, Heidelberg

- Alexandre Gramfort, Nov 2018, oral presentation, Society for Neuroscience conference, San Diego

- Alexandre Gramfort, Nov 2018, invited talk, France is AI conference, Paris

- Alexandre Gramfort, Dec 2018, invited talk, Montreal Artificial Intelligence and Neuroscience (MAIN) workshop, Montreal

- Bertrand Thirion, Jan 2018, IHES, Bures sur Yvette, 'Toward a rigorous statistical framework for brain mapping'

- Bertrand Thirion, June 2018, IPHT seminary, Gif sur Yvette, 'A rigorous causal framework for brain mapping'
- Bertrand Thirion, May 2018, High Tech Peripherique conference, 'Large-scale machine learning for medical imaging'
- Bertrand Thirion, April 2018, Tau seminary, Gif sur Yvette, 'Causal analysis for Brain Mapping'
- Bertrand Thirion, July 2018, JST workshop in Paris, 'Toward rigorous e-sciences: High-dimensional statistical inference'
- Bertrand Thirion, Dec 2018, ESSI colloquium, Evry, 'High-dimensional statistical inference for e-sciences'
- Demian Wassermann, Feb 2018, Stanford Medical School, 'Microstructure Imaging with Diffusion MRI'
- Demian Wassermann, June 2018, Harvard Medical School, 'Random Effect Models for Structure Connectivity-Based Cortical Clustering'
- Demian Wassermann, June 2018, New York University, 'Recent advances in Micro and Macro scale brain analysis with Diffusion MRI'
- Gaël Varoquaux, Sept 2018, IPAM (Institute for Pure and Applied Mathematics), UCLA, Long Program Science at Extreme Scales: Where Big Data Meets Large-Scale Computing
- Gaël Varoquaux, August 2018, keynote speaker NeuroInformatics, Montreal
- Gaël Varoquaux, August 2018, invited talk MILA (Montreal Institute for Learning Algorithms), Montreal
- Gaël Varoquaux, August 2018, invited talk MNI (Montréal Neurological Institute), Montréal
- Gaël Varoquaux, August 2018, invited talk Institut de Gériatrie, Montréal
- Gaël Varoquaux, June 2018, invited talk, BCG Gamma days, Paris
- Gaël Varoquaux, Nov 2018, invited talk, chair DAMI (Data, Analytics and Models for Insurance), Paris
- Gaël Varoquaux, Feb 2018, invited talk, Gatsby institute for theoretical neuroscience, UCL, London
- Gaël Varoquaux, Dev 2018, invited talk, Journée Nationale de la Science Ouverte, Paris
- Gaël Varoquaux, Sept 2018, invited talk, MASES International Workshop on Machine Learning and Software Engineering in Symbiosis, ASE (Automated Software Engineering), Montpellier
- Gaël Varoquaux, Sept 2018, invited talk, MICCAI workshop, Granada
- Gaël Varoquaux, June 2018, invited talk, Machine learning in the real world, Paris
- Gaël Varoquaux, July 2018, invited talk, DataIA–Japan Science and Technology agency, Paris
- Gaël Varoquaux, Feb 2018, invited talk, Pycon Belarus, Minsk
- Gaël Varoquaux, May 2018, invited talk, Brainhack Paris
- Gaël Varoquaux, Oct 2018, invited talk, Biomarker days, Toulouse

10.1.5. Leadership within the Scientific Community

- Demian Wassermann: Organising committee of the BrainHack community — Paris Chapter
- Demian Wassermann: ISMRM and MICCAI action organization towards reducing gender and minority biases.

10.1.6. Scientific Expertise

- Philippe Ciuciu has been member of the 45th ANR Scientic Evaluation Committee in charge of evaluating the projects dealing with maths, signal processing, computer science methods for medicine and biology.

- Alexandre Gramfort has been member of the 45th ANR Scientic Evaluation Committee (CE23) in charge of evaluating the projects dealing with machine learning, data knowledge, statistics, optimization.
- Demian Wassermann FET-OPEN ERCA Action
- Gaël Varoquaux was expert for the startup incubator agoranov

10.1.7. Research Administration

- In Nov 2018, Philippe Ciuciu Elected Vice-Chair of the SAT Biomedical Image & Signal Analytics (EURASIP technical committee) for 2019-2020.
- In Dec 2018, Philippe Ciuciu has been Elected IEEE Signal Processing Society Representative at the 2019 IEEE ISBI conference.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Alexandre Gramfort, Optimization for Data Science, 20h, Msc 2 Data Science Master Ecole Polytechnique, France

Master: Alexandre Gramfort, DataCamp, 20h, Msc 2 Data Science Master Ecole Polytechnique, France

Master: Alexandre Gramfort, Source Imaging with EEG and MEG, 7h, Msc 2 in Biomedical Imaging at Télécom Paristech

Doctoral School: Alexandre Gramfort, Sparse Optimization, 4h, school at iTWIST workshop, Marseille

Master: Bertrand Thirion, Functional neuroimaging and BCI, 12h, Master MVA, ENS Paris-Saclay, France

Master: Philippe, fMRI course: From acquisition to data Analysis, 6h, Msc 2 in Biomedical Imaging, Université Paris-Sud

Bachelor: Demian Wassermann, CSE201 class, 15h, C++ programming, Ecole Polytechnique

Extension: Demian Wassermann, Data Science, 20h, Ecole Polytechnique

Master: Gaël Varoquaux, Machine learning in Python, 3h, ENSAE

Master: Gaël Varoquaux, Functional brain connectivity, 7h, Msc 2 in Biomedical Imaging at Télécom Paristech

10.2.2. Supervision

The following PhD defense have taken place

HdR : Gaël Varoquaux, Estimating brain functional connectivity and its variations from fMRI, Université Paris VI, 25/03/2018

PhD : Stanislas Chambon, *Learning from electrophysiology time series: From scoring to event detection*, Université Paris-Saclay, 14/12/2018, under the direction of Alexandre Gramfort

PhD : Tom Dupré La Tour, *Non-linear models for neurophysiological time series*, Université Paris-Saclay, 26/11/2018, under the direction of Alexandre Gramfort

PhD : Yousra Bekhti, *Contributions to sparse source localization for MEG/EEG brain imaging*, Université Paris-Saclay, 22/03/2018, under the direction of Alexandre Gramfort

PhD : Mainak Jas, *Advances in automating analysis of neural time series data*, Université Paris-Saclay, 12/04/2018, under the direction of Alexandre Gramfort

PhD : Arthur Mensch, , Université Paris-Saclay, 30/09/2018, under the direction of Bertrand Thirion, Gaël Varoquaux and Julien Mairal.

PhD : Carole Lazarus, , Université Paris-Saclay, 30/09/2018, under the direction of Philippe Ciuciu.

PhD in progress : Pierre Ablin, , 01/10/2016, coadvised by Alexandre Gramfort and Jean-François Cardoso,

PhD in progress : Mathurin Massias, , 01/10/2016, coadvised by Alexandre Gramfort and Joseph Salmon,

PhD in progress : Hicham Janati, , 01/10/2017, , coadvised by Alexandre Gramfort and Marco Cuturi

PhD in progress : Quentin Bertrand, , 01/10/2018, coadvised by Alexandre Gramfort and Joseph Salmon

PhD in progress : Hubert Banville, , 01/10/2018, coadvised by Alexandre Gramfort and Denis Engemann

PhD in progress : David Sabbagh, , 01/10/2018, coadvised by Alexandre Gramfort and Denis Engemann

PhD in progress : Jérôme-Alexis Chevalier, , 01/10/2017, coadvised by Bertrand Thirion and Joseph Salmon

PhD in progress : Hugo Richard, , 01/10/2018, coadvised by Bertrand Thirion and Olivier Grisel

PhD in progress : Thomas Bazeille, , 01/10/2018, advised by Bertrand Thirion

PhD in progress : Tuan Binh Nguyen, , 01/10/2018, coadvised by Bertrand thirion and Sylvain Arlot

PhD in progress : Valentin Iovene, , 01/10/2018, advised by Demian Wassermann

PhD in progress : Antonia Machlouzarides Shalit, , 01/10/2018, coadvised by Demian Wassermann and Bertrand Thirion

PhD in progress : Loubna El Gueddari, , 01/10/2016, coadvised by Philippe Ciuciu and Alexandre Vignaud

PhD in progress : Hamza Cherkaoui, , 01/10/2017, advised by Philippe Ciuciu

PhD in progress : Patricio Cerda Reyes, , 01/10/2016, coadvised by Gaël Varoquaux and Balazs Kegl

PhD in progress : Maeliss Jallais, , 01/10/2018, advised by Demian Wassermann

PhD in progress : Jerome Dockès, , 01/10/2016, coadvised by Fabian Shuchanek and Gaël Varoquaux

10.2.3. Juries

Alexandre Gramfort has been involved in the following PhD committees:

- Marine Le Morvan (Reviewer) / Mines ParisTech
- Jérémy Guillon (Examiner) / Inria Paris
- Rémi Leblond (Examiner) / Inria Paris
- Andreas Trier (Reviewer) / DTU, Copenhague

Alexandre Gramfort was involved in a hiring committee for Telecom ParisTech and a hiring committee for Université Paris Diderot.

Bertrand Thirion has been involved in the following committees:

- PhD Sebastian Tarando / ESSI Evry
- PhD Guillermo Gallardo / Inria Sophia-Antipolis
- Habilitation Florent Meyniel / Université Paris VI

Bertrand Thirion was involved in a hiring committee for Centrale-Supelec.

Gaël Varoquaux was involved in a hiring committee for Centrale-Supelec and a hiring committee for Inria Saclay.

Demian Wassermann was involved in the following committees:

- PhD Guillermo Gallardo / Inria Sophia-Antipolis
- Habilitation Daniel Margullies / ICM – UPMC

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Philippe Ciuciu has been member of the Inria Saclay scientific commission since 2016
- Alexandre Gramfort is member of the steering committee of the Paris-Saclay Center for Data Science
- Alexandre is a Member of the technical development committee of Inria Saclay since Dec 2018
- Bertrand Thirion is Deputy head of reasearch of Inria Saclay research center
- Bertrand Thirion, Leader of the Datasense research axis of the Digicosme Labex
- Bertrand Thirion, Member of the steering committee of the Dataia Convergence Institute
- Bertrand Thirion, Member of the steering committee of the Computer Science Department of Paris Saclay University.
- Gaël Varoquaux was Member of the technical development committee of Inria Saclay until Dec 2018
- Gaël Varoquaux is member of the doctoral monitoring committee of Inria Saclay
- Gaël Varoquaux is member of the steering committee of the Paris-Saclay Center for Data Science

10.3.2. Articles and contents

- Gaël Varoquaux was interviewed by ActuIA
- Alexandre Gramfort was interviewed by ActuIA
- Alexandre Gramfort was interviewed by Libération
- Alexandre Gramfort, Olivier Grisel Gaël Varoquaux are interviewed by Les Echos

10.3.3. Interventions

- Olivier Grisel gave an interview at the Paris Open Source Summit

10.3.4. Internal action

- In June 2018, Philippe Ciuciu did a training session on the DRF Impulsion funding mechanism at the seminar of new hired CEA DRF scientists"
- In April 2018, Denis Engemann and Alexandre Gramfort gave a 2-day educational course for cognitive neuroscientists at NeuroSpin on analysis of MEG and EEG data using Python.

10.3.5. Creation of media or tools for science outreach

Philippe Ciuciu made Two videos together with the CEA communication division on COSMIC project (funded by CEA)

- Long version: https://www.youtube.com/watch?v=gQh6D_vpkSo&t=23s&fbclid=IwAR0OcU3JEy4KQmo6DD-iN8otjlowyeXDkEF7ljniuzOkI-aWhGqyHhQzruo
- Short version: https://www.youtube.com/watch?v=p_KMEQGK-WA&fbclid=IwAR3xcf8e98M77lF9mpQSDWfKppjOt7p

Gaël Varoquaux, Olivier Grisel, Alexandre Gramfort, Guillaume Lemaître, Joris van den Bossche participated in a general-public movie about scikit-learn: https://www.youtube.com/watch?v=twqdXTCkeyk&t=9s

PLEIADE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

Alain Franc co-organized with IRSTEA Bordeaux, IFREMER Nantes and INRA Toulouse the biannual meeting of the Mexico Network at Inria, Ada Lovelace room, in November 2018 (see https://mexico2018.sciencesconf.org/) and s a member of the Scientific Committee. The theme of the meeting was "Optimization, Sensitivity Analysis, and Exploration of Model Outputs." Mexico is a methodological network dedicated to methods of computer exploration of complex models. [0]

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Alain Franc is member of the editorial board of BMC Evolutionary Biology.

Pascal Durrens is a member of the editorial board of the journal ISRN Computational Biology.

9.1.3. Research Administration

David Sherman is a co-president of the INRA Commission for the Evaluation of Engineers (CEI IMP6) [0]. Every INRA staff engineer is evaluated by this commission every four years.

Alain Franc has been appointed "chargé de mission calcul" at INRA by INRA Delegate for Digital Transition. As such, his mission is to propose animations and solutions for the development of scientific computing at INRA, whatever the Research Department.

9.2. Popularization

9.2.1. Internal or external Inria responsibilities

David Sherman is president of the Commission for Technology Development (CDT) of the Inria Bordeaux Sud-Ouest research center. The CDT has two roles. First, it evaluates funding requests for Technology Development and Technology Transfer projects, which typically involve hiring technical staff. Second, the CDT is responsible for validating and overseeing contract engineers hired by Inria project-teams.

9.2.2. Interventions

The "Family-3D" activity (see below) was presented on three occasions:
- During the 10 year celebration on the evening of September 27
- During the Open House all day October 13
- During the Fête de la Science, to 8 groups of 12 students

9.2.3. Creation of media or tools for science outreach

Pleiade created an interactive activity "Family-3D" to explain the methods and uses of pattern classification of protein families. Using new software developed by the team we laid out 30 families in 3D space and converting those shapes to 3D volumes. The selected families had been previously grouped into biologically pertinent classes by human curators. Each shape was printed with an embedded unique RFID tag. We also designed and printed five interactive terminals, containing a microcontroller, an RFID reader with a custom-designed inductive coil as input, and an LED ring as output. Participants would propose groups of shapes that they believed belonged to the same class, and the terminal would evaluate the group.

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[0] http://reseau-mexico.fr
[0] INRA UAR0837 DEV Délégation à l'Evaluation
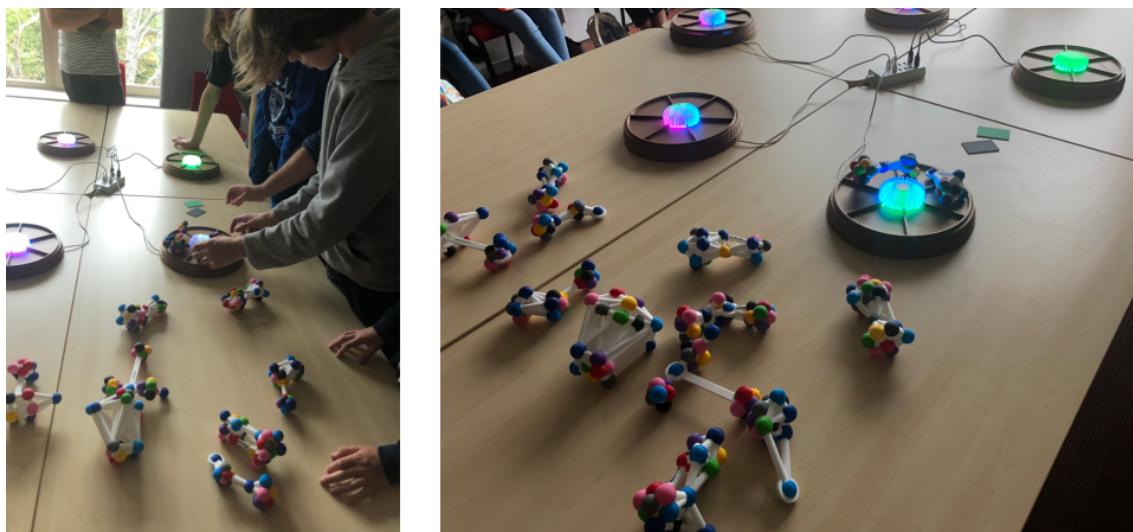
Figure 6. Family-3D activity during the Circuit Scientifique of the Fête de la Science, 2018

David Sherman contributes open-source software development to the Aseba platform for educational robotics [0], deployed in Thymio II robots used by children as well as in the simulator used by Class'Code [0] to train teachers.

David Sherman and Louise-Amélie Schmitt developed AsebaHub, a specialized WiFi hub for connecting Thymio-II robots into a local-area network. AsebaHub acts as either a wireless Access Point to which users may connect, or as a Bridge to an existing local-area network. Robots can be discovered using mDNS-sd (Zeroconf/Bonjour). AsebaHub works out of the box with the Aseba Studio and VPL programming environments, and can also provide an HTTP service that is compatible with Scratch, Snap!, or other environments.

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[0] http://aseba.io/
[0] https://pixees.fr/classcode-la-formation-associee-a-pixees/

<p align="center">**REO Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Laurent Boudin
  - Member of the organizing committee of the 7th "Forum Emploi Maths", December 2018, Paris
  - Member of both Boards of Mathematics Licence and Master, Sorbonne Université
  - Member of the IREM (Institutes for Research on Mathematics Teaching) Scientific Committee
  - Member of the SMAI (French Society for applied and industrial mathematics) Teaching Committee.
- Céline Grandmont
  - Co-organizer of Inria-LJLL meeting in scientific computing
  - Co-organizer of the CEMRACS 2018
- Irene Vignon Clementel
  - Minisymposium with F. Van de Vosse (Eindhoven U.) at WCCB, Dublin, Ireland.
  - Minisymposium at GDR mecabio January, Toulouse, France.
  - Session to foster collaboration between scientists and medical doctors at the Inria/CentraleSupelec/APHP meeting, November 12, Paris, France.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Irene Vignon Clementel
  - Steering committee, multidisciplinary workshop on surgical innovation WIC, 23-25 June, Cabourg, France
  - Programme committee member, Computational and Mathematical Biomedical Engineering Conference
  - Conference steering committee, International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease

10.1.2.2. Member of the Editorial Boards

- Jean-Frédéric Gerbeau
  - Member of the editorial board of the SIAM Journal of Scientific Computing (SISC).
  - Series editor of "SEMA SIMAI Series", Springer.
  - Member of the editorial board of Journal Advances in Computational Mathematics (ACOM), Springer
  - Member of the editorial board of International Journal for Numerical Methods in Biomedical Engineering (IJNMBE), Wiley.
  - Member of the editorial board of Communications in Applied and Industrial Mathematics, SIMAI/De Gruyter.

- – Member of the editorial board of Journal for Modeling in Ophthalmology, Kugler.
- Céline Grandmont
  - – Member of the editorial board of Mathematical Modelling of Natural Phenomena
- Marc Thiriet
  - – Member of the editorial board of Digital Medicine
  - – Member of the editorial board of Computer Methods in Biomechanics and Biomedical Engineering–Imaging and Visualization
- Irene Vignon Clementel
  - – Associate Editor of the International Journal for Numerical Methods in Biomedical Engineering

10.1.3. Leadership within the Scientific Community

- Jean-Frédéric Gerbeau
  - – Elected member of the Board of Directors of SMAI (French Society for Industrial and Applied Mathematics), in charge of the SMAI publications (M2AN, COCV, etc.)

10.1.4. Research Administration

- Muriel Boulakia
  - – Supervisor of the teaching of mathematics at the engineer school Polytech Sorbonne
- Miguel Ángel Fernández Varela
  - – Deputy Head of Science, Inria Paris
  - – Member of the Scientific Positions Commission, Inria Paris
  - – Member of the Inria Evaluation Committee
- Jean-Frédéric Gerbeau
  - – Head of science, Inria Paris (until Sept. 2017)
  - – Member of the scientific committee of Labex NUMEV, Montpellier.
  - – Service activity abroad: member of the Reference Committee of the PhD program Mathematical Models and Methods in Engineering (Politecnico di Milano, Italy).
- Céline Grandmont
  - – Member of the Inria Evaluation Committee
  - – Member of the Inria Parity Committee
- Irene Vignon-Clementel
  - – Technology grant committee (Commission de développement technologique), Inria Paris center
  - – Committee member for PhD students at Inria "Commission consultative des doctorants", since July 2016.
  - – Mediator between PhD students and their supervisors for Inria Paris

10.1.5. Conferences

- Ludovic Boilevin-Kayl
  - – Contributed talk in minisymposium, 13th World Congress on Computational Mechanics, July 22th – 27th, 2018, New York City, USA.
  - – Seminar, Jacques-Louis Lions Laboratory In-House Day, Sorbonne Université, April 5, 2018, Paris, France.
- Laurent Boudin

– Seminar, Lab. de mathématiques appliquées du Havre, Univ. Le Havre Normandie, February 2018, Le Havre, France

– Seminar, Cemracs 2018, August 2018, Marseille, France

– Seminar of Partial Differential Equations, IRMA, Univ. Strasbourg, November 2018, Strasbourg, France

- Muriel Boulakia

  – congres Inverse Problems, Modeling and simulation, Malta, May 2018

  – Inria-LJLL meeting in scientific computing, October 2018

- Miguel Ángel Fernández Varela

  – Keynote talk in minisymposium, 13th World Congress on Computational Mechanics, July 22-27, 2018, New York City, USA.

- Felipe Galarce Marin

  – Contributed talk in minisymposium, 8th World Congress of Biomechanics, July 8-12, 2018, Dublin, Ireland

- Jean-Frédéric Gerbeau

  – Contributed talk in minisymposium, 8th World Congress of Biomechanics, July 8-12, 2018, Dublin, Ireland

  – Keynote talk in minisymposium, 6th European Conference on Computational Mechanics, June 11-15, 2018, Glasgow, UK

- Céline Grandmont

  – Seminar EDP, Nice, Jan. 2018

  – Seminar, Nantes, May 2018

  – Colloquium, Paris 5 Univ., Nov. 2018

  – Invited Speaker, Workshop Interfaces entre mathématiques et biologie, Nancy Univ., Nov. 2018

- Florian Joly

  – Weekend d'Innovation Chirugicale, Cabourg, Jun. 2018

  – Journées du GDR MécaBio à Montpellier, Nov. 2018

- Damiano Lombardi

  – CMM-Fields-Inria Workshop on Mathematics for Medicine, Toronto (Canada)

  – VPH 2018 Zaragoza (Spain), minisymposium of data assimilation

  – Workshop of matematics for biomedicine, Roma (Italy)

  – Ncardia workshop, Cologne (Germany)

- Marc Thiriet

  – Invited lecture, 15th International Symposium Computer Methods in Biomechanics and Biomedical Engineering and 3rd Conference on Imaging and Visualization March 27th – 30th, 2018, Lisbon, Portugal

  – Invited lecture, 2nd International Conference on Digital Medicine, May 25–27, 2018, Guangzhou, China

  – Invited lecture, France–Taiwan Science Festival, Sept. 14, 2018, Taipei, Taiwan

- Alexandre This

  – INdAM Workshop "Mathematical and Numerical Modeling of the Cardiovascular System",April 16 - 19, 2018, Rome, Italy.

- Contributed talk in minisymposium, 8th World Congress of Biomechanics, July 8 - 12, 2018, Dublin, Ireland.
- Marina Vidrascu
  - Contributed talk in minisymposium, 13th World Congress on Computational Mechanics, July 22th – 27th, 2018, New York City, USA.
- Irene Vignon Clementel
  - Seminar (biomechanics), Ecole Polytechnique, Nov 16th, Palaiseau, France
  - Keynote lecture at the Workshop on Advanced Computational Biomechanics in Cardio-Vascular Surgery, Nov 8th, Saint-Etienne, France
  - Talk and poster, World conference of biomechanics, July 15-19 2018, Dublin, Ireland
  - Keynote, SBMC (systems biology in mammalian cells) conference, July 4-6, Brehmen, Germany
  - Invited talk, Weekend de l'innovation chirurgicale (WIC), Jun 22-24, Cabourg, France.
  - Invited talk, MRI and modeling workshop, June 22nd, Saclay, France
  - Poster presentation, EASL international conference (clinical liver conf.), April 11-15, Paris, France
  - Invited talk, GDR MecaBio (national biomechanics conference), Jan 10-12th, Toulouse, France

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence:
- Laurent Boudin
  - Introduction to series for signal theory, 18h, L2, UPMC
  - Calculus, 38.5h, L1, UPMC
  - Numerical methods for ODE, 53h, L3, UPMC
- Muriel Boulakia
  - Projects on differential equations, 34h, L3, Polytech Sorbonne, Sorbonne University
  - Nonlinear systems and optimization, 35h, L3, Polytech Sorbonne, Sorbonne University
  - Numerical approximation of functions, 36h, L3, Sorbonne University
- Jean-Frédéric Gerbeau
  - Control of dynamical systems, 32h, L3, Ecole Polytechnique.
- Damiano Lombardi
  - Analysis and Scientific Computing, 32h, L3, ENPC
  - Numerical Methods, 48h, L3, Polytech'Paris
  - Reduced models for problems in high dimension, 18h, ENPC, L3
- Irene Vignon Clementel
  - Numerical Methods for Ordinary Differential Equations, 24h ETD, L3, UPMC
  - Numerical simulations of blood flow, 2h30, as part of the undergraduate "continuum mechanics", AgroParisTech

Master:
- Laurent Boudin

- – Basics for numerical methods, 29h, M1, UPMC
- – Student advising for orientation and professional insertion, 20h, M1, UPMC
- Muriel Boulakia
  - – Preparatory course for teaching admission examination "Agrégation", 40h, M2, Sorbonne University
- Miguel Ángel Fernández Varela
  - – Modeling and numerical methods for hemodynamics, 30h, M2, UPMC
- Irene Vignon Clementel
  - – MEC 550 - Biofluid Mechanics and Mass Transport, M2, 1h30, Ecole Polytechnique (engineering school), France
  - – Annual ZCCE workshop, M2, 1h30, College of Engineering, Swansea University
  - – Innovations thrapeutiques: du fondamental à l'appliqué, bioengineering module, M2, 1h, Paul Brousse Hospital, France
  - – IFSBM (Institut de Formation Supérieure BioMédicale), M2, 1h30, Marie Lannelongue Hospital, France
  - – M2 Sciences Chirurgicales de l'Université Paris Sud, 1h30, France

10.2.2. Supervision

PhD in progress: Ludovic Boilevin-Kayl, Modeling of cardiac implantable devices, since February 2016. Supervisors: J.-F. Gerbeau & M.A. Fernández Varela

PhD in progress: Alexandre This, Fusion data/simulation for the assessment of mitral regurgitation, since January 2016. Supervisor: J.-F. Gerbeau

PhD in progress: Chen-Yu Chiang, Transport on biological systems and some applications, since February 2016. Supervisor: M. Thiriet

PhD in progress: Felipe Galarce, Enhancing hemodynamics measurements with mathematical modeling, since December 2017. Supervisors: J.-F. Gerbeau & D. Lombardi.

PhD in progress: Fannie Maria Gerosa, Immersed boundary methods for fluid-structure interaction with topological changes, since January 2018. Supervisor: M.A. Fernández Varela

PhD in progress: David Michel, Mathematical analysis of fluid-kinetic coupled models, since September 2018. Supervisors: L. Boudin & A. Moussa

PhD in progress: Nicolas Golse, Contributions of anatomical and hemodynamic modeling of the liver in the anticipation, realization and teaching of liver surgery, since November 2018. Supervisors: E Vibert and I. Vignon-Clementel.

10.2.3. Juries

- Laurent Boudin
  - – PhD committee: Nisrine Outada, Sorbonne Université & Caddi Ayad University, Gentien Marois, Insa Toulouse, Onera & CEA
  - – HDR committee: Ayman Moussa, Sorbonne Université
- Muriel Boulakia
  - – PhD committee: Pierre-Elliott Bécue, Inria Bordeaux Sud-Ouest; Guillaume Delay, Univ Toulouse (referee); Sourav Mitra, Univ. Toulouse; Josef Kolumban, Univ. Dauphine; Fabien Wahl, Inria Paris
  - – Hiring committee: CDI researcher, Univ. Bordeaux
- Miguel Angel Fernández Varela

- PhD committee: Rabii Mlika, INSA Lyon (president), Guillaume Delay, Universtié de Toulouse (member), Karol Cascavita, ENPC (member)
- Hiring committee: Inria (DR2).

- Céline Grandmont
  - Member of the "agrégation" jury in mathematics.
  - Hiring committees: Inria Rennes (CR2), Inria CRCN.
  - PHD committee: J.-C. Casanova, Toulouse University (referee), J. Kolomban, Dauphine Univ. (president), S. Girel, Lyon Univ. (referee), C. Taing, Sorbonne Univ.
  - HDR committee: A. Moussa, Sorbonne Univ.

- Irene Vignon Clementel
  - Hiring committee: Nice University (MdC), Inria (CRCN), Inria (DR2, admission).
  - PHD committee: Clara Jaquet, ESIEE (member), Jules Dichamp, IMFT (referee) Noémie Boissier, UPMC (co-advisor) Mohamed Bekheit, U. Paris-Saclay (president).

10.3. Popularization

10.3.1. Interventions

- Céline Grandmont
  - Conference "Métier": Master Maths students, UPMC, Oct 2018
  - Conference at "Rendez-vous des Jeunes Mathématiciennes et Informaticiennes", Inria Oct. 2018
  - High school discussion on scientific career, 18th January, Blanche de Castille, Le Chesnay, France
  - High school conference, 9th January, Blanche de Castille, Le Chesnay, France

SERENA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Géraldine Pichot was the co-chair of the Computational Methods in Water Resources 2018 conference.

Ibtihel Ben Gharbia and Martin Vohralík have organized a 1-day workshop Journée contrat cadre IFP Energies Nouvelles/Inria.

10.1.1.2. Member of the Organizing Committees

Michel Kern was the member of the local organizing committee of the Computational Methods in Water Resources 2018 conference.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Alexandre Ern is a member of the Scientific Committee for the European Finite Element Fair.

Michel Kern was a member of the program committee for the JCAD 2018 (Journées Calcul et Données, Lyon October 2018).

Géraldine Pichot co-organized a mini-symposium, entitled "Numerical methods for processes in fractured media" at the InterPore 2018 - 10th Annual Meeting and Jubilee, New Orleans, United States, June 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

François Clément was a member of the editorial board of Matapli until June 2018.

Alexandre Ern is a member of the editorial boards of SIAM Journal on Scientific Computing, ESAIM Mathematical Modelling and Numerical Analysis, IMA Journal of Numerical Analysis, and Computational Methods in Applied Mathematics.

Martin Vohralík is a member of the editorial boards of SIAM Journal on Numerical Analysis, Acta Polytechnica, and Applications of Mathematics.

10.1.3.2. Reviewer - Reviewing Activities

Alexandre Ern served as reviewer for dozens of papers in different journals.

Michel Kern was a reviewer for OGST, BIT, Mathematics and Computers in Simulation, Computers and Geosciences.

Martin Vohralík served as reviewer for dozens of papers in different journals.

10.1.4. Invited Talks

Alexandre Ern gave an invited lecture at the BAIL 2018 conference in Glasgow (*International conference on Boundary and Interior Layers*).

Géraldine Pichot was an invited speaker at the InterPore 2018 - 10th Annual Meeting and Jubilee, New Orleans, United States, June 2018 and at the Workshop Reactive Flows in Deformable, Complex Media, Oberwolfach, Germany, August 2018.

Martin Vohralík was an invited speaker at the workshop FEEC and High Order Methods, Oslo, Norway, the Seventh Conference on Finite Difference Methods: Theory and Applications, Lozenetz, Bulgaria, and the Workshop Reactive Flows in Deformable, Complex Media, Oberwolfach, Germany, August 2018.

10.1.5. Leadership within the Scientific Community

Alexandre Ern is the leader of the Master Mathématiques et applications, Ecole nationale des ponts et chaussées.

M. Kern is a member of the Scientific Committee of Orap (ORganisation Associative du Parallélisme), of the steering committee of Géosciences franciliennes of the Scientific Board of GDR Calcul, and of the jury and executive board of Label C3I.

M. Vohralík is a member of the steering committees of Géosciences franciliennes and Summer schools CEA–EDF–Inria.

M. Vohralík is in charge of the topic "Numerical schemes, mesh generation algorithms, and error control" in the ANDRA, BRGM, CEA, EDF, IFP Energies Nouvelles, and Total working group on *High-Performance Numerical Simulation in the Geosciences* (identification of common challenges and collaboration opportunities).

10.1.6. Scientific Expertise

M. Kern is a reviewer for the German Supercomputing Center JARA program.

10.1.7. Research Administration

François Clément is a member of the *Comité local d'hygiène, de sécurité et des conditions de travail* of the Inria Research Center of Paris.

François Clément was the *AMIES facilitator* of the Inria Research Center of Paris until June 2018.

M. Kern is Deputy Director of Maison de la Simulation, a joint project between CEA, CNRS, Inria, Université de Paris 11, and Université de Versailles, focused on applications of high end computing.

M. Kern is a member of the *Comité de site* of the Inria center of Paris.

Géraldine Pichot was a member of the *Comité local d'hygiène, de sécurité et des conditions de travail* of the Inria Research Center of Paris until Sep 2018.

Géraldine Pichot was a member of the *Commission de développement technologique* of the Inria Research Center of Paris until March 2018.

Martin Vohralík is a member of the Inria Paris *Committee on scientific positions* (evaluation of applications for Ph.D. theses (CORDI-S), post-docs, and "délégations").

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Alexandre Ern, Optimal Control, 20h, L3, Ecole Polytechnique, France.

Licence : Alexandre Ern, Partial differential equations, 10h, L3, Ecole nationale des ponts et chaussées, France.

Master : Alexandre Ern, Discontinuous Galerkin methods, 20h, M2, Sorbonne University, France.

Master: Michel Kern, Inverse Problems, 26h, M1, Mines-ParisTech, France

Master: Michel Kern, Advanced Numerical Analysis, 30h, M2, Institut Galilée, Université Paris 13, France

Master: Michel Kern, Subsurface flows, 30h (with E. Mouche), M2, Université Paris Saclay, France

Master: Martin Vohralík, A posteriori error estimates for efficiency and error control in numerical simulations, 36h, M2, Charles University, Prague, Czech Republic.

10.2.2. Supervision

PhD: Amina Benaceur, Model reduction for nonlinear thermics and mechanics, 21 Dec 2018, Alexandre Ern.

PhD: Karol Cascavita, Hybrid discretization methods for Signorini contact and Bingham flow problems, 18 Dec 2018, Alexandre Ern and Xavier Chateau.

PhD in progress: Jad Dabaghi, A posteriori error estimates and adaptive stopping criteria for formulations with complementarity constraints, 01 November 2015, Martin Vohralík and Vincent Martin.

PhD in progress: Patrik Daniel, Adaptive hp-finite elements with guaranteed error contraction and inexact multilevel solvers, 01 October 2015, Martin Vohralík and Alexandre Ern.

PhD in progress: Frédéric Marazzato, Discrete element methods for fracture and fragmentation, 01 October 2016, Alexandre Ern.

PhD in progress: Riccardo Milani, Compatible Discrete Operator schemes for Navier–Stokes equations, 01 October 2017, Alexandre Ern.

PhD in progress: Ani Miraci, Robust a posteriori error control and adaptivity with inexact solvers, 01 October 2017, Martin Vohralík and Alexandre Ern.

PhD in progress: Nicolas Pignet, Hybrid High-Order methods for nonlinear mechanics, 01 November 2016, Alexandre Ern.

10.2.3. Juries

Alexandre Ern, Referee, PhD A. Bensalah, ENSTA ParisTech, Jul 2018.

Alexandre Ern, Examiner, PhD G. Morel, Sorbonne University, Sep 2018.

Alexandre Ern, Referee, PhD P. Vega, University of Concepcion, Chile, Nov 2018.

Alexandre Ern, Referee, PhD G. Pennesi, Politecnico Milano, Italy, Dec 2018.

Michel Kern, Examiner, HDR J. Carrayrou, University of Strasbourg, 21 March 2018.

Martin Vohralík, Referee, PhD O. Gorynina, Université de Bourgogne Franche-Comté, Besançon, Feb 2018.

Martin Vohralík, Examiner, PhD M. Botti, Université de Montpellier, Nov 2018.

10.3. Popularization

10.3.1. Interventions

- M. Kern: présentation "Des mathématiques pour modéliser et simuler le monde", Lycée des Pierres–Vives (Terminale S), Carrières–sur–Seine, May 2018.

- M. Vohralík: "Advancing scientific knowledge together to support innovation", dissemination video, IFP Energies Nouvelles. Available here. February 2018.

Major publications by the team in recent years:

<p style="text-align:center; color:red;">SERPICO Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. General Chair, Scientific Chair

- Charles Kervrann is co-General Chair (with R. Ober, Texas A&M), and head of the organizing committee of the "Quantitative BioImaging" (QBI'2019) conference (350 attendees, Rennes, January 2019).

10.1.1.2. Member of the Organizing Committees

- Charles Kervrann was the organizer of a mini-symposium at the SIAM Image Science conference (June, Bologna, Italy).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Charles Kervrann: Associated Editor for the ISBI'2018 conference, member of the scientific committee of the JIONC workshop (GdR Ondes, since 2014).
- Patrick Bouthemy: Associate Editor for the ISBI'2019 conference.

10.1.2.2. Reviewer

- Charles Kervrann: reviewer for ISBI'2018 and ISBI'2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Charles Kervrann is Associate Editor of the IEEE Signal Processing Letters journal.
- Patrick Bouthemy is co-editor in chief of the open access journal Frontiers in ICT, specialty Computer Image Analysis.

10.1.3.2. Reviewer - Reviewing Activities

- Charles Kervrann: IEEE Signal Processing Letters, Bioinformatics, J. Mathematical Imaging and Vision, Nature Communications.
- Patrick Bouthemy: IEEE Signal Processing Letters, Computer Vision and Image Understanding, IEEE Transactions on Circuits and Systems for Video Technology.

10.1.4. Invited Talks

- Charles Kervrann: Invited talk at the "Reverse Problems in Reconstructing Single Cell Molecular Dynamics" workshop (October, Pisa, Italy), at the GdR ImaBio-MIV Days (November, IGBMC Strasbourg), at the BioGenOuest General Meeting (December, La Gacilly); Invited seminars at Institut Pasteur (February, Paris), Institut Curie CNRS-UMR 144 (June, Paris), European Molecular Biology Laboratory - EMBL (November, Heidelberg, Germany).

10.1.5. Leadership within the Scientific Community

- Charles Kervrann is member of the executive board of the GdR MIV/ImaBio (2588 - Microscopie Fonctionnelle du Vivant) CNRS.
- Patrick Bouthemy is member of the board of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes).

10.1.6. Scientific Expertise

- Charles Kervrann was expert for the national project evaluation in the framework of DIM ELICIT Institut Pasteur - Région Ile-de-France in 2018.

10.1.7. Research Administration

- Charles Kervrann is member of the executive board of the project committee of the Inria Rennes - Bretagne Atlantique centre since 2010. He is Co-head of the "BioImage Informatics" node (ANR France-BioImaging project http://france-bioimaging.org/), National Research Infrastructure for Biology and Health) since 2011.

- Patrick Bouthemy has been head of Excellence Lab (Labex) CominLabs (http://www.cominlabs.ueb. eu) since April 2014. He is deputy member of the board of directors and member of the selection and validation committee of the Images & Réseaux competitivity cluster (http://images-et-reseaux. com/). He is the Inria representative in the steering committee of the DGA-Inria collaboration. He is member of the board of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes), and member of the Research Committee of IMT Atlantique.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Charles Kervrann:

- Engineer Degree: Genomics and Informatics, 4.5 hours, Ecole Nationale Supérieure des Mines de Paris.

- Master: From Bioimage Processing to BioImage Informatics, 5 hours, coordinator of the module (30 hours), Master 2 Research IRIV, Telecom-Physique Strasbourg and University of Strasbourg.

- Master: Geometric Modeling for Shapes and Images, 6 hours, Master 2 Research SISEA, University of Rennes 1.

- Engineer Degree and Master 2 Statistics and Mathematics: Statistical Models and Image Analysis, 37 hours + 15 hours (TP, Emmanuel Moebel), 3rd year, Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes.

Patrick Bouthemy:

- Master: Analysis of Image Sequences, 18 hours, Master 2 Research SISEA, ISTIC & University of Rennes 1.

- Master: Video Indexing, 3 hours, Master 2 Research Computer Science, ISTIC & University of Rennes 1.

- Engineer Degree and Master 2 Research IRIV: Motion Analysis, 12 hours, Telecom-Physique Strasbourg & University of Strasbourg.

10.2.2. Supervision

- Emmanuel Moebel, new strategies for the nonambiguous identification and enumeration of macromolecules in cryo-electron tomograms, started in November 2015, supervised by Charles Kervrann.

- Ancageorgiana Caranfil, data assimilation methods for cell division mechanisms and molecule trafficking analysis, started in December 2016, supervised by Charles Kervrann and Yann Le Cunff.

- Sandeep Manandhar, optical flow methods for 3D fluorescence imaging, started in October 2016, supervised by Patrick Bouthemy and Charles Kervrann.

- Yunjiao Lu, intracellular dynamics and super-resolution imaging: analysis of bacteria wall at the molecular scale, started in October 2017, supervised by Charles Kervrann and Rut Carballido-Lopez.

- Antoine Salomon, statistical aggregation for image analysis in fluorescence microscopy and super-resolution, started in November 2017, supervised by Charles Kervrann.
- Léo Maczyta, motion saliency in video sequences, started in October 2017, supervised by Patrick Bouthemy and Olivier Lemeur.

10.2.3. Juries

Referee/Reviewer of HdR thesis: Michèle Gouiffès (University of Paris-Sud)[P. Bouthemy]

Referee/Reviewer of PhD thesis: Yves Michels (University of Strasbourg, supervised by M. Tajine) [C. Kervrann], Anne-Sophie Macé (University of Paris Descartes, supervised by L. Moisan) [C. Kervrann].

President of PhD thesis jury: F. Deslandes (INRA, supervised by B. Laroche)[P. Bouthemy].

External examiner in international labs: Felix Zhou (PhD thesis, University of Oxford, supervised by Prof. X. Lu and J. Rittscher)[P. Bouthemy]

<p align="center" style="color:red">SISTM Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Rodolphe Thiébaut, Boris Hejblum and Marta Avalos co-organized an invited session "Predicting health outcomes from administrative claims data and electronic health records" in the 4th International Conference on Big Data and Information Analytics. Theories, Algorithms and Applications in Data Science (BigDIA). Dec 17-19, 2018, Houston (USA). The invited session was chair by Rodolphe Thiébaut.

Robin Genuer Co-organizes a reading group called Smiling in Bordeaux (http://www.math.u-bordeaux.fr/~mchave100p/smiling/)

Boris Hejblum organizes the Biostatistics Seminar Series at the Bordeaux Public Health Inserm Research Center

Mélanie Prague organized the "Déjeuners scientifiques" at the "Journées de la statistique française" 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Mélanie Prague was the organizer of a day on "Use of mathematical models for personalized medicine" at the International Conference « Statistics and Health: personalized medicine » - 11-12 January 2018, Toulouse Institute of Mathematics, Toulouse France

10.1.2.2. Member of the Conference Program Committees

Daniel Commenges is a member of the scientific committee of the International Biometric Conference Barcelona, July 2018 (http://2018.biometricconference.org)

Mélanie Prague is a member of the scientific committee of CIMI conference "Statistics in Health - personalised medicine" (http://www.cimi.univ-toulouse.fr/mib/en/conference-statistics-and-health), Toulouse 2018, 10-12 January

Marta Avalos was a member of the program committee of the annual meeting of the francophone Machine Learning community, CAp 2018, Rouen, June 2018 (http://cap2018.litislab.fr/Comites-en.html)

Rodolphe Thiébaut was a member of the scientific committee of the national conference on clinical research (EPICLIN)

Rodolphe Thiébaut is a member of the scientific committee of the IWHOD International Workshop on HIV Observational Databases since 2013 (http://newsite.iwhod.org/Committee)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Lifetime Data Analysis (Daniel Commenges)

Statistics Surveys (Daniel Commenges)

Associate editor of International journal of Biostatistics (Melanie Prague)

10.1.3.2. Reviewer - Reviewing Activities

ADAC (Robin Genuer)

AIDS (Rodolphe Thiébaut)

Am J Public Health (Mélanie Prague)

Biostatistics (Laura Richert)

Biometrics (Mélanie Prague, Boris Hejblum)

IMIA Yearb Med Inform (Marta Avalos)

International Journal of Epidemiology (Daniel Commenges)

Journal of Computational and Graphical Statistics (Robin Genuer)

Journal of the Royal Statistical Society: Interaction (Mélanie Prague)

Journal of Statistical Computation and Simulation (Boris Hejblum)

JRSS-B (Mélanie Prague)

Scientific Reports (Laura Richert)

Society of clinical trial (Mélanie Prague)

Statistical Methods in Medical Research (Robin Genuer, Mélanie Prague)

Statistical science (Mélanie Prague)

Trials (Laura Richert)

10.1.4. Invited Talks

Mélanie Prague gave 4 invited talks in 2018 (Montreal university,Canada; Department of evolutionary dynamics Harvard Boston USA; Dracula Inria team in Lyon France; institute Gustave Roussy Biostatistics Group Paris).

Robin Genuer gave one invited talk at the "Séminaire de Probabilités et de Statistique du Laboratoire de Mathématiques Paul Painlevé de Lille".

Boris Hejblum gave 2 invited talks in 2018 (Genotoul Biostat/Bioinfo Day in Toulouse; Section of Biostatistics, University of Copenhagen, Danemark)

Marta Avalos gave 2 invited talks at the workshop "Big Data: la revolución de la información en la investigación biomédica", 18-19th December 2018, Santiago de Chile (Chile)

10.1.5. Leadership within the Scientific Community

Rodolpe Thiébaut and Chloé Pasin are elected members of the "collège des écoles doctorales', University of Bordeaux

Daniel Commenges is President of the French Region of the International Biometric Society

Mélanie Prague is an elected member of the "Young statistician group" of SFdS (French Society of Statistics)

Mélanie Prague is in charge of the group responsible for the communication of the SFdS - in charge of organizing the sponsoring of the society by public and private companies.

Laura Richert is a member of F-CRIN Steering Committee

Marta Avalos is general secretary of the "Statistics and Sport group" of SFdS (French Society of Statistics)

10.1.6. Scientific Expertise

- Rodolphe Thiébaut is an expert for INCA (Institut National du Cancer) for the PHRC (Programme hospitalier de recherche Clinique en cancérologie) and for the PRME (Programme de recherche médico-économique en cancérologie).

- Rodolphe Thiébaut is a member of the Membre du CNU 46.04 (Biostatistiques, informatique médicale et technologies de communication).

- Rodolphe Thiébaut is a member of the Scientific Council of INSERM.

- Rodolphe Thiébaut is a member of the commitee "Biologie des Systèmes et Cancer (Plan Cancer)", a member of the Scientific Advisory Board of the "Institut Pierre Louis d'Epidémiologie et de Santé Publique" (UPMC, Dir : Dominique Costagliola), a member of the independent committee of international trials ODYSSEY and SMILE, a member of the scientific council of Muraz's Center (Bobo-Dioulasso, Burkina Faso)

- Mélanie Prague is an expert for ANRS (France Recherche Nord&Sud Sida-HIV Hépatites) in the CSS 3 (Recherches cliniques et physiopathologiques dans l'infection à VIH) and AC 47.

- Laura Richert is an expert for the PHRC (Programme hospitalier de recherche Clinique).

- Marta Avalos is an expert for the ANSM (Agence nationale de sécurité du médicament et des produits de santé)

10.1.7. Research Administration

Daniel Commenges is the director of the Biostat-Info axis in the Inserm BPH (Bordeaux Public Health) institute.

Rodolphe Thiébaut is an elected member of the research committee (health sector) in University of Bordeaux and a member of the INSERM Scientific Council

10.2. Education

10.2.1. Teaching

In class teaching

Master : Robin Genuer, teaches in the two years of the Master of Public Health (M1 Santé publique, M2 Biostatistique) and 2nd year of the "Modélisation Stochastique et Statistique" Master, University of Bordeaux.

Master : Boris Hejblum, teaches in the two years of the Master of Public Health (M1 Santé publique, M2 Biostatistique).

Master : Rodolphe Thiébaut, teaches in the two years of the Master of Public Health, and he is head of the Epidemiology specialty of the second year of the Master of Public Health.

Master : Laura Richert teaches in the Master of Public Health at ISPED, Univ. Bordeaux, France (M2 Biostatistiques, M2 Epidémiologie).

Master : Mélanie Prague teaches in the Master of Public Health at ISPED, Univ. Bordeaux, France (M2 Biostatistiques).

Master : Marta Avalos teaches in the two years of the Master of Public Health (M1 Santé publique, M2 Biostatistique), the two years of the Master of Applied Mathematics and Statistics, and the 2nd year of the Master of "Management international : Développement pharmaceutique, Production et Qualité opérationnelle", Univ. of Bordeaux.

Master: Chloé Pasin, Laura Villain, Hadrien Lorenzo and Louis Capitaine are teaching assistants for the two years.

Edouard Lhomme teaches in the Master of Public Health at ISPED, Univ. Bordeaux (M2 Epidémiologie) and in the Master of Vaccinology from basic immunology to social sciences of health (University Paris-Est Créteil, UPEC)

Bachelor : Laura Richert teaches in PACES and DFASM1-3 for Medical degree at Univ. Bordeaux

Edouard Lhomme teaches in PACES and DFASM1-3 for Medical degree at Univ. Bordeaux

Bachelor: Mélanie Prague and Boris Hejblum teach in the third year ingenious school ENSAI, Rennes.

Summer School: the SISTM team member teach in the ISPED Summer school.

E-learning

Marta Avalos is head of the first year of the e-learning program of the Master of Public Health, and teaches in it.

Mélanie Prague teaches in the Diplôme universitaire "Méthodes statistiques de régression en épidémiologie".

Boris Hejblum teaches in the Diplôme universitaire "Méthodes statistiques en santé.

Laura Richert teaches in the Diplôme universitaire "Recherche Clinique".

Robin Genuer is head of the Diplôme universitaire "Méthodes statistiques en santé and participated to the IdEx Bordeaux University "Défi numérique" project "BeginR" (http://beginr.u-bordeaux.fr).

10.2.2. Supervision

Master internship: Marie Alexandre, *PKPD modeling in pre-clinical development*, co-directed by Mélanie Prague with Nicolas Frances Roche Basel Switzerland (01/04/2018 - 31/09/2018)

Master internship (M1): Anthony Devaux, *Gene expression analysis with the R software*, directed by Boris Hejblum (01/06/2018 - 31/08/2018)

Master internship (M2): Roxane Coueron, *Sample size estimation for a microbiome study*, co-directed by Boris Hejblum with Hélène Savel, CHU Bordeaux (01/02/2018 - 31/08/2018)

Master internship: Marine Gauthier, *Variance component test for RNA-seq data analysis*, directed by Boris Hejblum (01/02/2018 - 31/07/2018)

Master internship: Julien Rouar, *PCA for absolute and relative abundance microbiota data: survey and implementation of methods*, co-directed by Marta Avalos with Cheng Soon Ong and Richard Nock, Data61, Australia (26/02/2018 - 31/08/2018)

PhD in progress: Marie Alexandre "Mechanistic modeling and optimization of vaccine response in HIV and Ebola", co-directed by Mélanie prague and Rodolphe Thiébaut, from Oct 2018.

PhD in progress: Marine Gauthier "Methods for bulk and single-cell RNA-seq data analysis in vaccine research", co-directed by Boris Hejblum and Rodolphe Thiébaut, from Sept 2018.

PhD in progress : Soufiane Ajana "Comparison of linear and non-linear machine learning approaches to predict Age-related Macular Disease (AMD) risk in a survival framework", co-supervised by Boris Hejblum and Hélène Jacqumin-Gadda (Inserm) and Cécile Delcourt (Inserm), from Sept 2016.

PhD in progress: Perrine Soret, *Modélisation de données longitudinales en grande dimension*, from Oct 2014, directed by Marta Avalos.

PhD in progress : Wenjia Wang "Modèle de Rasch", co-directed by Daniel Commenges with Mickael Guedj CIFRE Pharnext, from Oct 2015.

PhD in progress : Edouard Lhomme, *Analyse des déterminants de la réponse immunitaire post-vaccination dans des stratégies vaccinales expérimentales*, from Oct 2016, directed by Laura Richert.

PhD in progress : Hadrien Lorenzo, *Analyses de données longitudinales de grandes dimensions appliquées aux essais vaccinaux contre le VIH et Ebola*, from Oct 2016, co-directed by Rodolphe Thiébaut and Jérôme Saracco.

PhD in progress : Louis Capitaine, *Random forests for high dimensional longitudinal data*, from Oct 2017, co-directed by Robin Genuer and Rodolphe Thiébaut.

PhD in progress : Madelyn Rojas *Self-management of injury risk and decision support systems based on predictive computer modelling. Development, implementation and evaluation in the MAVIE cohort study*, from Oct 2017, (Injury Epidemiology team, Inserm U1219, ED SP2) co-directed by Emmanuel Lagarde, David Conesa and Marta Avalos.

PhD defense on Oct 30 2018: Chloé Pasin, *Modeling and optimizing the response to vaccines and immunotherapeutic interventions: application to Ebola virus and HIV*, from Sep 2015, co-directed by Rodolphe Thiébaut and Francois Dufour.

PhD defense on Dec 13 2018: Laura Villain "Modélisation de l'effet du traitement par injection IL7", co-directed by Daniel Commenges and Rodolphe Thiébaut, from Oct 2015.

PhD defense on Nov 16 2018: Mélanie Née *Recherche et caractérisation de profils attentionnels : mieux comprendre la place de l'attention dans la survenue des accidents de la vie courante*, from Oct 2015, co-directed by Emmanuel Lagarde, Cédric Galéra (from the research center Inserm U1219) and Marta Avalos.

10.2.3. Juries

Mélanie Prague was involved in the PhD defence jury of Steven Sanche (university of Montreal).

Mélanie Prague is a member of the follow-up dissertation comity of 3 PhD students: NICOLO Chiara, Sébastien Benzkcry's PhD student (Inria Bordeaux Sud-ouest, MONC team), Marie Astrid METTEN, Jean-Francois Viel's PhD student (Universty rennes 1 Inserm U1085) and, Jonas BEAL, Sebastien Latouche's PhD student (Institut Curie Paris).

Mélanie Prague took part in the recruitment commission Inria CR Bordeaux and a postdoc recruitment commitee in an European project at Pau university.

Marta Avalos is a member of the follow-up dissertation comity of 3 PhD students: Allison Singier (Pharmacoepidemiology team, Inserm U1219, ED SP2), Alexandre Conanec (Statistics, IMB, ED MI), Delphine Canzian (Education sciences, ED SP2).

Marta Avalos was involved in the PhD defence jury of Mélanie Née (University of Bordeaux).

Rodolphe Thiébaut took part in the HDR committee of Marta Avalos and the PhD defence jury of Vincent Madelain, Chloé Pasin and Laura Villain.

Daniel Commenges took part in the PhD defence jury of Laura Villain.

Laura Richert, Rodolphe Thiébaut, Robin Genuer, Boris Hejblum and Marta Avalos participated to the juries of Master in Public Health (Biostatistics, Epidemiology, Public Health)

Edouard Lhomme and Laura Richert participated to the juries of medical thesis defenses, Medical School of Bordeaux University

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Mélanie Prague is part of the Inria Commission de Développement Technologique (CDT)
- Mélanie Prague is part of the Inria commission des emplois de recherche.
- Robin Genuer is the webmaster of the publication site of the French statistical society

10.3.2. Articles and contents

- Mélanie Prague participated to an interview for Sud ouest Eco.
- Mélanie Prague made a video of presentation of SISTM team

10.3.3. Interventions

- Chloé Pasin presented "Modélisation et optimisation de la réponse immunitaire" to L3 student from ENS Lyon visiting Inria and Hadrien Lorenzo participated to research speed meetings with these students on December 6 2018.
- Melany Durand, Hadrien Lorenzo, Chloé Pasin and Mélanie Prague participated at the "Fête de la Science" and presented "D'une goutte de sang à ta prochaine visite chez le médecin : bien personnaliser ton traitement" to high school students on October 10 2018.

- Chloé Pasin participated at the "atelier Digit'elles" with the "Femmes and Sciences" organization at the "Fête de la Science" on October 9 2018.

10.3.4. Internal action

- the whole team participated in a showcase of their activity for Inria BSO 10th anniversary on September 27th, 2018 "Une goutte de sang contient-elle plus de données qu'un smartphone ?"
- Marta Avalos and Binbin Xu conducted a workshop on "Vivre la diversité à Inria Bordeaux – Sud-Ouest", within the internal workshop for the Inria BSO 10th anniversary, June 13. Participation to the SO News of June.

STEEP Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Denis Dupré, Pierre-Yves Longaretti and Emmanuel Prados are the Scientific Chair of the series of conferences entitled "Understanding and Acting"; see section 8.3.1 .

8.1.1.2. Member of the Organizing Committees

- P. Sturm was member of the Organization and the Program Committees of the 2018 edition of the Inria Science Days (*Journées Scientifiques Inria*)

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

- Emmanuel Prados was member of the Program Committees of the Workshop on "Information and decision-making systems and democracy" at the INFORSID 2018 Congress , Nante, France 28-31 May 2018.
- Emmanuel Prados was member of the Program Committees of the Workshop on "EIAH and sustainability" at RJC-EIAH 2018, Besançon, France 3-5 April 2018.

8.1.3. Journal

8.1.3.1. Reviewer - Reviewing Activities

- P. Sturm was reviewer for Environment and Planning B: Urban Analytics and City Science, International Journal of Computer Vision, and Journal of Mathematical Imaging and Vision.

8.1.4. Invited Talks

- E. Prados give an invited talk to the **Journées scientitifiques de l'Inria** "", Bordeaux, France, june 27-29, 2018. Organizers: Inria (http://journees-scientifiques2018.inria.fr/).
- E. Prados give an invited talk to the **LIED Thematic Seminar** "Effondrement, déclin ou catastrophologie ? : théories sur les risques et l'avenir des sociétés" (Laboratoire interdisciplinaire sur les énergies de demain) with Pierre-Yves Longaretti and Grégoire Chambaz, Paris, France, June 19, 2018. Organizers: Petros Chatzimpiros.
- E. Prados give an invited talk to the **round table** on military nuclear [links with the risk of collapse of modern society] at the **first anniversary of the "Nuclear Knowledges" program**, Science Po, Paris, France, May 31, 2018. Organizers: Benoît Pelopidas.
- E. Prados give an invited talk to the **Conference for the Société Francaise de Physique** : "Vers un effondrement de notre société moderne ?", Grenoble, France, June 7, 2018 ; Conférence with Pierre-Yves Longaretti. Organizer: Thomas Thuillier.

8.1.5. Research Administration

- P. Sturm is, since 2015, Deputy Scientific Director of Inria, in charge of the domain Perception–Cognition–Interaction
- E. Prados was in charge of the working group "Digital tools for the progress of society" for the Strategic Plan of Inria, 2017-2018. His work resulted in the writing of the Scientific Challenges entitled "Digital world, society, and complexity".

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

As teacher-researchers, Denis Dupré and Serge Fenet completed their full teaching service in 2018 (full-time) in their field of study. Regis Perrier did a half service.

8.2.2. Supervision

PhD : Luciano Gervasoni, *Contributions to the formalization and implementation of spatial urban indices using open data: application to urban sprawl studies*, University Grenoble Alpes, November 19th, 2018, Peter Sturm (supervisor) and Serge Fenet (co-supervisor).

PhD in progress : Michela Bevione, *Socio-ecological transition, wealth creation and territorial metabolism: the case of Maurienne Valley*, October 2016, Pierre-Yves Longaretti (co-supervisor) and Nicolas Buclet (supervisor). Phd thesis in collaboration with the PACTE Laboratory. This interdisciplinary research on territorial ecology aims at bridging the gap between quantitative modeling and socio-economic and qualitative approaches to better understand the interactions between human society and the environment.

8.2.3. Juries

- P. Sturm chaired the Habilitation committee of Rémi Boutteau (Normandie Université, president), was reviewer of the PhD theses of Laura Fernàndez Julià (Université Paris-Est) and Mathias Gallardo (Université Clermont Auvergne) and chaired the PhD committee of Fatima Aziz (Université de Limoges).

8.3. Popularization

8.3.1. Conferences "Understanding and Acting" :

Saving Civilization is not a spectator sport
Lester Brown

Following a dynamics of exponential growth in a finite world, humanity today faces a number of unprecedented and tightly interlinked challenges. With a growing number of environmental limits being largely and irreversibly exceeded (GHG concentrations in the atmosphere, biodiversity loss, soil erosion, freshwater shortages...), social, economic, geopolitical, humanitarian (etc.) consequences are becoming more urgent than ever to address, while the threat of an uncontrolled global collapse is now more than a prospect. It is urgent to initiate deep, structural, socioeconomic changes on virtually all aspects of our increasingly global societies (economics, industrial and agricultural production, consumption, education, all requiring major new local and global policies).

In view of these facts, the STEEP research team has initiated in 2016 a series of conferences-debates entitled "Understanding & Acting" ("Comprendre et agir") that examines these issues in order to help researchers and citizens to increase their awareness of the various issues at stake in order to initiate relevant individual and collective actions. From now on, the scientific community at large must realize that its duty also lies in helping citizens to better understand these issues. If the fraction of people in society whose privilege is to be paid to think about society's problems do not seize this opportunity in the critical times we face, who will? Researchers must become more involved in the search of socioeconomic alternatives and help citizens to implement them. The interactions between researchers and citizens must also to be reinvented.

The presentations of this series of conferences typically last between 30 to 45 minutes; they are followed by a 45 minute public debate with the audience. The presentations are captured on video and then made directly accessible on the YouTube Channel "Comprendre et Agir". At the end of 2017 the YouTube channel reached almost 45,000 views with a rate of integral viewings re¬maining at above 25%.

Examples of conferences given in 2016-2017:

- "Why and how to recognize money as a common good?" by Jean-Michel Servet, Graduate institute of international and development studies (IHEID) at Genève.
- "What alternative to the crisis of representation?" by Loic Blondiaux, University of Paris I Panthéon-Sorbonne.
- "Reinventing agriculture and food in the 21st century?" by Gilles Billen, CNRS.

- "Can the commons movement re-activate democracy? by Christian Laval, University of Paris Ouest Nanterre La Défense.
- "Limiting climate change: Why do we not do it?" by Denis Dupré, University of Grenoble Alpes.
- "Understanding society collapses. What future for ours? " by Emmanuel Prados, Inria.
- "Environment, economy, collapse: squaring the circle?" by Pierre-Yves Longaretti, CNRS.

Link to the web page of the series [program, abstracts, dates, complements etc.]:
https://team.inria.fr/steep/les-conferences-debats-comprendre-et-agir/
Link to the YouTube channel :
https://www.youtube.com/channel/UCJbcXCcOA63M8VMysAbmt_A

8.3.2. Other popularization activities :

- Emmanuel Prados was guest speaker at
    - the **public debate "defying disaster"** that held at Grenoble City Hall., Grenoble, France, 13 December 2018. Organizers: City of Grenoble. "Climat, défier la catastrophe : vers un nouvel humanisme"
      http://www.grenoble.fr/uploads/Externe/a1/757_069_Conference-Climat-defier-la-catastrophe-vers-un-nouvel-humanisme.pdf
      Video of the conference on YouTube : https://www.youtube.com/watch?v=IfvFHx0kYa0
    - the **exchange day on travel modelling in Grenoble** "", Grenoble, France, 5 October 2018. Organizers: Agence d'urbanisme de Grenoble.
    - the **Controversation** entitled "Digital technology in the face of environmental impasse: an exit door or a way forward?", Aix en Provence, France, 17th of February 2018. Organizers: association "Tous Chercheurs" in collaboration with the students of the School of Journalism and Communication of Aix-Marseille ; Amina Mokrane.
    - the **Opening Conference at the Alterre Day** «Voyages en transitions » : "De l'urgence de tout changer face à l'effondrement qui vient", Dijon, France, March 21th 2018. Organizers: Alterre Bourgogne-Franche-Comté (Agence régionale pour l'environnement et le développement soutenable) ; Fabienne Lapiche-Jaouen.
      https://www.alterrebourgognefranchecomte.org/c/agenda/10604/journee-alterre-sur-le-theme-des-transitions?
- Emmanuel Prados participated **Fictionnalisation de controverse** in the research-action project FORCCAST. 22 April, 2018, Paris.
- Emmanuel Prados gave a conference at **STMicroelectronics Grenoble** : 'Collapse: understanding and accepting the game over of our modern society", Grenoble, France, March 8 2018. Organizers: Philippe Vincent and Violaine Pasini.

<center>**TONUS Team**</center>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Organization of events

- Philippe Helluy: Workshop on Compressible Multiphase Flows : Derivation, closure laws, thermodynamics, IRMA, May 2018.
- Emmanuel Franck: Workshop IPL : Breitenbach, November 2018

10.1.1.2. Reviewer

- Emmanuel Franck was a reviewer for
  - Communication in computation physics,
  - Journal of Computational Physics.
- Philippe Helluy was a reviewer for
  - Computers and fluids,
  - Communication in computational physics,
  - Numerical methods for partial differential equations,
  - ESAIM proceedings.
- Philippe Helluy is editor for:
  - International Journal on Finite Volume,
  - Computational and Applied Mathematics.
- Sever Hirstoaga was a reviewer for
  - Acta Applicandae Mathematicae,
  - Journal of Approximation Theory,
  - Journal of Computational and Applied Mathematics.

10.1.2. Invited Talks

- Emmanuel Franck was invited in
  - Canum 2018, Cap d'Agde, June 2018 (national conference),
  - Workshop Jorek, Oxford , May 2018,
  - Workshop Achylles, Bordeaux, March 2018,
  - Workshop ABPDE3, Lille, September 2018,
  - Numkin 2018, Munich, October 2018,
  - Würzburg numerical analysis seminar, April 2018,
  - Workshop IPL , November 2018.
- Florence Drui was invited in
  - Summer School GDR Manu, Roscoff, July 2018,
  - Workshop on compressible multiphase flow, Strasbourg, May 20118,
  - Autumn school, "Hyperbolic Conservation Laws", Würzburg, October 2018,
  - item Workshop IPL , November 2018.

- Laura Mendoza was invited in
    - Numkin 2018, Munich, October 2018,
    - Workshop IPL , November 2018,
    - Research and Scientific meeting, IRFM, CEA, Cadarache.
- Laurent Navoret was invited in
    - Numkin 2018, Munich, October 2018,
    - Workshop IPL , November 2018,
    - Seminar, Groupe de travail "Applications des Mathématiques", ENS Rennes.
- Michel Merhenberger was invited in
    - Numkin 2018, Munich, October 2018.
- Sever Hirstoaga was invited in
    - Workshop "Kinetic equations for Astrophysics", IRMA.

10.1.3. Scientific Expertise

- Philippe Helluy is in the evaluation committee of the "réseau calcul" of CNRS.

10.1.4. Research Administration

- Philippe Helluy
    - Director of the IRMA mathematics institute since September 2018.
- Laurent Navoret
    - Head of the master (Agrégation) since September 2018.
- Matthieu Boileau
    - Elected to the "Commission de la Recherche du Conseil Académique" of Strasbourg University,
    - Co-leader of "réseau métier Calcul" CNRS,
    - Member of the "Commission du Développement Technologique". l'Inria Nancy,
    - Member of users comity. IDRIS,
    - Member of X-Stra network (IA days in 2018).
- Michel Mehrenberger
    - Correspondent SMAI for IRMA,
    - Member of "École Doctorale ED209".

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Florence Drui :
    - Numerical analysis, TD and TP, L3 (58h)
- Laura Mendoza :
    - Scilab and algorithm, CPGE Lycée Kleber (120h).
- Laurent Navoret :
    - Licence : Nonlinear optimisation (18h eq. TD),
    - Licence : Scientific computing (64 eq. TD),
    - Master 1: Scientifique computing 2 (35h eq. TD),
    - Master 2 (Agrégation) : scientific computing (38h eq. TD),

- – Master 2 (Agrégation) : Problem correction (12h eq. TD),
- – Master 2 (Cell physics) : Basics in maths (24h eq. TD),
- Philippe Helluy :
  - – L2: Scientific computing (64 eq. TD),
  - – Master 1: graph and algorithm (30h eq. TD),
  - – Master 2 (Agrégation) : scientific computing (30h eq. TD),
  - – Master 2 CSMI : hyperbolic PDE (30h eq. TD),
  - – Master 2 CSMI : Optimal control (30h eq. TD).
- Matthieu Boileau:
  - – Master 2 : data sciences (18h),
  - – Master 1 CSMI : parallel computing (15h),
  - – Master ESPE : Python for science (28h).
- Michel Mehrenberger:
  - – Summer school at Harbin Institute of Technology (HIT) en Chine (16h),
  - – L1: mathematics for biology (42h),
  - – L3: nonlinear optimisation (54h+65h),
  - – Master 1: scientific computing (32.5h),
  - – Master 1: python (13h),
  - – Master 2 (agrégation): scientific computing (8h).
- Michaël Gutnic:
  - – L1: mathematics for biology (66h),
  - – L1: statistic for biology (72h),
  - – L3: scientific computing (32h).

10.2.2. Supervision

- Master 2 (agrégation) thesis: Louis Stutzmann, 01/2018 - 05/2018, Advisor: Sever Hirstoaga.
- PhD in progress: Lucie Quibel (CIFRE support): in collaboration with EDF Chatou, from October 2017, Advisor: Philippe Helluy.
- PhD in progress: Marie Houillon: "Modeling of thin wires in electromagnetic software", Advisors: Philippe Helluy and Laurent Navoret, from October 2017, Labex Irmia support.
- PhD finished in November 2018: Bruno Weber(CIFRE support): "Optimization of DG software on GPU in the AxesSim company". Advisor: Philippe Helluy.
- PhD in progress: Maxime Schmitt: "Optimization of scientific software with arbitrary mesh refinement", Advisors: Philippe Helluy and Cédric Bastoul (CAMUS team). Labex Irmia support.
- PhD in progress: Ksander Ejjaaouani, "Conception of a programmation model, application to gyrokinetic simulations", from October 2016, Advisors: Michel Mehrenberger, Julien Bigot, Olivier Aumage.
- PhD finished in December 2018: Nicolas Bouzat, "Conception of a programmation model, application to gyrokinetic simulations", from October 2015, Advisors: Michel Mehrenberger, Jean Roman, Guillaume Latu.
- PhD finished in october 2018: Yann Barsamian "Optimization of PIC and SL schemes for multi species simulations", from October 2015, Advisors: Michel Mehrenberger, Sever Hirstoaga, Eric Violard.
- PhD in progress: Pierre Gerhard, "Résolution des modèles cinétiques. Application à l'acoustique du bâtiment", from October 2015, Advisors: Philippe Helluy, Laurent Navoret.

10.2.3. Juries

- M. Mehrenberger and S. Hirstoaga were members of jury of the PhD committee of Yann Barsamian, University of Strasbourg,
- Philippe Helluy was member/reviewer of jury of the PhD committee of Benedict Dingfelder, TUM,
- Philippe Helluy was member/reviewer of jury of the PhD committee of Gentien Marois, Bordeaux,
- Philippe Helluy was member of jury of the PhD committee of Nicolas Bouzat, University of Strasbourg.

10.3. Popularization

- Philippe Helluy: "Des modèles mathématiques en acoustique des bâtiments" Rencontres mathématiques-architecture. Strasbourg, October 2018.
- Michel Mehrenberger: participation to "Maths-en-Jean".

<h1 style="text-align:center; color:red">VISAGES Project-Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- MS workshop: https://project.inria.fr/msworkshop2018/, Jan 30-31, London, UK (Claire Cury).
- Brainhack Global Rennes 2018: https://brainhack.irisa.fr, May 25-26, Rennes, France (Camille Maumet).
- Christian Barillot is member of the Board of Directors of IPMI conference series (Information Processing in Medical Imaging)

10.1.1.2. Member of the Organizing Committees

- Brainhack Global Rennes 2018: https://brainhack.irisa.fr, May 25-26, Rennes, France (Julie Coloigner, Olivier Commowick, Claire Cury, Mathis Fleury, Armelle Mozziconacci, Édith Blin).
- MS workshop: https://project.inria.fr/msworkshop2018/, Jan 30-31, London, UK (Christian Barillot).
- ARSEP workshop on multiple sclerosis, Feb 2, ICM (Elise Bannier, Anne Kerbrat).
- Official launching ceremony of Neurinfo new MR scanner, Nov 27, CCP, Rennes (Elise Bannier, Isabelle Corouge in collaboration with Inria and University of Rennes 1).
- Jean-Luc Anton, Elise Bannier, Marie Chupin, Gabriela Hossu, Irène Tropres created in 2016 an academic network for multicenter mutual aid in MRI called REMI. The network gathers over 150 members from nearly 80 different research and clinical sites. Pluri-annual meetings are organised and a website (https://remi.network/) allows members to share expertise, observations and questions. Different themes are discussed : Quality Assurance, Devices, Sequences, Good clinical practices, Data preprocessing, Data management and a preclinical theme was added this year. This initiative is supported by France Life Imaging. An issue of the french magazine for MR tech dedicated to research was published in September 2018 and also describes the REMI among other initiatives : http://new.afppe.com/le-n278-de-septembre-est-en-ligne-sur-la-mediatheque. REMI meetings, March 27 and Oct 9, ICM, Paris (Elise Bannier).

10.1.1.3. Program Participant

- Organizer of the project "A deep learning playground", Brainhack Global Rennes 2018: https://brainhack.irisa.fr, May 25-26, Rennes, France (Francesca Galassi).
- Session moderator "3T versus 7T", SFNR, March 21, Paris, France (Elise Bannier).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Christian Barillot was area chair of IEEE-ISBI 2018 and SPIE Medical Imaging 2018
- Scientific commitee of SFRMBM 2019, bi-annual congress that will be help in Strasbourg in March 2019 https://sfrmbm2019.sciencesconf.org/ (Elise Bannier).
- Neuroinformatics 2019: http://neuroinformatics2019.org/, Sept. 1-2, Warsaw, Poland (Camille Maumet).

10.1.2.2. Reviewer

- International Symposium on Medical Information Processing and Analysis: ISBI (Julie Coloigner, Olivier Commowick, Pierre Maurel, Emmanuel Caruyer)
- International Symposium on Medical Information Processing and Analysis: SIPAIM (Julie Coloigner)
- MICCAI (Olivier Commowick, Francesca Galassi)
- Annual congress of the Organisation of Human Brain Mapping (Camille Maumet)
- African Conference on Research in Computer Science and Applied Mathematics (CARI) (Pierre Maurel)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Christian Barillot is Editor-in-Chief of Frontiers in ICT: Computer Image Analysis.
- Christian Barillot is member of Editorial Boards of Medical Image Analysis, Current Medical Imaging Reviews, ISRN Signal Processing
- Camille Maumet is member of Editorial Boards of Neuroinformatics

10.1.3.2. Reviewer - Reviewing Activities

- Journal of Alzheimer's disease (Claire Cury)
- NeuroImage (Olivier Commowick, Pierre Maurel, Camille Maumet, Christian Barillot)
- NeuroImage: Clinical (Julie Coloigner, Christian Barillot)
- IEEE TMI (Olivier Commowick)
- IEEE Biomedical Engineering (Christian Barillot)
- Med Image Anal (Olivier Commowick, Emmanuel Caruyer, Christian Barillot)
- Magn Reson Med (Emmanuel Caruyer)
- Med Phys (Emmanuel Caruyer)
- Nature Scientific Data (Christian Barillot)

10.1.4. Invited Talks

- Barillot, C., "Defining and evaluating imaging markers for multiple sclerosis". Workshop on Machine Learning in Radiology (MLRad 2018). CHUV - Siemens, Lausanne.
- Barillot, C., "Nouveaux enjeux, nouvelles techniques d'imagerie pour analyser le système nerveux", École Recherche Translationnelle en Neurosciences. ITMO NNP - AVIESAN, Bordeaux.
- Barillot, C., "Medical image analysis and integration". Workshop on "Artificial Intelligence in Health Grand Challenge". AI Singapore, Singapore.
- C. Barillot and O.Commowick. "Objective Evaluation of Multiple Sclerosis Lesion Segmentation using a Data Management and Processing Infrastructure" - Journées françaises de radiologie (JFR 2018) - Paris (Oct 2018) [19]
- Christian Barillot, Michel Dojat, Michael Kain. "France Life Imaging and the transversal node for Information Analysis and Management (IAM)". Journées françaises de radiologie (JFR 2018) - Paris (Oct 2018) [18]
- Michael Kain. "Solutions de gestion des données d'imagerie : exemples avec Shanoir, Archimed et Cati-DB". Journées françaises de radiologie (JFR 2018) - Paris (Oct 2018) [20]
- O. Commowick. "OFSEP and FLI infrastructure for the organisation of the international challenge on MS lesions segmentation". MS workshop, London (January 2018)
- O. Commowick. "Objective Evaluation of Multiple Sclerosis Lesion Segmentation using a Data Management and Processing Infrastructure". France Life Imaging workshop - Orsay (March 2018)

- O. Commowick "Towards Multiple Sclerosis Lesions Segmentation Transfer to the Clinics: Methods and Evaluation". Gdr ISIS - Paris (March 2018)

- In the context of the EMISEP project on MS and spinal cord imaging and in order to discuss further collaboration, Anne Kerbrat, Benoit Combès and Elise Bannier visited the CEMEREM in Marseille on Monday and gave a talk " Characterisation of spinal cord involvement in early RRMS patients using MRI" (October 22st)

- C. Maumet "Tools and standards to make neuroimaging derived data reusable", Keynote at Neuroinformatics 2018, Montreal, Canada, August 2018 [21].

- Yao Chi and Christian Barillot "Infrastructures pour le traitement et la gestion de données d'imagerie biologique et médicale", 6ème Forum de l'Institut de Psychiatrie, Amiens, September 2018.

10.1.5. Leadership within the Scientific Community

- Chair-elect of the international OHBM Open Science Special Interest Group (Camille Maumet)

- Member of the international working group on data sharing in neuroimaging of the International Neuroinformatics Coordinating Facility (Camille Maumet)

- Member (by invitation) of Aperture, an international new online publishing plateform for the OHBM community, in the "workflow working group" led by Peter Bandettini (Camille Maumet).

- Member (by selection) of the "comité de la science ouverte", a national initiative to foster open science in France, in the "open and free software working group" led by Roberto Di Cosmo (Camille Maumet).

- Mentor (by selection) of the international training "Mozilla Open leaders" led by Abigail Cabunoc Mayes (Camille Maumet).

- Member (by selection) of the "Bio Imaging and Signal Processing" (BISP) Technical Committee of the IEEE Signal Processing Society (Emmanuel Caruyer).

- Gilles Edan was elected Fellow of the European Academy of Neurologie. Member of the EAN teaching committee in 2015

- Christian Barillot is member of the Scientific Council of the INS2I [0] Institute of CNRS since 2011 and is Chairman of the Board since 2015

- Christian Barillot is member of the C3N committee (CNRS)

- Christian Barillot is member of the scientific board of "GIS France Grilles"

- Christian Barillot is member of the scientific board of the Neuroscience and psychiatry institute of AVIESAN

10.1.6. Scientific Expertise

- Expertise as a reviewer for "Agence Nationale de la Recherche" (ANR) (Emmanuel Caruyer)

- Expertise as a reviewer for the Comité Français d'Évaluation de la Coopération Scientifique et Universitaire avec le Brésil (Christian Barillot)

- Expertise as a reviewer for the Israel Science Foundation (Christian Barillot)

- Expertise as a reviewer for the Research Council KU Leuven (Christian Barillot)

- Expertise as a reviewer for the Swiss National Science Foundation (Christian Barillot)

- Expertise as a reviewer for the "European Research Council" for the starting grant call (Christian Barillot)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

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[0] http://csins2i.irisa.fr

ESIR: Cédric Meurée, Algorithms and Complexity, 28h, M1, École Supérieure d'Ingénieur de Rennes (ESIR), France

ESIR: Benoit Combès, Statistiques, 12h, M1, École Supérieure d'Ingénieur de Rennes (ESIR), France

Master Molecular and Cellular biology/Master Bioinformatics/Master Fundamental and Applied Microbiology: Corentin Vallée, Machine Learning, 64h, M1, Univ. Rennes, France

L2 informatique: Raphaël Truffet, Génie Logiciel, 24h, L2, ISTIC, France

ESIR: Pierre Maurel, General image processing (60h), Algorithmics and complexity (60h), Medical imaging (60h), École Supérieure d'Ingénieur de Rennes (ESIR).

ENS Rennes: Pierre Maurel, Introduction to image processing (24h)

Licence SIF: Emmanuel Caruyer, Algorithms, 30h, L3, ENS Rennes, France.

Master 2 "Troubles de la Cognition et du Langage": Pierre-Yves Jonin, Introduction aux méthodes de neuroimagerie pour la recherche en neuropsychologie (3h) Master 2. Université de Poitiers, France.

Master 2 "Troubles de la Cognition et du Langage": Pierre-Yves Jonin, Evaluation neuropsychologique à visée diagnostique. Le cas des syndromes démentiels. Master 2 (2 x 6h) Université de Poitiers, France.

Medicine (4th & 5th year) UE Psychologie et Neurobiologie: Pierre-Yves Jonin, L'exploration neuropsychologique des maladies neurologiques et psychiatriques. 4ème & 5àme année de médecine (4h), Université de Brest, France.

Master 2 Neurosciences Cliniques: Pierre-Yves Jonin, Neurosciences cognitives de la mémoire humaine. Master 2. 3 heures. Université de Rennes 1, France.

Licence 3 de Psychologie: Pierre-Yves Jonin, Les syndromes neuropsychologiques. L3, (16h) Université de Rennes 2, France

Licence 3 de Psychologie: Pierre-Yves Jonin, L'approche neuropsychologique du handicap chez les patients cérébro-lésés. Licence 3. Université de Rennes 2.

Master 2 "Handicap et troubles du développement": Pierre-Yves Jonin, Evaluation neuropsychologique à visée diagnostique. Le cas des syndromes démentiels. Master 2. 2 x 6 heures. Université de Rennes 2.

Master 2 "Handicap et troubles du développement".: Pierre-Yves Jonin, Méthodologie de la recherche clinique. Master 2. 3 heures. Université de Rennes 2.

Master 2 "Psychologie, mention Neuropsychologie": Pierre-Yves Jonin, Méthodologie clinique et principes de l'évaluation neuropsychologique à visée diagnostique. Master 2. 3h30. Université de Savoie.

L2 biologie: Antoine Legouhy, Bio-statistques 34h, L2, Univ. Rennes 1, France.

M1 mathématiques: Antoine Legouhy, Optimisation 12h, M1, Univ. Rennes 1, France.

IUT GEA: Mathis Fleury, Mathématiques; 64h (3 months); Licence; IUT Saint-Malo, France.

L1 INF1: Francesca Galassi, Programming in Java (TD : 20h, TP : 20h), L1, ISTIC University of Rennes 1, France.

L2 PO: Francesca Galassi, Object Oriented Programming in Java (TP : 20h), L2, ISTIC University of Rennes 1.

Master SISEA: Benoit Combès, Méthodes statistiques pour l'image 10h, M2, Univ. Rennes 1, France.

Master SIBM, M2, University of Angers-Brest-Rennes, France.

- Christian Barillot (Plenary: 12h), responsible for one semester.
- Jean-Yves Gauvrit, Coordinator for the Master
- Olivier Commowick (Plenary: 6h).

- Quentin Duché, "Traitements des données d'IRM fonctionnelle" (Plenary: 1h).
- Isabelle Corouge, "Bio-marqueurs d'imagerie et IRM metabolique et fonctionnelle" (Plenary: 3h).
- Camille Maumet, "Imaging processing pipelines" (Plenary: 3h).
- Élise Bannier, "IRM fonctionnelle BOLD" (Plenary: 3h).
- Emmanuel Caruyer, "Introduction to diffusion MRI" (Plenary: 3h).
- Benoit Combès, "Méthodes statistiques pour le traitement d'image" (Plenary: 3h).

10.2.2. Supervision

10.2.2.1. PhD & HdR

PhD in progress : Antoine Legouhy, "Longitudinal brain altas creation, application to development studies", CNRS, from Nov 2016, Christian Barillot, François Rousseau, Olivier Commowick.

PhD in progress: Cédric Meurée, "Quantitative Analysis Of Arterial Spin Labeling MRI For Robust Parametric Information Of Perfusion Maps", Inria / Siemens, from Mar 2014, Christian Barillot, Pierre Maurel.

PhD: Sudhanya Chatterjee, "Gaining insights into brain tissues using multi-compartment T2 relaxometry models", Inria, defended on Dec 5, 2018, Christian Barillot, Olivier Commowick, Jean-Christophe Ferré, Simon Warfield.

PhD in progress : Corentin Vallée, "Joint estimation of neuronal activation, resting-state and basal metabolism from Arterial Spin Labeling", Univ. Rennes, from Nov 2016, Christian Barillot, Isabelle Corouge, Pierre Maurel.

PhD in progress : Anne-Claire Binter, "Étude des effets possibles des expositions prénatales à des neurotoxiques (solvants organiques et insecticides organophosphorés) sur le fonctionnement du cerveau de l'enfant évalués par imagerie cérébrale (Cohorte Pélagie)", Univ. Rennes, from Janv 2017, Fabienne Pelé, Cécile Chevrier, Elise Bannier.

PhD in progress : Xavier Rolland, "Modeling analytic variability in brain imaging", CNRS, from Oct 2018, Christian Barillot, Camille Maumet.

PhD in progress : Raphaël Truffet, "Compressed sensing for microstructure-enabled diffusion MRI", Univ. Rennes / ENS Rennes, from Oct 2018, Christian Barillot, Emmanuel Caruyer.

PhD: Maia Proisy, "Étude de la perfusion cérébrale par Arterial Spin Labeling en IRM à 1.5T chez le nouveau-né et l'enfant", Univ. Rennes/CHRU Rennes, defended on Dec 12, 2018, Jean-Christophe Ferré.

PhD: Anne Kerbrat Univ. Rennes/CHRU Rennes, defended on Oct 24, 2018, Gilles Edan

10.2.2.2. Other supervisions

Master student: Solene Tarride, "Deep learning for segmentation of MS lesions from multimodal MRI", Apr-Oct 2018, Francesca Galassi.

10.2.3. Juries

- Gilles Edan, Jean-Christophe Ferre, Christian Barillot. PhD committee: Anne Kerbrat, Univ. Rennes, Rennes; October 24, 2018.
- Jean-Christophe Ferre, Christian Barillot. PhD committee: Maia Proisy, Univ. Rennes, Rennes; December 12, 2018.
- Jean-Christophe Ferre, Christian Barillot. PhD committee: Jean-Marie Batail, Univ. Rennes, Rennes; December 15, 2018.
- Olivier Commowick, Christian Barillot. PhD committee: Sudhanya Chatterjee, Inria, Rennes; December 5, 2018.

- Isabelle Corouge, PhD thesis in medicine committee: Christophe Paya, Univ. Rennes, Rennes; June 25, 2018.

- Isabelle Corouge, PhD mid-term committee (CSI) : Cédric Meurée, Rennes; May 2018.

- Élise Bannier, PhD mid-term committee (CSI) : Haykel Snoussi, Rennes; May 2018.

- Élise Bannier, PhD mid-term committee (CSI) : Louis Marage, Rennes; July 2018.

- Emmanuel Caruyer, PhD mid-term committee (CSI) : Sudhanya Chatterjee, Rennes; June 2018.

- Christian Barillot, PhD committee: Gaetan Galisot, Tours Université Tours, March 21, 2018

- Christian Barillot, PhD review: Pauline Bezivin-Frere, Orsay Université Paris X, July 4, 2018

- Christian Barillot, Chairman PhD committee: Mayela Toledo, Rennes Université Rennes 1, May 23, 2018

10.3. Popularization

10.3.1. Press

- Isabelle Bonan and Christian Barillot did present the activity of Neurofeedback in Visages during a press conference in Paris on November 14th, 2018 organized by Inria. Press reports have been issued from this conference : France Inter morning news, Usbek et Rica (https://usbeketrica.com/article/le-xxieme-siecle-sera-celui-du-cerveau), and Egora (https://www.egora.fr/actus-medicales/neurologie/43575-l-interface-cerveau-ordinateur-efficace-dans-le-traitement-de).

- Article in "Sciences Ouest" on "*Un miroir intelligent pour entraîner son cerveau*" https://www.espace-sciences.org/sciences-ouest/366/dossier/un-miroir-intelligent-pour-entrainer-son-cerveau, Nov. 2018

10.3.2. Film

A film presenting the Neurinfo imaging facility was recorded by Inria for the official launching ceremony of the new 3T Prisma scanner and further use for general communication about Neurinfo. Reports on local press: Ouest-france (https://www.ouest-france.fr/bretagne/rennes-35000/video-une-irm-ultra-puissante-pour-faire-avancer-la-recherche-rennes-6095044) and TV-Rennes (https://www.tvr.bzh/programmes/tvr-soir-1543339500).

10.3.3. Articles and contents

- Camille Maumet: Blog post "Open science working group on scientific software" http://blog.camillemaumet.com/posts/12, November, personal website.

- Elise Bannier: Blog post "Village des sciences 2018" https://team.inria.fr/visages/village-des-sciences-2018/, October, VisAGeS blog.

- Camille Maumet: Blog post "Extending BIDS to fMRI analyses" http://blog.camillemaumet.com/posts/11, October, personal website.

- Olivier Commowick: Blog post: "Anima scripts release" https://team.inria.fr/visages/anima-scripts-release/, September, VisAGeS blog.

- Camille Maumet: Blog post "Collaborative AFNI projects at DC code convergence" http://blog.camillemaumet.com/posts/10, September, personal website.

- Camille Maumet: Blog post "Meeting Montreal neuroinformatics community at the INCF congress and hackathon" http://blog.camillemaumet.com/posts/9, August, personal website.

- Camille Maumet: Blog post "Mentoring for Mozilla Open Leaders" http://blog.camillemaumet.com/posts/8, August, personal website.

- Camille Maumet with Claire Cury: Blog post "Interview: Let's organise a Brainhack!" https://team.inria.fr/visages/interview-lets-organise-a-brainhack/, July, VisAGeS blog.

- Camille Maumet with Elise Bannier: Blog post "Interview: Participating in my first hackathon at Brainhack Rennes 2018" https://team.inria.fr/visages/participating-in-my-first-hackathon-at-brainhack-rennes-2018/, July, VisAGeS blog.
- Camille Maumet: Blog post "OHBM 2018: first remotely-attended conference" http://blog.camillemaumet.com/posts/7, June, personal website.
- Camille Maumet: Blog post "Sprinting with bio-imagers and how I learnt about NEUBIAS, EuBI, Elixir and tried out myBinder!" http://blog.camillemaumet.com/posts/6, May, personal website.
- Olivier Commowick: Blog post "Anima v3.0 release" https://team.inria.fr/visages/anima-v3-0-release/, March, VisAGeS blog.
- Claire Cury: Blog post "Workshop Multiple Sclerosis 2018 (UCL, Inria)" https://team.inria.fr/visages/workshop-multiple-sclerosis-2018-ucl-inria/, April, VisAGeS blog.
- Olivier Commowick: Blog post "Brainhack Rennes 2018 (April 25-26)" https://team.inria.fr/visages/brainhack-rennes-2018-april-25-26/, March, VisAGeS blog.
- Olivier Commowick: Blog post "medInria 3.0 available" https://team.inria.fr/visages/medinria-3-0-available/, March, VisAGeS blog.

10.3.4. Education

- L codent L créent - An outreach program to send PhD students to teach Python to middle school students in 8 sessions of 45 minutes. Tassadit Bouadi (Univ. Rennes 1), Camille Maumet (VisAGeS) and Anne-Cecile Orgerie (Myriads) are coordinating the local version of this program, initiated in Lille. The first session in Rennes is planned for April 2019. The program is currently supported by: Fondation Blaise Pascal, ED MathSTIC, Inria and Fondation Rennes 1.

10.3.5. Interventions

10.3.5.1. National brain week: "Semaine du Cerveau"

- Giulia Lioi: Talk "Lire dans son cerveau grâce au neurofeedback EEG, c'est mieux bouger", March 14, Warpzone, Rennes, France.
- Mathis Fleury: Bar en (neuro) sciences; May 14-16; Presentation of the Neurofeedback and demonstration of a EEG based Neurofeedback with a motor imagery paradigm.

10.3.5.2. National science week: "Village des sciences"

Visages took part in the Village des Sciences 2018, opening the Neurinfo platform to 45 middle school students (Oct 5) and 120 visitors from the general public (Oct 6-7), Oct 5-7, Rennes, France. https://www.univ-rennes1.fr/evenements/20072018/village-des-sciences-2018-visites-guidees-de-laboratoires-pour-les-scolaires, https://team.inria.fr/visages/members-area/projects/village-des-science-2018/. The event was coordinated by Julien Le Bonheur from the University of Rennes, and Elise Bannier coordinated the contribution of Neurinfo/Visages. We covered 4 themes:

- Giulia Lioi, Mathis Fleury, Simon Butet, Pauline Rolland: Neurofeedback EEG
- Pierre Maurel, Charlélie Erhart, Antoine Legouhy, Corentin Vallée, Francesca Galassi, Julie Coloigner: Image processing with MedInria
- Isabelle Corouge, Catherine Guillemot, Emmanuel Caruyer, Elise Bannier, Benjamin Parat: Brain and MRI
- Quentin Duché, Florian Chapelain, Virginie Dardier: Functional MRI

10.3.5.3. Other interventions

- Pierre-Yves Jonin: Series of 6 talks on neuropsychology, Universités du Temps Libre de Bretagne, Jan-Dec, Rennes, France.
- Pierre-Yves Jonin: Talk "La mémoire humaine, comment la conserver, quand s'inquiéter", Bien Vieillir en Ille-et-Vilaine, June, Rennes, France.
- Mathis Fleury: Talk "Qu'est ce qu'un doctorant ?"Journée des métiers IUT rennes - , Nov 16, IUT Rennes, France.
- Camille Maumet: Talk to middle school students (around 100) "La neuroinformatique", PRNB, April, Rennes, France.
- Olivier Commowick: Presentation of research done in VisAGeS on medical image processing and of the MedInria software, Journée LOGIN, Nov 27, Grenoble, France.

10.3.6. Creation of media or tools for science outreach

- Launching of a Twitter account for the VisAGeS team (Camille Maumet) and setup on the VisAGeS website (Olivier Commowick) http://twitter.com/visages_inria. Tweets by lab members (Quentin Duché, Christian Barillot)
- Development of the VisAGeS blog and writing of blog posts (Camille Maumet, Olivier Commowick, Claire Cury, Elise Bannier).

XPOP Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Winter School New Frontiers in high-dimensional probability and statistics, Moscow, February 23-24, 2018
- Workshop "Structural Inference in Inference in High-Dimensional Models", Moscow, 5-8 September 2018

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- NIPS 2018
- COLT 2018
- useR!2018

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Stochastic Processes and their Applications
- Journal of Statistical Planning and Inference
- Journal of Computational and Graphical Statistics

10.1.4. Invited Talks

- Analysis of adaptive stochastic gradient and MCMC algorithms, June 2018
- Langevin MCMC: theory and methods, Singapour, June 2018
- MCQMC 2018: Langevin Monte Carlo: theory and methods, Rennes, July 2018
- Langevin MCMC: theory and methods, Singapour, August 2018
- Huawei European Innovation Day, "Toward Bayesian Machine Learning", Roma, November 2018
- Iberoamerican Pharmacometrics Network Congress 2018, Guadalajara, Mexico.
- "Tests d'hypothèse et algorithmes de construction de modèle pour les modèles à effets mixtes", Toulouse, September 2018.
- New algorithms and tools for population model building and evaluation, Valparaiso, Chile, December 2018.

10.1.5. Leadership within the Scientific Community

- Eric Moulines is in charge of the academic supervision of the International Laboratory of Stochastic Algorithms and High-dimensional inference, National Research University, Higher School of Economics, funded by the Russian Academic Excellence Project.
- Eric Moulines is is associate researcher of the Alan Turing Institute
- Eric Moulines is elected member of the French Académie des Sciences.

10.1.6. Scientific Expertise

- Marc Lavielle is member of the Scientific Committee of the High Council for Biotechnologies.

- Marc Lavielle is member of the evaluation committee of the International Center for Mathematics (CIMAT), Guanajuato, Mexico.
- Eric Moulines is member of the award committee of foundation "Charles Defforey".

10.1.7. Research administration

- Marc Lavielle is member of the Scientific Programming Committee (CPS) of the Institute Henri Poincaré (IHP).
- Eric Moulines is a board member of the Institut de Convergence DataIA.
- Julie Josse is elected member of the R foundation.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Julie Josse, Statistics with R, 48, M2, X-HEC

Master : Eric Moulines, Regression models, 36, M2, X-HEC

Engineering School : Eric Moulines, Statistics, 36, 2A, X

Engineering School : Eric Moulines, Markov Chains, 36, 3A, X

Engineering School : Erwan Le Pennec, Statistics, 36, 2A, X

Engineering School : Erwan Le Pennec, Statistical Learning, 36, 3A, X

Engineering School : Marc Lavielle, Statistics in Action, 48, 3A, X

10.2.2. Supervision

PhD in progress : Nicolas Brosse, September 2016, Eric Moulines

PhD in progress : Geneviève Robin, September 2016, Julie Josse and Eric Moulines

PhD in progress : Belhal Karimi, October 2016, Marc Lavielle and Eric Moulines

PhD in progress : Marine Zulian, October 2016, Marc Lavielle

PhD in progress : Wei Jiang , October 2017, Julie Josse and Marc Lavielle

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Eric Moulines is member of the Evaluation Committee of Inria.

10.3.2. Creation of media or tools for science outreach

Marc Lavielle developed and maintains the learning platform Statistics in Action. The purpose of this online learning platform is to show how statistics (and biostatistics) may be efficiently used in practice using R. It is specifically geared towards teaching statistical modelling concepts and applications for self-study. Indeed, most of the available teaching material tends to be quite "static" while statistical modelling is very much subject to "learning by doing".

Julie Josse (with Nicholas Tierney and Nathalie Vialaneix) developed and maintains the website R-miss-tastic, A resource website on missing data.

<p style="text-align:center;color:red;font-weight:bold;">AGORA Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Khaled Boussetta was co-track chair of Wireless Models and Simulations in the 10th IFIP Wireless Days 2018, April, 2018, Dubai, UAE.

10.1.1.2. Member of the Organizing Committees

- Khaled Boussetta was on the Organizing Committee of 2018 IEEE SOCA/SC2/IOV, 19-22 November, 2018, Paris.

10.1.1.3. Member of the Conference Program Committees

- Walid Bechkit was in the TPC of the followinf conference: IEEE ICC.
- Khaled Boussetta was in the TPC of the following conferences: IEEE CCNC, IEEE GlobeCom, IEEE ICC, Med-Hoc-Net, Wireless Days.
- Oana Iova was in the TPC of the following conferences: IEEE Globecom, ACM AINTEC, AdHoc-Now, EWSN 2018 (track Poster and Demos).
- Razvan Stanica was in the TPC of the following conferences: IEEE ICC, IEEE CCNC, ICIN.
- Fabrice Valois was in the TPC of the following conferences: IEEE ICC, ICT, IEEE Globecom, IEEE VTC Spring, WiSARN.

10.1.1.4. Reviewer

- Oana Iova was a reviewer for the following conferences: IEEE ICC, IEEE WCNC.

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

- Oana Iova was a reviewer for the following journals: ACM TOSN, Elsevier Ad Hoc Networks, Elsevier Computer Networks, IEEE Transactions on Communications, IEEE Access, Springer Wireless Networks.
- Razvan Stanica was a reviewer for the following journals: IEEE Transactions on Mobile Computing, IEEE Transactions on Intelligent Transportation Systems, IEEE Communications Letters, Pervasive and Mobile Computing, IEEE Access, EURASIP Journal on Wireless Communications and Networking, IET Intelligent Transport Systems.

10.1.3. Invited Talks

- Walid Bechkit was invited speaker at the 1st Winter School on Information Theory and Signal Processing for Internet of Things, Villeurbanne, France.
- Walid Bechkit was invited speaker at the CESER (conseil économique, social et environnemental régional).
- Oana Iova was invited panelist at: 1st Winter School on Information Theory and Signal Processing for Internet of Things, Villeurbanne, France.
- Hervé Rivano was invited speaker at *La Nuit des idées*, Maison de France, Sfax, Tunisia.
- Hervé Rivano was invited speaker at La Myne, Lyon, France.

- Hervé Rivano was invited speaker Conseil de Développement de la Métropole/Amis de l'Université, Lyon, France.
- Hervé Rivano was invited speaker IMERIR, Perpignan, France.
- Hervé Rivano was invited speaker Salon Internet des Objets (SidO), Lyon, France.
- Hervé Rivano was invited speaker réseau ARAMIS, Lyon, France.
- Hervé Rivano was invited speaker at CIVIC Conference, University Constantine III, Algeria.
- Hervé Rivano was invited speaker at TokyoTech, Japan.
- Hervé Rivano was panel organizer on Smart Cities, POP Science Forum, Lyon, France.

10.1.4. Leadership within the Scientific Community

- Walid Bechkit was co-representative of the Labex IMU at the Smart City Expo World Congres (Barcelona).
- Walid Bechkit is a nominated member in the scientific committee of the Fédération d'Informatique de Lyon (FR 2000 CNRS).
- Hervé Rivano is member of the steering committee of the ResCom axis of the RSD CNRS GdR.
- Hervé Rivano is a member of the Scientific Council of TUBA Lyon.
- Hervé Rivano is member ot the steering committee of Ecole Urbaine de Lyon, in charge of Smart and Learning Cities.
- Fabrice Valois is a member of the Scientific Council of the LIMOS-UMR6158 laboratory, Clermont Ferrand.
- Fabrice Valois is member of the Scientific Council of the Labex IMU (Intelligence des Mondes Urbains).

10.1.5. Scientific Expertise

- Khaled Boussetta was reviewer for ANR generic call for projects 2018.
- Hervé Rivano is member of the Metropole de Lyon [R] Challenge, board of scientific experts.
- Hervé Rivano is member of the Scientific Committee of the Digital League Regional Cluster.
- Fabrice Valois was a member in the recruitment committee of a Full Professor in Computer Science at INSA Lyon.
- Fabrice Valois was a member in the recruitment committee of a Full Professor in Computer Science at Université d'Auvergne.

10.1.6. Research Administration

- Walid Bechkit is responsible for seminar organization and scientific animation within the CITI laboratory.
- Khaled Boussetta is member of the steering committee of the MathStic federation at University Paris 13.
- Hervé Rivano is member of the Administration Council of the EquipEx Sense City as representative of Inria.
- Hervé Rivano is president of the CITI laboratory council.
- Razvan Stanica is the CITI laboratory correspondent with the Labex IMU.
- Razvan Stanica is member of the steering committee of the Volvo Chaire at INSA Lyon.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Walid Bechkit, IP Networks, 30h, L3, Telecom. Dpt. INSA Lyon.

Licence : Oana Iova, IP Networks, 30h, L3, Telecom. Dpt. INSA Lyon.

Licence : Oana Iova, Medium Access Control, 8h, L3, Telecom. Dpt. INSA Lyon.

Licence : Oana Iova, Network and System Programming, 82h, L3, Telecom. Dpt. INSA Lyon.

Licence : Hervé Rivano, Networking Fundamentals, 2h, L3, Telecom. Dpt. INSA Lyon.

Licence : Hervé Rivano, Algorithms and programming, 165h, L1 - L2, INSA Lyon.

Licence : Hervé Rivano, Sensors data engineering project, 34h, L2, INSA Lyon.

Licence : Razvan Stanica, Network Programming, 90h, L3, Telecom. Dpt. INSA Lyon.

Licence : Fabrice Valois, IP Networks, 42h, L3, Telecom. Dpt. INSA Lyon.

Master : Walid Bechkit, Introduction to wireless sensor networks, 50h, L2, INSA Lyon.

Master : Walid Bechkit, Performance evaluation of telecom networks, 100h, M1, Telecom. Dpt. INSA Lyon.

Master : Walid Bechkit, Cryptography and communication security, 30h, M1, Telecom. Dpt., INSA Lyon.

Master : Walid Bechkit, Wireless networks: architecture and security, 30h, M2, INSA Lyon.

Master : Master : Walid Bechkit, Network Acces Control, 6h, M2, Telecom. Dpt. INSA Lyon.

Master : Oana Iova, Network Routing Protocols, 40h, M1, Telecom. Dpt. INSA Lyon.

Master : Oana Iova, Long Range Networks, 10h , M2, Telecom. Dpt. INSA Lyon

Master : Hervé Rivano, Smart Cities and IoT, 44h, M2, Telecom. Dpt. INSA Lyon.

Master : Razvan Stanica, Mobile Networks, 30h, M1, Telecom. Dpt. INSA Lyon.

Master : Razvan Stanica, Network Science, 10h, M2, Telecom. Dpt. INSA Lyon.

Master : Fabrice Valois, Mobile Networks, 16h, M1, Telecom. Dpt. INSA Lyon.

MOOC : Hervé Rivano, Razvan Stanica, Fabrice Valois, Connectez à Internet vos Objets Intelligents, production started in the context of the ANR Connect-IO project.

Walid Bechkit is in charge of the admission service of the Telecommunication department at INSA Lyon.

Walid Bechkit is an elected member of the Telecommunication department council at INSA Lyon.

Walid Bechkit is the head of the networking teaching team in the Telecommunications department at INSA Lyon, coordinating all the courses in the networking domain.

Khaled Boussetta is the studies director of Apprenticeship Education Program Specialty in Computer Science and Network at Sup'Galilée Engineering School (University Paris 13).

Hervé Rivano is responsible for the coordination of all courses in the Smart Cities and IoT option at the INSA Lyon Telecommunications department.

Herve´ Rivano is referent DSI in the FIMI Dpt., INSA Lyon.

Razvan Stanica is responsible of the research option at the Telecommunications department of INSA Lyon.

Razvan Stanica is vice dean of the Telecommunications department of INSA Lyon, in charge of education related affairs.

10.2.2. Supervision

PhD in progress: Abderrahman Ben Khalifa, Cognitive mechanisms for IoT networks, since 11/2016. Advisors: Hervé Rivano, Razvan Stanica.

PhD in progress: Ahmed Boubrima, Optimal deployment of wireless sensor networks for air pollution monitoring, since 10/2015. Advisors: Walid Bechkit, Hervé Rivano.

PhD in progress : Rodrigue Domga Komguem, Autonomous WSN architectures for road traffic applications, since 11/2012. Advisors: Razvan Stanica, Maurice Tchuente (Univ. Yaoundé, Cameroun), Fabrice Valois.

PhD in progress: Mohamed Anis Fekih, Urban pollution using wireless sensor networks, since 11/2018.Advisors: Walid Bechkit, Hervé Rivano.

PhD in progress: Mihai Popescu, Connectivity constrained mobility in fleets of robots, since 11/2015. Advisors: Olivier Simonin (Inria CHROMA), Anne Spalanzanni (Inria CHROMA), Fabrice Valois.

PhD in progress: Romain Pujol, Data collection in dynamic wireless networks, since 11/2018. Advisors: Razvan Stanica, Fabrice Valois.

PhD in progress: Solohaja Rabenjamnia, Data analysis of cellular trafic, since 11/2018. Advisors: Hervé Rivano, Razvan Stanica.

10.2.3. Juries

- Hervé Rivano was a reviewer in the following PhD defense committee:
  - V. Quintuna Rodriguez, Nouvelle commande réseau IP : Performance des fonctions virtualisées pour une infrastructure programmable, LIP6, Université Pierre et Marie Curie, Paris VI
  - Y. Couble, Optimisation de la gestion des ressources de la voie retour, IRIT, Université de Toulouse
  - L. Molina, Metrics and non-intrusive techniques to characterize Wi-Fi networks, IRISA, Université de Bretagne-Pays de la Loire
  - H. Tall, Load balancing in multichannel data collection wireless sensor networks, LIMOS, Université de Clermont Auvergne
  - H. Pimenta Moraes Junior, A contribution to data sharing in vehicular networks, Heudiasyc, Université Technologique de Compiègne
- Hervé Rivano was a reviewer in the following HDR defense committee:
  - F. Giroire, Nouvelle commande réseau IP : Performance des fonctions virtualisées pour une infrastructure programmable, I3S, Université de Nice Sophia Antipolis
- Fabrice Valois was a reviewer in the following PhD defense committee:
  - E. Morin, Intéroperabilité de protocoles de communication adaptatifs basse consommation pour des réseaux de capteurs, LIG, Université Grenoble Alpes
- Fabrice Valois was a member in the following PhD defense committee:
  - D. Alshamaa, Indoor localization of sensors: application to dependent elderly people, UTT
  - H. Chelle, Contrôle de charge des réseaux IoT : D'une étude théorique à une implantation réelle, IRIT, ENSHEEIT
- Fabrice Valois was a reviewer in the following HDR defense committee:
  - P. Berthou, Vers la dématérialisation des Réseaux Hybrides satellites et terrestre, LAAS, Université Paul Sabatier
- Fabrice Valois was a member in the following HDR defense committee:
  - T. Begin, Contributions to the Performance Modeling of Computer Networks, LIP, Université de Lyon 1
  - K. Boussetta, Dimensionnement, adaptation et placement de fonctionnalités réseaux pour des applications sensibles aux délais, L2TI, Université Paris XIII

ALPINES Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Xavier Claeys was co-chair of the "Symposium of the International Association for Boundary Element Methods" in June 26-28 2018, an international conference that took place in Jussieu campus of Sorbonne Université and hosted 140 participants.

- Frederic Hecht organized the 10th FreeFem++ days (December 12-14, 2018, Paris), https://freefem.org/ff-days/

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Laura Grigori, March 2014 – current. Member of the editorial board for the SIAM book series Software, Environments and Tools. See http://bookstore.siam.org/software-environments-and-tools/.

- Laura Grigori, January 2016 – current. Associate Editor, SIAM Journal on Scientific Computing.

- Laura Grigori, January 2017 – current. Associate Editor, SIAM Journal on Matrix Analysis and Applications.

- Laura Grigori, January 2016 – current. Editorial board, Numerical linear algebra with applications Journal, Wiley.

- Frédéric Nataf, January 2015 – current, Editorial board, Journal of Numerical Mathematics, de Gruyter.

10.1.3. Invited Talks

- Xavier Claeys was invited speaker at the second national congress of the Société Mahématique de France (SMF) in June 2018.

- Laura Grigori was
  - Keynote speaker, International Symposium on Computational Science at Scale, September 2018, Erlangen-Nurnberg Germany.
  - Invited plenary speaker, SIAM Conference on Applied Linear Algebra, Hong Kong May 2018.

- Frédéric Nataf was invited speaker at
  - Workshop for Robert Scheichl's farewell, Bath University, November 2018.
  - NUMACH 2018: Numerical Methods for Challenging Problems, Mulhouse (France) July 2018.
  - 10th International Workshop on Parallel Matrix Algorithms and Applications (PMAA'18) in ETH Zurich (Switzerland) June 2018.

- Frédéric Hecht was invited speaker at
  - XVIII Spanish-French school Jacques-Louis Lions about numerical simulation in physics and engineering, Las Palmas de Gran Canaria, 25-29 June 2018.

10.1.4. Leadership within the Scientific Community

- Laura Grigori, member elected of SIAM Council, January 2018 - December 2020, the committee supervising the scientific activities of SIAM. Nominated by a Committee and elected by the members of SIAM.
- Laura Grigori, member of the PRACE (Partnership for Advanced Computing in Europe) Scientific Steering Committee, September 2016 - current.
- Laura Grigori and Frédéric Hecht are coordinators of the High Performance in Scientific Computing Major of second year of Mathematics and Applications Master, Sorbonne University.

10.1.5. Scientific Expertise

- Laura Grigori: November 2015 - current, expert to the Scientific Commission of IFPEN (French Petroleum Institute). Evaluation of research programs, PhD theses, work representing a total of 5 days per year.

10.1.6. Research Administration

- Laura Grigori is vice-president of the committee CE46 of ANR, September 2017 - July 2018.
- Frédéric Nataf is president of the committee CE40 of ANR, September 2017 - current.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master 2: Laura Grigori, Course on *High performance computing, large scale linear algebra, and numerical stability* (*Calcul haute performance, algorithmes parallèles d'algèbre linéaire à grande echelle, stabilité numérique* in french), https://who.rocq.inria.fr/Laura.Grigori/TeachingDocs/UPMC_Master2/Spr2018.html, Master 2nd year, Mathematics & Applications, UPMC, 24 hours of lectures per year.

Master 2: Laura Grigori, Winter 2018, Participation in the course on High Performance Computing given at UPMC, Computer Science, intervention for 8 hours per year.

Master 2: Laura Grigori, Course on *High performance computing for numerical methods and data analysis*, https://who.rocq.inria.fr/Laura.Grigori/TeachingDocs/UPMC_Master2/HPC_MN_DA.html, Master 2nd year, Mathematics & Applications, UPMC, 24 hours per year.

Master 1: Xavier Claeys, supervision of a student project for a group of 4 students in the curriculum Polytech, 40hrs, UPMC.

Master 1: Xavier Claeys, Initiation to C++, 36 hrs of programming tutorials in C++, UPMC.

Master 1: Xavier Claeys, Computational Linear Algebra, 32 hrs of lectures, UPMC.

Master 1: Xavier Claeys, Approximation of EDPs, 24 hrs of programming tutorials in Python, UPMC.

Master 2: Frédéric Nataf, Course on Domain Decomposition Methods, UPMC

Master 1: Frédéric Hecht, Initiation au C++, 24hrs, UPMC, France

Master 2: Frédéric Hecht, Des EDP à leur résolution par la méthode des éléments finis (MEF), 36hrs, M2, UPMC, France

Master 2: Frédéric Hecht, Numerical methods for fluid mechanics, 10hrs, UPMC, France

Master 2: Frédéric Hecht, Calcul scientifique 3 / projet industriel FreeFem++, 28hrs, M2, UPMC, France

Master 2: Frédéric Hecht, Ingénierie 1 / Logiciel pour la simulation (FreeFem++), 21hrs, UPMC, France

Master 2: Frédéric Hecht, Ingénierie 2 / Projet collaboratif, 21hrs, UPMC, France

10.2.2. Supervision

PhD: Alan Ayala, Complexity reduction methods applied to the rapid solution to multi-trace boundary integral formulations, Sorbonne Université, November 2018 (funded by NLAFET H2020 project), co-advisors Xavier Claeys and Laura Grigori.

PhD: Hussam Al Daas, Solving linear systems arising from reservoirs modelling, Sorbonne Université, December 2018, (funded by contract with Total), advisor Laura Grigori.

PhD in progress : Sebastien Cayrols, since October 2013 (funded by Maison de la simulation), adivsor Laura Grigori.

PhD in progress: Olivier Tissot, since October 2015 (funded by NLAFET H2020 project), advisor Laura Grigori.

PhD in progress: Rim El Dbaissy, since November 2015 (funded by Univ. St Joseph, Liban), advisors Tony Sayah, Frédéric Hecht.

PhD in progress: Pierre Marchand, since October 2016 (funded by ANR NonLocalDD project), advisors Xavier Claeys and Frédéric Nataf.

PhD in progress: Zakariae Jorti, since February 2016 (funded by IFPen), advisor Laura Grigori.

PhD in progress: Igor Chollet, since October 2017 (funded by ICSD), advisors Xavier Claeys, Pierre Fortin, Laura Grigori.

PhD in progress: Thanh Van Nguyen, since November 2017 (funded by ANR CinePara), advisor Laura Grigori.

10.2.3. Juries

- Xavier Claeys was examiner at the PhD defense of Wen Xu on the 17th of July 2018 at École Centrale Supélec. Title of the thesis: "Relevant numerical methods for mesoscale wave propagation in heterogeneous media".
- Laura Grigori was examiner of the Phd defense of Gilles Moreau, ENS Lyon, December 2018.
- Laura Grigori was president of the HDR habilitation defense of Pierre Fortin, Sorbonne University, July 2018.
- Laura Grigori was examiner of the Phd defense of Amanda Bienz, June 2018, University of Illinois at Urbana Champaign.
- Frédéric Nataf was examiner at the Phd defense of Louis Viot, 2018, ENS Cachan
- Frédéric Nataf was president of the PhD defense of H. Al Daas, 2018, UPMC
- Frédéric Hecht was referee of the HDR habilitation defense of S. Glockner, 2018, I2M, Bordeaux
- Frédéric Hecht was referee of the PhD defense of G. Dollé, 2018, Univ. Strasbourg
- Frédéric Hecht was examiner at the Phd defense of G. Morel, 2018, Sorbonne University

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Laura Grigori is vice-president of the Evaluation Commission of Inria, March 2018 - current.

<p style="text-align:center">**AVALON Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Laurent Lefèvre was co-General chair of the conference SBAC-PAD : The International Symposium on Computer Architecture and High Performance Computing, Lyon, France (September 24-27, 2018). He was co-organizer of colloquium : "Digital society vs eco-responsability: impact on billions of connected objects, networks and clouds", with Centre Jacques Cartier, Concordia University, Inria, GDS CNRS EcoInfo, Ecole Normale Superieure of Lyon (November 12-13, 2018). He co-organized the E3-RSD school on Energy Efficiency in Networks and Distributed Systems, Dinard (October 1-4, 2018) and the GreenDays@Toulouse v2.0 (2018 Edition) "From IoT to Exascale, what about energy efficiency and carbon emission reduction ?", Toulouse (July 2-3, 2018)

10.1.1.2. Member of the Organizing Committees

Laurent Lefèvre was co Special Session Organizer of Special Session on High Performance Computing Benchmarking and Optimization (HPBench 2018), during HPCS conference, Orleans (July 16-20, 2018).

Christian Perez served on the Organizing Committee of the 2018 International Conference on High Performance Computing & Simulation (HPCS 2017) as Conference Awards and Recognitions Co-Chair, on the Organizing Comittee of the French Journées Calculs et Données (Lyon, October 24-26) and of the 1st Grid'5000-FIT school (Sophia Antipolis, April 3-6).

Frédéric Suter served in the Organization commitee of the session on Exascale Computing for High Energy Physics of the 14th IEEE International Conference on eScience and chaired the "Parallelism" track of the Conférence d'informatique en Parallélisme, Architecture et Système (Compas 2018).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Christian Perez was member of the program committees of the IEEE International Conference on Cluster Computing 2018 (Cluster 2018), the 18th IEEE/ACM International Symposium on Cluster, Cloud and Grid (CCGRID 2018), the 26th annual High Performance Computing Symposium 2018 (HPC '18), the 2018 Supercomputing Asia conference, and of the 4th International Workshop on Autonomic High Performance Computing. He was a member of the Birds of Feather Committee of SuperComputing 2018 and of the Tutorial Committee of ISC High Performance 2018.

Olivier Glück was a member of the program committees of PDP 2018 (26th Euromicro International Conference on Parallel, Distributed, and Network-Based Processing) and ICA3PP-2018 (18th International Conference on Algorithms and Architectures for Parallel Processing).

Frédéric Suter was member of program committee of SBAC-PAD 2018 (30th International Symposium on Computer Architecture and High Performance Computing), VECPAR 2018 (13th International Meeting High Performance Computing for Computational Science) and ICA3PP-2018 (18th International Conference on Algorithms and Architectures for Parallel Processing)

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

Christian Perez reviewed articles for the IEEE's Transactions on Big Data journal and for Oil & Gas Science and Technology journal of IFP Energies nouvelles.

Thierry Gautier reviewed articles for the ACM Transaction on Architecture and Code Optimization.

Frédéric Suter reviewed articles for the Journal of Parallel and Distributed Computing and Concurrency and Computation: Practice and Experience.

10.1.4. Invited Talks

Christian Perez has been invited to give the following talks:

- "Towards Reconfigurable HPC Component Models", Invited talk, 4th International Workshop on Autonomic High Performance Computing, Orléans, France, July 17.
- "HPC Component Models", Keynote talk, HPCS, Orléans, France, July 19, 2018.

Thierry Gautier has been invited to give the following talk:

- "Tasks' management in OpenMP: what about performance guarantee?", Maison de la Simulation, November 20, 2018.

Frédéric Suter has been invited to give the following talk:

- "Simulating MPI applications : the SMPI Approach" at the "Modeling and Simulation of HPC Architectures and Applications" mini-symposium at the SIAM Conference on Parallel Processing for Scientific Applications.

10.1.5. Leadership within the Scientific Community

Eddy Caron is animator and co-chair for the FIL (Fédération Informatique de Lyon) on the theme IDCHP (Informatique Distribuée et Calcul Haute Performance).

Laurent Lefèvre is animator and chair of the transversal action on "Energy" of the French GDR RSD ("Réseaux et Systèmes Distribués").

Christian Perez is co-leader of the pole Distributed Systems of the French GDR RSD ("Réseaux et Systèmes Distribués").

10.1.6. Scientific Expertise

Christian Perez reviewed two projects for the Regional Program STIC-AmSud.

Olivier Glück is member of the CNU (Conseil National des Universités) section 27 (Computer Science). He participated to the 2018 "Qualifications" session and "Suivi de carriere" session.

10.1.7. Research Administration

Eddy Caron is Deputy Director in charge of call for projects, research transfert and international affairs for the LIP. He is a member of "Conseil Technologique Logiciel MINALOGIC". He is member and reviewer for InriaHub.

Olivier Glück is member of the "Conseil Académique" of Lyon 1 University and Lyon University.

Christian Perez represents INRIA in the overview board of the France Grilles Scientific Interest Group. He is a member of the executive board and the sites committee of the Grid'5000 Scientific Interest Group and member of the executive board of the Silecs testbed. He is a member of the Inria Grenoble Rhône-Alpes Strategic Orientation Committee. He is in charge of exploring potential scientific collaborations between INRIA and SKA France.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Yves Caniou, Algorithmique programmation impérative initiation, 25h, niveau L1, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Pratique d'Unix, 3h, niveau L1, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Programmation Concurrente, 35h et responsabilité d'UE, niveau L3, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Projet Informatique, 3h, niveau L3, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Réseaux, 45h, niveau L3, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Système d'Exploitation, 32h and responsible of UE, niveau L2, Université d'Ho Chi Minh Ville, Vietnam.

Licence: Yves Caniou, Système d'Exploitation, 39h et co-responsible of UE, niveau L3, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Projet pour l'Orientation en Master, 3h, niveau M1, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Responsible of alternance students, 30h, niveau M1, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Responsible of Master SRIV (Systèmes, Réseaux et Infrastructures Virtuelles), 30h, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Projet Bibliographie et Certifications, 4h and responsible of UE, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Sécurité, 36h et responsible of UE, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Sécurité, 20h, niveau M2, IGA Casablanca, Maroc.

Master: Yves Caniou, Systèmes Avancés, 4.5h, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Approfondissement Scientifique, 6h, niveau M2, Université Claude Bernard Lyon 1, France.

Licence: Eddy Caron, Projet 1, 48h, L3, ENS de Lyon. France.

Master: Eddy Caron, Projet Intégré, 42h, M1, ENS de Lyon. France.

Master: Eddy Caron, Système distribués, 30h, M1, ENS de Lyon. France.

Master: Eddy Caron, Advanced Topics in Scalable Data Management, 20h, M2, ENS de Lyon. France.

Licence: Olivier Glück, Licence pedagogical advisor, 30h, niveaux L1, L2, L3, Université Lyon 1, France.

Licence: Olivier Glück, Introduction Réseaux et Web, 32h, niveau L1, Université Lyon 1, France.

Licence: Olivier Glück, Bases de l'architecture pour la programmation, 62h, niveau L1, Université Lyon 1, France.

Licence: Olivier Glück, Algorithmique programmation impérative initiation, 50h, niveau L1, Université Lyon 1, France.

Licence: Olivier Glück, Réseaux, 2x70h, niveau L3, Université Lyon 1, France.

Master: Olivier Glück, Réseaux par la pratique, 8h, niveau M1, Université Lyon 1, France.

Master: Olivier Glück, Responsible of Master SRIV (Systèmes, Réseaux et Infrastructures Virtuelles) located at IGA Casablanca, 20h, niveau M2, IGA Casablanca, Maroc.

Master: Olivier Glück, Applications systèmes et réseaux, 30h, niveau M2, Université Lyon 1, France.

Master: Olivier Glück, Applications systèmes et réseaux, 24h, niveau M2, IGA Casablanca, Maroc.

Master: Olivier Glück, Administration des Systèmes et des Réseaux, 16h, niveau M2, Université Lyon 1, France.

Master: Laurent Lefèvre, Parallélisme, 12h, niveau M1, Université Lyon 1, France.

Master: Laurent Lefèvre, Réseaux avancés, 24h, niveau M2, IGA Casablanca, Maroc.

Licence: Frédéric Suter, Programmation Concurrente, 32h, niveau L3, Université Lyon 1, France.

Master: Jean-Patrick Gelas, Programmation embarquée et mobile des objets, 30h, niveau M1, Université Lyon 1, France

Master: Jean-Patrick Gelas, Introduction au Cloud Computing, 21h, niveau M2 (CCI), Université Lyon 1, France

Master: Jean-Patrick Gelas, Système d'exploitation, 45h, niveau M2 (CCI), Université Lyon 1, France

Master: Jean-Patrick Gelas, Projet en Informatique en Anglais, 15h, niveau M2 (CCI), Université Lyon 1, France

Master: Jean-Patrick Gelas, Réseaux Avancés, 24h, niveau M2 (CCI), Université Lyon 1, France

Master: Jean-Patrick Gelas, Sécurité et Admin des infra résx, 30h, niveau M2 (CCI), Université Lyon 1, France

Master: Jean-Patrick Gelas, Technologies embarquées, 18h, niveau M2 (Image), Université Lyon 1, France

Master: Jean-Patrick Gelas, Routage (BGP), Routeurs et IPv6, 12.5h, niveau M2, Université Lyon 1, France

Master: Jean-Patrick Gelas, Systèmes embarqués (GNU/Linux, Android, ARM, Arduino), 24h, niveau M2, Université Lyon 1, France

Master: Jean-Patrick Gelas, Analyse de performance, 3h, niveau M2 (TIW), Université Lyon 1, France

Master: Jean-Patrick Gelas, Cloud Computing, 15h, niveau M2 (TIW), Université Lyon 1, France

Master: Jean-Patrick Gelas, Stockage, Cloud et Virtualisation, 9.5h, niveau M2 (SRIV), Université Lyon 1, France

Master: Jean-Patrick Gelas, Développement informatique, 23h, niveau M2 (Data science), Université Lyon 1, France

10.2.2. Supervision

PhD: Issam Raïs, *Discover, model and combine energy leverages for large scale energy efficient infrastructures*, 29 sept. 2018, Laurent Lefèvre (dir), Anne Benoit (Roma Team, LIP, ENS Lyon, co-dir) and Anne-Cécile Orgerie (CNRS, Myriads team, Irisa Rennes, co-dir).

PhD: Hadrien Croubois, *Toward an autonomic engine for scientific workflows and elastic Cloud infrastructure*, 16 oct. 2018, Eddy Caron (dir).

PhD: Philippe Virouleau,*Studying and improving the use of NUMA architectures through runtime systems*, 5 jun. 2018, Fabrice Rastello (Inria, Corse team, dir), Thierry Gautier (AVALON team, LIP, ENS Lyon, co-dir) and François Broquedis (UGA, Corse team, Grenoble, co-dir).

PhD: Adrien Roussel, *Parallelization of iterative methods to solve sparse linear systems using task based runtime systems on multi and many-core architectures: application to Multi-Level Domain Decomposition methods*, 6 fev. 2018, Thierry Gautier (dir), Jean-Marc Gratien (IFPen).

PhD in progress: Dorra Boughzala, *Simulating Energy Consumption of Continuum Computing between Heterogeneous Numerical Infrastructures in HPC*, IPL Hac-Specis Inria, Laurent Lefèvre (dir) , Martin Quinson and Anne-Cécile Orgerie (Myriads, Rennes, co-dir) (since december 2017).

PhD in progress: Anchen Chai: *Simulation of the Distributed Execution of a Medical Imaging Simulator*, Hugues Benoit-Cattin (co-dir, CREATIS, INSA Lyon), Frédéric Suter (co-dir).

PhD in progress: Arthur Chevalier, *Optimisation du placement des licences logiciel des fonctions réseau dans le Cloud pour un déploiement économique et efficace*, Eddy Caron (dir), Noëlle Baillon (co-dir, Orange) (since october 2017).

PhD in progress: Jad Darrous, *Geo-distributed storage for distributed Cloud*, Gilles Fedak (dir) until Aug. 2017 then Christian Perez (dir), Shadi Ibrahim (co-dir).

PhD in progress: Idris Daoudi, *Simulation of OpenMP programs*, Olivier Aumage (dir, Storm team, Bordeaux), Thierry Gautier (co-dir) (since oct. 2018).

PhD in progress: Zeina Houmani, *A Data-driven microservices architecture for Deep Learning applications*, Eddy Caron (dir), Daniel Balouek-Thomert (Rutgers University) (since oct. 2018).

PhD pended: Aurélie Kong-Win-Chang: *Techniques de résilience pour l'ordonnancement de workflows sur plates-formes décentralisées (cloud computing) avec contraintes de sécurité*, Yves Robert (dir, ROMA, ÉNS-Lyon), Eddy Caron (co-dir) et Yves Caniou (co-dir).

PhD in progress: Felipe Rodrigo De Souza, *Networking Provisioning Algorithms for Highly Distributed Data Stream Processing*, École Doctorale, Eddy Caron (dir), Marcos Dias de Assunção (co-dir) (2017-2020).

PhD in progress: Alexandre Da Silva Veith: *Elastic Mechanisms for Big-Data Stream Analytics*, Labex MiLyon, Laurent Lefèvre (dir), Marcos Dias de Assunção (co-dir) (2016-2019).

PhD cancelled: Valentin Lorentz : *Energy traceability of data*, Gilles Fedak (dir), Laurent Lefèvre (co-dir) (2016-2018).

10.2.3. *Juries*

Eddy Caron was reviewer and examiner of the PhD defense committe of Bassirou Ngom. UPMC (Co-tutelle avec l'UCAD). (July 13, 2018). Hajer Salhi., University of Tunis El Manar (Phd defense will be in 2019). and examiner of the PhD defense committe of Anne-Lucie Vion, Université de Grenoble and Orange (March 29, 2018).

Laurent Lefèvre was PhD Opponent and Jury Member of the PhD defense committee of Selome Kostentinos Tesfatsion, Umea University, Sweden (April 16, 2018), reviewer and examiner of the PhD defense committee of Wilfried Yoro, Telecom SudParis (March 8, 2018), reviewer of the PhD of Jungmin Son, University of Melbourne, Australia (May 2018) and examiner of the PhD defense committee of David Guyon, IRISA, University of Rennes 1 (December 7, 2018).

Christian Perez was examiner of the HdR defense committe of Samuel Thibault, University of Bordeaux (December 12, 2018), reviewer and examiner of the PhD defense committe of Pierre Matri, University Polytenics of Madrid, Spain (June 10, 2018), Hugo Taboada, University of Bordeaux (December 11, 2018), Mohamed Abderrahim, University of Bretagne Loire (December 19, 2018), Stéphanie Challita, University of Lille (December 20, 2018), and examiner of the PhD defense committe of Yacine Taleb, European University of Brittany (October 2, 2018).

10.3. Popularization

10.3.1. *Articles and contents*

Laurent Lefèvre has been interviewed for the articles:

- "Le Groupe Casino remplace ses radiateurs par des data centers", Le Point Journal (December 23, 2018)
- "Comment cliquer sans trop polluer", Laurent Lefèvre, Le Progrès Journal, November 21, 2018
- "Google utilise-t-il réellement 100% d'énergie verte pour alimenter ses services ?", Libération, July 13, 2018
- "J'ai le (dé)clic écolo pour réduire mon empreinte", Journal La Vie, February 15, 2018

He was interviewed and filmed for "Pollution numérique/Digital pollution", Journal 19/20, France3 National Channel, December 9, 2018.

10.3.2. Education

Yves Caniou is responsible of the LPI Certification at Université Claude Bernard Lyon 1. Further discussions are in progress concerning the proposed tools and redaction of courses/questions.

In the contexte of the CHEL[s] (Collège des Hautes Etudes Lyon Science[s]) Eddy Caron is mentor for the MedTech project building the start-up VETARIA.

Jean-Patrick Gelas manage and build several modules of education about blockchain technologies for an erasmus+ european project. The BLISS project (Blockchain skills for ICT professionals), aims to improve the skills and competencies of ICT professionals by developing and making available educational resources and materials to address existing occupational needs and mismatches, resulting from the dynamic penetration of blockchain technology across all sectors of the EU economy (including banking, accounting, auditing and government services).

10.3.3. Interventions

Laurent Lefèvre has given several invited talks for :

- "Green-It and Video Games infrastructures - Jeu vidéo et collapsologie #2 : Meetup - Le dématérialisé, ça sauve les pandas ?", Meet-up Game Impact, Paris, November 29, 2018
- "Vers des Data Centers éco-responsables", Data Center World, Paris, November 28, 2018
- "Agile (d'accord !) mais Green (d'abord !)", Agile Tour 2018, Epitech, Bordeaux, November 2-3, 2018
- "Numérique et Environnement", with Françoise Berthoud, Groupe de travail développement durable, Centre Inria Bordeaux, October 19, 2018
- "CES 2018 : l'humain numérique de demain...", Journée Réseau Aramis, University Lyon2, Lyon, May 24, 2018
- "Le futur peut-il être numérique ?", with Françoise Berthoud and Jonathan Schaeffer, Journée Réseau Aramis, University Lyon2, Lyon, May 24, 2018
- "EE@G5K : the story continues...", Grid5000 Scientific Advisory Board, Sophia Antipolis, April 4, 2018
- "Rendre l'informatique plus verte", Conférence de formation des professeurs du secondaire en science informatique, Inria Montbonnot, March 21, 2018
- "WG5 : Energy efficiency final results", Network for Sustainable Computing (Nesus), COST European Action IC1305, Final Action Meeting, with Ariel Oleksiak, Madrid, Spain, March 15-16, 2018
- "CES 2018 - so little Green", Rencontres Ecoinfo, Lyon, January 30, 2018

<p style="text-align:center;color:red;font-weight:bold">Coast Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Claudia-Lavinia Ignat and François Charoy were general co-chairs of ECSCW 2018.

9.1.1.2. Member of the Organizing Committees

Claudia-Lavinia Ignat, François Charoy and Gérald Oster were members of the ECSCW organising committee (European Conference on Computer-Supported Cooperative Work: The International venue on Practice-centred computing and the Design of cooperation technologies) 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Claudia-Lavinia Ignat was co-chair of the Program Committee of ECSCW 2018. Gérald Oster was co-chair of the Demo an Poster Program Committee of ECSCW 2018.

9.1.2.2. Member of the conference program committees

- Claude Godart was PC member of the conference program committee of BPMDS (Business Process Modelling, Development and Support) 2018, EDOC (The enterprise computing conference), ICSOC (International Conference on Services Oriented Computing) 2018, ICWS (IEEE International Conference on Web Services) 2018, SCC (IEEE International Conference on Services Computing) 2018, WISE (Web Information Systems Engineering) 2018.

- Claudia-Lavinia Ignat was PC member of ECSCW (European Conference on Computer-Supported Cooperative Work: The International venue on Practice-centred computing and the Design of cooperation technologies) 2018, CDVE (International Conference on Cooperative Design, Visualisation and Engineering) 2018, CRIWG (International Conference on Collaboration and Technology) 2018

- François Charoy was PC Member of ICEBE (International Conference on Business Engineering) 2018, CTS 2018 (International Symposium on Collaborative Technologies and Systems), DG.O (International Conference on Digital Government Research) 2018, ICSOC 2018, IEEE International Conference on Business Information Systems, ISCRAM 2018, ECSCW 2018 and of several workshops.

- Gérald Oster was a PC member of CoopIS (International Conference on Cooperative Information Systems) 2018, CSCW (21st ACM Conference on Computer-Supported Cooperative Work and Social Computing) 2018 and ECSCW 2018.

- Khalid Benali was PC member of I-ESA'2018 (Interoperability of Enterprise Software and Applications), WorldCIST'18 (World Conference on Information Systems and Technologies), I3E 2018 (IFIP Conference on e-Business, e-Services and e-Society), ISKO-Maghreb'2018 (7th International Symposium ISKO-Maghreb'2018), MEDES 2018 (10th International Conference on Management of Digital EcoSystems).

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Claude Godart is a member of the editorial board of IEEE Transactions on Service Computing, International Journal of Services Computing, and member of the review board of the International Journal of Next Generation Computing.

- Claudia-Lavinia Ignat is member of the editorial board of Journal of CSCW (Computer Supported Cooperative Work).
- François Charoy is member of the editorial board of Service Oriented Computing and Applications Journal (Springer).

9.1.3.2. Reviewer - Reviewing activities

- Olivier Perrin reviewed papers for IEEE Transactions on Services Computing journal, IEEE Transactions on Parallel and Distributed Systems and Journal of Systems and Software.
- Claudia-Lavinia Ignat reviewed papers for CSCW 2018.
- Gérald Oster reviewed papers for Computer Supported Cooperative Work Journal, ECSCW 2018, CSCW 2018, CoopIS 2018.

9.1.4. Invited Talks

Claudia-Lavinia Ignat was invited to give the opening keynote "From groupware to large-scale trustworthy distributed collaborative systems" at CRIWG 2018.

9.1.5. Scientific Expertise

François Charoy was member of the HCERES committee for the SAMOVAR Lab, IMT Sud Paris

9.1.6. Research Administration

François Charoy and Claudia-Lavinia Ignat are steering committee members of European Society for Socially Embedded Technologies (EUSSET).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Permanent members of the Coast project-team are leading teachers in their respective institutions. They are responsible of lectures in disciplines like software engineering, database systems, object oriented programming and design, distributed systems, service computing and more advanced topics at all levels and in different of departments in the University. Most of the PhD Students have also teaching duties in the same institutions. As a whole, the Coast team accounts for more than 2500 hours of teaching. Members of the Coast team are also deeply involved in the pedagogical and administrative life of their departments.

- Claude Godart is responsible for the Computer Science Department of the engineering school ESSTIN.
- Khalid Benali is responsible for the professional master degree speciality "Distributed Information Systems" of MIAGE and of its international branch in Morocco.
- François Charoy is responsible of the Software Engineering specialisation at the TELECOM Nancy Engineering School of University of Lorraine.

9.2.2. Supervision

- PhD (defended): Quang Vinh Dang, Trust-based large scale collaboration, started in 10/2014, Claudia-Lavinia Ignat and François Charoy
- PhD (in progress): Hoai Le Nguyen, Study of group performance and behaviour in collaborative editing, started in 9/2015, Claudia-Lavinia Ignat and François Charoy
- PhD (in progress): Hoang Long Nguyen, A Trust Based Authorisation Model and Framework for the Cloud, started in 11/2015, Claudia-Lavinia Ignat and Olivier Perrin
- PhD (in progress): Victorien Elvinger, Secured Replication for Peer-to-Peer Collaborative Infrastructures, started in 10/2015, François Charoy and Gérald Oster

- PhD (in progress): Guillaume Rosinoski, Elastic BPM and the Cloud, started in 10/2014, François Charoy and Samir Youssef
- PhD (in progress): Quentin Laporte-Chabasse, Federation of Organisations over Peer to Peer Collaborative Network, started in 10/2016, François Charoy and Gérald Oster
- PhD (in progress): Béatrice Linot, Trust in cooperative systems, Jérome Dinet et François Charoy, started 11/2016
- PhD (in progress): Anis Ahmed Nacer, Safe Service Composition, Olivier Perrin and François Charoy, started 3/2017
- PhD (in progress): Matthieu Nicolas, Optimisation of Replication Algorithms, Olivier Perrin and Gérald Oster, started 10/2017

9.2.3. Juries

- Claudia-Lavinia Ignat was member of CRCN recruitment jury at Inria Nancy-Grand Est

Coast members were members of the following PhD and HdR defence committees:

- Noura Faci, HdR, Université de Lyon, Décembre 2018 (François Charoy, president)
- Wafa Triaa, PhD, Université Grenoble Alpes, Septembre 2018 (François Charoy, rapporteur)
- Guillaume Garzone, PhD, Université de Toulouse, Novembre 2018 (François Charoy, rapporteur)
- Audrey Fertier, PhD,IMT Mines d'Albi-Carmaux, Novembre 2018 (François Charoy, rapporteur)
- Yacine Abboud, PhD, Université de Lorraine, Novembre 2018 (François Charoy, examinateur)
- Teuku Aulia Geumpana, PhD, University of New South Wales, December 2018 (François Charoy, rapporteur)

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- Claudia-Lavinia Ignat is in charge of European affairs for Inria Nancy Grand-Est. She is the Delegate of International Relations for Inria Nancy-Grand Est and member of COST-GTRI commission. She is a member of the Inria Nancy-Grand Est COMIPERS committee. She is a member of Inria CAP Chercheurs commission. She is responsible with the activity kindergarten at AGOS Inria Nancy-Grand Est. She is a member of the organisation committee of the Security Seminar at LORIA.
- Gerald Oster is a member of the council of the scientific pole AM2I (Automatique, Mathématiques, Informatique et leurs Interactions) of University of Lorraine

<p style="text-align:center;color:red;font-weight:bold;">COATI Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- David Coudert :

    RESCOM'18 : school of the *pôle ResCom of GDR ASR of CNRS* on "Apprentissage et fouille de données dans les réseaux", Porquerolles, France, June 18-22, 2018. This edition was organized in collaboration with GDR MADICS.

- Frédéric Havet :

    School on Graph Theory (SGT 2018), Séve, France, June 11-15 2018.

    Journées Combinatoire et Algorithmes du Littoral Méditerranéen (JCALM).

- Nicolas Nisse

    GRASTA'18 : 9th workshop on GRAph Searching, Theory & Applications, Berlin, Germany, 24-27 September 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- Christelle Caillouet :

    Program Committee Chair of AlgoTel'18 (20e Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications): conférence of the *pôle ResCom of GDR ASR of CNRS* Roscoff, France, May 29-June 1, 2018.

9.1.2.2. Member of the Conference Program Committees

- David Coudert :

    ONDM'18: 22nd Conference on Optical Network Design and Management, Dublin, Ireland, May 14-17, 2018.

    IEEE ICC'18 : IEEE International Conference on Communications, Kansas City, MO, USA, May 20-24, 2018.

    SEA'18: 17th International Symposium on Experimental Algorithms, L'Aquila, Italy, June 27-29, 2018.

    IPEC'18: 13th International Symposium on Parameterized and Exact Computation, Helsinki, Finland, August 20–24, 2018.

    IEEE Globecom'18: IEEE Global Communications Conference, Abu Dhabi, UAE, December 9-13, 2018.

- Frédéric Havet :

    10th International Colloquium on Graph Theory (ICGT 2018), Lyon, France, July 9-13, 2018.

    Journées Graphes et Algorithmes (JGA 2018), Grenoble, France, 14-16 November, 2018.

- Nicolas Nisse

    SEA'18: 17th int. Symposium on Experimental Algorithms, L'Aquila, Italy, 27-29 June 2018.

CoRes'18: 3rd conférence francophone centrée les réseaux et protocoles de communicatio. Roscoff, France, 29 May- 1st June 2018

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Jean-Claude Bermond

Computer Science Reviews, Discrete Mathematics, Discrete Applied Mathematics, Journal of Graph Theory, Journal of Interconnection Networks (Advisory Board), Mathématiques et Sciences Humaines, Networks, Parallel Processing Letters, the SIAM book series on Discrete Mathematics, Transactions on Network Optimization and Control, Algorithms and Applications.

David Coudert

Discrete Applied Mathematics (Elsevier); Networks (Wiley).

Frédéric Giroire

Journal of Interconnection Networks (World Scientific).

Frédéric Havet

Discrete Mathematics and Theoretical Computer Science.

Bruce Reed

Journal of Graph Theory, Electronic Journal of Combinatorics.

9.1.3.2. Reviewer - Reviewing Activities

Members of COATI have reviewed numerous manuscripts submitted to international journals, including:

ACM Journal of Experimental Algorithmics, Ad Hoc Networks, Ars Combinatorica, Computer Networks (COMNET) Discrete Applied Mathematics (DAM), Discrete Mathematics, Discrete Mathematics and Theoretical Computer Science (DMTCS), European Journal of Combinatorics, IEEE/OSA Journal of Lightwave Technology (JLT), IEEE/ACM Transactions on Networking (ToN), IEEE Transactions on Parallel and Distributed Systems (TPDS), Journal of Computer and System Sciences (JCSS), Theoretical Computer Science (TCS) Theory of Computing Systems (TOCS), Utilitas Mathematica.

9.1.4. Invited Talks

- Julien Bensmail

    Sequential Metric Dimension (in trees). Graph Theory 2018 (GT'18), Nyborg, Denmark. August 2018.

    Augmenting matchings in trees, via bounded-length augmentations. 3rd International Symposium on the Frontier of Graph Theory, Qinghai Normal University, Xining, China. April 2018.

    Sequential Metric Dimension (in trees). Seminarium Matematyka Dyskretna, AGH university, Kraków, Poland. November 2018.

    A Decompositional Approach to the 1-2-3 Conjecture. Seminar of the Department of Applied Mathematics, Northwestern Polytechnical University, Xi'an, China. May 2018.

    On partitioning graphs into connected subgraphs. Seminar of the School of Mathematical Sciences, Anhui University, Hefei, China. May 2018.

- Christelle Caillouet

    Optimization of mobile sensor coverage with UAVs. Workshop "L'Internet des Objets Industriels" (IIoT) of GDR RSD / ResCom and GDR MACS, Strasbourg, France, July 3, 2018.

- Frédéric Giroire

Optimization of Network Infrastructures. Seminar of ETIS, University Cergy-Pontoise, France. November 2018.

- Frédéric Havet :

    Bispindles in strongly connected digraphs with large chromatic number. Graph Theory Meeting (GT 2018), Nyborg, Denmark, August 29 - September 1, 2018.

    Trees in tournaments. Journées Combinatoire Graphes et Algorithmes, Lyon, December 10-11, 2018.

- Nicolas Nisse

    When treewidth and treelength are equivalent: Seminar Xidian University, Xi'an, China, September 2018.

- Stéphane Pérennes, Luc Hogie, Michel Syska

    Parallel & Distributed Graph algorithms for large graphs, practical challenges: Atelier de programmation GRAMINEES in ANF APSEM2018 (Apprentissage et sémantique). November 2018.

9.1.5. Leadership within the Scientific Community

David Coudert

Member of the steering committee of *Pôle ResCom du GDR RSD du CNRS* since 2005, and co-chair since June 2017.

Frédéric Giroire

Member of the steering committee of *GT Energy of the GDR RSD du CNRS*.

Frédéric Havet :

Member of the steering committee of *GT Graphes of the GDR IM of CNRS*.

9.1.6. Scientific Expertise

- Jean-Claude Bermond

    Expert for DRTT-MESR Crédit impôt recherche (CIR et agréments).

- Frédéric Havet :

    Expert for ANR and NSERC (Canada)

- Nicolas Nisse

    Expert for ANR

    Expert for ODP (OPUS, Poland) 2018

    Expert for Millennium Science Initiative (Programme de financement chilien) (2018).

    Expert for ESF (European Science Foundation) 2018.

9.1.7. Research Administration

- Jean-Claude Bermond

    Responsible fo the cooperation between Inria and Greece (obtention of join grants and of financial support for internships via the Bodossakis Fundation).

- Christelle Caillouet

    Elected member of CPRH (Comité Permanent de Ressources Humaines) University of Nice Sophia Antipolis;

    Elected member of I3S laboratory committee since December 2016;

    Member of "Comité de Sélection" MCF 0403, Grenoble INP, 2018.

- David Coudert :

    Nominated member for Inria at the doctoral school STIC since September 2017;

        Member of the "Comité de Suivi Doctoral" of Inria (since 2009);

        Member of the scientific council of Academy RISE (Networks, Information, Digital Society) of UCA[JEDI] till January 2018;

        Nominated member for Inria at the steering committee of Academy RISE (Networks, Information, Digital Society) of UCA[JEDI] and EUR DS4H since Fébruary 2018;

        Member of "Comité de Sélection" 4109 - 0074 - PR 27 STS, Université d'Avignon et des Pays de Vaucluse, 2018.

        Member of "Comité de Sélection" 27 Pr 519, Université Nice - Sophia Antipolis, 2018;

- Frédéric Giroire :

  In charge of the internships of stream UbiNet of Master 2 IFI, UNS.

- Frédéric Havet :

  Head of COMRED team of I3S laboratory.

- Nicolas Nisse

  Elected member of Comité de Centre, Inria Sophia Antipolis since 2016

  Membre du CS Académie 1 UCA

- Michel Syska

  Elected member of CPRH (Comité Permanent de Ressources Humaines) University of Nice-Sophia Antipolis;

9.2. Teaching - Supervision - Juries

9.2.1. Teaching responsibilities

- Julien Bensmail

  In charge of the internships of first year students of QLIO département of IUT Nice Côte d'Azur.

- Joanna Moulierac

  "Directrice d'études" for the 1st-year students du Département Informatique of IUT Nice Côte d'Azur, (since September 2017).

  Head of the "Conseil de Département Informatique" of IUT Nice Côte d'Azur (since September 2017).

9.2.2. Teaching

- Julien Bensmail

  Sécurité des systèmes d'information, 36h ETD, Level LP, IUT Nice Côte d'Azur, UNS;

  Recherche opérationnelle, 82h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

  Systèmes de gestion de bases de données, 86h ETD, Level L2, IUT Nice Côte d'Azur, UNS.

- Christelle Caillouet

  Programmation Orientée Objet, 96h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

- David Coudert

  Algorithms for Telecoms, 32h ETD, stream UbiNet of Master 2 IFI and Master RIF, UNS.

- Frédéric Giroire

  Algorithmics of Telecommunications, 18h ETD, stream UbiNet of Master 2 IFI, UNS;

  Data Mining for Networks, 18h ETD, stream UbiNet of Master 2 IFI, UNS;

  Introduction to probability and statistics, 15h ETD, International Master 1, UNS.

- Joanna Moulierac

    Introduction à l'algorithmique, 30h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

    Introduction aux Réseaux, 60h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

    Programmation répartie, 40h ETD, Level L1, IUT Nice Côte d'Azur, UNS.

    Réseaux avancés, 60h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

    Compléments d'algorithmique, 30h ETD, Level L2, IUT Nice Côte d'Azur, UNS.

- Nicolas Nisse

    Graph Algorithms and Combinatorial Optimization, 18 ETD, Master 2, parcours Ubinet master IFI, UNS;

    Informatique théorique, 24 ETD, MPSI, classe préparatoire, CIV, Valbonne;

- Stéphane Pérennes

    Java pour le Calcul Ditribué et Concurrent, 60 h ETD Level : Master MIAGE Univ. Nice Côte d'Azur, UNS;

- Michel Syska

    Operating Systems: Advanced Programming, 28h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

    Data Structures and Algorithms, 40h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

    Algorithmics, 52h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

    Distributed Programming, 58h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

9.2.3. Supervision

9.2.3.1. PhD thesis

PhD: William Lochet, *Substructures in digraphs* [2], Université Côte d'Azur, July 19, 2018. Co-supervisors: Frédéric Havet and Stéphan Thomassé (ÉNS Lyon).

PhD in progress: Ali Al Zoobi, *Algorithms for shared on demand public transportation system in the city*, since October 2018. Co-supervisors: David Coudert and Nicolas Nisse.

PhD in progress: Brieuc Berruet, *Application des techniques de Machine Learning à la géolocalisation des objets connectés dans le contexte de la future 5G*, doctorale school SPIM, Université de Belfort Franche Comté, since November 2016. Supervisor: Alexandre Caminada and Oumaya Baala (Orange).

PhD in progress: Giuseppe di Lena, *Resilience of virtualized networks*, since April 2018. Co-supervisors: Thierry Turletti (DIANA), Chidung Lac (Orange Labs Lannion) and Frédéric Giroire.

PhD in progress: Adrien Gausseran, *Optimization Algorithms for Network Slicing for 5G*, since October 2018. Supervisors: Joanna Moulierac and Nicolas Nisse.

PhD in progress: Mehdi Katranji, *Utilisation des méthodes de Machine Learning pour apprendre les modèles de mobilité humaine selon leurs attibuts socio-démographiques et géographiques*, doctorale school SPIM, Université de Belfort Franche Comté, since September 2016. Supervisor: Alexandre Caminada and Fouad Hadjselem (Orange).

PhD in progress: Fionn McInerney, *Combinatorial Games in Graphs*, since October 2016. Supervisor: Nicolas Nisse.

PhD in progress: Andrea Tomassilli, *Diffusion of information on large dynamic graphs*, since October 2016. Supervisors: Stéphane Pérennes and Frédéric Giroire.

PhD in progress: Thibaud Trolliet, *Exploring Trust on Twitter*, since October 2017. Co-supervisors: Arnaud Legout (DIANA) and Frédéric Giroire.

PhD in Progress: Thi-Viet-Ha Nguyen, *Graph Algorithms techniques for (low and high) resolution model of large protein assemblies.*, since October 2018. Co-supervisors: Frédéric Havet and Dorian Mazauric (ABS).

9.2.3.2. Internships

- Eleni Batziou

    Date: from November 2017 until May 2018

    Institution: Master 2, National Technical University of Athens (Greece)

    Supervisors: David Coudert and Nicolas Nisse

    Subject: Enhancing urban mobility with shared on-demand services

- Florent Cabret

    Date: from April 2018 until June 2018

    Institution: DUT 2, IUT, Université Nice Sophia Antipolis

    Supervisors: Luc Hogie and Michel Syska

    Subject: Evaluation of Jmaxgraph, a distributed computing framework on large graphs

- Théo Frasquet

    Date: from July 2018 until August 2018

    Institution: SI4, Polytech'Nice, France

    Supervisors: David Coudert

    Subject: Decomposing a digraph into k-strongly connected components

- Adrien Gausseran

    Date: from March 2018 until september 2018

    Institution: Master 2 RIF, Université Nice Sophia Antipolis

    Supervisors: Frédéric Giroire and Joanna Moulierac

    Subject: Optimization Algorithms for Network Slicing for 5G

- Thibault Hilaire

    Date: from June-July 2018

    Institution: L3, ENS Saclay

    Supervisor: Nicolas Nisse

    Subject: Polynomial algorithm for connected graph searching.

- Allen Passos Ibiapina

    Date: from October 15 until December 14 2018

    Institution: Master 2, UFC Fortaleza, Brazil

    Supervisor: Frédéric Havet

    Subject: Constrained ear decompositions in graphs and digraphs.

- Badr Jouhar

    Date: from March 2018 until August 2018

    Institution: stream UbiNet of Master 2 IFI

    Supervisors: Frédéric Giroire and Andrea Tomassilli

    Subject: Joint optimization of network and data centers

- Thi-Viet-Ha Nguyen

    Date: from January 2018 until June 2018

    Institution: Master 2, ENS Lyon.

> Supervisors: Frédéric Havet, Dorian Mazauric (ABS) and Rémi Watrigant (ENS Lyon)
>
> Subject: Overlaying a hypergraph by graph families with bonded maximum degree.

- Meghana M. Reddy

  > Date: from May 2018 until August 2018
  >
  > Institution: Master at IIIT-Bangalore, India
  >
  > Supervisors: David Coudert
  >
  > Subject: implementation of a linear time algorithms for decomposing a graph into 3-connected components in Sagemath. In the context of the Google Summer of Code (GSoC).

- Alexandre Simon

  > Date: from June-July 2018
  >
  > Institution: L3, INSA Lyon
  >
  > Supervisor: Nicolas Nisse
  >
  > Subject: Treelength des graphes planaires.

- Sai Harsh Tondomker

  > Date: from May 2018 until August 2018
  >
  > Institution: Master at IIIT-Hyderabad, India
  >
  > Supervisors: David Coudert
  >
  > Subject: implementation of algorithms for decomposing a graph into 3-connected components and organizing these components as a SPQR-tree in Sagemath. In the context of the Google Summer of Code (GSoC).

- Xuchun Zhang

  > Date: from July 2018 until September 2018
  >
  > Institution: Master 1 MAM, Université de Nice Sophia Antipolis
  >
  > Supervisors: Jean-Baptiste Caillau, Enzo Giusti (Oui!Greens startup), Dorian Mazauric and Joanna Moulierac
  >
  > Subject: Optimal Assignment Problem for Oui!Greens

- Yin Zhuochao

  > Date: from March 2018 until August 2018
  >
  > Institution: stream UbiNet of Master 2 IFI, UNS
  >
  > Supervisors: David Coudert and Nicolas Nisse
  >
  > Subject: On the pickup-and-delivery problem with time window

- Mykhailo Zima

  > Date: from March 2018 until August 2018
  >
  > Institution: stream UbiNet of Master 2 IFI, UNS
  >
  > Supervisors: David Coudert and Nicolas Nisse
  >
  > Subject: Routing in multimodal networks with bicycles

9.2.4. Juries

- Jean-Claude Bermond :

  > Member of the HDR jury of Ignasi Sau Valls, LIRMM, Montpellier, June 25 2018;
  >
  > President of the PhD prize committee *prix de thèse Graphes "Charles Delorme"* http://gtgraphes.labri.fr/pmwiki/pmwiki.php/PrixTheseDelorme/PrixTheseDelorme

- Christelle Caillouet :

      Member of the PhD jury of Alassanne Samba, IMT Atlantique, October 29, 2018;

- David Coudert :

        President of the PhD jury of Jianding Guo, Université de Technologie de Belfort-Montbéliard, June 6, 2018;

        President of the PhD jury of Mohammed Amine Ait Ouahmed, Université d'Avignon et des Pays de Vaucluse, October 15, 2018;

        Referee and member of HDR committee of Fen Zhou, Université d'Avignon et des Pays de Vaucluse, September 28, 2018;

        External referee in the PhD thesis monitoring committee of Karyna Gogunska, Université Côte d'Azur, March 19, 2018;

- Frédéric Giroire :

        Invited member of the PhD jury of Marwa Dammak, ENSEA, Cergy-Pontoise, November 20, 2018;

- Frédéric Havet :

        Referee and member of PhD committee of Antoine Dailly, Université Lyon 1, September 2018.

        Referee and member of PhD committee of Tien-Nam Le, ENS Lyon, November 2018.

        Member of PhD committee of Leo Planche, Université Paris Descartes, November 2018.

        Referee and member of HDR committee of Laurent Beaudou, Université Clermont-Auvergne, December 2018.

        Referee and member of PhD committee of Tilde Nielsen, Southern Denmark University, Odense, Denmark, December 2018.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- Frédéric Havet :

        Vice-president and member of the scientific committee of the association Institut Esope 21 (http://www.esope21.eu).

- Nicolas Nisse:

        Membre de Mastic (Médiation et Animation scientifiques Inria Sophia Antipolis - Méditerranée).

9.3.2. Education

- Frédéric Havet, Joanna Moulierac and Nicolas Nisse : Participation to Galejade projet.

        Design of pedagogical resources introducing graphs and algorithms to primary school students.

        Training of primary school teachers, ESPE April 9-10 2018.

9.3.3. Interventions

- Fête de la Science (Frédéric Havet, Nicolas Nisse, Fionn Mc Inerney, Ali Al Zoobi)

        Journée portes ouvertes, Inria Sophia Antipolis, Sunday October 7, 2018.

        Palais des Congrès de Juan-Les-Pins, October 20-21, 2018.

        Collège de Vinon-sur-Verdon (83), October 9-12, 2018.

- Frédéric Havet, Joanna Moulierac, and Nicolas Nisse

> Participation to the supervision of the internships of 12 pupils of 3eme, December 17-21, 2018.

- Frédéric Havet

    L'élégance des Mathématiques. Conference at Lycée Janetti, St Maximin, February 16, 2018. Audience: 3 classes (1e S and ES).

    La magie des graphes et du binaire. Conference at collège Alphonse Daudet, Nice, April 17, 2018. Audience: 2 classes of 4e and 1 of 6e.

    L'élégance des mathématiques. General audience conference, Rians, Var, France, April 28, 2018.

- Nicolas Nisse

    Training and awareness of school teachers (Cycle 2, CP-CE2) to scientific mediation. Le Cannet, November 21 and Mandelieu, November 28, 2018.

    Training and awareness of future teachers to scientific mediation, Ecole Supérieure du Professorat et de l'Education (ESPE, ex IUFM) of Académie de Nice. March 19-20 and April 9-10, 2018.

    Liens entre médiation numérique et recherche, Maison méditerranéenne des Sciences de l'homme (MMSH), Aix en Provence, March 14, 2018.

    Mediation for the Master en science de l'éducation, Nice, October 18, 2018.

- Fionn Mc Inerney :

    Presentation at Collège Victor Hugo, Nevers, France, March 23, 2018.

    Participation in the day "*L'informatique, c'est pas génétique, filles ou garçons, les clics sont identiques!*", Lycée Raoul Follereau, Nevers, France, March 22, 2018.

    Presentation at Ecole Primaire Romain Rolland, Varennes-Vauzelles, France, March 21, 2018.

    Supervised internship of a school girl in 2nd, Inria Sophia-Antipolis - Méditerranée, France, June 18-22, 2018.

- Michel Syska :

    Organisation and supervision of the code competition "*La nuit de l'info*", December 6-7, 2018.

<p align="center" style="color:red">CTRL-A Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Eric Rutten is co-chairing, with Bogdan Robu (Gipsa-lab), the 40th Summer School of Automatic Control, Grenoble, September 2019, on the special topic of Control for Computing Systems.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Eric Rutten is co-chair, with A. Filieri (Imp. Coll. UK), of the International Workshop on Autonomic High Performance Computing,(AHPC 2018) (http://hpcs2018.cisedu.info/2-conference/workshops—hpcs2018/workshop09-ahpc) part of The International Conference on High Performance Computing & Simulation (HPCS 2018), July 16 - 20, 2018,Orléans, France (http://hpcs2018.cisedu.info/)

9.1.2.2. Member of the Conference Program Committees

Eric Rutten is PC member for :

- international conferences
  - ICAC 2018 (15th IEEE International Conference on Autonomic Computing), Sept 3-7, 2018, Trento, Italy (http://icac2018.informatik.uni-wuerzburg.de/)
  - (Associate Editor) 2nd IEEE Conference on Control Technology and Applications, CCTA 18, Copenhagen, Denmark, August 21-24, 2018 (http://ccta2018.ieeecss.org/)
  - 14th Workshop on Discrete Event Systems, WODES'18, Sorrento Coast, Italy, May 30 - June 1, 2018. (http://wodes2018.unisa.it/)
  - AI-Science'18, workshop on autonomic cyberinfrastructure for science, in conjunction with the ACM HPDC 2018, Tempe, AZ, United States, June 11, 2018 (http://www.hpdc.org/2018/)
  - 16th High Performance Computing & Simulation Conference (HPCS 2018). July 16 ? 20, 2018,Orléans, France (http://hpcs2018.cisedu.info/)
  - UCC Cloud Challenge event in conjunction with IEEE/ACM UCC/BDCAT 2018 in Zurich (http://events.cbmi.htw-berlin.de/ucc18-cloudChallenge/index.html)
  - ICAC 2019 (16th IEEE International Conference on Autonomic Computing), Umeøa, Sweden, June 16 ? 20, 2 019 (http://icac2019.cs.umu.se)

9.1.2.3. Reviewer

Eric Rutten is reviewer for SafeProcess 18 and CDC 18.

Stéphane Mocanu is reviewer for WODES'18.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

Eric Rutten is reviewer for

- Science of Computer Programming
- IEEE TSC Transactions on Services Computing
- IEEE Transactions on Industrial Informatics

9.1.4. Invited Talks

Eric Rutten was invited to give a talk at :
- FETCH 2018, Ecole d'Hiver francophone sur la technologie de conception des systèmes embarqués hétérogènes, 24-26 Janvier 2018, Saint Malo http://fetch-conference.org
- with J.Ph. Diguet, : WRC: 12th Workshop on Reconfigurable Computing at HiPeac 2018, https://www.hipeac.net/2018/manchester/#/schedule/ Jan. 24, Manchester U.K.
- International Workshop on High Performance and Dynamic Reconfigurable Systems and Networks (DRSN 2018) part of The International Conference on High Performance Computing & Simulation (HPCS 2018), July 16 ? 20, 2018, Orléans, France http://hpcs2018.cisedu.info/
- FETCH 2019, Ecole d'Hiver francophone sur la technologie de conception des systèmes embarqués hétérogènes, Louvain-la-Neuve, Belgique, 28-30 janvier 2019 http://fetch-conference.org

9.1.5. Leadership within the Scientific Community

Eric Rutten is co-chair of the Technical Committee on Discrete Event Systems (DESTC), a part of the IEEE Control Systems Society (CSS) Technical Activities Board (http://discrete-event-systems.ieeecss.org/tc-discrete/home) ; and member of the IFAC Technical Committee 1.3 on Discrete Event and Hybrid Systems, for the 2017-2020 triennum (http://tc.ifac-control.org/1/3).

9.1.6. Research Administration

Eric Rutten is member of the LIG laboratory council, and in charge of scientific relations between Inria Grenoble Rhône-Alpes and CEA Tech.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : G. Delaval, Algorithmics and imperative programming, 18h class, 18h lab, L2, Université Grenoble Alpes

Licence : G. Delaval, Basis of software development : modularity, tests, 15h class, 15h lab, L2, Université Grenoble Alpes

Master : G. Delaval, Programming languages and compiler design, 33h, M1, Université Grenoble Alpes

Master : S. Mocanu, Computer Networks and Cybersecurity, 16h class, 34h lab, M1, Grenoble-INP/ENSE3

Master : S. Mocanu, Industriel Computer Networks, 8h class, 8h lab, niveau (M1, M2), M2, Grenoble-INP/ENSE3

Master : S. Mocanu, Reliability, 10h class, 8h lab, M2, Grenoble-INP/ENSE3

Master : S. Mocanu, Intrusion Detection and Defense in Depth labs, niveau M2, Grenoble-ENSE3/ENSIMAG

9.2.2. Supervision

- PhD : Oualid Koucham ; Détection d'intrusions dans les systèmes de contrôle industriels ; 12 nov. 2018 ; co-advised by S. Mocanu with J-M Thiriet (Gipsa-lab).
- PhD in progress : Chabha Hireche ; Etude et implémentation d'une approche probabiliste de contrôle de mission de drone autonome ; oct. 2015 ; co-advised by S. Mocanu with Catherine Dezan (U. Bretagne Occidentale), and Jean-Philippe Diguet (U. Bretagne Sud).
- PhD in progress : Neïl Ayeb ; Vers un management des objets de l'IoT décentralisé et adaptable ; dec. 2017 ; co-advised by Eric Rutten with S. Bolle, T. Coupaye (Orange labs).

9.3. Popularization

9.3.1. Articles and contents

The Ctrl-A team is featured in a special issue on the numeric world in the "*Dauhiné Libéré des enfants*" (nov.-dec. 2018).

9.3.2. Internal action

The Ctrl-A team participated in the event "mon équipe en 180 secondes" at Inria Montbonnot.

<p style="text-align:center;color:red;font-weight:bold;font-size:large;">DANTE Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Márton Karsai was in the organizing team (general chair) of the Computational Social Science Satellite of the CCS'18 Conference in September 2018 in Thessaloniki
- Márton Karsai was in the organizing team (general chair) of the Machine Learning and Network Science Satellite of the NetSci'18 Conference in June 2018 in Paris

10.1.1.2. Member of the Organizing Committees

- Éric Guichard was the chair and organiser of the summer school *Cartography and visualisation 2018*[0].
- Márton Karsai was in the organising team (sponsor chair) of the NetSci'18 Conference held in June 2018 in Paris
- Márton Karsai was in the organising team (poster chair) of the Complex Networks Conference held in December 2018 in Cambridge

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Thomas Begin was on the PC of the 43nd IEEE Conference on Local Computer Networks (LCN).
- Isabelle Guérin Lassous was, in 2018, a member of the program committee of the conferences ACM MSWiM, IEEE ICC and Globecom.
- Philippe Nain was a member of the program committee of the IFIP Performance 2018 conference (Toulouse, France, december 2018) and of the MAMA 2018 workshop (Irvine, CA, USA, June 2018).
- Márton Karsai was a member of the program committee of the following conferences in 2018: Complenet 2018, MLSN2018, LADAS2018, ICCS2018, Dyno 2018, COMPLEX NETWORKS 2018, NetSci 2018.
- Christophe Crespelle was a member of the program committee of the 10th International Colloquium on Graph Theory and Combinatorics (ICGT 2018).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Isabelle Guérin Lassous is member of the editorial boards of Computer Communications (Elsevier), Ad Hoc Networks (Elsevier) and Discrete Mathematics & Computer Science.
- Anthony Busson is member of the editorial boards of Computer Communications (Elsevier).
- Márton Karsai is member of the editorial boards of Advances in Complex Systems (World Scientific).
- Márton Karsai was the invited editor of the Special Issue on Complex Networks and Their Applications, Applied Network Science, Springer (2018)
- Philippe Nain is a member of the Advisor Board of Performance Evaluation (Elsevier).

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[0]http://barthes.enssib.fr/ECV-2018

10.1.3.2. Reviewer - Reviewing Activities

- Márton Karsai was acting as a reviewer for the journals of Nature Communications, PNAS, PRL, PRX, PRE, Scientific Reports, EPJ Data Science, SNAM, EPL, EPJ B, PLoS One, Journal of Statistical Mechanics, Physics Letter A, Advanced in Complex Systems, Journal of Physics: Condensed Matter, Complex Networks, New Journal of Physics, Physica Scripta, Network Science; and for project agencies as ANR, FET-H2020 RIA.

- Paulo Gonçalves was reviewer for the following journals: IEEE Transactions on Signal Processing, IEEE Signal Processing Letter, Signal Processing (Elsevier).

- Christophe Crespelle was a reviewer for Algorithmica (Springer) and Theoretical Computer Science (Elsevier).

10.1.4. Invited Talks

- Éric Guichard gave a talk at the one-day conference *Humanités et numérique: vers plus de confiance dans la production du discours scientifique*: Les humanités numériques, un slogan creux? (Paris, Dec 4, 2018).

- Éric Guichard gave a talk at the international conference in honor of Gérard Noiriel, called *Héritages et actualités de la socio-histoire*: Comment l'informatique et les statistiques ont aidé à penser l'histoire des catégories juridiques et sociales de l'immigration? (June 14, 2018, Ehess, Paris).

- Éric Guichard gave a talk at the seminar of the PhD students of LIRIS (Univ. Lyon-1): Numérique et fracture sociale (April 3rd, 2018.)

- Éric Guichard gave a talk at the conference « Quelle est l'utilité d'un produit digital connecté dans le monde du sport? », rencontres *maths et industrie* (institut Henri Poincaré, Paris, March 13, 2018).

- Éric Guichard gave a talk at the one-day conference *Imaginaires présents, numérique à venir: impensés et idéologies*: Culture de l'écrit spatial, imaginaires et subjectivités (ESAD St-Etienne, March 7, 2018).

- Éric Guichard gave a talk at the *Séminaire interdisciplinaire PHITECO (Philosophie, Technique et Cognition)*: Epistémologie et philosophie politique du numérique (UTC, Compiègne, Jan 19, 2018).

- Paulo Gonçalves gave a talk at the seminars of the EPC Inria Maracas (Nov. 2018).

- Isabelle Guérin Lassous gave a talk at CUST and NUST in Pakistan and a seminar at the LIG laboratory on Wi-Fi association.

- Thomas Begin gave a talk at DIVA lab of Univ. of Ottawa in Canada on the modeling of DPDK-based virtual switches.

- Thomas Begin gave a talk at CITI Lab of INSA Lyon on Modeling WiFi in a multihop wireless network : feedback on experience.

- Thomas Begin gave a talk at LIP Lab of ENS Lyon on A brief tour of Machine Learning techniques.

- Philippe Nain gave a seminar on A class of stochastic multilayer networks: percolation, exact and asymptotic results, Inria Grenoble (March 22, 2018).

- Márton Karsai gave an invited talk at the Higher Order Models in Network Science, NetSci'18 Satellite (12 June 2018, Paris, France)

- Márton Karsai gave an invited talk at the Art, Networks and Technology, NetSci'18 Satellite (12 June 2018, Paris, France)

- Márton Karsai gave an invited talk at the BrainTime workshop, Institut de Neurosciences de la Timone (18 September 2018, Marseille, France)

- Márton Karsai gave an invited talk at the Language Seminar Series, Laboratoire d'Informatique de Grenoble (20 September 2018, Grenoble, France)

- Márton Karsai gave an invited talk at the Op-La-Dyn workshop, CCS'18 Satellite (26 September 2018, Thessaloniki, Greece)

- Márton Karsai gave an invited talk at the Complex systems for the most vulnerable – UNICEF workshop, CCS'18 Satellite (27 September 2018, Thessaloniki, Greece)
- Márton Karsai gave an invited talk at the SpaceNet workshop, CCS'18 Satellite (27 September 2018, Thessaloniki, Greece)
- Christophe Crespelle gave an invited talk in the Workshop on Graph Theory and Applications at the Vietnam Institute for Advanced Studies in Mathematics (VIASM), Hanoi, Vietnam.
- Christophe Crespelle gave a talk at the ICTLab of the University of Science and Technology of Hanoi (USTH), Vietnam.

10.1.5. Leadership within the Scientific Community

- Éric Fleury is Co-chair of the Networking group ResCom of the CNRS GDR ASR. He is also a member of the scientific committee of the GDR ASR.
- Philippe Nain is the coordinator of the "Strategic Technology Monitoring & Prospective Studies Inria Unit".

10.1.6. Scientific Expertise

- Isabelle Guérin Lassous is a member of the research committee of the Milyon labex.
- Isabelle Guérin Lassous is the president of the HCERES evaluation committee of SAMOVAR.
- Éric Fleury is member of the Inria Advanced and starting research position jury and junior research position (CR2/CR1)
- Éric Fleury has been an expert for the Fund for Scientific Research - FNRS.
- Éric Fleury has been a member of evaluation panels as part of the French National Research Agencys (ANR) and member of the program committee of the ANR ROSE Challenge (RObotique et Capteurs au Service d'Ecophyto)
- Éric Fleury is member of the Inria Evaluation Committee.
- Éric Guichard is a member of the scientific committee of LASCO Idea Lab of the IMT (LAboratoire Sens et COmpréhension du monde contemporain de l'Institut Mines-Télécom).
- Éric Guichard is a member of the international evaluation board of the doctoral program *Filosofia da Ciencia, Tecnologia, Arte e Sociedade* of the University of Lisbon.
- Éric Guichard is the manager of the RAIL [0] (Réseau de l'Atelier Internet Lyonnais), founded in 2017 and supported by IXXI and Enssib.

10.1.7. Research Administration

- Paulo Gonçalves is scientific liaison officer for international relations in Inria Research Centre of Rhône-Alpes.
- Paulo Gonçalves is a member of the executive committee of the Milyon labex and referent for its valorisation committee.
- Paulo Gonçalves is correspondant for the theme "Big Data" of the *Fédération d'Informatique de Lyon*.
- Paulo Gonçalves is member of the Council of the LIP laboratory.
- Isabelle Guérin Lassous is member of the department council of the Computer Science department of Université Lyon 1.
- Isabelle Guérin Lassous is the managing director of the Foundation Blaise Pascal.
- Anthony Busson is member of the Thesis Commission at LIP.
- Anthony Busson is head of the computer science department at IUT (Institut Universitaire de Technologie) - Université Lyon Claude Bernard Lyon 1.

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[0] http://barthes.enssib.fr/RAIL

- Anthony Busson was a HCERES expert member (laboratory LMIA-MIPS - Université de Haute Alsace).
- Thomas Begin is an elected member of the Council of the LIP laboratory.
- Thomas Begin is an elected member of the department council of the Computer Science department of Université Lyon 1.
- Jean Pierre Chevrot is member of the steering committee of the IXXI - Rhône-Alpes Complex Systems Institute.
- Márton Karsai is the co-responsible for the M2 master program in Modelling of Complex Systems at ENS Lyon
- Márton Karsai is the elected council member of the Complex System Society (2015-)
- Márton Karsai is the elected member of executive committee of the Complex System Society (2018-)
- Márton Karsai is the elected member of the steering committee of the IXXI Complex System Institute (2017-)
- Márton Karsai is the member of the computational infrastructure board of LIP
- Márton Karsai is the member of the communication board of LIP
- Éric Guichard is a member of the steering committee of the IXXI Complex System Institute
- Jean-Philippe Magué is a member of the executive committee of the IXXI Complex System Institute
- Jean-Philippe Magué is a member of the executive committee of the Aslan Labex, in charge of the language complexity work package.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence :

Thomas Begin: Computer Networks, 18.5h, L3, Université Lyon 1.

Márton Karsai: Introduction to Complex Networks, 6h, L3, ENS Lyon

Master :

Thomas Begin: Distributed Algorithms, 18h, M1, Université Lyon 1.

Thomas Begin: Computer Networks, 44h, M1, Université Lyon 1.

Thomas Begin: System Administration & Security, 10.5h, M2, Université Lyon 1.

Thomas Begin: Advanced Networks, 58h, M2, Université Lyon 1.

Thomas Begin: Cloud Computing, 9h, M2, Université Lyon 1.

Isabelle Guérin-Lassous: Distributed Algorithms, 30h, M1, Université Lyon 1.

Isabelle Guérin-Lassous: Networking, 14h, M1, Université Lyon 1.

Isabelle Guérin-Lassous: Wireless networks, 9h, M2, Université Lyon 1.

Isabelle Guérin-Lassous: Quality of Service, 5h, M2, Université Lyon 1.

Isabelle Guérin-Lassous: ToIP and streaming, 12h, M1, Université Lyon 1.

Éric Guichard: Économie du web et du document, 36h, M2, Enssib & Univ. Lyon 1.

Éric Guichard: Programmation éditoriale, 18h, M2, Enssib & Univ. Lyon 1.

Márton Karsai: Complex Networks, 36h, M2, ENS Lyon

Márton Karsai: Data Bases Data Mining, 20h, M1, ENS Lyon

Philippe Nain: Performance Evaluation of Computing and Communication Systems (graduate course, Fall semester 2018), 32h, University of Massachusetts, Amherst, USA.

Cycle ingénieur (Bac+3 à Bac+5):

> Paulo Gonçalves: Traitement du Signal (déterministe, aléatoire, numérique), Estimation statistique. 80 heures Eq. TD. CPE Lyon, France.

> Marion Foare: Traitement du Signal (déterministe, aléatoire), Traitement d'images, Compression, Projets. 115 heures Eq. TD. CPE Lyon, France.

10.2.2. Supervision

HDR defense: Thomas BEGIN, Contributions to the Performance Modeling of Computer Networks. December 2018.

PhD defense: Mohammed AMER,WiFi network management: a SDN approach, Novembre 2018.

PhD in progress: Esteban BAUTISTA RUIZ, Statistical Graph Signal Processing. P. Gonçalves (P. Abry, co-advisor). Started Sept. 1st, 2016.

PhD in progress: Mohamed Adbelwedoud LAFDAL, Inference of conflict graph in IEEE 802.11 networks. September 2017, A. Busson and I. Guérin Lassous

PhD in progress: Samuel UNICOMB, Spreading processes on temporal networks, Oct 2016, E. Fleury and M. Karsai

PhD in progress: Jacobo Levy ABITBOL, Information diffusion and language evolution on dynamical social networks, Oct 2016, E. Fleury and M. Karsai

PhD in progress: Marija STOJANOVA, Performance Modelling of IEEE 802.11 networks , Oct 2016, T. Begin

PhD in progress: Sicheng DAI, Dynamic Multilayer Network Modelling, M. Karsai supervisor (E. Fleury director). Started October 1st, 2017.

PhD in progress: Gaetan FRUSQUE, *Modal Decompositions of Dynamic Graphs : Application in Neurosciences*, P. Gonçalves (P. Borgnat, co-advisor). Started October 1st, 2017.

PhD in progress: Rémy GRÜNBLATT, Controlled mobility for UAV networks, October 2017, I. Guérin Lassous and O. Simonin.

PhD in progress: Dominique BARBE, From local to global learning, P. Gonçalves (P. Borgnat, co-advisor). Started October 1st, 2018.

PhD in progress: Nour el Houda BOUZOUITA, supervised by A. Busson and Hervé Rivano. Wi-Fi network Optimization through crowd sensing applications. November 2018 - November 2021.

10.2.3. Juries

Paulo Gonçalves was a member of the Ph.D thesis examination board of Jean-Charles Vialatte, IMT Atlantique, Université Bretagne Loire, December 2018.

Isabelle Guérin Lassous was a reviewer of the Ph.D thesis examination board of Jonatan Krolikowski, Univ. Paris-Sud ; Raphaël Naves, Univ. de Toulouse ; Antoine Auger, Univ. de Toulouse

Isabelle Guérin Lassous was a president of the Ph.D thesis examination board of Elodie Morin, Univ. Grenoble Alpes ; Jonatan Krolikowski, Univ. Paris-Sud

Isabelle Guérin Lassous was a member of the Ph.D thesis examination board of Narcisse Kamtchoun, UPMC

Isabelle Guérin Lassous was a member of the HdR thesis examination board of Valeria Loscri, Univ. de Lille.

Éric Guichard was a member of the Ph.D thesis examination board of Amélie Turet, Univ. Bordeaux-Montaigne.

Christophe Crespelle was a reviewer of the Ph.D thesis examination board of Thibaud Arnoux, UPMC

Anthony Busson was a jury member of Cristhian IZA PAREDES's PhD thesis. Universitat Polytecnica de Catalunya. July 12 July 2018.

Anthony Busson was reviewer and jury member of Lam-Thanh TU's PhD thesis. Université Paris Saclay. 18 June 2018.

Anthony Busson was reviewer and jury member of Nesrine KHERNANE's PhD thesis. Université de Bourgogne Franche comté. 13 November 2018.

Anthony Busson reviewer and jury member of Lucas's RIVOIRARD PhD thesis. Université de Lille. 21 September 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Isabelle Guérin Lassous is the managing director of the Foundation Blaise Pascal. The objectives of the foundation are to promote mathematics and computer science and to attract young people to scientific fields like computer science and mathematics. The actions of the FBP focus on:

- a support to actors that promote mathematics and computer science via allocated funding based on call of proposals;
- a structuring of actors to increase the impacts of their actions, to coordinate the efforts and to share experiences;
- a development of innovative experiences via summer camps and clubs of mathematics and computer science.

10.3.2. Articles and contents

- Éric Guichard wrote an article with Nicolas Schabanel in newspaper *Libération*, September 10, 2018, p. 24: « Copyright numérique: stériliser pour mieux tuer », https://www.liberation.fr/debats/2018/09/09/copyright-numerique-steriliser-pour-mieux-tuer_1677568.
- Éric Guichard gave an interview in newspaper *O Globo* (Brazil), Jan 1st , 2018.

10.3.3. Interventions

Paulo Gonçalves and Eric Guichard animated a citizen meeting on Artificial Intelligence and Social impacts. November 2018. Orliénas. https://www.vepm.net/2018/10/26/cafe-citoyen-orlienas-9-novembre-2018-lintelligence-artificielle/

<p style="text-align:center; color:red;">**DATAMOVE Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

President of the steering committee of Edu-Europar.

President of the steering committee of EGPGV (Eurographics Symposium on Parallel Graphics and Visualization).

Member of the steering committee of Europar.

Member of the steering committee of *Journée de visualisation scientifique*.

Member of the steering committee of HeteroPar.

Co-chair of the First HPML Workshop collocated with SBAC-PAD Lyon , October 2018.

9.1.1.2. Member of the Organizing Committees

Euro-Par Advisory Board Member

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

ISAV 2018 (Workshop on In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization) , November, Dallas, USA

EGPGV 2018 (Eurographics Symposium on Parallel Graphics and Visualization), June, Brno, Czech Republic.

LADV 2018 (IEEE Symposium on Large Data Analysis and Visualization), October, Berlin, Germany.

IPDPS 2018 (nternational Parallel and Distributed Processing Symposium), May, Vancouver, Canada.

LATIN, April 2018, Buenos Aires, Argentina.

CCgrid 2018 (18th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing), May, Washington DC.

SPAA (30th ACM Symposium on Parallelism in Algorithms and Architecture), July 2018, Vienna, Austria.

ISPDC, June 2018, Geneva, Switzerland.

CONPAS (Conference d'informatique en Parallelisme, Architecture et Systeme), July 2018, Toulouse, France.

HiPC 2018 (IEEE internat. Conf on High Performance Computing, Data and Analytics), December 2018, Bengaluru, India.

EURO 2018 (29th European Conference On Operational Research), July, Valencia.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Associate Editor of the Parallel Computing journal PARCO.

Member of the Editorial Board of Computational Methods in Science and Technology.

Member of the Editorial Board of ARIMA (revue africaine de recherche en informatique et maths appliquées).

9.1.4. Scientific Expertise

ANR project evaluation expert

9.1.5. Research Administration

Director of Pôle MSTIC of COMUE Univ. Grenoble-Alpes.

Head of the international Master program (MOSIG1) at Grenoble INP (ENSIMAG)

Steering committee of Grid'5000

Steering committee of GRICAD

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Denis Trystram is responsible of the first year (M1) of the international Master of Science in Informatics at Grenoble (MOSIG-M1). 200 hours per year in average.

Master: Fanny Dufossé. 30 hours per year. Combinatorial scientific computing in Master at ENS Lyon and Algorithmic in Licence at Grenoble INP.

Master: Pierre-François Dutot. 226 hours per year. Licence (first and second year) at IUT2/UPMF (Institut Universitaire Technologique de Univ. Grenoble-Alpes) and 9 hours Master M2R-ISC Informatique-Systèmes-Communication at Univ. Grenoble-Alpes.

Master: Grégory Mounié. 242 hours per year. Master (M1/2nd year and M2/3rd year) at Engineering school ENSIMAG, Grenoble-INP.

Master: Bruno Raffin. 28 hours per year. Parallel System. International Master of Science in Informatics at Grenoble (MOSIG-M2).

Master: Olivier Richard is responsible of the third year of the computer science department of Grenoble INP. 222 hours per year. Master at Engineering school Polytech-Grenoble, Univ. Grenoble-Alpes.

Master: Frédéric Wagner. 220 hours per year. Engineering school ENSIMAG, Grenoble-INP (M1/2nd year and M2/3rd year).

Master: Yves Denneulin. 192 hours per year. Engineering school ENSIMAG, Grenoble-INP (M1/2nd year and M2/3rd year).

9.2.2. Supervision

PhD: Estelle Dirand, Integration of High-Performance Data Analytics and IOs for Molecular Dynamics on Exascale Computer, Univ. Grenoble-Alpes. November 2018. Bruno Raffin and Laurent Colombet (CEA).

PhD: Valentin Reis, Learning to Control Large-Scale Parallel Platforms, Univ. Grenoble-Alpes. October 2018. Advisers: Denis Trystram and Eric Gaussier

PhD in progress: Michael Mercier, Resource Management and Job Scheduling in HPC–Cloud environments towards the Big Data era, Univ. Grenoble Alpes. Started October 2016. Advisers: Olivier Richard and Bruno Raffin.

PhD in progress: Alessandro Kraemer, Scheduling in the Cloud, Univ Grenoble-Alpes and UFPR (co-tutelle). Started October 2014. Advisers: Olivier Richard and Denis Trystram.

PhD in progress: Mohammed Khatiri, Tasks scheduling on heterogeneous Multicore, Univ. Grenoble-Alpes and University Mohammed First (co-tutelle), Advisers: Denis Trystram, El Mostafa DAOUDI (University Mohammed First, Oujda, Morocco)

PhD in progress: Adrien Faure, Scheduling with Resource Augmentation, Advisers: Denis Trystram

PhD in progress: Clément Mommessin, Scheduling on heterogeneous platforms, Advisers: Denis Trystram

PhD in progress: Loris Felardos, Deep Learning for the Analytics of Molecular Systems, Advisers: Bruno Raffin, Guillaume Charpiat (Inria team Tau), Jérome Hénin (IBPC).

PhD in Progress: Salah Zrigui, Learning Scheduling Strategies, Advisers: Denis Trystram and Fanny Dufossé.

9.2.3. *Juries*

PhD Defense of Jonathan Sarton, Visualisations interactives haute-performance de donnes volumiques massives : une approche out-of-core multi-resolution basee GPUs, 28 Novembre 2018, Université de Reims Champagne-Ardenne. Reviewer

PhD Defense of Adrian Perez Dieguez, Parallel Prefix Operations on Heterogeneous Platforms, December 2018, Universidad da Coruna. Reviewer.

PhD Defense of Khalil Labidi, Parallelisation of hybrid metaheuristics for COP solving, 20 septembre 2018, Université de Tunis et Université Paris-Dauphine. President

PhD Defense of Stéphane Durand, Contrôle distribué et théorie des jeux : application aux systèmes auto-optimisants, 13 décembre 2018, Univ Grenoble Alpes. President

HDR Defense of Samuel Thibault, 13 décembre 2018, University Bordeaux I. Reviewer

9.3. Popularization

9.3.1. *Interventions*

- Talk *Des besoins en calcul de plus en plus performant* for the conference cycle "Accompagnement de l'informatique au lycée en 2018".

DELYS Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Marc Shapiro, Organiser of Dagstuhl Workshop on "Data Consistency in Distributed Systems: Algorithms, Programs, and Databases" (19-0117), February 2018.

Swan Dubois, PC Track Chair (track A: Theoretical and Practical Aspects of Stabilizing Systems) of the 20th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2018).

8.1.1.2. Member of the Organizing Committees

- Marc Shapiro, Steering Committee of Workshop on Principles and Practice of Consistency for distributed Data (PaPoC).

- Franck Petit, Steering Committee of the *International Symposium on Stabilization, Safety, and Security of Distributed Systems* (SSS).

- Pierre Sens, since 2014: Member of Steering Committee of International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD).

8.1.2. Scientific Events Selection

8.1.2.1. Member of Conference Program Committees

Pierre Sens, 28th International Symposium on Software Reliability Engineering (ISSRE 2018), 17th IEEE International Symposium on Network Computing and Applications (NCA 2018), 37th IEEE International Symposium on Reliable Distributed Systems (SRDS 2018), 32rd International Symposium on DIStributed Computing (DISC 2018).

Marc Shapiro, Program Committee of Int. Conf. on Middleware (Middleware 2018).

Marc Shapiro, Program Committee of European Conference on Computer Systems (EuroSys 2019).

Marc Shapiro, Program Committee of Symposium on Principles of Distributed Computing (PODC 2019).

Dimitri Vasilas, Shadow Program Committee of European Conference on Computer Systems (EuroSys 2019).

Franck Petit, 20th Workshop on Advances in Parallel and Distributed Computational Models (APDCM 2018), 24th Conférence d'informatique en Parallélisme, Architecture et Système (COMPAS 2018), 20th Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications (ALGOTEL 2018). Tutorial chairman of Latin-American Symposium on Dependable Computing (LADC 2018).

Luciana Arantes, 17th IEEE International Symposium on Network Computing and Applications (NCA 2018), 14th European Dependable Computing Conference (EDCC 2018), Latin-American Symposium on Dependable Computing (LADC 2018), Conférence d'informatique en Parallélisme, Architecture et Système (COMPAS 2018) .

Swan Dubois, PC member of the ACM Symposium on Principles of Distributed Computing (PODC 2018).

8.1.3. Journal

8.1.3.1. Member of Editorial Boards

Pierre Sens, Associate editor of International Journal of High Performance Computing and Networking (IJHPCN)

Franck Petit, Special Issue on Stabilization, Safety, and Security, Journal on Theory of Computing Systems (ToCS).

Marc Shapiro, Associate Editor for Letters of the IEEE Computer Society (LOCS).

8.1.3.2. Reviewer, Reviewing Activities

Pierre Sens, reviewer Journal of Parallel and Distributed Systems (JPDC), and IEEE Transactions on Parallel and Distributed Systems (TPDS).

Franck Petit, reviewer Journal of the ACM (JACM), Journal of Parallel and Distributed Systems (JPDC), and the International Colloquium on Structural Information and Communication Complexity (SIROCCO 2018).

Luciana Arantes, reviewer Journal of Parallel and Distributed Systems (JPDC), and IEEE Transactions on Parallel and Distributed Systems (TPDS).

Swan Dubois, reviewer Theoretical Computer Science (TCS), ACM Transactions on Computer Systems (TOCS), and The International Symposium on DiStributed Computing (DISC 2018).

8.1.4. Invited Talks

Pierre Sens, *Fault tolerance in dynamic distributed systems*. Invited keynote speaker, "Insights for the Future of Computing", LIG, Grenoble, Avril 2018.

Franck Petit, *Robustness: a New Form of Heredity Motivated by Dynamic Networks*, Invited speaker, 9th Workshop on GRAph Searching, Theory & Applications (GRASTA 2018), Berlin, Germany, Sept. 2018.

Marc Shapiro, *Just-Right Consistency: As available as possible, As consistent as necessary, Correct by design*. Invited speaker, Verification of Distributed Systems workshop, Essaouira, Morocco, May 2018.

Marc Shapiro, *Just-Right Consistency: As available as possible, As consistent as necessary, Correct by design*. Keynote presentation, DotScale, the European Tech Conference on Scalability, Distributed Systems & DevOps, Aubervillers, June 2018.

Marc Shapiro, *Just-Right Consistency*. Keynote presentation, Conf on Advances and Computing and Communication Engineering, Paris, June 2018.

Marc Shapiro, *Just-Right Consistency: As available as possible, Synchronous when necessary, Correct by design*. Invited Keynote talk, I/O Labs annual workshop, Châtillon, France, Oct. 2018.

Marc Shapiro, *Life after consistency*. Workshop of the EuroSys Program Committee, Dec. 2018.

8.1.5. Scientific Expertise

Pierre Sens, Project in Indo-French Centre for the Promotion of Advanded Research

Marc Shapiro, member of Panel PE6 (Computer Science) of European Research Council Starting Grants 2018.

8.1.6. Research Administration

Franck Petit, since 2014: deputy director of the LIP6 laboratory

Pierre Sens, since 2016: Member of Section 6 of the national committee for scientific research CoNRS

Pierre Sens, since 2012: Member of the Executive Committee of Labex SMART, Co-Chair (with F. Petit) of Track 4, Autonomic Distributed Environments for Mobility.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Julien Sopena is Member of "Directoire des formations et de l'insertion professionnelle" of Sorbonne Université, France

Master: Julien Sopena is responsible of Computer Science Master's degree in Distributed systems and applications (in French, SAR), Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, Jonathan Lejeune, Franck Petit, Pierre Sens, Julien Sopena, Advanced distributed algorithms, M2, Sorbonne Université, France

Master: Jonathan Lejeune, Designing Large-Scale Distributed Applications, M2, Sorbonne Université, France

Master: Maxime Lorrillere, Julien Sopena, Linux Kernel Programming, M1, Sorbonne Université, France

Master: Luciana Arantes, Swan Dubois, Jonathan Lejeune, Pierre Sens, Julien Sopena, Operating systems kernel, M1, Sorbonne Université, France

Master: Luciana Arantes, Swan Dubois, Franck Petit, Distributed Algorithms, M1, Sorbonne Université, France

Master: Jonathan Lejeune, Julien Sopena, Client-server distributed systems, M1, Sorbonne Université, France.

Master: Julien Sopena, Marc Shapiro, Ilyas Toumlilt, Francis Laniel. Kernels and virtual machines (*Noyaux et machines virtuelles*, NMV), M2, Sorbonne Université, France.

Licence: Pierre Sens, Luciana Arantes, Julien Sopena, Principles of operating systems, L3, UPMC Sorbonne Université, France

Licence: Swan Dubois, Initiation to operating systems, L3, Sorbonne Université, France

Licence: Swan Dubois, Multi-threaded Programming, L3, Sorbonne Université, France

Licence: Jonathan Lejeune, Oriented-Object Programming, L3, Sorbonne Université, France

Licence: Franck Petit, Advanced C Programming, L2, Sorbonne Université, France

Licence: Swan Dubois, Julien Sopena, Introduction to operating systems, L2, Sorbonne Université, France

Licence: Mesaac Makpangou, C Programming Language, 27 h, L2, Sorbonne Université, France

Ingénieur 4ème année : Marc Shapiro, Introduction aux systèmes d'exploitation, 26 h, M1, Polytech Sorbonne Université, France.

Licence : Philippe Darche (coordinator), Architecture of Internet of Things (IoT), 2×32h, L3, Institut Universitaire Technologique (IUT) Paris Descartes, France.

Engineering School: Philippe Darche (coordinator), Solid-State Memories, 4th year, ESIEE, France.

DUT: Philippe Darche (coordinator), Introduction to Computer Systems - Data representation, 60h, Institut Universitaire Technologique (IUT) Paris Descartes, France.

DUT: Philippe Darche (coordinator), Computer Architecture, 32h, Institut Universitaire Technologique (IUT) Paris Descartes, France.

DUT: Philippe Darche (coordinator), Computer Systems Programming, 80h, Institut Universitaire Technologique (IUT) Paris Descartes, France.

8.2.2. Supervision

PhD: Florent Coriat, "Géolocalisation et routage en situation de crise", Dec. 2018, Sorbonne Univ., Anne Fladenmuller (NPA-LIP6) and Luciana Arantes.

PhD: Lyes Hamidouche, "Data replication and data sharing in mobile networks", Sorbonne Univ., CIFRE, Apr. 2018, Sébastien Monnet, Pierre Sens, Dimitri Refauvelet (Magency).

PhD: Denis Jeanneau, "Failure detectors in Dynamic Systems," Sorbonne Université, Dec. 2018, Luciana Arantes, Pierre Sens.

PhD: B Ngom. "FreeCore: a system for indexing document summaries on a Distributed Hash Table (DHT)," Sorbonne Université, Jul. 2018, Mesaac Makpangou.

PhD: Alejandro Z. Tomsic, Sorbonne Univ., defended Apr. 2018, Marc Shapiro. "Computing over widely-replicated data in a hybrid cloud."

PhD: Gauthier Voron, "Big-Os : un OS pour les grands volumes de données,", Sorbonne Univ., Mar. 2018, Gaël Thomas, Pierre Sens.

PhD in progress: João Paulo de Araujo, "L'exécution efficace d'algorithmes distribués dans les réseaux véhiculaires", funded by CNPq (Brésil), since Nov.2015, Pierre Sens and Luciana Arantes.

PhD in progress: Sébastien Bouchard, "Gathering with faulty robots", Sorbonne Univ., since Oct. 2016, Swan Dubois, Franck Petit, Yoann Dieudonné (University of Picardy Jules Verne)

PhD in progress: Marjorie Bournat, "Speculation and Graceful Degradability for Robots in Highly Dynamic Environments", Sorbonne Univ., since Sep. 2015, Swan Dubois, Franck Petit, Yoann Dieudonné (University of Picardy Jules Verne)

PhD in progress: Damien Carver, "HACHE : HorizontAl Cache cHorEgraphy - Toward automatic resizing of shared I/O caches.", Sorbonne Univ., CIFRE, since Jan. 2015, Sébastien Monnet, Pierre Sens, Julien Sopena, Dimitri Refauvelet (Magency).

PhD in progress: Arnaud Favier, "Algorithmes de coordination répartis dans des réseaux dynamiques", Sorbonne Univ., since Sep. 2018, Pierre Sens and Luciana Arantes.

PhD in progress: Saalik Hatia, "Efficient management of memory and storage for CRDTs," Sorbonne Univ., since Oct. 2018. Advised by Marc Shapiro.

CIFRE PhD in progress: Guillaume Fraysse, Orange Lab - Inria, "Ubiquitous Resouces for Service Availability." Since Jul. 2017, advised by Pierre Sens, Imen Grida Ben Yahia (Orange-Lab) , Jonathan Lejeune, Julien Sopena.

PhD in progress: Francis Laniel, Sorbonne Univ., since Sept. 2017. Advised by Marc Shapiro, Julien Sopena, Jonathan Lejeune. "Vers une utilisation efficace de la mémoire non volatile pour économiser l'énergie."

PhD in progress: Sreeja Nair, Sorbonne Univ., since April 2018. "Just-Right Consistency for massive gee-replicated storage." Advised by Marc Shapiro.

CIFRE PhD in progress: Jonathan Sid-Otmane. "Étude des critères de distribution et de l'usage d'une base de données distribuée pour un OS Telco." Advised by Marc Shapiro, with Sofiane Imadali and Frédéric Martelli, Orange Labs.

PhD in progress: Ilyas Toumlilt, Sorbonne Univ. "Bridging the CAP gap, all the way to the edge." Advised by Marc Shapiro.

CIFRE PhD in progress: Dimitrios Vasilas, Sorbonne Univ., "Indexing in large-scale storage systems." Advised by Marc Shapiro, with Brad King, Scality.

8.2.3. *Juries*

Franck Petit was the reviewer of:

- Alessia Milani, HDR, LaBRI, Bordeaux
- Laurent Feuilloley, PhD, IRIF, Paris

Franck Petit was Chair of

- Florent Coriat, PhD, LIP6, Paris

Pierre Sens was the reviewer of:

- Matthieu Roy, HDR, LAAS, Toulouse
- Thouraya Louati, PhD, Sfax Univ., Tunisie
- Yacine Taleb, PhD, IRSIA, Rennes
- Ye Xia, PhD, LIG, Univ. Grenoble

Pierre Sens was Chair of

- Soraya Zertal, HDR, UVSQ, Versailles
- Nikolaos Georgantas, HDR, Sorbonne Univ. - Inria, Paris
- Alejandro Tomsic, PhD, LIP6, Paris
- Veronica Quintuna Rodriguez, PhD, Sorbonne Univ. - Inria, Paris

Marc Shapiro was a member of the following committees:

- Aurélie Hurault, HdR, ENSEEIHT, Toulouse.
- Soraya Zertal, Comité de suivi doctoral, UVSQ, Versailles.

8.3. Popularization

Jonathan Lejeune and Julien Sopena animated an activity during the Science Festival 2018 at Sorbonne Univ.

<p style="text-align:center;color:red;font-weight:bold;">DIANA Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

Chadi Barakat is on the editorial board of the Computer Networks journal, and is on the Technical Program Committee for the ACM MECOMM Workshop held in conjunction with the ACM SIGCOMM 2018 conference, and for the Network Traffic Measurement and Analysis Conference (TMA 2019). He co-chaired the workshops at the ACM CoNext 2018 conference and will co-chair the Technical Program Committee for the CCDWN workshop 2019 to be held in conjunction with the WiOpt 2019 conference. He is currently the scientific referee for international affairs at Inria Sophia Antipolis and member of the Conseil d'Orientation Scientifique et Technologique at Inria within the working group of international affairs (COST-GTRI).

Walid Dabbous is chair of the scientific committee of the User Centric Networking (UCN@Sophia) Laroratory of Excellence, and member of the scientific committee of the Academy 1 of the UCAJedi Idex. He is also member of the Ubinet International Master program steering committee. He is chair of the Inria admissibility jury for the young graduate scientist ("CRCN") competitive selection.

Arnaud Legout is on the editorial board of the Computer Networks journal. Arnaud Legout is the president of the Commission of the users of IT resources of Sophia Antipolis Inria research center.

Damien Saucez has co-organised the ACM SIGCOMM Reproducilbity workshop. He is co-chair of the ACM SIGCOMM *Artefact Evaluation Committee* whose role is to assess the reproducibility level of papers accepted to ACM SIGCOMM sponsored conferences and journals. He was TPC co-chair of the 2018 ACM Workshop on ns-3. He was member of the TPCs of IEEE ICC 2018, DRCN 2018, ACM WNS3 2018 and is regular reviewer for IEEE, ACM, Elsevier, and Springer journals. Damien Saucez and Walid Dabbous participated to the organization of the first Grid'5000-FIT school in Sophia Antipolis in April 3-6 2018. See https://www.silecs.net/1st-grid5000-fit-school/ for more information.

Thierry Turletti, Senior ACM and IEEE member, served in 2018 in the program committees of the following international workshops and conferences: the 3rd CoRes Workshop at Roscoff, France in May 28-29, the 9th Workshop on ns-3 at Mangalore, India in June 13-14, the 13rd Workshop on Challenged Networks (CHANTS) at New Delhi, India in October 29 and IEEE Globecom at Abu Dabi, UAE in December 9-13. He is member of the Editorial Boards of the Journal of Mobile Communication, Computation and Information (WINET) published by Springer Science and of the Advances in Multimedia Journal published by Hindawi Publishing Corporation. Thierry Turletti is president of the Committee for Technological Development (CDT) and member of the committee NICE that studies postdoc and visiting researcher applications at Inria Sophia Antipolis.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master Ubinet: Chadi Barakat and Walid Dabbous, Evolving Internet, 31.5 hours, M2, University of Nice-Sophia Antipolis, France.

Master Ubinet: Chadi Barakat and Walid Dabbous, Internet Measurements and New Architectures, 31.5 hours, M2, University of Nice-Sophia Antipolis, France.

Master 1 in Computer Science: Chadi Barakat, Computer Networks, 15 hours, M1, University of Nice Sophia Antipolis, France.

Master 1 in Computer Science: Chadi Barakat, Internet of the Future, 15 hours, M1, University of Nice Sophia Antipolis, France

Master Estel: Chadi Barakat, Voice over IP, 9 hours, University of Nice-Sophia Antipolis, France.

Master Ubinet: Arnaud Legout, From BitTorrent to Privacy, 36 hours, M2, University of Nice-Sophia Antipolis, France.

Master 1 in Computer Science: Arnaud Legout, Oral and written communications, 18 hours, M1, University of Nice-Sophia Antipolis, France.

Master IUP GMI: Damien Saucez, Security and privacy in networks, 38h, M2, University of Avignon, France.

E-learning

Python: Arnaud Legout and Thierry Parmentelat are co-authors of the MOOC Python 3 : "Python 3 : des fondamentaux aux concepts avancés du langage" that lasts 9 weeks on FUN (https://www.france-universite-numerique-mooc.fr/), UCA. For the second session there were 12748 registered persons. In total, this MOOC all on its editions has been followed by 57938 persons.

9.2.2. Supervision

PhD in progress: Othmane Belmoukadam started his PhD on "QoE aware content management in the Internet: caching and transport" in October 2018. He is supervised by Chadi Barakat and funded by the doctoral school EDSTIC of Université Côte d'Azur (UCA).

PhD in progress: Yanis Boussad started his PhD on "Large scale characterization of the exposition to microwaves" in October 2017. He is co-supervised with Leonardo Lizzi, LEAT.

PhD in progress: Giuseppe Di Lena started his PhD on "Building a resilience methodology for NFV/SDN " in Apr 2018. His PhD is co-supervised by Thierry Turletti and Damien Saucez.

PhD in progress: Thibaut Ehlinger: started his PhD on "Mapping Quality of Service metrics to user Quality of Experience in the Internet" in November 2017. He is co-supervised by Chadi Barakat and Vassilis Christophides (EPI MiMove, Inria Paris).

PhD in progress: Iman Fouad started her PhD on on Web tracking technologies and privacy protection in november 2017. Her thesis is co-supervised by Arnaud Legout and Nataliia Bielova (Indes).

PhD in progress: Karyna Gogunska works on "Empowering Virtualized Networks with Measurement As a Service (MaaS)". Her thesis is co-supervised by Chadi Barakat and Guillaume Urvoy-Keller (I3S).

PhD in progress: Muhammad Jawad Khokhar works on "From Network Level Measurements to Expected Quality of User Experience". His PhD is supervised by Chadi Barakat.

PhD in progress: Mohamed Naoufal Mahfoudi works on cross-layer optimization techniques for next generation MIMO-based networks since November 2015. His thesis is co-supervised by Walid Dabbous and Robert Staraj (LEAT).

PhD in progress: Ghada Moualla works on "the problem of network faults and how to circumvent them by the means of Software Defined Networking, virtualization, and service function chaining" since November 2015. Her thesis is co-supervised by Thierry Turletti and Damien Saucez.

PhD: Vitalii Poliakov defended his PhD on "the application of Software Defined Networking on 5G networks in order to optimise the Quality of Experience of network services" in December 2018. His thesis was co-supervised by Damien Saucez and Lucile Sassatelli (I3S).

PhD: Hardik Soni defended his PhD on "Software Defined Networking in challenged environments" in April 2018. His thesis was co-supervised by Thierry Turletti and Walid Dabbous.

PhD in progress: Imane Taibi started his PhD in the Dionysos project-team on "Big data analysis for network monitoring and troubleshooting" in November 2017. She is co-supervised by Gerardo Rubino, Yassine Hadjadj-Aoul and Chadi Barakat.

PhD in progress: Mathieu Thiery started his PhD in the Privatics project-team on "Data protection of connected objects and smartphones" in April 2017. He is co-supervised by Vincent Roca and Arnaud Legout.

PhD in progress: Thibaud Trolliet started his PhD on "Exploring trust on Twitter" in octobre 2017. He is co-supervised with Frederic Giroire.

9.2.3. *Juries*

Chadi Barakat served as reviewer of Muhammad Ikram thesis, "Analysis and Design of Secure and Privacy Preserving Systems" defended in April 2018 at the University of New South Wales and Data61, Australia.

Walid Dabbous served as reviewer of Cédric Baudoin HDR thesis "Optimisation et intégration des réseaux de télécommunication par satellite" in INP Toulouse, defended in january 17, 2018.

Walid Dabbous served as a jury member for the mid-term review of the Ph.D. thesis of Sumit Kumar (Eurecom) for his thesis entitled "Simultaneous multi-standard SDR platform" in january 18, 2018.

Walid Dabbous served as a jury chair person for the Ph.D. thesis defense of Dolière Francis Somé on "Web Applications Security and Privacy" on october 29, 2018 (Inria, Indes project-team).

Damien Saucez served as jury member of Chi Dung Phung PhD defence, UPMC, Paris. The thesis on "Enriching the Internet control-plane for improved traffic engineering" was defended on March 30, 2018.

Damien Saucez served as jury member of Yue Li PhD defense, Telecom ParisTech, Paris. The thesis on "Future Internet Services based on LISP Technology" was defended on April 26, 2018.

Thierry Turletti served as a jury member for the mid-term review of the Ph.D. thesis of Andrea Tomassilli on "the integration of Network Functions Virtualization (NFV) techniques with Software-Defined Networking (SDN)." on May 24, 2018 (Inria, COATI project-team).

Thierry Turletti served as a jury member for the mid-term review of the Ph.D. thesis of Chia-Yu Chang on "Cloudification and Slicing in 5G Radio Access Network" on June 28, 2018 (Eurecom).

Thierry Turletti served as reviewer of Elie Bouttier PhD thesis, "Livraison de contenus sur un réseau hybride satellite / terrestre", defended on July 5, 2018 at INP Toulouse, France.

Thierry Turletti served as reviewer of Raphael Naves PhD thesis, "Apport de la gestion des interférences aux réseaux sans-fil multi-sauts: Le cas du Physical-Layer Network Coding" defended on November 19, 2018 at INP Toulouse, France.

Thierry Turletti served as reviewer and president of Imad Alawe PhD thesis "Architectures evaluation and dynamic scaling for 5G mobile core networks", defended on November 21, 2018 at Université de Rennes 1, France.

9.3. Popularization

9.3.1. *Interventions*

Chadi Barakat keeps participating to the organization of the Mediterranean Students Days @ Campus SophiaTech. The sixth edition took place on Feb 12 - 14, 2018. All details on this event can be found at http://univ-cotedazur.fr/events/meddays. He also participated to the organization of the French-American Doctoral Exchange Seminar (FADEx) 2018 held in June 2018 on the three French sites Sophia Antipolis, Grenoble, and Paris.

Damien Saucez is part of the MASTIC (https://project.inria.fr/mastic) group at Inria. MASTIC groups all the activities for scientific dissemination for Inria Sophia Antipolis. Within the team, we gave a 3h game-based class to 12 collège interns that made an internship at Inria in December to introduce them to the fundamental algorithms used in the Internet (shortest-path, longest prefix matching, distance-vector, AIMD). Damien Saucez was involved in the organization of the "Journée portes-ouvertes" of the Inria Sophia Antipolis premises. Specifically, DIANA presented R2LAB and Electrosmart.

<h1 style="text-align:center; color:red;">DIONYSOS Project-Team</h1>

10. Dissemination

10.1. Scientific Events Organisation

We organized the *13th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing*, in Rennes, July 1-6, 2018. The MCQMC Conference is a biennial meeting on Monte Carlo and quasi-Monte Carlo methods and the premier event on the topic; it has attracted 300 people from all over the world.

10.1.1. General Chair, Scientific Chair

- Bruno Tuffin was the General Chair for the *13th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing*, in Rennes, July 1-6, 2018.
- Yassine Hadjadj-Aoul was the General Chair for the *The 5th International Symposium on Networks, Computers and Communications*, Co-sponsored by IEEE, in Roma (Italy), May 2018.

10.1.2. Member of the Organizing Committees

- Pierre L'Ecuyer is member of the Steering Committee of MCQMC and the president of the Steering Committee of MCM.
- Gerardo Rubino and Bruno Tuffin are members of the Steering Committee of the International Workshop on Rare Event Simulation (RESIM).
- Y. Hadjadj-Aoul is co-chairing the Steering Committee of the International Conference on Information and Communication Technologies for Disaster Management (ICT-DM) from December 2016 and member of the steering committee since 2015.
- Yann Busnel has been member of the Organization Committee of the 17th International Conference on Ad Hoc Networks and Wireless (AdHoc-Now 2018), in Saint-Malo, France, in July 2018, acting as Publicity Chair.

10.1.3. Scientific Events Selection

10.1.3.1. Chair of Conference Program Committees

- Bruno Tuffin Area chair for the area "Performance Evaluation, Control and Optimization" of ITC, 11-14 Sep, 2018 in Vienna, Austria.
- Bruno Tuffin was Track-Coordinator for Network and Communications mini-track for WSC'2018 (Winter Simulation Conference, Gotheburg, Sweden, Dec 9-12).
- Yassine Hadjadj-Aoul was Track-Coordinator for the "Satellites IoT and M2M Networks" of the "International Conference on Smart Communications and Networking" (SmartNets), Hammamet, Tunisia (Nov. 2018).

10.1.3.2. Member of the Conference Program Committees

Pierre L'Ecuyer was a member of the program committee of the following events:

- MCQMC'2018: Thirteenth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Rennes, France, July 2018.
- SIMULTECH 2018: International Conference on Simulation and Modeling Methodologies, Technologies and Applications, Porto, Portugal, July 2018.
- ICORES 2018: International Conference on Operations Research and Enterprise Systems, Funchal, Portugal, Feb. 2018

Patrick Maillé was a member of the program committee of the following events:

- MobiHoc 2018,
- WiOpt 2018,
- IFIP Performance 2018,
- NetEcon 2018,
- AdHocNow 2018.

Bruno Tuffin was a member of the program committee of the following events:

- Ninth International Workshop on Simulation, Barcelona, Spain, June 18-22, 2018
- The 4th International Symposium on Ubiquitous Networking (UNET 2018), Hammamet, Tunisia, May 03-05, 2018.
- IEEE International Conference on Communications, 20-24 May 2018, Kansas City, MO, USA
- IEEE 1st 5G World Forum, Santa Clara, July 9-11, 2018
- GECON 2018 - International Conference on Economics of Grids, Clouds, Software, and Services, Pisa, 18-20.Sept.2018
- NETGCOOP 2018 - International Conference on NETwork Games, COntrol and OPtimisation New York, November 14-16, 2018
- IFIP WG 7.3 Performance 2018, 36th International Symposium on Computer Performance, Modelling, Measurement and Evaluation, Toulouse, France, December 5-7, 2018

Yann Busnel was a member of the program committee of the following events:

- NCA 2018: 17th IEEE International Symposium on Network Computing and Applications, Boston, USA, October 2018.
- AdHoc Now: 17th International Conference on Ad Hoc Networks and Wireless (AdHoc-Now 2018), Saint-Malo, France, July 2018.

Gerardo Rubino was a member of the program committee of the following event:

- MCQMC'2018: Thirteenth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Rennes, France, July 2018.

Yassine Hadjadj-Aoul was a member of the program committee of the following events:

- IEEE Globecom 2018 - IEEE Global Communications Conference, Abu Dhabi, UAE, December 9-13, 2018.
- IEEE ICC 2018 - IEEE International Conference on Communications, Kansas City, MO, USA, May 20-24, 2018.
- IEEE WCNC 2018 - IEEE Wireless Communications and Networking Conference, Barcelona, Spain, April 15-18, 2018.
- IEEE ISCC 2018 - IEEE Symposium on Computers and Communications, Natal, Brazil, June 25-28, 2018.
- IEEE CCNC 2018 - IEEE Consumer Communications & Networking Conference, Las Vegas, USA, January 12-15, 2018.

10.1.3.3. Reviewer

Yann Busnel served as a reviewer for several major international journals and conferences, such as TPDS (IEEE Transactions on Parallel and Distributed Systems).

Bruno Sericola served as a reviewer for several major international conferences.

César Viho has reviewed papers for the journals IEEE Transaction on Wireless Communication, IEEE Transactions on Vehicular Communications, IEEE Communications Magazine, and for the following international conferences: IWCNC, Globecom, and CCNC.

Yassine Hadjadj-Aoul has served as a reviewer for several major international conferences such as IEEE Globecom, IEEE ICC.

Gerardo Rubino served as a reviewer for several major international conferences.

10.1.4. Journals

10.1.4.1. Member of the Editorial Boards

Bruno Tuffin is the Simulation Area Editor for *Informs Journal on Computing* since Jan. 2016.
Bruno Tuffin is an associate editor for the following journal:

- ACM Transactions on Modeling and Computer Simulation, since November 2008.

Pierre L'Ecuyer is an associate editor for the following journals:

- ACM Transactions on Mathematical Software, since August 2004.

- Statistics and Computing (Springer-Verlag), since June 2003.

- International Transactions in Operational Research, since May 2007.

Bruno Sericola is an associate editor for the following journals:

- International Journal of Stochastic Analysis, since April 2010.

- Performance Evaluation, since April 2015.

Bruno Sericola is Editor in Chief of the books series "Stochastic Models in Computer Science and Telecommunications Networks", ISTE/WILEY, since March 2015.

10.1.4.2. Reviewer - Reviewing Activities

Bruno Sericola, Bruno Tffin, Gerardo Rubino, served as reviewers for several major international journals.

Yassine Hadjadj-Aoul has reviewed papers for the journals: Elsevier Computer Networks, Elsevier Computer communication, IEEE Communication Letters, Transaction on Vehicular Technologies (TVT), IEEE Communication magazine, IEEE Journal On Selected Area of Communication, IEEE Transactions on Emerging Topics in Computational Intelligence, Springer Journal of Network and Systems Management, Springer Annals of Telecommunications.

10.1.5. Invited Talks

B. Tuffin. gave the tutorial "Recherche opérationnelle et théorie des jeux pour l'analyse de la neutralité du Net" in *19ème congrès de la Société Française de Recherche Opérationnelle et d'Aide A la Decision (ROADEF)*, Lorient, France, 21-23 Février 2018.

B. Tuffin gave the following seminar presentations:

- B. Tuffin. Estimating the mean and tail-distribution measures of time to failure by simulation. Meeting COSMOS(Contrôle et Optimisation Stochastique, MOdélisation et Simulation), GR Recherche Opérationnelle CNRS, June 18, 2018.

- B. Tuffin. Mean Time To Failure Estimation by simulation. RNA Kinetics Day, LRI October 3, 2018.

Yann Busnel made several invited and keynote talks:

- *How to generate uniform Samples on large-scale data streams*, Invited talk at SMURF Workshop: Survey Methods and their use in Related Fields, Institute of Statistics, University of Neuchâtel, August 2018.

- *Big Data Panorama & Large-scale Data Streaming*, Keynote at CEP/FDP on Big Data Computing, IIT Patna, India, December 2018.

Gerardo Rubino made several invited and keynote talks:

- *Machine Learning Developments around the PSQA Project*, **plenary speaker** in the workshop by invitation *Machine Learning in Communication Systems*, organized by the German DFG Collaborate Research Center 1053 "MAKI": Multi-Mechanism Adaptation for the Future Internet, Darmstadt, Germany, March 23, 2018.

- *Random Neural Networks and Extensions. Applications to networking*, **plenary speaker** in the TMA Experts Summit by invitation, as part of *IEEE Network Traffic Measurement and Analysis Conference (TMA'18)*, Vienna, Austria, June 2018.

- *Duality concepts and applications in difference and differential linear systems*, A. Krinik and G. Rubino, invited talk in *The American Mathematical Society (AMS) Fall Western Sectional Meeting*, San Francisco State University, San Francisco, CA, October 2018.

- *Performance evaluation targeting Quality of Experience*, **keynote speaker** in *The 15th European Performance Engineering Workshop (EPEW'18)*, Paris, France, October 2018.

- *Efficient Monte Carlo estimation of network reliability metrics with the standard estimator*, invited talk in *INFORMS Annual Meeting*, Phoenix, USA, November 2018.

Yassine Hadjadj-Aoul gave the following tutorial:

- "Analysis of caching strategies for content centric networks" in the International Conference: "The 7th IEEE International Conference on Smart Communications in Network Technologies (SaCoNet)".

Gerardo Rubino gave the following tutorial:

- *Introduction to rare event analysis using Monte Carlo*, G. Rubino, tutorial in 13th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing (MCQMC 2018), Rennes, France, July 2018.

Yassine Hadjadj-Aoul gave the following seminar presentation:

- "Efficient support of massive IoT deivces' access in future wireless networks" at the Manchester Metropolitan University (MMU).

10.1.6. Leadership within the Scientific Community

- Bruno Tuffin is the co-director of the common lab ALSTOM-Inria since 2014.

- Bruno Tuffin is an elected member of I-SIM council of INFORMS Society.

- Yann Busnel is a member of the CSV (the technical committee) of the Images and Networks Cluster of Brittany, France.

- Gerardo Rubino is a member of the CSV (the technical committee) of the Images and Networks Cluster of Brittany, France.

- Yann Busnel is a member of the Steering Committee of the RESCOM research group at GDR CNRS RSD.

- Yassine Hadjadj-Aoul is a founding member of Special Interests Group "IEEE Sig on Big Data with Computational Intelligence" under the IEEE COMSOC Big Data TC (Since June 2017).

- Yassine Hadjadj-Aoul is a member of the scientific committee of GT ARC (Automatique et Réseaux de Communication) scientific committee (since Nov. 2017).

- Gerardo Rubino is the coordinator of the research action "Analytics and machine learning", in collaboration with Nokia Bell Labs.

10.1.7. Scientific Expertise

- César Viho has reviewed project proposals for the ANR and for CIFRE contracts for the ANRT.
- Yassine Hadjadj-Aoul has reviewed project proposals for the Irish Research Council (COALESCE Research Fund 2019).

10.1.8. Research Administration

- Yann Busnel is the head of « Network System, Cybersecurity and Digital law » Research Department at IMT Atlantique (2017–*).
- Bruno Sericola is responsible for the Inria Rennes-Bretagne Atlantique budget.
- Bruno Sericola is the leader of the research group MAPI (Math Appli Pour l'Info) the goal of which is to improve the collaboration between computer scientists and mathematicians.
- Bruno Sericola is member of the research commission of the academic council of University of Rennes 1.
- César Viho is director of the MAthSTIC (Mathematics, Electronics and Computer Sciences) doctoral school in charge of managing the recruitment of around 1100 PhD students and their activities during their doctorate, in all the concerned areas of the UBL (Université Bretagne Loire).

10.2. Teaching

Master: Bruno Tuffin, MEPS (performance evaluation), 35h, M1, Univ Rennes, France

Master: Bruno Tuffin, GTA (Game Theory and Applications), 15h, M2, Univ Rennes, France

Master: Patrick Maillé, GTA (Game Theory and Applications), 15h, M2, Univ Rennes, France

Master:Rennes 1 Patrick Maillé, Simulation and queuing theory, 25h, M2, IMT Atlantique, France

Licence:Rennes 1 Patrick Maillé, Techniques and models in networks, 20h, L3, IMT Atlantique, France

Master:Rennes 1 Patrick Maillé, Performance Evaluation, 30h, M1, IMT Atlantique, France

Licence:Rennes 1 Yann Busnel, Introduction to Network, 12h, 1st year ENS Rennes, France.

Master:Rennes 1 Yann Busnel, Big Data and Stream Processing, 9h, 3rd year IMT Atlantique , France.

Licence: Bruno Sericola, Mathematics, 14h, L2, IUT/University of Rennes 1, France.

Master: Bruno Sericola, Mathematics, 12h, M2, Istic/University of Rennes 1, France.

Master: Bruno Sericola, Logistic and performance, 12h, M2, Faculté de sciences économiques, Univ of Rennes 1, France

Master: Bruno Sericola, MEPS (performance evaluation), 36h, M1, Univ Rennes, France

Master M1: César Viho, Networks:Rennes 1 from Services to protocols, 36 hours, Istic/University of Rennes 1, France

Master M2: César Viho, Algorithms on graphs, 40 hours, Istic/University of Rennes 1, France

Bachelor L2: César Viho, Network architecture and components, 16 hours, Istic/University of Rennes 1, France

Master, 2nd year: Yassine Hadjadj-Aoul, Scalable Network Infrastructure (SNI), 10 hours, The Research in Computer Science (SIF) master and EIT Digital Master/University of Rennes 1, France

Master, pro 2nd year: Yassine Hadjadj-Aoul, Multimedia streaming over IP (MMR), 48 hours, Esir/University of Rennes 1, France

Master, pro 2nd year: Yassine Hadjadj-Aoul, Multimedia services in IP networks (RSM), 29 hours, Esir/University of Rennes 1, France

Master, pro 2nd year: Yassine Hadjadj-Aoul, Software Defined Networks, 6 hours, Istic/University of Rennes 1, France

Master, 2nd year: Yassine Hadjadj-Aoul, Video streaming over IP, 8 hours, Istic/University of Rennes 1, France

Master: Yassine Hadjadj-Aoul, Introduction to networking (IR), 26 hours, Esir/University of Rennes 1, France

Master: Yassine Hadjadj-Aoul, Mobile and wireless networking (RMOB), 20 hours, Esir/University of Rennes 1, France

Master 2nd year: Yassine Hadjadj-Aoul, Overview of IoT technologies: focus on LPWAN, 2 hours, INSA, France

Master pro 2nd year: Sofiéne Jelassi, Supervision of heterogeneous networks, 32 hours, Istic/University of Rennes 1, France

Master pro 2nd year: Sofiéne Jelassi, Cloud & SDN virtualization, 32 hours, Istic/University of Rennes 1, France

Master pro 2nd year: Sofiéne Jelassi, Multimedia networks, 32 hours, Istic/University of Rennes 1, France

Master, 2nd year: Gerardo Rubino, Scalable Network Infrastructure (SNI), 10 hours, The Research in Computer Science (SIF) master and EIT Digital Master/University of Rennes 1, France

Supelec Rennes 3rd year: Gerardo Rubino, Dependability Analysis, 15 hours.

Master 2nd year: Gerardo Rubino, Quality of Experience, 4 hours, for two different groups of students of the Esir/University of Rennes 1, France

UDELAR, Uruguay: Gerardo Rubino, post-graduate course on queuing models, 21 hours.

10.2.1. Supervision

PhD: Ajit Rai, Availability prediction with logistics, ALSTOM/Université de Rennes 1, Defense in July 2018, supervised by Bruno Tuffin.

PhD: Imad Alawe, "Mobile SDN architecture", Defense in November 2018; supervised by César Viho and Yassine Hadjadj-Aoul, University Rennes 1, Philippe Bertin, B-COM and Davy Darche, TDF.

PhD: Nicolás Jara, "Fault tolerant design of dynamic WDM optical networks", Technical University Federico Santa María (UTFSM) and university of Rennes 1, France. Advisors: R. Vallejos (Chile) and G. Rubino (France). Defended in July 2018.

PhD in progress: Ximun Castoreo, Measurements to check network neutrality, started 10/2018, supervised by Bruno Tuffin.

PhD in progress: Ayman Chouayakh, Jeux d'acteurs et mécanismes d'enchères pour la gestion du spectre dans les réseaux 5G, Orange/IMT Atlantique, started 03/2017, supervised by Patrick Maillé.

PhD in progress: Hiba Dakdouk, Algorithmes asynchrones et économes pour l'optimisation des communications d'un réseau d'objets connectés, Orange/IMT Atlantique, started 11/2018, supervised by Patrick Maillé

PhD in progress: Alassane Samba, Technologies Big Data et modèles prédictifs pour la QoS des réseaux, IMT Atlantique, defended in October 2018, supervised by Yann Busnel, Gwendal Simon and Philippe Dooze (Inria).

PhD in progress: Richard Westerlynck, Analyse répartie et extraction de tendances à grande échelle pour les données massives en santé, IMT Atlantique, defense in 2020, supervised by Yann Busnel and Marc Cuggia (PUPH, CHU Rennes).

PhD in progress: Vasile Cazacu, Calcul distribué pour la fouille de données cliniques, IMT Atlantique, defense in 2020, supervised by Emmanuelle Anceaume (CNRS/IRISA Rennes), Yann Busnel and Marc Cuggia (PUPH, CHU Rennes).

PhD in progress: Corentin Hardy, Device-Assisted Distributed Machine-Learning on Many Cores, started in April 2016; supervisors: Bruno Sericola and Erwan Le Merrer from Technicolor, University Rennes 1.

PhD: Yves Mocquard, Analyse probabiliste de protocoles de population, Defense in December 2018; supervisors: Bruno Sericola and Emmanuelle Anceaume from team Cidre, University Rennes 1.

PhD in progress: Jean-Michel Sanner; Cifre Grant, Orange Labs, "SDN technologies for network services performances adaptation of carriers networks"; started on January 2013.

PhD in progress: Ali Hodroj, Enhancing content delivery to multi-homed users in broadband mobile networks, started in November 2015; supervisors: Bruno Sericola, Marc Ibrahim and Yassine Hadjadj-Aoul, University Rennes 1 and St Joseph University of Beyrouth.

PhD in progress: Jean-Michel Sanner; Cifre Grant, Orange Labs, "SDN technologies for network services performances adaptation of carriers networks"; started on January 2013; Advisors: Y. Hadjadj-Aoul and G. Rubino; University Rennes 1.

PhD in progress: Hamza Ben Ammar, "Socially-aware network and cache resources optimization for efficient media content delivery in Content Centric Networks", started in October 2015; advisors: Yassine Hadjadj-Aoul, Gerardo Rubino and Soraya Ait Chellouche, University Rennes 1.

PhD in progress: Imane Taibi, "Big data analysis for network monitoring and troubleshooting"; started on Nov. 2017; Advisors: G. Rubino, Inria, and Yassine Hadjadj-Aoul, University Rennes 1, and Chadi Ibrahim, Inria.

PhD in progress: Anouar Rkhami, "Data analytics for optimized resources' management in future 5G networks"; started on Oct. 2018; Advisor: Gerardo Rubino and Yassine Hadjadj-Aoul, University Rennes 1, and Abdelkader Outtagarts, Nokia Bell labs.

PhD in progress: Mohamed Rahali, "Machine learning-based monitoring and management for hybride SDN networks"; started on Oct. 2017; Advisors: G. Rubino, Inria, and Sofiène Jelassi, University of Rennes 1.

PhD in progress: Laura Aspirot, "Fluid Approximations for Stochastic Telecommunication Models", University of the Republic, Uruguay. Advisors: E. Mordecki (Uruguay) and G. Rubino (France). Defense in 2019.

PhD in progress: Jorge Graneri, "Mathematical Models for Semantic Memory", University of the Republic, Uruguay. Advisors: E. Mizraji (Uruguay) and G. Rubino (France). Defense in 2019.

10.2.2. Juries

Bruno Tuffin was a member of the following PhD defense committees:

- Graciela FERREIRA LEITES MUNDELL. Analysis and Optimization of Highly Reliable Systems. University of the Republic, Montevideo, Uruguay, 2018, rapporteur.
- Robert Salomone, Advances in Monte Carlo Methodology, The University of Queensland, Australia, 2018, rapporteur.
- Jean-Bernard Eytard, Une approche par la géométrie tropicale et la convexité discrète de la programmation bi-niveau : application à la tarification des données dans les réseaux mobiles de télécommunications, Ecole Polytechnique, Novembre 2018, president.

Patrick Maillé was a member of the following PhD defense committees:

- Wilfried YORO. Modeling the correlation between the energy consumption and the end-to-end traffic of services in large telecommunication networks, Telecom SudParis, 2018, rapporteur.
- Àngel SANCHIS CANO, Economic analysis of wireless sensor-based services in the framework of the Internet of Things, Polytechnic University of Valencia, Spain, 2018, rapporteur.
- Kodjo Sena APEKE, Modélisation hybride et multiéchelle pour la prédiction de la réponse d'une tumeur sous traitement en radiothérapie, Décembre 2018, président.

Yann Busnel was a member of the following PhD defense committee:

- Mansour Khelghatdoust, University of Sidney, November 2018, rapporteur.

Bruno Sericola was member of the final selecting board for the recruitment of CNRS researchers in 2018.

César Viho was a member of juries for the recruitment of:

- Young graduate scientists and senior researchers at Inria.
- Associate Professors and senior Professors at ISTIC-Université

Gerardo Rubino was a member of the following PhD defense committees:

- Imen TRIKI, Rôle du vidéo streaming mobile qui dépend du contexte dans l'amélioration de la qualité d'expérience. Université d'Avigon, June 5, 2018. Rapporteur.
- Nadhir Ben Rached. Rare Events Simulations with Applications to the Performance Evaluation of Wireless Communication Systems. Kaust, Saudi Arabia, October 8, 2018. Rapporteur.

10.3. Popularization

Yann Busnel is a member of Development Council of Computer Sciences Master at Université de Nantes (2017–*).

10.3.1. Internal or external Inria responsibilities

- Bruno Tuffin was a member of Inria-MITACS selection committee

10.3.2. Interventions

G. Rubino makes regular presentations to high school students about the research work in general, and specific technical topics in particular. Current talks:

- Randomness as a tool
- Internet as a research problem
- Great challenges in maths: the Riemann Hypothesis
- Great challenges in math/computer science: the "P versus NP" problem

<p align="center">**DIVERSE Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Benoit Combemale has been appointed in 2018 Deputy Editor in Chief of the international journal JOT, and chair of the steering committee of the ACM SIGPLAN conference SLE.
Benoit Baudry was General chair for SSBSE'2018

9.1.1.2. Member of the Organizing Committees

Benoit Combemale has been a co-organizer of the session "Application of Advanced Software Engineering Tools and Methods in the Environmental Sciences" at CMWR'18.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Benoit Combemale has been co-chair for the Industry Day at MODELS 2018, and the GEMOC Workshop at MODELS 2018.

9.1.2.2. Member of the Conference Program Committees

Mathieu Acher:

- 33rd IEEE/ACM International Conference on Automated Software Engineering
- 22nd International Systems and Software Product Line Conference
- 12th International Workshop on Variability Modelling of Software-Intensive Systems

Olivier Barais:

- PC member for ICWE 2018. Full Research Papers
- PC member for ICWE 2018. Short and Vision Papers
- PC member for SAC'2018
- PC member for SecureMDE 2018 workshop at MODELS'18

Benoit Baudry:

- PC member for SPLC 2018
- PC member for SAC 2018

Arnaud Blouin:

- 30th French speaking conference on Human-Computer Interaction (IHM), 2018
- Second International Workshop on Debugging in Model-Driven Engineering at MODELS'2018 (MDEBug), 2018
- Third International Workshop on Human Factors in Modeling at MODELS'2018 (HuFaMo), 2018
- PC member of the ACM Student Research Competition (SRC) at MODELS 2018

Benoit Combemale:

- PB member for MODELS'18
- PC member for ICMT'18
- PC member for ECMFA'18
- PC member for the MiSE'18 workshop at ICSE'18
- PC member for the EXE'18 workshop at MODELS'18
- PC member for the MDEBug'17 workshop at MODELS'18
- PC member for the DevOps'18 workshop

Jean-Marc Jézéquel:

- PC member for SPLC 2018 Industry Track
- PC member for SEAMS 2018

Johann Bourcier:

- PC member for SEsCPS workshop at ICSE, 2018
- PC member for the eCAS workshop at SASO 2018

Noël Plouzeau:

- PC member for ICSA 2018, Technical Track
- PC member for SEAA 2018, Cloud Based Systems and CPS Systems tracks

9.1.2.3. Reviewer

Arnaud Blouin, external reviewers for:

- EICS'18, ICWE'18

Olivier Barais, external reviewers for:

- ASE'18

Johann Bourcier, external reviewers for:

- Models'18

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Benoit Combemale is a member of the editorial board of the journals SoSyM (Springer), COMLAN (Elsevier), and SCP (Elsevier, Advisory Board of the Software Section).

Jean-Marc Jézéquel:

- Associate Editor in Chief of SOSYM
- Associate Editor in Chief of IEEE Computer
- Associate Editor of JSS
- Associate Editor of JOT

Benoit Baudry:

- Associate Editor in Chief of STVR
- Associate Editor in Chief of SOSYM

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9.1.3.2. Reviewer - Reviewing Activities

In addition to his editorial duties, Benoit Combemale is a regular reviewer for the journals ACM Survey, and IEEE Transactions on Software Engineering (TSE).

Arnaud Blouin:

- COMLAN (Computer Languages, Systems and Structures), JVLC (Journal of Visual Languages and Computing), SCP (Science of Computer Programming), KAIS (Knowledge and Information Systems)

Olivier Barais:

- COMLAN (Computer Languages, Systems and Structures), JVLC (Journal of Visual Languages and Computing), Software and Systems Modeling (SoSyM), IEEE Computer

Noël Plouzeau:

- Software and Systems Modeling (SoSyM)

Johann Bourcier:

- Software and Systems Modeling (SoSyM), Journal of System and Software (JSS), IEEE Communication Magazine

9.1.4. Invited Talks

Mathieu Acher:

- *Reverse Engineering Language Product Lines from Existing DSL Variants*, David Méndez-Acuña, José Galindo, Benoit Combemale, Arnaud Blouin, Benoit Baudry, at GDR-GPL 2018
- *Re-engineering Software Variability into Software Product Lines*, Tewfik Ziadi, Mathieu Acher, at ASE 2018 (tutorial: http://www.ase2018.com/?p=tutorials#spl)

Jean-Marc Jézéquel:

- *Keynote speech for the LIG seminar on the Future of Informatics: "On Turning Domain Knowledge into Tools"*

Benoit Combemale:

- Model Execution: Past, Present and Future. Keynote at EXE'18, DK (14/10/18).
- Modeling For Sustainability - Or How to Make Smart CPS Smarter?. Keynote at Models@run.time'18, DK (14/10/18), and invited talk at TU Wien, AT (15/05/18)
- Execution Framework of the GEMOC Studio. Talk at LangDev'18, NL (08/03/18).

9.1.5. Leadership within the Scientific Community

Mathieu Acher is member of the steering committee of SPLC, the major venue in software product line and variability http://splc.net/.
Arnaud Blouin:

- Founding member and member of the GL-IHM (software engineering and human-computer interaction) working group (action spécifique GDR-GPL 2017)

Benoit Baudry organized a dagstuhl-Seminar on the relationship between DevOps and quality assurance from a software engineering perspective https://www.dagstuhl.de/de/programm/kalender/semhp/?semnr=18122.

Benoit Combemale:

- Chair of the Steering committee of the ACM SIGPLAN conference SLE
- Founding member and member of the advisory board of the GEMOC initiative.
- Chair of the Eclipse Research Consortium GEMOC and the Eclipse Project GEMOC Studio.

9.1.6. Scientific Expertise

Olivier Barais is an external expert for the H2020 ENACT project. Olivier Barais provides scientific expertises for DGRI international program (20 proposals per year)

9.1.7. Research Administration

Jean-Marc Jézéquel is Director of IRISA (UMR 6074). He is Coordinator of the academic club of the French Cyber-defense Excellence Cluster, and Director of the Rennes Node of EIT Digital.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

The DIVERSE team bears the bulk of the teaching on Software Engineering at the University of Rennes 1 and at INSA Rennes, for the first year of the Master of Computer Science (Project Management, Object-Oriented Analysis and Design with UML, Design Patterns, Component Architectures and Frameworks, Validation & Verification, Human-Computer Interaction) and for the second year of the MSc in software engineering (Model driven Engineering, Aspect-Oriented Software Development, Software Product Lines, Component Based Software Development, Validation & Verification, *etc.*).

Each of Jean-Marc Jézéquel, Noël Plouzeau, Olivier Barais, Johann Bourcier, Arnaud Blouin, and Mathieu Acher teaches about 200h in these domains, with Benoit Baudry and Benoit Combemale teaching about 50h, for a grand total of about 1300 hours, including several courses at ENSTB, Supelec, and ENSAI Rennes engineering school.

Olivier Barais is deputy director of the electronics and computer science teaching department of the University of Rennes 1. Olivier Barais is the head of the final year of the Master in Computer Science at the University of Rennes 1. Johann Bourcier is co-manager of the Home-Automation option at the ESIR engineering school in Rennes. Arnaud Blouin is in charge of industrial relationships for the computer science department at INSA Rennes.

The DIVERSE team also hosts several MSc and summer trainees every year.

Mathieu Acher gave courses to EJCP (Ecole Jeune Chercheur en Programmation), a well-known, national training school for PhD students https://ejcp2018.sciencesconf.org/resource/page/id/5

9.2.2. Supervision

- PhD in progress: Alejandro Gomez Boix, *Distributed counter-measure against browser fingerprinting*, 2016, B. Baudry, D. Bromberg
- PhD in progress: Manuel Leduc, *Formal and Executable Specification of domain-specific language families*, 2016, O. Barais, B. Combemale
- PhD in progress: Youssou NDiaye, *Modelling and evaluating security in user interfaces*, 2016, N. Aillery, O. Barais, A. Blouin, A. Bouabdallah
- PhD in progress: Jean-Émile Dartois, *Efficient resources management for hybrid cloud computing*, 2016, O. Barais
- PhD in progress: Ludovic Mouline, *Omniscient fault localization in IOT systems using model-driver data analytics*, 2016, O. Barais, Y. Le-Traon, J. Bourcier.
- PhD in progress: Oscar Luis, *Automatic test amplification*, 2016, B. Baudry
- PhD in progress: Alexandre Rio, *Demand Side Management A model driven approach to promote energy self-consumption* , 2016, O. Barais, Y. Maurel
- PhD in progress: Dorian Leroy, *A generic and generative white-box testing framework for model transformations*, 2017, B. Combemale.
- PhD in progress: Fabien Coulon, *Web engineering for domain-specific modeling languages*, 2017, B. Combemale, S. Begaudeau.
- PhD in progress: Romain Lebouc, *Techniques de test front-end en DevOps*, 2018, A. Blouin, N. Plouzeau, A. Ribault

- PhD in progress: June Benvegnu-Sallou, Decision support for the assessment of risks associated with the operation of underground environments, 2018, J-R. De dreuzy, B. Combemale, J. Bourcier.
- PhD in progress: Pierre JeanJean, *Refining simulators by analyzing execution traces of complex systems*, 2018, O. Barais, B. Combemale.
- PhD in progress: Akbar-pranata Alif, *Chaos Engineering for IoT and Network Services*, 2018, O. Barais, J. Bourcier.
- PhD in progress: Antoine Cheron, *Abstractions for linked data and the programmable web*, 2018, O. Barais, J. Bourcier.
- PhD in progress: Gauthier LYAN, *Urban mobility: machine learning for building simulators using large amounts of data*, 2018, J-M. Jééquel, D. Gross Amblard.
- PhD in progress: Hugo Martin, *Learning variability*, 2018, M. Acher.
- PhD: Gwendal Le Moulec, *Synthèse d'applications de Réalité Virtuelle à partir de modèles*, sept. 2018, B. Arnaldi, A. Blouin, V. Gouranton
- PhD: Paul Temple, *Investigate the Matrix: Leveraging Variability to Specialize Software and Test Suites*, dec. 2018, J-M. Jézéquel, M. Acher
- PhD: Kevin Corre, *User controlled trust and security level of Web real-time communications*, May. 2018, O. Barais, G. Sunye

9.2.3. *Juries*

9.2.3.1. Jean-Marc Jézéquel

was in the examination committee of the following PhD and HDR thesis:
- Jessie carbonnel, November 2018, Univ Montpellier (examiner)
- Paul Temple, December 2018, Univ Rennes I (Advisor)
- Johan Bourcier, HDR, December 2018, Univ Rennes I

9.2.3.2. Mathieu Acher

was in the examination committee of the following PhD thesis:
- Jessie carbonnel, November 2018, Univ Montpellier (examiner)
- Paul Temple, December 2018, Univ Rennes I (co-supervisor)

9.2.3.3. Olivier Barais

was in the examination committee of the following PhD thesis:
- Kevin Corre, May 2018, Univ Rennes I, Supervisor
- Thomas Durieux, Sep 2018, Univ Lille, Reviewer
- Mathieu Allon, Sep 2018, Univ Lille, Reviewer
- Tayeb LEMLOUMA, HDR, June 2018, Univ Lille, President
- Simon Bouget, Oct 2018, Univ Lille, President
- Mounir Chadli, Nov 2018, Univ Rennes I, President
- Arezki Laga, Dec 2018, Univ Bretagne Occidentale, President
- Franck Petitdemange, Dec 2018, Univ Bretagne Sud, President

9.2.3.4. Benoit Baudry

was in the examination committee of the following PhD thesis:
- Hugo Brunelière (IMT), Dec 2018, Reviewer
- Johanna Binti Ahmad (Univ. Putra Malaysia), 2018, Reviewer
- Daniel Schoepe (Chalmers), 2018, Reviewer

9.2.3.5. Benoit Combemale

was in the examination committee of the following PhD thesis:

- Stephanie Challita, Univ Lille 1 (December 2018), Reviewer
- Pablo Inostroza Valdera, Univ. Amsterdam & CWI (November 2018), The Netherlands

9.3. Popularization

- Exhibitions to Open Cloud Forum, Paris 21/03/2018
- Exhibitions to EclipsCon Toulouse 13-14/04 2018
- Exhibitions to Paris Open Source Submit 05-06/12/2018

9.3.1. Internal or external Inria responsibilities

- Olivier Barais was in charge of the recruitment committee for the position of associate professor at the University of Rennes 1 in cyber security.
- Olivier Barais was a member the recruitment committee for the position of associate professor at the University of Nantes in Software Engineering.
- Olivier Barais was a member of the recruitment committee for the position of associate professor at the University of Bordeaux in Software Engineering.

9.3.2. Interventions

- Exhibitions to the Lycée Sévigné to present career paths in Research
- Exhibitions to the "forum des métiers du collège Bourgchevreuil"

9.3.3. Internal action

- Olivier Barais provide one day course on Modern Web Engineering to SED Engineer.

<p style="text-align:center;color:red;font-weight:bold;">DYOGENE Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- B. Błaszczyszyn was in the Organizing Commitee of *Stochastic Geometry Days 2018* 14–18 mai 2018 Paris (France); https://geosto-2018.sciencesconf.org/.
- A. Busic was in the Organizing Commitee of *ALEA Days 2018* 12–16 March 2018 at CIRM, Luminy (France); https://conferences.cirm-math.fr/1776.html

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Editorial Boards

- M. Lelarge: IEEE's Transactions on Network Science and Engineering, Bernoulli Journal, Queueing Systems.

9.1.3. Invited Talks

- Analysis of Algorithms 2018, Uppsala (Sweden), June 2018.
- European Conference on Queueing Theory (ECQT) 2018, Jerusalem, July 2018.
- Rencontres de Probabilités de Rouen 2018, September 2018, invited talk.
- Societal Networks, RTDM program, Simons Institute, UC Berkeley, USA, March 2018, invited talk; video: https://simons.berkeley.edu/talks/ana-busic-3-29-18.
- Advances in Modelling and Control for Power Systems of the Future (CAESARS 2018), EDF Palaiseau, September 2018, invited talk.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence: B. Blaszczyszyn (Cours) **Théorie de l'information et du codage** 24 heqTD, L3, ENS, France.
- Licence: A. Busic (Cours) and S. Samain (TD) Structures et algorithmes aléatoires 60heqTD, L3, ENS, France.
- Master: B. Blaszczyszyn (Cours) **Processus ponctuels, graphes aléatoires et géeométrie stochastique** 39heqTD, M2 Probabilités et Modèles Aléatoires, UPMC, France
- Master: A. Busic (Cours) and L. Stephan (TD) **Modéles et algorithmes de réseaux** 60heqTD, M1, ENS, France.
- Master: A. Busic (Cours) **Fondements de la modélisation des réseaux** 18 heqTD, M2 MPRI, France.
- Master: M. Lelarge (Cours) **Deep Learning Do it Yourself**, M1, ENS
- Doctorat: A. Busic (Cours) **Markov chains and exact sampling**, 7heqTD, Ecole thématique CNRS, MathExp 2018 "Mathématiques expérimentales: méthodes et pratiques", 21 mai-1 juin 2018, Saint Flour, France. https://mathexp2018.sciencesconf.org/

9.2.2. Supervision

- PhD: Dalia-Georgiana Herculea "Les Hyperfractales pour la Modelisation des Reseaux sans Fil" since October 2016, defence 21 November 2018; PhD CIFRE co-advised by B. Błaszczyszyn, and Ph. Jacquet.

- PhD: Alexandre Hollocou, defense December 19 2018, Nouvelles approches pour le partitionnement de graphes, co-advised by M. Lelarge and T. Bonald (Telecom ParisTech)

- PhD in progress: Léo Miolane, since 2016, High dimensional statistics, advised by M. Lelarge

- PhD in progress: Alexis Galland, since 2017, Deep Learning on Graphs, advised by M. Lelarge

- PhD in progress: Quentin Le Gall "Crowd networking : modélisation de la connectivité D2D" since October 2017; PhD CIFRE co-advised by B. Błaszczyszyn and E. Cali (Orange).

- PhD in progress: Antoine Brochard "Signal processing for point processes and statistical learning for telecommunications", since September 2018; PhD CIFRE co-advised by B. Błaszczyszyn and Georgios Paschos (Huawei).

- PhD in progress: Md Umar Hashmi, Decentralized control for renewable integration in smartgrids, since from December 2015, advised by A. Busic.

- PhD in progress: Sébastien Samain, Monte Carlo methods for performance evaluation and reinforcement learning, since November 2016, advised by A. Busic.

- PhD in progress: Arnaud Cadas, Dynamic matching models, since October 2017, supervised by A. Busic.

9.2.3. Juries

- B. Błaszczyszyn, member of the PhD defense jury of Dalia-Herculea Popescu; 21 November 2018.

- A. Busic, member of the PhD defense jury of J. Horta (Télécom ParisTech, France); 16 Avril 2018.

- C. Fricker, PhD defense of Farah Slim (Orange- Bretagne Loire University), 13/03/2018.

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- B. Błaszczyszyn is an ENS adjunct professor since September 2018.

- B. Błaszczyszyn and A. Busic are members of the ENS Computer Science Department Board (Conseil du Laboratoire).

- A. Busic is member of the Committee for the Technological Development, Inria Paris

9.3.2. Education

C. Fricker: member of the jury of *Agrégation de Mathématiques*.

<p style="text-align:center;color:red">**EASE Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- Local Arrangement Chair, AdHoc Now 2018, F. Weis

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- PC member of AdHoc Now 2018, F. Weis
- PC member of VTC 2018, ICIN 2018, AdHoc Now 2018, ICON 2018, JM. Bonnin

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

- Mobile Networks and Applications, IEEE transactions on Mobile Computing, Simulation Modeling Practice and Theory, Computer Standards & Interfaces, an international journal on Engineering Science and Technology, JM. Bonnin

9.1.4. Invited Talks

- Invited talk at Mairie de Paris (June 2018): "Open Environment: Coopération par interactions locales", C. Couturier
- Invited talk at Inria/INRA Workshop (Feb. 2018), "Environnements auto descriptifs : une approche alternative pour l'IoT", P. Couderc
- Invited in a round table at IoT World (March 22, Paris) : "Voitures connectées : quels défis technologiques pour la mobilité urbaine?", JM. Bonnin
- Invited talk at IoT Tunisia workshop (April 26, Tunis), JM. Bonnin
- Keynote Speech at IoT Tunisia forum (April 27, Tunis): "L'IoT au service de la mobilité", JM. Bonnin
- Invited at a round table (May 24, Rennes) in the "Cybersécurité des Véhicules Autonomes et Connectés" workshop organized by Id4Car, JM. Bonnin
- Invited talk at summer school "Cooperative Interacting Vehicles" (September 2018, Loire Valley, France) : "Communication for cooperation", JM. Bonnin
- Invited talk at Automotive 2018 (October 18, Versailles), JM. Bonnin
- Invited lecture at Department of Electrical Engineering and Postgraduate Program in Electrical Engineering, Faculty of Engineering Udayana University (October 24, Bali) : "Autonomous Vehicle in the Smart City Ecosystem", JM. Bonnin
- Keynote speech at ICSGTEIS'2018 (October 25, Bali) : "Smart City: A Digital Mobility (R) Evolution", JM. Bonnin

9.1.5. Scientific Expertise

- Head of the scientific committee of InOut 2018, JM. Bonnin
- Member of the scientific council of the GIS ITS, JM. Bonnin
- Member of the scientific council the Id4Car cluster, JM. Bonnin

- Scientific advisor of the YoGoKo startup, JM. Bonnin
- Co-head of "the pole Digital Society of the MSHB" (Maison des Sciences de l'Homme de Bretagne), JM. Bonnin
- Project evaluation for ANR, Belgium, Quebec, Id4Car, BPI, JM. Bonnin
- Expert for CSV board of "Pôle Images et Réseaux", projects reviewing and selection, strategic roadmap definition, P. Couderc

9.1.6. Research Administration

- Head of the Networks, Telecommunication and service department at IRISA, JM. Bonnin
- Member for the IRISA Laboratory Council, JM. Bonnin
- Member of the scientific council of ECAM (Engineering school), JM. Bonnin

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- L2/L3: network computing (lectures, tutorials, labs), 250 hours, F. Weis, Univ. Rennes 1
- Master 2: Wireless LANs, F. Weis, 30 hours, M2, IMT Atlantique
- Master 2: Pervasive computing and IoT system architectures, 4 hours+48 hours including project supervision, P. Couderc, Univ. Rennes 1
- Master 1: Network programming (lectures, tutorial, labs), 78 hours, Y. Maurel, Univ. Rennes 1
- L3/M2: network communications protocol for building automation (lectures, labs), 80 hours, Y. Maurel
- Master 2: Software engineering (lectures, tutorial, labs), 82 hours, Y. Maurel
- Master 2 : Mobility management in the Internet, JM. Bonnin, IMT Atlantique
- Master 2 Smart Mobility : Communications for ITS, JM. Bonnin, IMT Atlantique
- Master 2 IoT: Smart City, JM. Bonnin, ENSI Tunis
- Continuous training: Communications for Autonomous and Cooperative vehicle, Communications for ITS, JM. Bonnin, IMT Atlantique
- Master 1: Network programming (lab and project), 72 hours, C. Couturier, IMT Atlantique
- Master 1: IP networks (lectures, tutorial), 24 hours, C. Couturier, IMT Atlantique
- Master 2: Enterprise Network Design, 12 hours, C. Couturier, IMT Atlantique
- Master 2: Bid to Call for Tender, 12 hours, C. Couturier, IMT Atlantique
- Master 2: Supervision of the Networking and Telecom curriculum of FIP3A, C. Couturier, IMT Atlantique
- Master 2: Tools for cloud computing , 18 hours, C. Couturier, IMT Atlantique

9.2.2. Supervision

PhD: Zaineb Lioune, "Une Architecture pour des Services e-Santé évolutifs dans le cadre des Maisons Intelligentes", Frédéric Weis, Tayeb Lemlouna (UR1) and Philippe Roose (University of Pau), Defended on June 30, 2018

PhD: Steve Muller, "Risk Monitoring and Intrusion Detection for Industrial Control Systems", Jean-Marie Bonnin, co-supervision with Y. Le Traon at University of Luxembourg, defneded on March 26, 2018

PhD: Saad El Jaouhari, "A secure design of WoT services for Smart Cities", Jean-Marie Bonnin, co-supervision with IRISA OCIF group, defended on Dec. 13, 2018

PhD in progress: Indra Ngurah, Car-based Data Collection for Low Energy Devices (Car-based DC4LED), May 2016, Jean-Marie Bonnin

PhD in progress: Christophe Couturier, "Frugal networking for cooperative autonomy", Nov. 2016, Jean-Marie Bonnin

PhD in progress: Alexandre Rio, "Modélisation des activités de site consommateur d'énergie", Octobre 2016, Olivier Barais (UR1) and Yoann Maurel

PhD in progress: Rodrigo Silva, "Mécanisme de décision multi-critères pour le placement de flux en environnement hétérogène et changeant", Nov. 2015, Jean-Marie Bonnin

PhD in progress: Nejm Frigui, "Maintenance autonomique du réseau programmable d'accès optiques de très haut débit", Jan. 2016, Jean-Marie Bonnin

9.2.3. Juries

PhD: Rania Ben Hadj, "Gestion des conflits dans une plateforme ubiquitaire orientée services", Univ. Grenoble, F. Weis, referee, April 2018

PhD: Rania Ben Hadj, "Gestion des conflits dans une plateforme ubiquitaire orientée services", Univ. Grenoble, Y. Maurel, examiner, April 2018

PhD: Mouna Gassara, "Proactive Security in new Generations of Wireless Networks", National Engineering School of Sfax, Tunisia, Jean-Marie Bonnin, referee, Nov. 2018

PhD: Mourad Lesious, "Highlight and Execute Suspicious Paths in Android Malware", IMT Atlantique, examiner, Dec. 2018

HDR: Emmanuel Bertin, "La transformation numérique des télécoms : synthèse et perspectives", Université Paris-Sorbonne, referee, Feb. 2019

HDR: Sonia Mettali Gammar, "Approches pour le routage dans les réseaux 802.11 et les réseaux orientés contenus", referee, Dec. 2018

<p style="text-align:center;color:red;">**EVA Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. General Chair, Scientific Chair

- **Thomas Watteyne** is TPC co-chair of the 6th International Workshop on Computer and Networking Experimental Research using Testbeds (CNERT), held in conjunction with IEEEINFOCOM, Paris, France, 29 April-2 May, 2019. More information at https://infocom2019.ieee-infocom.org/cnert-computer-and-networking-experimental-research-using-testbeds.

- **Paul Muhlethaler** was general co-chair with Eric Renault of the first conference of application of Machine Learning for Networks (MLN 2018 27-28 November 2018), conference hosted by Inria Paris.

- **Pascale Minet** was general co-chair with Leila Saidane from ENSI (Tunisia) of the PEMWN 2018 conference, the 7th IFIP/IEEE international conference on Performance Evaluation and Modeling of Wired and Wireless Networks, technically co-sponsored by IFIP WG6.2 and IEEE ComSoc (see https://sites.google.com/site/pemwn2018/). This conference was held in Toulouse (IUT of Blagnac), the 26th, 27th and 28th of September 2018. The organization co-chairs were Thierry Val, Adrien Van Den Bossche, and Rejane Dalce. Three tutorials were given:
    - *D2D communications in 5G networks: opportunities and challenges* by Salah Eddine Elayoubi, Centrale Supelec, Paris.
    - *Drone aided networks: from collecting data to connecting people* by Riadh Dhaou, Institut National Polytechnique de Toulouse (INPT).
    - *Continuity of the Positioning Service* by François Spies, University Bourgogne Franche-Comte.

- **Thomas Watteyne** was co-chair of the 6TiSCH 2 Plugtests, Inria, Paris,2-4 February 2018.

10.1.1.2. Member of the Organizing Committees

- **Paul Muhlethaler** organized the DGA Inria workshop on Artificial Intelligence for telecommunications and networks in May 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- **Paul Muhlethaler** was in Steering committee member of MobileHealth Workshop 2018.
- **Anis Louiti** was in Steering committee member of MobileHealth Workshop 2018.

10.1.2.2. Member of the Conference Program Committees

- **Pascale Minet**
    - CoRes 2018, 3emes Rencontres Francophones sur la Conception de Protocoles,
    - DCNET 2018, 9th International Conference on Data Communication Networking, July 2018,
    - ETFA 2018, 22th IEEE International Conference on Emerging Technologies & Factory Automation, September 2018,
    - EUSPN 2018, 9th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN), November 2018,

- GlobeCom 2018, IEEE Global Communications Conference, December 2018.
- MLN 2018, Machine Learning for Networking, November 2018,
- MSPN 2018, 4th International Conference on Mobile, Secure and Programmable Networking, June 2018,
- PEMWN 2018, 7th International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, September 2018,
- PECCS 2018, 8th International conference on Pervasive and Embedded Computing and Communication Systems, July 2018,
- SITIS 2018, 14th International Conference on Signal Image Technology & Internet Based Systems, November 2018,
- VTC 2018, 87th IEEE Vehicular Technology Conference, June 2018,
- Wireless Days 2018, IFIP/IEEE Wireless Days, March 2018,
- WiSEE 2018, 6th IEEE International Conference on Wireless for Space and Extreme Environments, October 2018.

- **Paul Muhlethaler**:
  - ITST 2018 15- 17 October, Lisbon, Portugal ,
  - ISCC 2018, 25-28 June 2018, Natal Brazil,
  - Mownet 2018, International Conference on Selected Topics in Mobile & Wireless Networking, 20 -22 June 2018,
  - PEMWN 2018, 7th International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, 26 - 28 November 2018, Toulouse,
  - Wireless Days, IFIP/IEEE Wireless Days 3 - 5 April 2018, Dubai,
  - WiOpt 2018, 7 - 11 March 2018 Shangai, China.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- **Paul Muhlethaler**
  - Reviewer Ad Hoc Networks Journal (Elsevier),
  - Reviewer Annals of telecommunications,
  - Reviewer International Journal of Distributed Sensor Networks. Hindawi,
  - Reviewer IEEE Transactions on Information Theory,
  - Reviewer IEEE Transactions on Vehicular Technology,
  - Reviewer IEEE Transactions on Wireless Communications.

- **Pascale Minet**
  - Acta Astronautica,
  - Ad Hoc Networks,
  - Annals of Telecommunications,
  - Computer Communications,
  - Computer Networks,
  - Engineering Applications of Artificial Intelligence,
  - IEEE Access,
  - IEEE Internet of Things,
  - IEEE Transactions on Mobile Computing,
  - IEEE Transactions on Green Communications and Networking,

- – IEEE Transactions on Industrial Electronics,
- – IEEE Transactions on Industrial Informatics,
- – International Journal of Communication Systems,
- – International Journal of Ad Hoc and Ubiquitous Computing,
- – Sensors Journal,
- – Wireless Networks.
- **Thomas Watteyne**
  - – MDPI Sensors, 2018.
- Nadjib Achir
  - – Reviewer Sensor Networks (MDPI)
  - – Reviewer Wireless Communications and Mobile Computing (Wiley)
  - – Reviewer Internet of Things Journal (IEEE)
  - – Reviewer Ad Hoc Networks Journal (Elsevier)
- Selma Boumerdassi
  - – Reviewer Ad Hoc Networks Journal (Elsevier);
  - – Reviewer The journal of Future Generation Computer Systems (Elsevier).
- Samia Bouzefrane
  - – The International Journal of Computer and Telecommunications Networking (Elsevier),
  - – The IEEE Transactions on Mobile Computing,
  - – The Information and Software Technology Journal (Elsevier)
  - – The Springer Multimedia Tools and Application Journal
  - – The ACM Transaction on Internet Technology
  - – The Concurrency and Computation Practice and Experience Journal
  - – the Journal of Systems and Software (Elsevier)

10.1.4. Invited Talks

- **Thomas Watteyne**
  - – Panelist on "New Trends for IoT and Satellite Networks", talking about "Industrial IoT, A Reality Check – Standards, Products and Research Challenges" at IoT Week 2018, Bilbao, Spain, 6 June 2018.
  - – Boostez la Performance the vos Objects Connectes. Inria Tech talk, French Tech central, Station F, Paris, France. 24 October 2018.
  - – Getting Your Hands Dirty with the Industrial IoT and SmartMesh IP. Summer School on Dependable IoT. TU Graz, Graz, Austria. 20 July 2018.
  - – SmartMesh IP. Captronic/Arrow mesh networking day. ESSIE, Paris, France. 25 October 2018.
  - – The Internet of (Important) Things. French Tech Central, Station F, Paris, France. 24 October 2018.
  - – "IoT research, standardization and interop using testbeds", Fed4FIRE Engineering Conference, Brugge, Belgium, 8-9 October 2018.
  - – From Research, to Product, to Standardization: A Journey into TSCH. TU Graz, Graz, Austria, 19 July 2018.
  - – Reality Check on IoT Solutions producing data for people to analyze. Boston Consultancy Group semine series, Station F, Paris, France. 7 July 2018.

- (keynote) Industrial IoT, A Reality Check : Standards, Products and Research Challenges. IIoT Workshop, Strasbourg, France, 3 July 2018.
- "IPv6 over the TSCH mode of IEEE 802.15.4e: overview of standardization, tooling, open-source initiative and commercial products", Workshop on Design, Deployment and Testing of Internet of Things Technologies (DDT-IoT), IEEE BalkanCom, Podgorica, Montenegro, 8 June 2018.
- "Industrial IoT, A Reality Check: Standards, Products and Research Challenges", IoT Week, Bilbao, Spain, 4-8 June 2018.
- A Turn-Key Solution for Real-World IoT, presented together with Keoma Brun-Laguna. LIRIMA Workshop on Smart Agriculture in Africa. 3-4 April 2018.
- Intro to Dr. Malisa Vucinic' keynote "The Devil is in the Detail: How a Real-World IoT Technology is Made – IETF 6TiSCH" at the Information Technology Conference, Montenegro, 20 February 2018.

10.1.5. Leadership within the Scientific Community

Thomas Watteyne co-chairs the IETF 6TiSCH standardization group.

10.1.6. Scientific Expertise

Thomas Watteyne regularly consults with major player in the (Industrial) IoT space.

10.1.7. Research Administration

- **Thomas Watteyne** is member of the Inria-Paris "Commission de Developpement Technologique", since 2018, where we ensure Inria project teams get sufficient engineering resources to change the world.
- **Paul Muhlethaler** is member of the Inria-Paris "Comite de Centre", since 2016 (suppléant of Michel Kern).
- **Thomas Watteyne** is member of the Inria-Paris "Comite de Centre", since 2016, where we work on making sure Inria-Paris will always remain one of the greatest places to work at!

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Intensive 1-week course on IoT, with associated hands-on labs. ENSTA ParisTech. Graduate level. **Thomas Watteyne** and Ziran Zhang. 9-12 October 2017.
- 1/2-day crash course on the Industrial IoT. Telecom ParisTech. Graduate level. **Thomas Watteyne**. 28 September 2017..
- 6-week course on IoT, with associated hands-on labs. ENSTA ParisTech. Undergraduate level. **Thomas Watteyne**, Keoma Brun-Laguna and Dominique Barthel. Spring 2017.

10.2.2. Supervision

- PhD : Fouzi Boukhalfa, Low and high reliability access in Vehicular Ad-hoc NETworks. Sorbonne University. **Paul Muhlethaler**.
- PhD (ongoing) Mina Rady, Heterogeneous architectures for the IoT, Sorbonne University. **Thomas Watteyne** and **Paul Muhlethaler**, under a CIFRE agreement with Orange Labs, Meylan, France.
- PhD (viva on 18 December 2018) Keoma Brun-Laguna, Deterministic networking for the Industrial Internet of Things, Sorbonne University. **Thomas Watteyne** and **Pascale Minet**.
- PhD (in progress) Jonathan Munoz, Time slotted systems for long range communications, Sorbonne University, **Thomas Watteyne** and **Paul Muhlethaler**.

- PhD (in progress) Amar Abane, Name Data Networks in the Internet of Things, CNAM. Samia Bouzefrane and **Paul Muhlethaler**.
- PhD (in progress) Abdallah Soheby, Etude et evaluation de la dissemination des informations dans la 5G. Eric Renault and **Paul Muhlethaler**.
- PhD (in progress) Mamoudou Sangara, Utilisation de techniques de Machine Leraning dans les reseaux VANETs. Samia Bouzefrane and **Paul Muhlethaler**.
- PhD (in progress) Iman Hmedoush, Connection protocols for the 5G IoT. Cedric Adjih and **Paul Muhlethaler**.

10.2.3. Juries

- HdR:
  - Oyunchimeg Shagdar, "Optimizing wireless communications in dense mobile environments", University of Paris-Saclay, prepared at the University of Versailles-Saint Quentin, September 2018, **Pascale Minet** examiner.
  - Imen Jemili, "Optimisation des ressources dans les réseaux mobiles sans fil", University of Bordeaux, November 2018, **Pascale Minet** examiner.
  - Khaled Boussetta "Dimensionnement, adaptation et placement de fonctionnalités réseaux pour des applications sensibles aux délais", University of Paris 13, December 2018, **Paul Muhlethaler** reviewer.
- PhD:
  - Keoma Brun-Laguna, "Deterministic networking for the Industrial Internet of Things", Sorbonne University, December 2018, **Thomas Watteyne** and **Pascale Minet**, PhD advisers.
  - of Jetmir Haxhibeqiri, "Flexible and Scalable Wireless Communication Solutions for Warehouse Applications", imec – IDLab Ghent – Ghent University, Belgium, December 2018, **Thomas Watteyne** reviewer.
  - Narjes Boulila "Communication vehiculaire garantissant les contraintes temps reel pour les systèmes de prevention de collision", University de la Manouba, December 2018, **Paul Muhlethaler** reviewer.
  - Dinh Van Nguyen "Reseaux de capteurs sans-fil pour la cartographie à l'interieure et la localisation precise servant la navigation à basse vitesse dans les villes intelligentes", Mines ParisTech, December 2018, **Paul Muhlethaler** examiner.
  - Veronica Quintuna Rodriguez "Performance Analysis of Virtualized Network", University of Paris 6, October 2018, **Paul Muhlethaler** examiner.
  - Mohamed Tahar Hammi, "Sécurisation de l'Internet des Objets", Telecom ParisTech, September 2018, **Pascale Minet** examiner.
  - Lilia Lassouaoui, "Ordonnancement et routage pour l'augmentation de la duree de vie dans les reseaux de capteurs sans fil", CNAM, July 2018, **Pascale Minet** examiner.
  - Thiwiza Bellache. "Controle dynamique des communications dans une environnement V2V et V2I", University Versailles Saint Quentin February 2018. **Paul Muhlethaler** examiner.
  - Philippe Erzan "Optimisation de la topologie des reseaux sans fil", University Centrale-Supelec, January 2018, **Paul Muhlethaler** examiner.
  - Moussa Déthié Sarr, "Spécification d'un mécanisme de construction automatique de topologies et d'adressage permettant la gestion dynamique de réseaux de capteurs sans fil lineéaires", University of Clermont, January 2018, **Pascale Minet** reviewer.
  - Pengwenlong Gu, "Détection des comportements malveillants dans les réseaux véhiculaires", Telecom ParisTech, February 2018, **Pascale Minet** examiner.

10.3. Popularization

10.3.1. Interventions

- Keoma Brun-Laguna
    - "Solsystem: IoT Industriel et déploiement en milieux réels" démo at RII meeting ("Mobilités et environnements, 20 Novembre 2018, Station F, Paris")
- **Thomas Watteyne**
    - The Inria-Paris OpenTestbed (you might already have noticed. . .). Inria Seminar, Paris, 2 October 2018.
    - "Le tour du monde en 1,000 capteurs!". Inria Rocquencourt seminar series. 6 June 2018.
    - Construire son Reseau IoT en 10min. Conférence d'ouverture de la semaine des Mathématiques. Inria-Paris, Paris, France, 12 March 2018.

10.3.2. Dans les Medias

- **Thomas Watteyne**
    - Edge computing: on vous dit tout sur les technos qui mettent le cloud dans votre poche, 01net, 10 September 2018.
    - Qu'est-ce que l'IoT? Boston Consultancy Group podcast, 9 September 2018.
    - Retour Semaine des maths 2018 : conference de Thomas Watteyne à l'Inria, Academie de Paris, 15 March 2018.

10.3.3. Creation of media or tools for science outreach

A video concerning the research on protocols for VANETs of Mohamed Hadded has been done by Inria.

<p style="text-align:center;color:red;">FOCUS Project-Team</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

S. Martini: Workshop "Formalisms at the interface with machines, languages and systems", Bertinoro October 16-17 2018. https://programme.hypotheses.org/autumn-workshop-formalisms-at-the-interface-with-machines-languages-and-systems

U. Dal Lago: First Workshop on Probabilistic Interactive and Higher-Order Computation, http://pihoc2018.cs.unibo.it/

8.1.1.2. Member of the Organizing Committees

Steering Committee membersip:

I. Lanese: Conference on Reversible Computation (RC); Microservices, DevOps, and Service-Oriented Architecture (MiDOS) track of the Annual ACM Symposium on Applied Computing (SAC); IFIP Int. Conference on Formal Techniques for Distributed Objects, Components and Systems (FORTE)

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

U. Dal Lago: 21st Int. Conference on Foundations of Software Science and Computation Structures (FoSSaCS)

8.1.2.2. Member of the Conference Program Committees

M. Bravetti: IEEE Int. Conference on Big Data (BigData 2018); 12th IEEE Int. Conference On Big Data Science and Engineering (BigDataSE 2018); 18th IEEE Int. Conference on Software Quality, Reliability, and Security (QRS 2018); 30th IFIP Int. Conference on Testing Software and Systems (ICTSS 2018); 16th Int. Conference on Software Engineering and Formal Methods (SEFM 2018); 15th Int. Conference on Applied Computing (AC 2018)

U. Dal Lago: Thirty-Third Annual ACM/IEEE Symposium on Logic in Computer Science (LICS); Third Int. Conference on Formal Structures for Computation and Deduction (FSCD); 13th Workshop on Logical and Semantic Frameworks with Applications (LSFA);

I. Lanese: 11th IEEE Int. Conference on Service-Oriented Computing and Applications (SOCA 2018); 11th Interaction and Concurrency Experience (ICE 2018); 10th Conference on Reversible Computation (RC 2018); 15th Int. Conference on Formal Aspects of Component Software (FACS 2018); Second Int. Workshop on Microservices: Agile and DevOps Experience (MADE18)

D. Sangiorgi: 27th European Symposium on Programming (ESOP); 13th int. conf. on Software Technologies (ICSOFT'18); Symposium on Dependable Software Engineering (SETTA'18); IFIP Int. Conference on Formal Techniques for Distributed Objects, Components and Systems (FORTE); int. conf. on Logic for Programming, Artificial Intelligence and Reasoning (LPAR-22).

A. Yoshimizu: Games for Logic and Programming Languages XIII (GaLoP 2018).

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

M. Bravetti: Journal of Universal Computer Science

U. Dal Lago: Logical Methods in Computer Science; Mathematical Structures in Computer Science.

M. Gabbrielli: Int. Journal Theory and Practice of Logic Programming.

C. Laneve: Frontiers in ICT (Section Formal Methods).

I. Lanese: Editor in chief of the Open Journal of Communications and Software (Scientific Online).

D. Sangiorgi: Acta Informatica, Distributed Computing, RAIRO Theoretical Informatics and Applications.

8.1.4. *Invited Talks*

I. Lanese: 10th Conference on Reversible Computation (RC 2018)

D. Sangiorgi: 19th Italian Conference on Theoretical Computer Science (ICTCS'18)

Schools:

U. Dal Lago: "Lambda Calcolo e Teoria dei Tipi", Scuola AILA, Gargnano 2018

8.1.5. *Leadership within the Scientific Community*

U. Dal Lago has been elected member of the Scientific Council of the Italian Chapter IC-EATCS (November 2017).

S. Martini is the vice-presiden of EQANIE (European Quality Assurance Network for Informatics Education), since 1 January 2018.

S. Martini is a member of the Council of the Commission on History and Philosophy of Computing, an organism of the International Union for History and Philosophy of Science, 2017-2021.

S. Martini is a member of the Board of CINI (Italian National Interuniversity Consortium for Informatics), designated by the Ministry for Semplificazione e Pubblica Amministrazione, from 2015.

8.2. Teaching - Supervision - Juries

8.2.1. *Teaching*

- Mario Bravetti

  Master: "Linguaggi, Compilatori e Modelli Computazionali", 120 hours, 1st year, University of Bologna, Italy.

- Ugo Dal Lago

  Undergraduate: "Introduction to Programming in Python", 20 hours, 1st year, University of Bologna, Italy.

  Undergraduate: "Optimization", 36 hours, 2nd year, University of Bologna, Italy.

  Master: "Foundations of Logic for Computer Science", 24 Hours, 2nd year. University of Bologna, Italy.

  Master: "Cryptography", 36 Hours, 2nd year, University of Bologna, Italy.

- Maurizio Gabbrielli

  Undergraduate: "Programming languages", 40 hours, 2nd year, University of Bologna, Italy.

  Master: "Artificial Intelligence", 60 hours, 2nd year, University of Bologna, Italy.

- Francesco Gavazzo

  Undergraduate: "Programming languages", 30 hours, 2nd year, University of Bologna, Italy.

  Undergraduate: "Basic Computer Skills". 30 hours, BSc Medical Chemistry and Pharmaceutical Technology, BSc Biology, University of Bologna.

- Ivan Lanese

Undergraduate: "Architettura degli Elaboratori", 56 hours, 1st year, University of Bologna, Italy.

Master: "Ingegneria del Software Orientata ai Servizi", 22 hours, 2nd year, University of Bologna, Italy.

- Cosimo Laneve

    Undergraduate: "Programmazione", 70 hours, 1st year, University of Bologna, Italy.

    Master: "Analisi di Programmi", 42 hours, 1st year, University of Bologna, Italy.

- Simone Martini

    Undergraduate: "Programming in Python", 72 hours, 1st year, University of Bologna, Italy.

- Davide Sangiorgi

    Undergraduate: "Operating Systems", 110 hours, 2nd year, University of Bologna, Italy.

    Undergraduate: "Computer abilities for biologists", 8 hours, 1st year, University of Bologna, Italy.

- Gianluigi Zavattaro

    Undergraduate: "Computer Architectures", 60 hours, 1st year, University of Bologna, Italy

    Undergraduate: "Algoritmi e strutture dati", 60 hours, 2nd year, University of Bologna, Italy

8.2.2. *Supervision*

Below are the details on the PhD students in Focus: starting date, topic or provisional title of the thesis, supervisor(s). These are all PhDs in progress.

- Raphaelle Crubillé, October 2015, "Bisimulation Metrics and Probabilistic Lambda Calculi", Université Denis Diderot and University of Bologna. Supervisors Thomas Ehrhard and Ugo Dal Lago.

- Adrien Durier, September 2016, "Proving behavioural properties of higher-order concurrent languages", ENS de Lyon and University of Bologna. Supervisors: Daniel Hirschkoff and Davide Sangiorgi.

- Francesco Gavazzo, October 2015, "Coinductive Techniques for Effectful Lambda Calculi". Supervisor U. Dal Lago.

- Michael Lodi, January 2017, "Growth Mindset and Computational Thinking". Supervisor: S. Martini.

- Tong Liu, November 2015, "Constraint based languages for Software Defined Networks". Supervisor: Maurizio Gabbrielli.

- Stefano Pio Zingaro, November 2016, "High level languages for Internet of Things applications". Supervisor: Maurizio Gabbrielli.

- Gabriele Vanoni, November 2018. "Optimal Reduction, Geometry of Interaction, and the Space-Time Tradeoff". Supervisor Ugo Dal Lago.

8.2.3. *Juries*

Daniel Hirschkoff was reviewer (rapporteur) for the PhD thesis Guvan Cabon, in december 2018 (Univ. Rennes).

Simone Martini has been member of the PhD jury of Francesco di Giacomo, Università Ca' Foscari Venezia (June 2018) and Tilburg University (November 2018)

8.3. Popularization

8.3.1. Education

Michael Lodi and Simone Martini have carried out extended work of scientific popularization, including the following.

- They are members of the technical committee of Olimpiadi del Problem Solving (at Italian Ministry of Education), http://www.olimpiadiproblemsolving.com; this involves preparation of material and supervision and jury during the finals.
- S. Martini has given various talks at institutes and workshops on the teaching methods for Computer Science, including a talk on "Abbiamo davvero bisogno del pensiero computazionale?", at the conference "I bit rotolano dovunque", Università di Roma Tor Vergata, May 2018.

8.3.2. Interventions

Daniel Hirschkoff was part of the organising committee for the "École Jeunes Chercheurs en Programmation", 25-29 june 2018, in Lyon.

8.3.3. Other duties

S. Martini has been Head of the Department of Computer Science and Engineering, University of Bologna, until May 2018.

M. Gabbrielli is Deputy Head of the Department of Computer Science and Engineering, University of Bologna, since May 2018.

G. Zavattaro is coordinator of undergraduate studies at the Department of Computer Science and Engineering, University of Bologna (Informatica per il Management).

FUN Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Nathalie Mitton is a member of the Steering committee of CIoT
- Nathalie Mitton is demo/poster chair of infocom 2019
- Valeria Loscri is general co-chair of City-Wide Pervasive Environment CoWPER, in conjunction with IEEE SECON 2018, and of a Special Session on Mobile Social Networks in PIMRC 2018
- Antoine Gallais was the co-chair of IIoT day 2018

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Antoine Gallais is TPC co-chair of CoRes 2019
- Valeria Loscri is TPC co-chair of IEEE ACM Nanocom 2019 and of IEEE ACM SmartComp in conjunction with Mobihoc 2018
- Nathalie Mitton is TPC co-chair of ICC 2019 and 2018

10.1.2.2. Member of the Conference Program Committees

- Valeria loscri is/was member in the Technical Program Committee (TPC) in IFIP/IEEE NTMS 2018, Globecom 2018-2019, CORES 2018, VTC 2018-2019, GIoTS 2018-2019, WiMob 2018, CCNC 2018-2019, ICC 2019
- Nathalie Mitton is/was in the Technical Program Committee (TPC) of Percom 2019, WCNC 2019, DCOSS 2019, CORES 2018, Infocom workshop 2018, VTC 2018, globecom 2019&2018, GIIS 2018, CSCN2018, ICC 2018, coconet 2018, adhocnow 2018
- Antoine Gallais was/is in the Technical Program Committee (TPC) of IEEE Globecom'19 and 2018, IEEE ICNC'19 and 2018, IEEE GIIS'18, IARIA INNOV'18, IEEE COMNETSAT'18, IARIA EMERGING'18, ADHOC-NOW'18, ICST Adhocnets'18
- Allan Blanchard was/is in the Technical Program Committee (TPC) of 4PAD 2018

10.1.3. Journal

10.1.3.1. Guest editorial activities

- Nathalie Mitton was (co-)editor of Sensor Special Issues of MDPI Sensors on QoS in WSN and of MDPI Future Internet WSN in Smart Agriculture
- Valeria Loscri was editor of IEEE Access Special Section on Protocols for Nanocommunication Networks, of IEEE Access Special Section on Body Area Networks and of a Special Issue on IEEE Internet of Things Journal on Recent Advances on Social Internet of Vehicles

10.1.3.2. Member of the Editorial Boards

- Nathalie Mitton is editorial board members of AHSWN since 2011
- Nathalie Mitton is editorial board member of Adhoc Networks since 2012
- Nathalie Mitton is editorial board member of IET-WSS since 2013
- Nathalie Mitton is editorial board member of ComSoc MMTC e-letter since 2014

- Nathalie Mitton is editorial board member of Wiley Transactions Emerging Telecommunications Technologies since 2016
- Nathalie Mitton is editorial board member of Wireless Communications and Mobile Computing since 2016
- Nathalie Mitton is editorial board member of MDPI Future Internet since 2018
- Valeria Loscri is editorial board member of IEEE Transactions on Nanobioscience journal since 2017
- Valeria Loscri is editorial board member of Elsevier Computer Networks journal since 2016
- Valeria Loscri is editorial board member of Robotics Software Design and Engineering of the International Journal of Advanced Robotic Systems since 2016
- Valeria Loscri is editorial board member of Elsevier Journal of Networks and Computer Applications (JNCA) journal since 2016

10.1.4. Invited Talks

- Nathalie Mitton was invited speaker at Workshop "Digital Agriculture in Africa", in Montpellier, in April 2018
- Nathalie Mitton was invited speaker at CORES conference in Roscoff, France, in May 2018
- Nathalie Mitton was invited speaker at WFCS conference in Imperia, Italy, in June 2018
- Nathalie Mitton was invited speaker at Nantes University, France, in October 2018
- Antoine Gallais was invited speaker at Innov'School Network of Things (ISNOT), Gammarth, Tunisia in April 2018
- Allan Blanchard gave an invited tutorial at ZINC 2018, Novi Sad, Serbia in June 2018
- Allan Blanchard gave an invited tutorial at HPCS 2018, Orleans, France, in July 2018
- Valeria Loscri was invited as panelist in the panel "Inspirations from wireless networks to biology" in the 3rd EU FET CIRCLE Workshop, Ghent April 2018
- Valeria Loscri was invited as panelist in the Panel New Trends in Communication and at the Doctoral Colloquium at ACM/IEEE NanoCom 2018
- Valeria Loscri has been appointed as Faculty Mentor in N2 Women meeting at ACM Mobihoc 2018
- Valeria Loscri was invited to attend the Seed meeting on Dynamical Modeling and Simulation for Molecular Communication that was held at the Embassy of France in London
- Valeria Loscri was invited speaker at the LiFi seminar in Vélizy, September 2018

10.1.5. Leadership within the Scientific Community

- Nathalie Mitton is a member of the Steering Committee of the GDR Rescom
- Valeria Loscri is a member of Social Network Technical Committee
- Valeria Loscri is a member of Emerging Technologies Initiatives for Molecular, Biological and Multi-Scale Communications (ETI-MBMC)
- Valeria Loscri is a member of the Quantum Communications & Information Technology Emerging Technical Subcommittee (QCIT)
- Valeria Loscri is a member of the "Research Group on IoT Communications and Networking Infrastructure" at ComSoc Communities

10.1.6. Scientific Expertise

- Nathalie Mitton is an elected member of the evaluation community of Inria. She has acted as a reviewer for ANRT and ANR project submissions and as an evaluator for Chilean National Science and Technology Commission (CONICYT - Chile) FONDECYT Initiation into Research 2018 projects. She is also member of the scientific committees of the competitiveness cluster of MATIKEN and for CITC (International Contactless Technologies Center). Finally, Nathalie Mitton is a member of the HCERES visiting committee for the LISIS laboratory.

- Valeria Loscri is Scientific European Responsible for Inria Lille - Nord Europe. She is reviewer in the context of ERC Consolidator Grant. She is reviewer for Equipes Associées. She has been scientific reviewer of TOP grant for senior researchers in the context of Netherlands Organisation for Scientific Research (NWO) program.
- Valeria Loscri has been external expert reviewer of proposal for grant competition at the Center for Excellence in Applied Computational Science and Engineering (CEACSE), UTC (USA).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

E-learning

Mooc, Nathalie Mitton, "Villes intelligentes : défis technologiques et sociétaux" , 5-week mooc by the IPL CityLab@Inria team, FUN, Inria, in November 2018

SPOC, Nathalie Mitton,EIT Digital "Technological challenges of participatory Smart cities", 5-week by the IPL CityLab@Inria team in November 2018

Remote curse, Nathalie Mitton, Internet of things, 5-week + face to face week in May 2018

Master: Valeria Loscri, Objets Communicants, 24h (Mineure Habitat Intelligent), Ecole des Mines de Douai, France

Master: Nathalie Mitton, Wireless sensor networks, 16h eqTD (Master MINT), Université Lille 1 and Telecom Lille 1, France

Master: Nathalie Mitton, Introduction to Internet of Things, 8h CM Ecole Centrale de Lille, France

Master: Ibrahim Amadou, Introduction to Internet of Things, 8h TP Ecole Centrale de Lille, France

Master: Ibrahim Amadou and Abdoul Aziz Mbacke, Introduction to RFID, 16h IMT Rennes, France

Master: Ibrahim Amadou, Wireless sensor networks, 16h eqTD (Master ROC), IMT, France

Bsc: Farouk Mezghani, Contactless technologies, 20h eqTD, Université de Valenciennes, France

Licence: Jean Razafimandimby, Algorithms and Programming, 30h eqTD, Université Lille 1, France

10.2.2. Supervision

PhD defended on October 18th 2018: Aziz Mbacke, Smart Deployment of heterogeneous sensors and RFID in a Smart City, Université Lille 1, 2015-2018, Nathalie Mitton and Hervé Rivano (Urbanet)

PhD defended on October 12th 2018: Jad Nassar, Ubiquitous networks for smart grids, Université Lille 1, 2015-2018, Nathalie Mitton and Nicolas Gouvy (HEI)

PhD in progress: Brandon Foubert, Communication sans fil Polymorphe pour l'Agriculture Connectée, Université Lille 1, 2018-2021, Nathalie Mitton

PhD in progress: Rodrigo Teles, Virtualizing Heterogeneous Wireless Networks with SDN for the 5G, Université Strasbourg, 2016-2019, Antoine Gallais and Fabrice Théoleyre

PhD in progress: M. Amine Falek, Optimization algorithms for personalized and dynamic multimodal itinerary planning, Université Strasbourg, 2016-2029, Antoine Gallais, Cristel Pelsser and Fabrice Theoleyre

PhD in progress: Loïc Miller, Secure work-flow access control, Université Strasbourg, 2018-2021, Antoine Gallais, Pascal Merindol and Cristel Pelsser

10.2.3. Juries

- PhD/HDR committees:
    - Antoine Gallais is/was members of the following PhD thesis committees:

- * François Lemercier, IMT Atlantique, Rennes, France, November 2018
- * Solomon Petrus le Roux, Stellenbosch University, South Africa, December 2018
- * Hugo Chelle, Universite´ de Toulouse, France, December 2018
- – Valeria Loscri is/was members of the following PhD thesis committees:
  - * Alexis Duque, INSA Lyon, France, October 2018
  - * Óscar Alvear, Universidade Politecnica Valencia, Spain, July 2018
  - * Sabrine Aroua, Université de La Rochelle, France, July 2018
  - * Mohamed Abdelkrim, Université Paris Est Créteil, December 2018
- – Nathalie Mitton is/was member of the following PhD thesis committees:
  - * Patrick Olivier Kamgueu, Univ. de Yaounde - Univ. de Lorraine, January 2018
  - * Hermes Pimenta de Moraes Junior, UTC (présidente), May 2018
  - * Hamadoun Tall, Clermont Auvergne, (reviewer) May 2018
  - * Marwan Ghanem, UPMC, September 2018
  - * Wafa Badreddine, UPMC, (reviewer) November 2018
  - * Yosra Zguira, INSA Lyon (reviewer), November 2018
  - * Solomon Petrus le Roux (reviewer), Stellenbosch University, December 2018
  - * Fadhlallah Baklouti, Université Bretagne Sud (reviewer), February 2019
  - * M Naas, Université de Bretagne Occidentale (reviewer), February 2019
- – Nathalie Mitton was a member of the HDR defense committees
  - * Valeria Loscri, Université Lille 1, March. 2018
  - * Fen Zhou, Université d'Avignon, Sept. 2018
- Researcher selection committees:
  - – Nathalie Mitton was a member of the Professor competition selection committee at Ecole des Mines Nancy, Université Nice-Sophia Antipolis and Clermont-Ferrand
  - – Nathalie Mitton was a member of the Inria chaire committee for Supelec Rennes
  - – Nathalie Mitton was a member of the Assistant Professor (MdC) at Valenciennes
- Nathalie Mitton is/was reviewer of the following PhD follow-up committees:
  - – Rodrigue Domgua Rodriguez, INSA Lyon
  - – Yosra Zguira, INSA Lyon
  - – Vaseileios Kotsiou, Université de Strasbourg
- Antoine Gallais is/was reviewer of the following PhD follow-up committees:
  - – Tomas Lagos Jenschke, IMT Atlantique

10.3. Popularization

- Matthieu Berthome, Jad Nassar, Ibrahim Amadou, Antonio Costanzo and Antoine Gallais gave some talks in high schools for the "Fête de la Science" in October 2018
- Nathalie gave an interview for France Info on connected objects

GANG Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Amos Korman: BDA 2018, General Chair of the organizing committee.
- Adrian Kosowski: WENDY Paris, chair of workshop.

10.1.1.2. Member of the Organizing Committees

Organisation of Dagstuhl Seminar 18211 *Formal Methods and Fault-Tolerant Distributed Computing: Forging an Alliance*, by Javier Esparza (TUM, Munick, Germany), Pierre Fraigniaud (IRIF and Inria GANG, Paris, France), Anca Muscholl (LaBRI, Bordeaux, France), and Sergio Rajsbaum (UNAM, Mexico, Mexique).

10.1.1.3. Chair of Conference Program Committees

- Amos Korman: BDA 2018, co-chair.

10.1.1.4. Steering Committee Member

- Amos Korman: ADGA 2018.
- Pierre Fraigniaud: *Highlights of Algorithms* (HALG) from January 2015.

10.1.1.5. Member of the Conference Program Committees

- Adrian Kosowski: MFCS 2018, SIROCCO 2018.
- Carole Delporte-Gallet: NETYS 2018.
- Pierre Fraigniaud: SPAA 2018, DISC 2018, ICALP 2018, WWW 2018, IPDPS 2018, LATIN 2018, HiPC 2018, ICDCN 2018.
- Michel Habib: WG 2018.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Pierre Fraigniaud is a member of the Editorial Board of Distributed Computing (DC).
- Pierre Fraigniaud is a member of the Editorial Board of Theory of Computing Systems (TOCS).
- Adrian Kosowski is a member of the Editorial Board of Mathematical Foundations of Computing (AIMS MFOC)

10.1.2.2. Editors of a special issue

- Carole Delporte is co-editors with Parosh Abdulla of the Special Issue on NETYS'2016 published in Computing ([27]).

10.1.3. Invited Talks

- Hugues Fauconnier gives a seminar in College de France entitled "Failure detectors", December 2018.

10.1.4. Scientific Expertise

- Adrian Kosowski was an expert panel member for grant panel PE6 of the National Science Center, Poland (Spring 2018).
- Pierre Fraigniaud was member of the *shadow committee* of the ERC Starting Grants selection panel in 2018.

- Pierre Fraigniaud was vice-president of the HCERES committee of Laboratoire d'Informatique de Polytechnique (LIX), November 2018.

10.1.5. Research Administration

- Hugues Fauconnier is director of the UFR d'informatique of Université Paris Diderot.
- Carole Delporte-Gallet is deputy director of the UFR d'informatique of Université Paris Diderot.
- Laurent Viennot is leader of the "Algorithms and discrete structures" department of the Institute de Recherche en Informatique Fondamentale (IRIF).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Carole Delporte and Hugues Fauconnier, Algorithmique distribuée avec mémoire partagée, 6h, M2, Université Paris Diderot

Master: Hugues Fauconnier, Cours programmation répartie, 33h, M2, Univ. Paris Diderot

Master: Carole Delporte, Cours et TP Protocoles des services internet, 44h, M2, Univ. Paris Diderot

Master: Carole Delporte, Cours Algorithmes répartis, 33h, M2, Univ. Paris Diderot

Master: Carole Delporte and Hugues Fauconnier, Théorie et pratique de la concurrence, 48h, M1, Université Paris Diderot

Licence: Carole Delporte and Hugues Fauconnier, Culture informatique, 16h, L2, Univ. Paris Diderot

Licence: Boufkhad Yacine, Algorithmique et Informatique, 132h, L1, IUT de l'Université Paris Diderot

Licence: Boufkhad Yacine, Programmation Orientée Objet, 60h, L2, IUT de l'Université Paris Diderot

Licence: Boufkhad Yacine, Traitement de données, 16h, L2, IUT de l'Université Paris Diderot

Master: Pierre Fraigniaud, Algorithmique parallèle et distribuée, 24h, Ecole Centrale Supélec Paris, M2

Master: Adrian Kosowski, Randomization in Computer Science: Games, Networks, Epidemic and Evolutionary Algorithms, 18h, M1, École Polytechnique

Licence: Adrian Kosowski, Design and Analysis of Algorithms, 32h, L3, École Polytechnique

Master: Pierre Fraigniaud and Adrian Kosowski, Algorithmique distribuée pour les réseaux, 24h, M2, Master Parisien de Recherche en Informatique (MPRI)

Master: Fabien de Montgolfier, Grand Réseaux d'Interaction, 44h, M2, Univ Paris Diderot

Licence: Fabien de Montgolfier, Protocoles Réseau (TP/TD), 24h, M1, Univ Paris Diderot

Licence: Fabien de Montgolfier, Programmation avancée (cours/TD/projet, bio-informatique), 52h, L3, Univ. Paris Diderot

Master: Fabien de Montgolfier, Algorithmique avancée (bio-informatique), 26h, M1, Univ Paris Diderot

Licence: Fabien de Montgolfier, Algorithmique (TD), 26h, L3, Ecole d'Ingénieurs Denis Diderot

Master : Laurent Viennot, Graph Mining, 6h, M2 MPRI, Univ. Paris Diderot

Licence: Pierre Charbit, Elements d'Algorithmique, 24h, L2, Université Paris Diderot, France

Licence: Pierre Charbit, Automates finis, 36h, L2, Université Paris Diderot, France

Licence: Pierre Charbit, Internet et Outils, 52h, L1, Université Paris Diderot, France

Master: Pierre Charbit, Programmation Objet, 60h, M2Pro PISE, Université Paris Diderot, France

Master: Pierre Charbit, Algorithmique de Graphes, 12h, M2 MPRI, Université Paris Diderot, France

10.2.2. Supervision

PhD defended: Lucas Boczkowski (co-advised by Amos Korman and Iordanis Kerenidis). Title of thesis is: "Computing with Limited Resources in Uncertain Environments" [2]. Started September 2015, defended on November 30th, 2018.

PhD defended: Laurent Feuilloley (advised by Pierre Fraigniaud). Title of thesis is: "Synchronous Distributed Computing" [3]. Started September 2015, defended on September 19th, 2018.

PhD defended: Léo Planche (co-advised by Étienne Birmelé and Fabien de Montgolfier). Title of thesis is : "Graph Decomposition into Shortest Paths and Cycles of Small Eccentricity" [4]. Started October 2015, defended on November 23rd, 2018.

PhD defended: Vitaly Aksenov (co-advised by Petr Kuznetsov, Anatoly Shalyto and Carole Delporte). Title of thesis is : "Synchronization Costs in Parallel Programs and Concurrent Data Structures" [1]. Started October 2015, defended on September 26, 2018.

PhD in progress: Simon Collet (co-advised by Amos Korman and Pierre Fraigniaud). Title of thesis is: "Algorithmic Game Theory Applied to Biology". Started September 2015.

PhD in progress: Brieuc Guinard (advised by Amos Korman). Title of thesis is: "Algorithmic Aspects of Random Biological Processes". Started October 2016.

PhD in progress: Mengchuan Zou (co-advised by Adrian Kosowski and Michel Habib). Title of thesis is: "Local and Adaptive Algorithms for Optimization Problems in Large Networks". Started October 2016.

PhD in progress: Alkida Balliu and Dennis Olivetti (PhD students from L'Aquilla University and Gran Sasso Science Institute) are supervised by Pierre Fraigniaud.

PhD in progress: Lucas Hosseini (co-advised by Pierre Charbit, Patrice Ossona de Mendez and Jaroslav Nešetřil since Sept. 2014). Title : Limits of Structures.

Master internship (MPRI): Duc-Minh Phan (advised by Laurent Viennot). (March-August 2018) Title of report: "Public Transit Routing with Unrestricted Walking using Hub Labelling".

10.2.3. Juries

Michel Habib was on the jury committee of the PhD thesis of Léo Planche: "Décomposition de graphes en plus courts chemins et en cycles de faible excentricité", Paris Descartes and Paris Diderot Universities, 23th novembre 2018.

Michel Habib was president of the jury committee of the PhD thesis of Julien Fradin : "Graphes complexes en biologie : problèmes, algorithmes et évaluations", Nantes University, 4th december 2018.

Michel Habib was on the jury committee of the PhD thesis of Mostafa Darwiche : "When operation research meets structural pattern recognition : on the solution of error-tolerant graph matching problems", Tours University, 5th december 2018.

Michel Habib was member of the jury for the HDR thesis of Jean-Sébastien Sereni : "Sur des aspects algébriques de la coloration de graphes : coloration fractionnaire et nombre de colorations", Université de Loraine, 13 février 2018.

Laurent Viennot was referee and on the jury committee of the HDR thesis of Frédéric Giroire on "Optimisation des infrastructures réseaux. Un peu de vert dans les réseaux et autres problèmes de placement et de gestion de ressources" at the University of Nice-Sophia Antipolis, October 2018.

Laurent Viennot was president of the jury committee of the PhD thesis of Matthieu Boutier "Routage sensible à la source" at Paris Diderot University, September 2018.

Laurent Viennot was on the jury committee of the PhD thesis of Alexandre Hollocou on "Novel Approaches to the Clustering of Large Graphs" at PSL University, December 2018.

Hugues Fauconnier was president of the jury committee of the PhD thesis of Vitaly Aksenov "Synchronization Costs in Parallel Programs and Concurrent Data Structures" at Paris Diderot University, September 2018.

Carole Delporte is on the jury committee of the PhD thesis of Vitaly Aksenov "Synchronization Costs in Parallel Programs and Concurrent Data Structures" at Paris Diderot University, September 2018.

Carole Delporte was president of the jury committee of the PhD thesis of Laurent Feuilloley "Local certification in distributed computing: error-sensitivity, uniformity, redundancy, and interactivity" at Paris Diderot University, September 2018.

Carole Delporte was referee and on the jury committee of the PhD thesis of Denis Jeanneau "Failure Detectors in Dynamic Distributed Systems" at Sorbonne université, December 2018.

Carole Delporte was president of the jury committee of the PhD thesis of Thibault Rieutord "Combinatorial Characterization of Asynchronous Distributed Computability" at Université Paris Saclay, Octobre 2018.

Pierre Fraigniaud was referee for the HDR thesis of Christine Tasson (IRIF, Paris Diderot) "Sémantiques vectorielles, probabilistes et distribuées", 23 novembre 2018.

Pierre Fraigniaud was referee for the HDR thesis of Alessia Milani (LaBRI, Bordeaux) "Asynchronous Distributed Computing", 12 novembre 2018.

Pierre Fraigniaud was member of the jury for the HDR thesis of Jean-Sébastien Sereni : "Sur des aspects algébriques de la coloration de graphes : coloration fractionnaire et nombre de colorations", Université de Loraine, 13 février 2018.

Pierre Fraigniaud was member of the jury for the PhD thesis of Lucas Boczkowski "Distributed Computing Applied to Biology", 30 novembre 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Laurent Viennot was "commissaire scientifique" for the permanent exposition on "Informatique et sciences du numérique" at Palais de la déécouverte in Paris (opened in March 2018).

10.3.2. Education

- Carole Delporte was president of a jury of baccalaureat.

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HIEPACS Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

L. Giraud was member of the SIAM Conference of parallel processing in scientific computing, March 2018, Tokyo, Japan and the 10th International Workshop on Parallel Matrix Algorithms and Applications PMAA'18, June 2018, Zurich, Switzerland.

9.1.1.2. Chair of Conference Program Committees

A. Guermouche was the vice-chair of the Architechture track for the 25th IEEE International conference on High Performance Computing, Data, and Analytics HIPC'18, December 2018, Bengaluru, India.

9.1.1.3. Member of the Conference Program Committees

HiPC'18 (A. Guermouche, L. Giraud), ICPP'18 (E. Agullo), IEEE PDP'18 (J. Roman), IPDPS'18 (O. Coulaud), PDSEC'18 (O. Coulaud, M. Faverge, L. Giraud), COMPAS'18 (P. Ramet), SBAC-PAD'18 (M. Faverge).

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- E. Agullo and L. Giraud were guest editor of the special issue of Parallel Computing dedicated to PMAA'16 [4].

- L. Giraud is member of the editorial board of the SIAM Journal on Scientific Computing (SISC) and SIAM Journal on Matrix Analysis and Applications (SIMAX).

9.1.2.2. Reviewer - Reviewing Activities

The members of the HIEPACS project have performed reviewing for the following list of journals: Computing and Fluid, International Journal of Antennas and Propagation, Parallel Computing, SIAM J. Matrix Analysis and Applications, SIAM J. Scientific Computing, Journal of Parallel and Distributed Computing, IEEE Transactions on Parallel and Distributed Systems, ACM Transactions on Mathematical Software, ACM Computational and Mathematical Methods, International Journal of High Performance Computing Applications, Journal Of Computational Science.

The members of the HIEPACS project have performed reviewing for the following list of conferences (additionally to PC): Europar'18, IPDPS'19, SC'18.

9.1.3. Scientific Expertise

- Luc Giraud is member of the board on Modelisation, Simulation and data analysis of the Competitiveness Cluster for Aeronautics, Space and Embedded Systems. He also acted as an expert for The Israel Science Foundation, on the Individual Research Grants and for the Czech Science Foundation, the main public funding agency in the Czech Republic supporting all areas of basic research.

- Pierre Ramet is "Scientific Expert" at the CEA-DAM CESTA since Oct. 2015.

- Jean Roman is member of the "Scientific Board" of the CEA-DAM. As representative of Inria, he is member of the board of ETP4HPC (European Technology Platform for High Performance Computing), of the French Information Group for PRACE, of the French Working Group for EuroHPC, of the Technical Group of GENCI and of the Scientific Advisory Board of the Maison de la Simulation.

9.1.4. Research Administration

- Emmanuel Agullo and Luc Giraud are the scientific correspondents of the European and International partnership for Inria Bordeaux Sud-Ouest.

- Olivier Coulaud is the scientific manager of the PLAFRIM platform for Inria Bordeaux Sud-Ouest.

- Jean Roman is a member of the Direction for Science at Inria : he is the Deputy Scientific Director of the Inria research domain entitled *Applied Mathematics, Computation and Simulation* and is in charge at the national level of the Inria activities concerning High Performance Computing.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Undergraduate level/Licence

- A. Esnard: System programming 36h, Computer architecture 40h, Network 23h at Bordeaux University.

- M. Faverge: Programming environment 26h, Numerical algorithmic 40h, C projects 25h at Bordeaux INP (ENSEIRB-MatMeca).

- A. Guermouche: System programming 36h at Bordeaux University.

- P. Ramet: System programming 24h, Databases 32h, Object programming 48h, Distributed programming 32h, Cryptography 32h at Bordeaux University, and Numerical algorithmic 40h at Bordeaux INP (ENSEIRB-Matmeca).

Post graduate level/Master

- E. Agullo: Operating systems 24h at Bordeaux University ; Dense linear algebra kernels 8h, Numerical algorithms 30h at Bordeaux INP (ENSEIRB-MatMeca).

- O. Coulaud: Paradigms for parallel computing 24h, Hierarchical methods 8h at Bordeaux INP (ENSEIRB-MatMeca).

- A. Esnard: Network management 27h, Network security 27h at Bordeaux University; Programming distributed applications 35h at Bordeaux INP (ENSEIRB-MatMeca).

- M. Faverge: System programming 72h, Load balancing and scheduling 13h at Bordeaux INP (ENSEIRB-MatMeca).
  He is also in charge of the master 2 internship for the Computer Science department at Bordeaux INP (ENSEIRB-MatMeca).

- L. Giraud: Introduction to intensive computing and related programming tools 20h, INSA Toulouse; Introduction to high performance computing and applications 20h, ISAE; On mathematical tools for numerical simulations 10h, ENSEEIHT Toulouse; Parallel sparse linear algebra 11h at Bordeaux INP (ENSEIRB-MatMeca).

- A. Guermouche: Network management 92h, Network security 64h, Operating system 24h at Bordeaux University.

- P. Ramet: Load balancing and scheduling 13h at Bordeaux INP (ENSEIRB-MatMeca).

- J. Roman: Parallel sparse linear algebra 10h, Algorithmic and parallel algorithms 22h at Bordeaux INP (ENSEIRB-MatMeca).
  He is also in charge of the last year "Parallel and Distributed Computing" option at ENSEIRB-MatMeca which is specialized in HPC (methodologies and applications). This is a common training curriculum between Computer Science and MatMeca departments at Bordeaux INP and with Bordeaux University in the context of Computer Science Research Master. It provides a lot of well-trained internship students for Inria projects working on HPC and simulation.

9.2.2. Supervision

PhD: Nicolas Bouzat; Fine grain algorithms and numerical schemes for exascale simulations of turbulent plasmas ; M.Mehrenberger (TONUS project-team), J. Roman, G. Latu (CEA-IRFM); defended on December 17, 2018; jury members: N. Crouseilles (referee, Inria Rennes Bretagne Atlantique), Ph. Helluy (Université Strasbourg), G. Latu (CEA Cadarache), M. Mehrenberger (Université Aix-Marseille), R. Namyst (referee, Université Bordeaux), S. Salmon (Université Reims).

PhD: Arnaud Durocher; High performance Dislocation Dynamics simulations on heterogeneous computing platforms for the study of creep deformation mechanisms for nuclear applications; O. Coulaud, L. Dupuy (CEA); defended on December 19, 2018; jury members: D. Barthou (Bordeaux INP), M. Blétry (Université Paris XII), L. Dupuy (CEA, Saclay), M. Fivel (referee, CNRS, Grenoble), J.F. Méhaud (referee, Université de Grenoble).

PhD in progress: Aurélien Falco; Data sparse calculation in FEM/BEM solution; E. Agullo, L. Giraud, G. Sylvand.

PhD in progress: Esragul Korkmaz; Solveurs creux direct et matrices hierarchiques; M. Faverge, P. Ramet.

PhD: Grégoire Pichon; Utilisation de techniques de compression $\mathcal{H}$-matrices pour solveur direct creux parallèle dans le cadre des applications FEM; M. Faverge, P. Ramet; defended on November 29, 2018; jury members: A. Buttari (CNRS, Toulouse), D. Goudin (CEA-CESTA, Le Barp), G. Kubické (DGA, Rennes), S. Lanteri (Inria, Sophia Antipolis), E. Ng (Lawrence Berkeley Nat. Lab., Berkeley), F. Pellegrini (Université de Bordeaux).

PhD in progress: Louis Poirel; Algebraic coarse space correction for parallel hybrid solvers; E. Agullo, L. Giraud; defended on November 28, 2018; jury members: B. Cuenot (CERFACS, Toulouse), M. Gander (referee, Université de Genève). M. Heroux (referee, Sandia Nat. Lab.), A. Legrand (CNRS, Grenoble), F.X. Roux (ONERA, UPMC Paris), P. Tallec (referee, Ecole Polytechnique).

9.2.3. *Juries*

- Aloïs Bissuel, "Résolution des équations de Navier-Stokes linéarisées pour l'aéroélasticité, l'optimisation de forme et l'aéroacoustique", referees: V. Dolean, R. Abgrall, president: L. Giraud, Université Paris-Saclay à l'Ecole polytechnique, spécialité: mathématiques appliquées, 22 Janvier 2018.

- Eemeho Edorh, "Incremental algorithms for long range interactions", referees: M. Bolden, O. Coulaud, Université Grenoble Alpes, spécialité: mathématiques et informatique, 2 Octobre 2018.

- Vinicius Garcia Pinto, "Performance Analysis Strategies for Task-based Applications on Hybrid Platforms", referees: G. Cavalheiro, B. Mohr, P. Navaux, N. Maillard, A. Legrand reviewers: A. Goldman, G. Thomas Université Grenoble Alpes, spécialité: mathématiques et informatique, et Universidade Federal do Rio Grande do Sul, 30 Octobre 2018.

- Guillaume Latu, HDR, "Contribution à la simulation haute-performance et aux méthodes de calcul très extensibles", referees: R. Abgrall, F. Desprez, R. Namyst, reviewers: S. Genaud, J. Roman, E. Sonnendrücker, Université Strasbourg, spécialité: informatique et calcul scientifique, 18 Mai 2018.

- Gilles Moreau, "On the solution phase of direct methods for sparse linear systems with multiple right-hand sides", referees: P. Amestoy, J. Erhel, L. Grigori, J.-Y. L'Excellent, reviewers: J. Gilbert, P. Ramet, ENS Lyon, spécialité: informatique, 10 Decembre 2018.

9.3. Popularization

9.3.1. *Interventions*

During the 10th anniversary of the Inria Bordeaux Sud-Ouest centre and the open day, scientific popularisation materials of the HiePACS team's research work were presented to the attendees.

INDES Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Nataliia Bielova was the co-chair (together with Claude Castelluccia) of the Francophone workshop on Privacy Protection " l'Atelier sur la Protection de la Vie Privée" (APVP), which took place in Porquerolles (France) from 3 to 6 June 2018. https://project.inria.fr/apvp2018/
- Manuel Serrano was the general chair of the Programming'18 conference that took place in Nice in April 2018, https://2018.programmingconference.org/.
- Tamara Rezk was co-chair and co-organizer (together with Sébastien Bardin and Stéphanie Delaune) of the yearly event of the Working Group "Méthodes formelles pour la sécurité" (GT-MFS) in the context of the Pré-GDR Sécurité meeting in Paris (May 30, 2018).
- Ilaria Castellani was the co-chair (together with Mohammad Reza Mousavi) of the workshop TRENDS 2018, which took place in Beijing on September 8, in association with the CONCUR 2018 conference. https://concurrency-theory.org/events/workshops/trends

8.1.1.2. Member of the Organizing Committees

- Tamara Rezk was the local chair of the Programming'18 conference that took place in Nice in April 2018 https://2018.programmingconference.org/.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- Nataliia Bielova was the PC co-chair (together with Claude Castelluccia) of the Francophone workshop on Privacy Protection " l'Atelier sur la Protection de la Vie Privée" (APVP), which tool place in Porquerolles (France) from 3 to 6 June 2018. https://project.inria.fr/apvp2018/
- Manuel Serrano was the co-chair together with Sukyong Ryu from Kaist University of the WWW'18 alternate Programming Track, https://www2018.thewebconf.org/call-for-papers/web-programming-cfp/, which took place in April in Lyon.

8.1.2.2. Member of the Conference Program Committees

- Nataliia Bielova served in the Program Committees of IEEE SecDev'18, POST'18, ProWeb'18, eCrime'18, APVP'18. She also is a member of the Steering Committee of the PLAS workshop.
- Manuel Serrano served in the Program Committee of ProWeb'18 workshop.
- Tamara Rezk served in the Program Committees of NDSS'18, Euro S&P'18, APLAS'18, POST'18, WWW'18, PriSC'18, CSF'18, SEC@SAC'18. She is also a member of the Steering Committee of the POST conference at ETAPS.
- Ilaria Castellani served in the Program Committee of the conference FORTE'18.

8.1.2.3. Reviewer

- The team members have been reviewers for the following conferences and workshops: PoPETs'18, CONCUR'18, FORTE'18, EXPRESS/SOS'18.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Ilaria Castellani is a member of the editorial board of *Technique et Science Informatiques*.

- Tamara Rezk is a member of editorial Board of Interstices and blog Binaire du Le Monde.

8.1.3.2. Reviewer - Reviewing Activities

- The team members have been reviewers for the following journals: JCS, Acta Informatica, JLAMP, TCS, JOT.

8.1.4. Invited Talks

- Nataliia Bielova was an invited speaker at the workshop "Transparence et opacité des systèmes d'information" in April http://transparence.conf.citi-lab.fr/. She gave a talk at the Journées Scientifiques Inria in June https://journees-scientifiques2018.inria.fr/francais-programme/. She gave a tutorial on Web Tracking Technologies at TheWeb'18 conference in April https://www2018.thewebconf.org/program/tutorials-track/tutorial-203/ and gave a keynote talk at the Journée scientifique RISE/DS4H of Université Cote d'Azur in September. Nataliia was an invited speaker at Harvard University where she gave a talk on Web tracking technologies in October 2018. She also gave an invited lecture on "Online tracking and privacy protection", at Master 2 course, Carnegie Mellon University in October and an invited lecture on "Ethics and Internet Security" in Master in Digital Business course at SKEMA Business school in March.

- Manuel Serrano gave an invited talk on on Web Programming at the Programming ProWeb'18 workshop in April, https://2018.programming-conference.org/track/proweb-2018-papers. He gave a two hours talk on Reactive Web Programming during the Synchron'18 workshop https://project.inria.fr/synchron2018/fr/. He also was an invited speaker at Brown University where he gave a talk on JavaScript implementation.

- Tamara Rezk was an invited speaker at the seminar in the context of Inaugural lecture of Marieke Huisman, University of Twente, January 2018. She also gave a talk in the Dagstuhl Seminar on Secure Compilation of May 2018 and at Harvard University in October 2018.

8.1.5. Leadership within the Scientific Community

- Ilaria Castellani is the chair of the IFIP TC1 WG 1.8 on Concurrency Theory since June 2014. In 2018 she has been reelected for a second term.

- Ilaria Castellani is a Management Committee member of the COST Action IC1405 on Reversible Computation (November 2014-April 2019).

8.1.6. Research Administration

- Nataliia Bielova is a member of "Comité du Suivi Doctoral (CSD)" (Supervision of PhD students) of the Inria Sophia Antipolis Mediterranée research center. She was a member of the Inria "Master Transverse" evaluation committee.

- Manuel Serrano was the "Délégué scientifique" (head of research) of the Inria Sophia Antipolis Mediterranée research center until end of August. He was member of the Inria Evaluation Committee until that time.

- Tamara Rezk is a member of " Commission de Développement Technologique (CDT)" of the Inria Sophia Antipolis Mediterranée research center.

- Ilaria Castellani is a member of Inria's "Comité Parité et Égalité des Chances". In the Centre of Inria Sophia Antipolis, she is a member of the "Comité d'Animation et Médiation Scientifique" and of the Scientific Committee of the Morgenstern Colloquium. She is also a member of the Réseau Parité of Université Côte d'Azur, and of the Scientific Committee of the Forum Numerica Seminar of Academy 1 of Université Côte d'Azur.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : Nataliia Bielova, Security of Web Applications, 18ETD, niveau M2, University of Pierre et Marie Curie, France

Master : Nataliia Bielova, Foundations of Privacy, 1.5ETD, niveau M2, Carnegie Mellon University, USA

Master: Nataliia Bielova, Ethics and Internet Security, 1.5ETD, M2, SKEMA Business school, France.

Master : Tamara Rezk, Security of Web Applications, 28ETD, niveau M2, University of Nice Sophia Antipolis, France

Master : Tamara Rezk, Preuves en Cryptographie, 28ETD, niveau M2, University of Nice Sophia Antipolis, France

Master : Tamara Rezk, Security of Web Applications, 36ETD, niveau M2, University of Pierre et Marie Curie, France

Doctorat : Nataliia Bielova, Apprentissage et fouille de données sur les Réseaux, 2.25ETD, École de Recherche ResCom, France

Doctorat : Nataliia Bielova, Ecole de Cybersécurité, 3ETD, UCA, France

Doctorat : Nataliia Bielova, Web Privacy, 30ETD, University of Trento, Italy

E-learning

MOOC: Nataliia Bielova, "Protection de la vie privée dans le monde numérique", 1 Module, 8 sequences, FUN-MOOC, Inria, grande public, formation continue, 8900 inscrit au 18 Decembre 2018.

8.2.2. Supervision

HdR :Tamara Rezk, *Secure Programming* [11], Université Côte d'Azur, 03/04/2018

PhD : Dolière Francis Somé, *Web Applications Security and Privacy* [12], Université Cote d'Azur, 29/10/2018, Nataliia Bielova and Tamara Rezk

PhD: Colin Vidal, *Programmation Web réactive* [13], University of Nice, 1/07/2015-1/09/2018, Manuel Serrano and Gérard Berry.

PhD in progress : Imane Fouad, Web tracking detection and measurement, 1/01/2018, Nataliia Bielova and Arnaud Legout

PhD in progress : Jayanth Krishnamurthy, Privacy policy enforcement in IoT applications, 12/09/2018, Nataliia Bielova and Manuel Serrano

PhD in progress : Héloïse Maurel, Secure compilation of IoT applications, 1/10/2018, Tamara Rezk

PhD in progress : Mohamad Ellaz, Encodings of ElGammal, 1/12/2017, Benjamin Gregoire and Tamara Rezk

PhD in progress : Lesly-Ann Daniel, Security analysis of binary code, 1/10/2018, Sébastien Bardin and Tamara Rezk

Postdoc: Yoonseok Ko, Subsets of secure JavaScript, 1/10/2018-, Tamara Rezk

Postdoc: Minh Ngo, TSNI enforcement mechanisms, 1/01/2018-31/12/2018, Tamara Rezk

Postdoc: Francis Somé, IoT secure broadcasting, 1/11/2018-, Tamara Rezk

8.2.3. Juries

- Nataliia Bielova was a member of the PhD jury of Oleksii Starov, Stony Brook University.
- Nataliia Bielova was a member of the PhD jury of Daniel Schoepe, Chalmers University of Technology.
- Manuel Serrano was a member of the PhD jury of Remy El-Sibaie, Paris-Sorbonne University.
- Manuel Serrano was a member of the PhD jury of Pierre Talbot Ircam, Paris-Sorbonne University.

- Tamara Rezk was "rapporteur" for the PhD thesis of Nadim Kobeissi, ENS
- Tamara Rezk was "rapporteur" for the PhD thesis of Gurvan Cabon, Université de Rennes
- Tamara Rezk was a member of the Licenciate jury of Iulia Bastys, Chalmers University of Technology
- Tamara Rezk was a member of the jury "soutenance stage" of the CASPAR master of University of Nice Sophia Antipolis
- Tamara Rezk was a member of the jury for the ACM Student Research Competition of April 2018

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

Tamara Rezk is member of the editorial board of Interstices and Blog Binaire Le Monde

8.3.2. Articles and contents

Tamara Rezk published the article "Est-ce que mon programme est bien protégé ?" in blog binaire Le Monde in February 2018. The article with some minor modifications was retaken by Interstices and published in December 2018. http://binaire.blog.lemonde.fr/2018/02/09/est-ce-que-mon-programme-est-bien-protege-contre-les-cyberattaques/.

Nataliia Bielova was interviewed by Sophie Casals, "Comment mieux protéger sa vie privée en naviguant sur internet? Les conseils d'une spécialiste" in Nice Matin, June 2018. https://www.nicematin.com/faits-de-societe/comment-mieux-proteger-sa-vie-privee-en-naviguant-sur-internet-les-conseils-dune-specialiste-239166

8.3.3. Education

8.3.3.1. Skini and the Fabrique à Musique

Skini is currently used with a class of secondary school in order to create a musical show in collaboration with the Conservatory of Nice and the CIRM (National Center for Music Creation). A group of 25 children, 12 year old, are creating together a story, and use the distributed sequencer of Skini to design basic musical patterns using tablets. The next step is to organize with them the orchestration of the piece which is coded in HipHop. The activation of the piece will be done in real time by the children using the tablet and the Skini plateform. This project is funded by SACEM (Société des auteurs, compositeurs et éditeurs de musique). The project will end in May 2019 with a public concert in the Conservatory of Nice.

8.3.3.2. MOOC Protection de la vie privée dans le monde numérique

Nataliia Bielova has participated to the MOOC "Protection de la vie privée dans le monde numérique" (Session 2) that was shooted in July 2018 under the guidance of Inria Learning Lab and was open to general public between 5 November 2018 and 7 January 2019, https://www.fun-mooc.fr/courses/course-v1:inria+41015+session02/about.

8.3.4. Interventions

- Nataliia Bielova held a stand at Portes ouvertes (Fête de la science) of Inria Sophia Antipolis explaining how to protect privacy on the Web, October 2018.
- Ilaria Castellani and Héloïse Maurel held the stand "Science au féminin" together with Carine Antico from CNRS at the Fête de la Science in Antibes Juan-les-Pins, October 2018.

8.3.5. Internal action

- Nataliia Bielova gave a talk at the PhD seminar special edition on "Tracking technologies and protection of your privacy on the Web", March 2018.
- Nataliia Bielova gave a talk at the Data Science meetup Nice on "How companies track you as you browse the web and how to protect yourself?", https://www.meetup.com/Data-Science-Meetup-Nice-Sophia-Antipolis/events/255546602/, October 2018.

<p style="text-align:center">**INFINE-POST Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

1. **Aline C. Viana** is Publicity co-Chair of: IEEE PICom 2018; IEEE MiSeNet 2018 (jointly with IEEE Infocom 2018); DCOSS 2018; DCOSS 2019; CoUrb 2019 (jointly with DCOSS 2019).

2. **Aline C. Viana** is Stutend Travel Grant co-chair of IEEE Infocom 2019.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

1. **Emmanuel Baccelli** was chair of the RIOT Summit 2018.

8.1.2.2. Member of the Conference Program Committees

1. **Aline C. Viana** is/was TPC member of: Altogel 2018; Algotel 2019; NTMS 2018; LADaS 2018.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

1. **Aline C. Viana** is an Editorial Board member of Urban Computing Spring book series (http://www.springer.com/series/15552), since Feb. 2018; an Associate Editor of ACM SIGCOMM Computer Communication Review (ACM CCR), since May 2014; an Editorial Board member of Wireless Communications and Mobile Computing Open Access Journal of John Wiley&Sons and Hindawi since 2016.

8.1.3.2. Reviewer - Reviewing Activities

1. in 2018, **Emmanuel Baccelli** reviewed for ACM Transactions on IoT, ACM ICN, IEEE Transactions on Cloud Computing, IEEE Journal on Internet of Things, JSAC, PEMWN.

2. **Aline C. Viana** reviewed papers for ACM SIGCOMM CCR Journal, elsevier Pervasive and Mobile Computing Journal and Computer Communication Elsevier Journal, IEEE Trans. on Network and Service Management, on IEEE Internet Computing.

8.1.4. Standardization

1. **Emmanuel Baccelli and Cedric Adjih** have participated at several working groups at IETF during 2018.

2. **Emmanuel Baccelli and Cedric Adjih** have participated at several IETF hackathons during 2018.

8.1.5. Invited Talks

1. in 2018, **Emmanuel Baccelli** gave invited talks as EPO in Berlin, at Paris Open Source Summit, at the 2018 French-Japanese Workshop on Cybersecurity in Tokyo, and at OSIS 2018 in Paris.

2. in 2018, **Cedric Adjih** presented FIT IoT-LAB at the IoT Tunisia Forum 2018, described ICN IoT challenges at IoT Tunisia Workshop 2018, and in december, at a scientific seminar in University Paris 13.

3. **Aline C. Viana** was invited to give a talk at (1) LNCC, Petrópolis, Brazil, workshop on Urban Computing and Society in November 2018; (2) Univ. de la Rochelle, workshop CoFaBras 2018 in October 2018

4. **Aline C. Viana** was the keynote speaker of the CoUrb 2018 Workshop jointly organized with SBRC 2018, Brazil in May 2018. She will be a keynote at the GDR RSD Winter School in February 2019.

8.1.6. Research Administration

1. **Aline C. Viana** is the President of the Scientific Commission at Inria Saclay, responsible for the selection of candidates for the CORDI-S, Post-Doc and Delegation campaigns.
2. **Aline C. Viana** is the international coordinator of the EMBRACE associated team of Inria.
3. Together with the members of the team, **Aline C. Viana** has submitted the short proposal of the new team as well as has presented it at the BCEP and CEP. The long versio of the team proposal will be sent by next week.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master : Emmanuel Baccelli, "IoT & Security", summer semester seminar, Freie Universitaet Berlin.
- Master : Emmanuel Baccelli, "IoT & Security", winter semester seminar, Freie Universitaet Berlin.
- Master : Emmanuel Baccelli, "Operating Systems for Small Connected Devices in the Internet of Things", 3h cours magistral, Formation PESTO Corps des Mines, Telecom ParisTech, Paris France
- Engineering School: Cédric Adjih, "Internet of Thing", 3h pratical courses, Telecom SudParis
- Engineering School: Cédric Adjih, "Internet of Thing", 6h practical courses, ENSEA
- Lectures to under-graduation, masters and PhD students at foreign Universities: "Complete trajectory reconstruction from sparse mobile phone data", 1h, Nov. 2018, LNCC, Petrópolis, Brazil
- Short-courses at conference: "Humans in the communication loop: enablers of next generation networks", 4h, May 2017, SBRC 2018 conference, Brazil http://www.sbrc2018.ufscar.br/minicurso-1-mc-1/.

8.2.2. Supervision

- PHD Guangshuo Chen has defended his PhD in April 2018. *Thesis title*: Human Habits Investigation: from Mobility Reconstruction to Mobile Traffic Prediction. Ecole Polytechnique/ ED STIC Univ. Paris Saclay. Advisor: Aline C. Viana
- Roni Shigueta has defended his PhD in July 2018. *Thesis title:* Channel resource allocation of wireless interfaces of mobile devices.Co-tutelle: PUC-PR and Ecole Polytechnique/ ED STIC Univ. Paris Saclay. Advisors: Aline C. Viana and Mauro Fonseca (UTFPR, Brazil)
- PhD in progress: Licia Amichi, "Modelling explo- ration factor of human beings", since Sep. 2018.
- PhD in progress: Lucas Santos, "Investigating causalities in habits of human visits", since May 2018.
- PhD in progress: Douglas Teixeira, "Context-enhanced human predictability in short-term datasets with high spatial resolution", since April 2018.
- PhD in progress: Joao B. Borges, "Revealing motifs in human mobility", since Nov. 2018.
- PhD in progress: Rafael Costa, "Human-enhanced forward- ing strategies for Device-to-Device (D2D) communication", since Sep 2017.

8.2.3. Juries

- **Reviewer for PhD thesis committee:**Aline Viana was reviewer for the following PhDs: H. Chelle (INP/Univ. de Toulouse, Dec. 2018); Y. Zhou (CentraleSupélec, Jui.2018); F. Coriat (UPMC, Dec. 2018);
- **Examiner for PhD thesis committee:**Aline Viana was examiner for the committees of the following PhDs: A. Boubrima (INSA-Lyon/AGORA, Feb. 2019); L. Pajević (KTH, Nov. 2018);
- **Mid-term Examiner PhD thesis committee:**Emmanuel Baccelli was mid-term reviewer for the PhD of Benjamin Beurdouche (Inria, June 2018). Aline Viana was mid-term examiner for the following PhDs: M. Sardara (Cisco/TPT, Jun. 2018); M. Charfi and I. D. Adamou (CentraleSupélec, Jun. 2018); C. Bertier (Thales/UPMC, Avr. 2018);

<p align="center" style="color:red">KERDATA Project-Team</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Luc Bougé: Chair of the Steering Committee of the Euro-Par Series of conferences since August 2017.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

Alexandru Costan:

– Program Co-Chair of the ScienceCloud 2018 international workshop held in conjunction with ACM HPDC 2018, Tucson, AZ, USA.

8.1.2.2. Member of the Conference Program Committees

Gabriel Antoniu: ACM HPDC 2018, IEEE IPDPS 2018, ACM/IEEE SC'18: Papers Committee, Posters Committee, Best Poster Award and Student Research Competition Committee, IEEE CSE-2018, BDA 2018.

Alexandru Costan: IEEE/ACM SC'18 (Posters and ACM Student Research Competition), ACM/IEEE CCGrid 2018, IEEE Cluster 2018, IEEE/ACM UCC 2018, ARMS-CC 2018 workshop (held in conjunction with PODC 2018), IEEE Big Data 2018, IEEE CSE 2018, MLDS 2018, EBDMA 2018.

Pedro Silva: ScienceCloud 2018 Workshop – Co-located with ACM HPDC 2018.

8.1.2.3. Reviewer

Alexandru Costan: ACM HPDC 2018, IEEE/ACM SC 2018, IEEE IPDPS 2018

Pedro Silva: IEEE Big Data, IEEE Cloud 2018, IEEE Cluster, IEEE CCGrid 2018, ACM HPDC 2018, IEEE/ACM SC 2018.

8.1.3. Journals

8.1.3.1. Member of the Editorial Boards

Gabriel Antoniu: Future Generation Computer Systems: Special Issue on Mobile, hybrid, and heterogeneous clouds for cyberinfrastructures (Guest Editor); Special Issue on Resource Management for Big Data Platforms (Guest Editor).

8.1.3.2. Reviewer - Reviewing Activities

Alexandru Costan: IEEE Transactions on Parallel and Distributed Systems, Future Generation Computer Systems, Concurrency and Computation Practice and Experience, IEEE Transactions on Cloud Computing, IEEE Transactions on Big Data.

8.1.4. Invited Talks

Gabriel Antoniu and Alexandru Costan: Huawei European Research Center, Munich, January 2018. *Low-latency Storage for Stream Data*.

Gabriel Antoniu:

– First workshop of the BDEC2 workshop series, Bloomington, November 2018. *The Sigma Data Processing Architecture: Leveraging Future Data for Extreme-Scale Data Analytics to Enable High-Precision Decisions*.

- 8th workshop of the Joint Laboratory for Extreme-Scale Computing (JLESC), Barcelona, April 2018. *HPC-Big Data convergence at the processing level: a vision.*
- Sintef, Oslo, October 2018: *HPC-Big Data convergence at the processing level: a vision.*

8.1.5. Leadership within the Scientific Community

Gabriel Antoniu:

International lab management   *Vice Executive Director of JLESC* for Inria. JLESC is the Joint Inria-Illinois-ANL-BSC-JSC-RIKEN/AICS Laboratory for Extreme-Scale Computing. Within JLESC, he also serves as a *Topic Leader* for Data storage, I/O and in situ processing for Inria.

Team management   *Head of the KerData Project-Team* (Inria-ENS Rennes-INSA Rennes).

International Associate Team management   Leader of the Data@Exascale Associate Team with Argonne National Lab (2013–2018).

PI of a collaborative research project with industry : Huawei Technologies, HIRP program(Huawei Innovative Research Project Program, 2016-2018).

Technology development project management   Coordinator of the Damaris ADT project (2016–2018), to be continued with the Damaris 2 ADT project (2019–2021).

Luc Bougé: Vice-President of the *French Society for Informatics* (*Société informatique de France*, SIF), in charge of Teaching.

Alexandru Costan: Leader of the *Smart Cities* Working Group within the BigStorage H2020 ETN project.

8.1.6. Scientific Expertise

Luc Bougé: Member of the jury for the *Agrégation de mathématiques* and the *CAPES of mathématiques*. These national committees select permanent mathematics teachers for secondary schools and high-schools, respectively.

8.2. Teaching, Supervision, Juries

8.2.1. Teaching

Gabriel Antoniu

- Master (Engineering Degree, 5th year): Big Data, 24 hours (lectures), M2 level, ENSAI (*École nationale supérieure de la statistique et de l'analyse de l'information*), Bruz, France.
- Master: Scalable Distributed Systems, 12 hours (lectures), M1 level, SDS Module, EIT ICT Labs Master School, France.
- Master: Infrastructures for Big Data, 12 hours (lectures), M2 level, IBD Module, SIF Master Program, University of Rennes, France.
- Master: Cloud Computing and Big Data, 10 hours (lectures), M2 level, Cloud Module, MIAGE Master Program, University of Rennes, France.

Luc Bougé

- Bachelor: Introduction to programming concepts, 36 hours (lectures), L3 level, Informatics program, ENS Rennes, France.
- Bachelor: Introduction to scientific research, 24 hours. Research center visits, individual research project supervised by local researchers, student seminars, summer internships, etc.
- Master Program, Rennes: Invited presentation to the M2 students about *Preparing your applications after your PhD* (November 2018); *Informatics as a scientific activity: Toward a responsible research* (November 2018).

Alexandru Costan
- – Bachelor: Software Engineering and Java Programming, 28 hours (lab sessions), L3, INSA Rennes.
- – Bachelor: Databases, 68 hours (lectures and lab sessions), L2, INSA Rennes, France.
- – Bachelor: Practical case studies, 24 hours (project), L3, INSA Rennes.
- – Master: Big Data Storage and Processing, 28h hours (lectures, lab sessions), M1, INSA Rennes.
- – Master: Algorithms for Big Data, 28 hours (lectures, lab sessions), M2, INSA Rennes.
- – Master: Big Data Project, 28 hours (project), M2, INSA Rennes.

Pedro Silva
- – Master: Algorithms for Big Data, 4 hours (lectures), M2, INSA Rennes.
- – Master: Algorithms for Big Data, 6 hours (lab sessions), M2, INSA Rennes.

8.2.2. Supervision

8.2.2.1. PhD completed this year

Pierre Matri: *Tyr: Storage-Based HPC and Big Data Convergence Using Transactional Blobs*, Universidad Politécnica de Madrid, defended June 10, 2018, co-advised by María Pérez (Universidad Politécnica de Madrid) and Gabriel Antoniu.

Mohammed-Yacine Taleb: *Energy-impact of data consistency management in Clouds and Beyond* [15], ENS Rennes, defended on October 2, 2018, co-advised by Gabriel Antoniu and Toni Cortés (Barcelona Supercomputing Center).

Ovidiu-Cristian Marcu: *Efficient data transfer and streaming strategies for workflow-based Big Data processing*, INSA Rennes, defended on December 18, 2018, co-advised by Alexandru Costan and Gabriel Antoniu.

8.2.2.2. PhD in progress

Nathanaël Cheriere: *Resource Management and Scheduling for Big Data Applications in Large-scale Systems*, thesis started in September 2016, co-advised by Gabriel Antoniu and Matthieu Dorier.

Paul Le Noac'h: *Workflow Data Management as a Service for Multi-Site Applications*, thesis started in November 2016, co-advised by Alexandru Costan and Luc Bougé.

8.2.3. Juries

Gabriel Antoniu:

Barcelona Supercomputing Center STAR Postdoctoral Programme: Member of the evaluation panel in 2018 (30 applications reviewed).

PhD juries: Referee for 3 PhD juries for PhD defenses at Barcelona Supercomputing Center, Université de Grenoble and UPMC, Paris.

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

Gabriel Antoniu:

Big Data Value Association: Inria representative in the working group on HPC-Big Data convergence since 2018.

ETP4HPC: Inria representative in the working group on HPC-Big Data convergence since 2018.

Luc Bougé: Co-ordinator between ENS Rennes and the Inria Research Center and the IRISA laboratory.

Alexandru Costan:
- – In charge of internships at the Computer Science Department of INSA Rennes.
- – In charge of the organization of the IRISA D1 Department Seminars.

8.3.2. Articles and contents

HDF5 Blog: Invited blog article explaining how Damaris can support HDF5-based storage.

<p align="center" style="color:red">MIMOVE Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- V. Issarny, TPC co-chair of ICSE-SEIS'2018 - Software Engineering in Society Track of the ICSE'18 conference. Gotheborg, SE, May 2018.
- V. Issarny, TPC co-chair of CIC'2018 - 4th IEEE International Conference on Collaboration and Internet Computing. Philadelphia, USA, October 2018
- V. Issarny, TPC co-chair of SCF-ICIOT - 2019 International Conference on Internet of Things Services at the Services Conference Federation. San Diego, USA, June 2019.

10.1.1.2. Member of the Conference Program Committees

- V. Christophides, PC member of IEEE Data Engineering Conference 2018.
- V. Issarny, PC member of COOPIS'18, FASE'18 & 20, IC2E'19, ICDCS'18, ICSE'18 & 20, ICSE-SEIS-19, IOTDI'19, Middleware'18, OPODIS'18, WWW'19.
- R. Teixeira, PC member of ACM SIGCOMM 2018.
- R. Teixeira, PC member of ACM HotNets workshop 2018, ACM SIGCOMM Workshop on Self-Driving Networks 2018.
- N. Georgantas is PC member of the following international conferences: SAC'18&'19, AmI'18, SOSE'18&'19, WWW'19.
- N. Georgantas is PC member of the following international workshops: MRT'18, SERENE'18, IoT-ASAP'18&'19, ARM'18, SESOS-ICSE'18.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- V. Issarny, Associate editor, ACM Transactions on Internet of Things (TIOT)
- V. Issarny, Associate editor, IEEE Transactions on Services Computing (TSC)
- V. Issarny, Associate editor, IEEE Transactions on Software Engineering (TSE)
- N. Georgantas, Associate editor, International Journal of Ambient Computing and Intelligence (IJACI)
- V. Christophides, Associate editor, MDPI Open Access Journal of Internet of Things (IoT)
- V. Christophides, Associate editor, MDPI Open Access Journal of Future Internet

10.1.2.2. Reviewer - Reviewing Activities

- V. Christophides, Reviewer for the ACM Journal Transactions on Internet of Things (TIOT)
- V. Christophides, Reviewer for the Springer Journal Knowledge and Information Systems (KAIS)

10.1.3. Invited Talks

- V. Christophides "IoT Data Analytics", Invited Tutorial at the French Database Community (BDA) Summer School on Scalable Data Analytics Aussois, Modane June 17-22, 2018.
- V. Issarny, "USNB - Enabling Universal Online Social Interactions", Keynote, ECSCW - The 16th European Conference on Computer-Supported Cooperative Work: The International venue on Practice-centred computing and the Design of cooperation technologies. Nancy, FR, June 2018.

- V. Issarny, "When service-oriented and cloud computing meets the IoT: A use case in the context of urban mobile crowd-sensing", Keynote, ESOCC Conference. COMO, IT, September 2018.
- R. Teixeira, "Diagnosis of Internet Quality of Experience in Home Networks", Keynote, 6th International Conference, NETYS 2018, Essaouira, Morocco, May 9–11, 2018.
- N. Georgantas, "Challenges in Enabling Effective Smart Cities and Communities: Global Perspectives", Plenary panel, IEEE SMARTCOMP 2018, Taormina, Sicily, June 18-20, 2018.

10.1.4. Leadership within the Scientific Community

- V. Christophides, Member of the EDBT Association (since 2014).
- V. Issarny, Council member, ACM Europe (since 2017).

10.1.5. Scientific Expertise

- V. Issarny, Elected member: *Commission d'Evaluation Inria*.
- V. Issarny, Scientific council member: ARCEP (since September 2018).
- V. Issarny, Committee member: *Advanced Data science Alliance Expert Panel of the Canadian Networks of Centres of Excellence* (NCE) (Ottawa, Canada, 08/18); *JPI Urban Europe and NSFC China pilot call on Sustainable and Liveable Cities and Urban Areas* (Paris, 10/18); *FWO Expert panel for PhD fellowships strategic basic research* (Bruxelles, 11/18)
- R. Teixeira, evaluator for the H2020-ICT-2018-2 call, topic ICT-21-2018 "EU-US Collaboration for advanced wireless platforms" organised by the European Commission.
- R. Teixeira, monitor for the H2020 projects CogNet, SUPERFLUIDITY.
- R. Teixeira, Member of the acceptability committee for the competitive selection of young researchers (CR), 2018.
- R. Teixeira, Member of the admission committee for the competitive selection of young researchers (CR), 2018.
- V. Christophides, Member of the appointment committee for faculty position on «Machine Learning with focus on Bioinformatics» University of Crete, December 2017.
- N. Georgantas, monitor for the ANR project INTEROP.

10.1.6. Research Administration

- V. Issarny, Scientific coordinator: IIL Inria@SiliconValley (till 08/18) and IPL CityLab@Inria (till 11/18).
- N. Georgantas, member of the PhD monitoring committee at Inria Paris (till 10/18).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: V. Christophides, "Big Data Processing and Analytics", 25h M2, Ecole CentraleSupelec, France. Created this new master's level class in Spring 2016.

Master : R. Teixeira, "Methodology for research in networking", 4h CM, M2, Sorbonne University, France

Master : R. Teixeira, "Network Metrology", 4h CM, M2, Sorbonne University, France

E-learning

V. Issarny, MOOC & SPOC *Implementing Successful Processes for Citizen Participation: Supporting Methods and Civic Tech*, 5 weeks, 1,600 registered students in the session of November 2018.

R. Teixeira, MOOC "Internet Measurements: a Hands-on Introduction", 5 weeks in FUN platform, session May 2018.

10.2.2. Supervision

PhDs in progress:

- Yifan Du (Since October 2017): "In-network collaborative crowd-Xing", Sorbonne University, V. Issarny and F. Sailhan (CNAM)
- Thibaut Ehlinger (Since November 2017): «Causal Modelling of User Quality Experience (QoE) from Network Quality of Service (QoS)» University of Côte d'Azur. advisors: V. Christophides and C. Barakat (Inria)
- Grigoris Piperagkas (Since October 2018): "Leveraging universal social networking and the IoT for urban-scale participatory systems", Sorbone University, V. Issarny and R. Angarita (ISEP).
- Israel Marquez Salinas (Since October 2018): "Optimization of Internet Quality of Experience in Home Networks", S. Ayoubi, R. Teixeira.
- Dimitris Tsolovos (Since March 2017): "A privacy-by-design middleware for urban-scale mobile crowdsensing", UVSQ, N. Anciaux (Inria PETRUS @ Saclay) and V. Issarny.
- Fethi Dilmi (Since October 2017): "End-to-end monitoring and diagnosis of video Quality of Experience", F. Bronzino and R. Teixeira.
- Sarah Wassermann (Since October 2017): "Passive analysis and opitimization of Internet Quality of Experience", R. Teixeira.
- Sara El Aouad (Since May 2013): "Building a personalized summary from movie reviews", V. Christophides, R. Teixeira, C. Diot (Google).
- Patient Ntumba (Since August 2018): "Dynamic adaptation of middleware-layer protocols for emergent mobile systems", Sorbonne University, N. Georgantas.

10.2.3. Juries

V. Christophides: External evaluator of the Ph.D. Thesis of Giorgos Borboudakis entitled "Efficient and Accurate Feature Selection, with Extensions for Multiple Solutions and to Big Data", University of Crete, Greece, November 2018

V. Issarny: President of the PhD defense committee of Saad El Jaouhari on the topic "A secure design of WoT services for smart cities", IMT-Atlantique, Rennes, FR, December 2018

R. Teixeira, external evaluator of the Ph.D dissertation of Danilo Cicalese on "Anycast nowadays" (Telecom ParisTech, 2018).

R. Teixeira, external evaluator of the Ph.D dissertation of Luca Vassio on "Data Analysis and Modelling of Users' Behaviour on the Web" (Politecnico di Torino, 2018).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- V. Issarny, Appointed member: CODEV, *Métropole du Grand Paris* (Since December 2018).

<p align="center" style="color:red">MYRIADS Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Guillaume Pierre was General Chair of the 19th ACM/IFIP Middleware conference which took place on December 10-14th 2018 in Rennes. The event attracted more than 200 participants (a record number for this conference), including 70% from abroad.

10.1.1.2. Member of the Organizing Committees

- Anne-Cécile Orgerie was a member of the Organizing Committee of the 3rd GDR RSD and ASF Winter School on Distributed Systems and Networks.
- Anne-Cécile Orgerie was a member of the Organizing Committee of the E3-RSD Research school for early stage researchers on Energy Efficiency of Networks and Distributed Systems.
- Maryse Fouché and Julie Montégu were members of the organizing committee of ACM/IFIP Middleware 2018.
- Anne-Cécile Orgerie was Student activities co-chair for ACM/IFIP Middleware 2018.
- Christine Morin was Sponsor chair for ACM/IFIP Middleware 2018.
- Benjamin Camus was Publicity co-chair and Web and social media chair for ACM/IFIP Middleware 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Anne-Cécile Orgerie was Co-chair of the Track on Cluster and Cloud Computing for Euro-Par 2018.
- Anne-Cécile Orgerie was Co-chair of the Special Track on Big Data/Smart Cities and IoT for IEEE BigData Congress 2018.
- Guillaume Pierre was vice-PC chair of the short paper track at the IEEE ICDCS 2018 conference.

10.1.2.2. Member of the Conference Program Committees

- Anne-Cécile Orgerie was a member of the Workshop committee and Poster committee at ACM/IEEE Supercomputing Conference 2018 (SC'18).
- Anne-Cécile Orgerie was a member of the program committee for IEEE Cluster Conference 2018.
- Cédric Tedeschi was a member of the program committee for ICCS 2018.
- Cédric Tedeschi was a member of the program committee for ICWS 2018.
- Cédric Tedeschi was a member of the program committee for Compas 2018.
- Cédric Tedeschi was a member of the program committee for SBAC-PAD 2018.
- Cédric Tedeschi was a member of the program committee for IEEE CSE 2018.
- Guillaume Pierre was a member of the program committee for ICACNI 2018.
- Guillaume Pierre was a member of the program committee for ISORC 2018.
- Guillaume Pierre was a member of the program committee for CloudCom 2018.
- Guillaume Pierre was a member of the program committee for IEEE/ACM UCC 2018.
- Guillaume Pierre was a member of the program committee for mF2C 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE ISPDC'2018.

- Nikos Parlavantzas was a member of the program committee for Euro-Par 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE/ACM UCC 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE CloudCom 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE CSE 2018.
- Nikos Parlavantzas was a member of the program committee for CrossCloud 18.
- Nikos Parlavantzas was a member of the program committee for VHPC'18.
- Nikos Parlavantzas was a member of the program committee for CLOSER 2018.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- Nikos Parlavantzas served as a reviewer for IEEE Computer.
- Nikos Parlavantzas served as a reviewer for JSS.

10.1.4. Invited Talks

- Anne-Cécile Orgerie gave a presentation Entretiens Jacques Cartier, Lyon, France, November 12, 2018.
- Anne-Cécile Orgerie gave a keynote at GreenDays@Toulouse, Toulouse, France, July 3, 2018.
- Anne-Cécile Orgerie gave a seminar organized by France Stratégie, Paris, France, March 13, 2018.
- Guillaume Pierre gave an invited talk at the Fog Placement meeting, Grenoble, June 19-20th 2018.
- Guillaume Pierre gave a keynote at the Journées Cloud, Troyes, September 12-13th 2018.
- Martin Quinson gave a presentation at the spring school "Algorithmique et programmation" for secondary teachers, Luminy, May 11th 2018.
- Martin Quinson gave a presentation to the seminar of the "Large Scale System" department of IRISA, Rennes, November 23th 2018.
- Martin Quinson gave a presentation to the seminar of the DGD-T of Inria, Rennes, October 18th 2018.

10.1.5. Leadership within the Scientific Community

- Anne-Cécile Orgerie is co-chair of the Green axis of the CNRS GDR RSD (Network and Distributed Systems working group).
- Anne-Cécile Orgerie is vice-chair of the ASF: the French chapter of ACM SIGOPS.
- Cédric Tedeschi is member of the steering committee of the Compas conference.

10.1.6. Scientific Expertise

- Jean-Louis Pazat is the coordinator of experts in Information Technology for the evaluation of international bilateral collaborations at the ministry of research and education.

10.1.7. Research Administration

- Anne-Cécile Orgerie is an officer (chargée de mission) for the IRISA cross-cutting axis on Green IT.
- Martin Quinson is the leader of the "Large Scale Systems" department of IRISA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

License: Jean-Louis Pazat, Introduction à la programmation, L1, Département STPI, INSA de Rennes.

License: Guillaume Pierre, Systèmes Informatiques, L3 MIAGE, Univ. Rennes 1.

License: Guillaume Pierre, Systèmes d'exploitation, L3 Informatique, Univ. Rennes 1.

License: Jean-Louis Pazat, Calcul Hautes Performances, Département Informatique L3, Insa Rennes.

License: Jean-Louis Pazat, Calcul Hautes Performances, Département Mathematiques L3, Insa Rennes.

Licence: Martin Quinson, Architecture et Systèmes, 60 hETD, L3 Informatique, ENS Rennes.

Licence: Martin Quinson, Pedagogy, 15 hETD, L3 Informatique, ENS Rennes.

Master: Anne-Cécile Orgerie, Cloud & Big Data, 30 hETD, M1, ENS Rennes.

Master: Anne-Cécile Orgerie, Green ICT, 4.5 hETD, M2, Telecom SudParis Evry.

Master: Anne-Cécile Orgerie, Green ICT,3 hETD, M2, ENSSAT Lannion.

Master: Anne-Cécile Orgerie, Green ICT, 22.5 hETD, M2, IMT-Atlantique Nantes.

Master: Cédric Tedeschi, Concurrency in Systems and Networks, M1, Univ. Rennes 1.

Master: Cédric Tedeschi, Service Technology, M1, Univ. Rennes 1.

Master: Cédric Tedeschi, Parallel Programming, M1, Univ. Rennes 1.

Master: Guillaume Pierre, Distributed Systems, M1, Univ. Rennes 1.

Master: Guillaume Pierre, Service technology, M1, Univ. Rennes 1.

Master: Guillaume Pierre, Techniques de développement pour le cloud, M2, Univ. Rennes 1.

Master: Guillaume Pierre, Advanced Cloud Infrastructures, M2, Univ. Rennes 1.

Master: Jean-Louis Pazat, Parallel Computing, M1 Département Informatique Insa Rennes.

Master: Jean-Louis Pazat, Internet Of Things, M1 & M2 Département Informatique Insa Rennes.

Master: Nikos Parlavantzas, Clouds, M1, INSA Rennes.

Master: Nikos Parlavantzas, Performance Evaluation, M1, INSA Rennes.

Master: Nikos Parlavantzas, Project in Large-Scale Systems, M2, INSA Rennes.

Master: Nikos Parlavantzas, Big Data and Applications, M1, INSA Rennes.

Master: Martin Quinson, Préparation à l'Agrégation de Science Industrielle (Programming and Software Engineering, 20h ETD; Operating Systems and C programming, 20 hETD; Networking, 20h ETD), ENS Rennes.

Master: Martin Quinson, Scientific Outreach, M2, 30 hEDT, ENS Rennes.

10.2.2. Supervision

PhD: Issam Rais, Multi criteria scheduling for large scale High Performance Computing environments, defended on September 28th, 2018, Anne-Cécile Orgerie, Anne Benoit (ROMA), Laurent Lefèvre (Avalon).

PhD: David Guyon, Supporting energy-awareness for cloud users, defended on December 7th, 2018, Anne-Cécile Orgerie, Christine Morin.

PhD in progress: Paulo Rodrigues De Souza Junior, "fog computing service roaming techniques", started in December 2018, advised by Guillaume Pierre and Daniele Miorandi.

PhD in progress: Davaadorj Battulga, "Scalable data pipelines for fog computing applications", started in September 2018, advised by Cédric Tedeschi and Daniele Miorandi.

PhD in progress: Mulugeta Tamiru, "Automatic optimization of autonomous management systems", started in September 2018, advised by Guillaume Pierre and Erik Elmroth.

PhD in progress: Mozhdeh Farhadi, "Fog computing-enabled IoT situation-aware services", started in June 2018, advised by Guillaume Pierre and Daniele Miorandi.

PhD in progress: Hamidreza Arkian, "Stream processing operator placement", started in June 2018, advised by Guillaume Pierre and Erik Elmroth.

PhD in progress: Mehdi Belkhiria, Dynamic Stream Processing for Maritime Traffic Surveillance, started in December 2017, advised by Cédric Tedeschi.

PhD in progress (*co-tutelle*): Yasmina Bouizem, Energy-efficient, fault-tolerance mechanisms for containerized cloud applications, started in December 2017, Didi Fedoua (Tlemcen University, Algeria), Djawida Dib (Tlemcen University, Algeria), Christine Morin, Nikos Parlavantzas.

PhD in progress: Ali Jawad Fahs, "Decentralized Fog Computing Infrastructure Control", started in October 2017, Guillaume Pierre.

PhD in progress: Clément El Baz, Reactive security monitoring in clouds, started in October 2017, Louis Rilling, Christine Morin.

PhD in progress: Loic Guegan, Simulating Internet of Things, started in October 2017, advised by Martin Quinson and Anne-Cécile Orgerie.

PhD in progress: The Anh Pham, Dynamic Formal Verification of High Performance Runtimes and Applications, started in November 2016, Martin Quinson, Thierry Jéron.

PhD in progress: Arif Ahmed, "Scalable Decentralized Edge Cloud Infrastructures", started in October 2016, Guillaume Pierre.

PhD in progress: Baptiste Goupille-Lescar, Designing agile, distributed cyber-physical systems with advanced collaboration capabilities, started in January 2016, Eric Lenormand (Thales), Christine Morin, Nikos Parlavantzas.

PhD in progress: Pernelle Mensah, Security policy adaptation driven by risk evaluation in modern communication infrastructures, started in December 2015, Samuel Dubus (Alcatel-Lucent), Christine Morin, Guillaume Piolle (Cidre), Eric Totel (Cidre).

PhD in progress: Genc Tato, Locality-aware Lazy Overlay Networks for WANS, started in December 2015, Marin Bertier, Cédric Tedeschi.

PhD in progress: Amir Teshome, Definition and enforcement of Service-Level Agreements for Cloud security monitoring, started in October 2015, Louis Rilling, Christine Morin.

PhD in progress: Bruno Stevant, Resource allocation strategies for service distribution at the Internet edge to optimize end-to-end latency, started in December 2014 (part-time), Jean-Louis Pazat.

10.2.3. Juries

- Anne-Cécile Orgerie was preliminary examiner (equivalent to external reviewer) for the PhD of Kashif Khan, Aalto University, Finland, March 2018.
- Guillaume Pierre was an external reviewer in the PhD committee of Alejandro Tomsic, Sorbonne Université, April 20th 2018.
- Guillaume Pierre chaired the PhD committee of Yacine Taleb, Univ. Rennes 1, October 2nd 2018.
- Guillaume Pierre was a member in the PhD committee of David Guyon, Univ. Rennes 1, December 7th 2018.
- Guillaume Pierre was an external reviewer in the PhD committee of Ye Xia, Université Grenoble Alpes, December 17th 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Martin Quinson is on the scientific board of the Blaise Pascal foundation, boosting the scientific outreach in the domains of Maths and Computer Science.

10.3.2. Articles and contents

- Anne-Cécile Orgerie participated to the radio program La methode scientifique by Nicolas Martin with Jean-Marc Jancovici, France Culture, October 17, 2018.

- Anne-Cécile Orgerie was interviewed by Agnes Rougier, Radio France Internationale, September 26, 2018.

- Anne-Cécile Orgerie was interviewed by Laure Cailloce for the Journal of CNRS, May 2018.

10.3.3. Education

- L codent L créent - An outreach program to send PhD students to teach Python to middle school students in 8 sessions of 45 minutes. Tassadit Bouadi (Univ. Rennes 1), Camille Maumet (VisAGeS) and Anne-Cécile Orgerie (Myriads) are coordinating the local version of this program, initiated in Lille. The first session in Rennes is planned for April 2019. The program is currently supported by: Fondation Blaise Pascal, ED MathSTIC, Inria and Fondation Rennes 1.

- Anne-Cécile is a member of the Jury for the Agrégation de Sciences Industrielles, an examination for future secondary teachers of engineering

- Martin Quinson is a trainer for the Agrégation de Sciences Industrielles.

- Martin Quinson is in charge of a M2 lecture on scientific vulgarization at ENS Rennes. The students are asked to come up with new activities (or improve existing ones) on their research field.

- Martin Quinson was a trainer during the SIF summer school on "Scientific Vulgarization in Computer Science", held in Toulouse, June 6th-8th 2018.

10.3.4. Interventions

- Anne-Cécile Orgerie and Martin Quinson participated in the organization of a day for middle school student to deconstruct computer science-related stereotypes http://emergences.inria.fr/2018/newsletter-n53/l53-informaticiennes.

- Martin Quinson presented various unplugged activities to primary and secondary students over the year.

- Anne-Cécile Orgerie and Martin Quinson hosted 2 secondary students during one week (17th-21th december 2018).

10.3.5. Creation of media or tools for science outreach

- Martin Quinson initiated a new unplugged activity with Philippe Marquet (EPI Dreampal – Lille) and Corentin Ferry (student at ENS Rennes) called M999 to explain the internal behavior of a CPU. This activity is still to be tested live with pupils.

- Martin Quinson helped the M2 students of ENS Rennes to create or improve unplugged activities on their research topics. Activities on Classification, Image Reconstruction, Modeling, Cryptographic Protocols, Map-Reduce or Verifications are still incubating at this point.

<p style="text-align: center; color: red;">**Neo Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Eitan Altman was the general chair of the 6th Intl. Conf. on Wireless Networks and Mobile Communications (WINCOM'18), Marrakesh, Morocco, 16-19 October 2018;
- Eitan Altman is the general chair of the 12th EAI International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS 2019), Palma de Mallorca, Spain, 13-15 March 2019;
- Eitan Altman is a steering committee member of the
    - 4th Intl. Symposium on Ubiquitous Networking (UNET 2018), Hammamet, Tunisia, 2-5 May 2018;
    - 9th EAI Intl. Conf. on Game Theory for Networks (GAMENETS 2019), Paris, France, 25-26 April 2019;
- Dimitra Politaki was the general chair of the workshop "Monde des mathematiques industrielles (MOMI)," Inria Sophia Antipolis Méditerranée, 26-27 February 2018.

10.1.1.2. Member of the Organizing Committees

- G. Neglia is publicity co-chair of the 20th Intl. Symposium on Mobile Ad Hoc Networking and Computing (ACM Mobihoc, Catania, Italy, 2019).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Eitan Altman was TPC co-chair of ITC 30 (Vienna, Austria, Sept. 2018);

10.1.2.2. Member of the Conference Program Committees

- ACM Sigmetrics / IFIP Performance 2019 (Phoenix, Arizona, USA) (S. Alouf, K. Avrachenkov)
- 19th Conf. of the Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF 2018, Lorient, France) (A. Jean-Marie)
- 9th EAI Intl. Conf. on Sensor Systems and Software (S-CUBE 2018, Chengdu, China) (E. Altman)
- 15th European Performance Engineering Workshop (EPEW 2018, Paris, France) (A. Jean-Marie)
- IEEE Intl. Conf. on Computer Communications (INFOCOM 2019, Paris, France) (G. Neglia)
- 26th IEEE Intl. Conf. on Network Protocols (ICNP 2018, Cambridge, UK) (K. Avrachenkov)
- 3rd Intl. Conf. on Pervasive and Embedded Computing (PEC 2018) (K. Avrachenkov)
- 6th Intl. Conf. on Wireless Networks and Mobile Communications (WINCOM'18, Marrakesh, Morocco) (E. Altman)
- European Conf. on Queueing Theory (ECQT 2018, Jerusalem, Israel) (K. Avrachenkov)
- 9th Intl. Conf. on Network Games, Control and Optimization (NETGCOOP 2018, New York, USA) (K. Avrachenkov)
- 18th Intl. Symposium on Dynamic Games and Applications (ISDG 2018, Grenoble, France) (E. Altman)

- 2018 Intl. Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET, Shangai, China, 2018) (K. Avrachenkov, G. Neglia)
- Workshop on AI in Networks (WAIN, Toulouse, France, 2018) (G. Neglia)
- 15th Workshop on Algorithms and Models for the Web Graph (WAW 2018, Moscow, Russia) (K. Avrachenkov)
- 20th Workshop on MAthematical performance Modeling and Analysis (MAMA 2018, Irvine, USA) (A. Jean-Marie)
- 2018 Intl. Workshop on Content Caching and Delivery in Wireless Networks (CCDWN 2018, Shanghai, China) (K. Avrachenkov)
- Workshop Technologies for the Wireless Edge (EdgeTech 2018) (K. Avrachenkov)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- *Elsevier Computer Communications (COMCOM)* (G. Neglia);
- *Elsevier International Journal of Performance Evaluation* (K. Avrachenkov);
- *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (ACM ToM-PECS)* (K. Avrachenkov);
- *Wiley Transactions on Emerging Telecommunications Technologies (ETT)* (S. Alouf);
- *IEEE JSAC* Special issue on Caching for Communication Systems and Networks (S. Alouf, G. Neglia);

10.1.3.2. Reviewer - Reviewing Activities

- *ACM Transactions on Modeling and Performance Evaluation of Computing Systems* (ACM ToM-PECS) (G. Neglia)
- *European Journal of Operational Research* (A. Jean-Marie)
- *IEEE Networking Letters* (G. Neglia)
- *EURASIP Journal on Wireless Communications and Networking* (G. Neglia)
- *Journal of Economic Dynamics and Control* (A. Jean-Marie)
- *IEEE Transactions on Parallel and Distributed Systems* (G. Neglia)
- *IEEE Transactions on Signal and Information Processing over Networks* (G. Neglia)
- *IEEE/ACM Transactions on Networking* (G. Neglia)
- *Performance Evaluation* (PEVA) (S. Alouf)
- *Probability in the Engineering and Informational Sciences* (A. Jean-Marie)

10.1.4. Invited Talks

- E. Altman gave a keynote lecture on "Game Theoretic Models for Routing Over Wireless Links " at the 6th Intl. Conf. on Wireless Networks and Mobile Communications (WINCOM'18), October 16-19, Marrakesh, Morocco.
- K. Avrachenkov gave an invited talk on "Analysis of relaxation time in random walk with jumps" at the Intl. Conf. on Trends and Perspectives in Linear Statistical Inference (LinStat'2018, 19-25 August) in Bedlewo, Poland.
- K. Avrachenkov gave an invited talk on "Singularly perturbed linear programs and their application to MDP" at Univ. of Twente, September 20, Enschede, The Netherlands.
- G. Neglia gave an invited talk on "Implicit Coordination of Caches in Small Cell Networks under Unknown Popularity Profiles" at the workshop Technologies for the Wireless Edge (EdgeTech) EdgeTech of the 24th Annual Intl. Conf. on Mobile Computing and Networking (ACM MobiCom 2018), November 2, New Delhi, India.

- G. Neglia gave an invited talk on "Transient and Slim versus Recurrent and Fat: Random Walks and the Trees they Grow" at the UCA workshop on Social Interactions and Complex Dynamics, November 29-30, Nice, France.

10.1.5. Leadership within the Scientific Community

- E. Altman is a fellow member of IEEE (Class of 2010).
- E. Altman and A. Jean-Marie are (elected) members of IFIP WG 7.3 on "Computer System Modeling".
- E. Altman is member of WG 6.3 of IFIP on Performance of Communication Systems.

10.1.6. Research Administration

S. Alouf
- is member of the scientific committee of the joint laboratory Inria-Alstom since May 2014;
- is member of CLF, the training committee of Inria Sophia Antipolis Méditerranée, since November 2014;
- is vice-head of project-team Neo since January 2017.

K. Avrachenkov
- is responsible for the supervision and validation of the project-teams' yearly activity reports since 2010;
- is a member of NICE, the Invited Researchers Committee of Inria Sophia Antipolis Méditerranée, since 2010.
- is a member of scientific committee for Labex UCN@Sophia;
- is a member of scientific and pedagogical committee for the graduate school of UCA DS4H.

A. Jean-Marie
- is the scientific coordinator of Inria activities in Montpellier (since 2008); as part of this duty, he represents Inria at: the Scientific Council of the Doctoral School "Sciences and Agrosciences" of the Univ. of Avignon; at the Regional Conference of Research Organisms (CODOR);
- is member of the managing sub-committee of the Project-Team Committee of the Inria Sophia Antipolis – Méditerranée research center since December 2017;
- is a member of the Steering Committee of the GDR RO, a national research initiative on Operations Research sponsored by the Cnrs;
- is Head of project-team Neo since January 2017.

G. Neglia
- is the scientific delegate for European partnerships for Inria Sophia Antipolis – Méditerranée since 2014;
- is member of the Inria COST GTRI (International Relations Working Group of Inria's Scientific and Technological Orientation Council since 2016;
- is member of the scientific animation committee for the IDEX UCA[JEDI] research program "Social Interactions and Complex Dynamics" since 2017.

D. Politaki was one of the organizers of the fortnightly PhD Seminars of Inria Sophia Antipolis Méditerranée until September 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence :

G. Neglia, "Probability", 60H, Undergraduate Water Engineering degree (L3), Univ. of Nice Sophia Antipolis (UNS), France.

Master :

A. Jean-Marie, "Performance Evaluation of Networks", 15.75H, M2 IFI Ubinet, UNS, France.

G. Neglia, "Distributed Optimization and Games", 31.5H, M2 IFI Ubinet, UNS, France.

G. Neglia, "Performance Evaluation of Networks", 15.75H, M2 IFI Ubinet, UNS, France.

G. Neglia, responsible for the "Winter School on Complex Networks", 22.5H, M1 Computer Science, UNS, France.

Doctorat:

A. Jean-Marie, "Advanced Markov Modeling", 18H, Univ. of Montpellier, France.

10.2.2. Supervision

PhD defended:

Said Boularouk, "Helping space apprehension by visually impaired people", UAPV, 5 Dec. 2018, advisors: Eitan Altman and Didier Josselin.

PhD in progress :

Zaid Allybokus, "Scalable Online Algorithms for SDN Controllers", 1 July 2016, advisors: Konstantin Avrachenkov and Lorenzo Maggi (Huawei).

Abhishek Bose, "Adaptive crawling with machine learning techniques", 1 June 2018, advisor: Konstantin Avrachenkov.

Mandar Datar, "Singular perturbation approach for machine learning in multiobjective optimisation", 1 May 2018, advisor: Eitan Altman.

Maximilien Dreveton, "Statistical Physics Methods for Distributed Machine Learning", 1 Oct. 2018, advisor: Konstantin Avrachenkov.

Guilherme Iecker Ricardo, "Caching for wireless networks", 1 Sept. 2018, advisors: Giovanni Neglia and Pietro Elia (EURECOM).

Marie Masson, "Fonctionnalités auto-organisantes dans le réseau d'accès radio 5G virtuels", 1 Dec. 2017, advisors: Eitan Altman and Zwi Altman (Orange).

Dimitra Politaki, "Greening data center", 1 February 2016, advisors: Sara Alouf and Fabien Hermenier (UNS).

10.2.3. Juries

Neo members participated in the Ph.D. committees of (in alphabetical order):

- Hafiz Ali, "Random Matrix Theory and Large Dimensional graphs", CentraleSupelec, 24 September (K. Avrachenkov as reviewer);
- Xinwei Bai, "Performance bounds for random walks in the positive orthant", Univ. Twente, 20 September (K. Avrachenkov as reviewer);
- Yoann Couble, "Optimisation de la gestion des ressources de la voie retour", Institut National Polytechnique de Toulouse, 3 September (S. Alouf as reviewer);
- Thibault Debatty, "Design and analysis of distributed k-nearest neighbors graph algorithms", TELECOM ParisTech, 5 October (G. Neglia as reviewer);
- Philippe Ezran, "Topology Optimization of Wireless Networks", Univ. Paris-Saclay, 23 January (E. Altman as reviewer);
- Dalia-Georgiana Popescu, "Les hyperfractales pour la modelisation des reseaux sans fil", LINCS, 21 November (K. Avrachenkov as reviewer);
- Rémi Varloot, "Dynamic Network Formation", Université de recherche Paris Sciences et Lettres, École normale supérieure, 1 June (G. Neglia as jury president).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- D. Politaki is a member of MASTIC, a commission in charge of popularization and regional and internal scientific animation, since July 2016.

10.3.2. Interventions

On October 12th, in the framework of *La Fête de la Science*, M. Dreveton participated in a mediation activity at *Espace de l'Art Concret* in Mouans-Sartoux. It was a mix between art and sciences (maths and physics). The topic was randomness and the targeted public was primary school students, from two different classes (one in the morning and one in the afternoon). Activities involved loaded dices, Galton Board, double pendulum, and some online program (http://weavesilk.com/, pupils really liked this). Each game was presented and students would figure out where the randomness comes from, and play/experiment by themselves (30 min per group).

PHOENIX-POST Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

Hélène Sauzéon participated in organizing the residence seminar "Human and technology", framed by the Institute of advances studies of the Bordeaux University, held on Jun 5-6, 2018, at Cadillac, France.

Hélène Sauzéon organized the scientific workshop "Innovation technologique et maladies neurodégénératives" of the Excellence center BIND, on Nov 23, 2018.

8.1.2. Scientific Events Selection

8.1.2.1. Reviewer

Hélène Sauzéon and Stéphanie Giraud performed reviews for the ACM-CHI conference.

8.1.3. Journal

8.1.3.1. Reviewer - Reviewing Activities

Hélène Sauzéon performed reviews for the following journals: Psychonomic Bulletin and Review; Gerontology; PlosOne, Memory and Cognition, Aging, Neuropsychology and Cognition, International Journal of Environmental Research and Public Health.

8.1.4. Scientific Expertise

Hélène Sauzéon is a member for the evaluation committee CES 19 (TECSAN) - ANR, since 2017.

8.1.5. Research Administration

Hélène Sauzéon held the following responsibilities:

- Vice-Director of the Lab "Activité, handicap, cognition et système nerveux" (EA 4136), leader of the axis "Handicap cognitif", since 2015.
- Member of the "Young researchers" committee within Inria Bordeaux, since 2015.
- Member of the Committee launching a new institute of advanced studies at the University of Bordeaux since 2016. In this context she participated at the design of this institute, leveraging her expertise in cognitive sciences and interdisciplinary research at Inria Bordeaux. Indeed, the aim of the institute is fostering interdisciplinary research, innovation, and creativity, by providing adequate financial support, educative and participative resources to researchers on the Bordeaux campus.
- Member of the International Relations Committee — IFR Handicap-INSERM, since 2017.
- Leader of the Innovations and Transfer committee of the excellence center BIND in Bordeaux, since 2018.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master (M2) : Charles Consel, "Advanced topics — Technology surveys", 17h, Bordeaux INP, France
- Licence: Hélène Sauzéon, "Psychologie Cognitive Générale", 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, "Sciences cognitives du langage", 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, "Neuropsychologie cognitive (Vieillissement normal et pathologique)", 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, "Technologies du Handicap cognitif", 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, "Facteurs Humains et IHM", 9h, University of Bordeaux, France.
- Licence (L3) : Eugène Volanschi, "Introduction to imperative programming", 24h, Bordeaux INP, France
- Licence (L3) : Eugène Volanschi, "Object-oriented programming", 24h, IUT Informatique, Bordeaux, France
- Licence (L2) : Bernard Serpette, "Functional Programming", 35h, Université de Bordeaux, France.
- Licence (L2): Cécile Mazon, "Fonctions exécutives", 22h, MIASHS, Université de Bordeaux, France
- Licence (L2) : Cécile Mazon, "Introduction à la psychologie cognitive", 22h, MIASHS, Université de Bordeaux, France
- Licence (L2): Cécile Mazon, "Applications d'assistance sur tablettes", 7h, MIASHS, Université de Bordeaux, France
- Master : Cécile Mazon, "Préparation et évaluation en inspection ergonomique des interfaces", 7h, Université de Bordeaux, France

8.2.2. Supervision

- PhD: Audrey Landuran, "Design, adaptation and validation of digital tools for people with intellectual disabilities', defended on Nov 26, 2018, directed by Bernard N'Kaoua.
- PhD: A. Delmas, "Conception et validation d'un serious game pour l'éducation thérapeutique d'enfants asthmatiques", defended on Sept 12, 2018, co-directed by Hélène Sauzéon and Pierre-Yves Oudeyer.
- PhD in progress : Cécile Mazon, "Personalization and evaluation of a digital assistant for school inclusion of college students with autism and/or intellectual disability", University of Bordeaux, started in September 2016, co-directed by Hélène Sauzéon and Charles Consel.
- PhD in progress: P.A. Cinquin, "Conception et validation d'un lecteur accessible aux personnes avec troubles cognitifs pour un système d'enseignement numérique", started in 2016, co-directed by Hélène Sauzéon and Pascal Guitton.
- PhD in progress: A. Zamudio Rodriguez, "Suivi longitudinal de l'impact à 12 et 24 mois de la solution DomAssist auprès de personnes âgées pré-fragiles et fragiles", started in Octobre 2017, co-directed by Hélène Sauzéon and K. Pérès.
- PhD in progress: Rafik Belloum, "A methodology for developing assistive services", started in 2016, directed by Charles Consel.

8.2.3. Juries

Hélène Sauzéon participated in the following juries:

- President of the PhD thesis jury for S. T. Popescu (PhD in Cognitive Sciences, supervised by M. Wexler and J. Sackure), 2018, École des Hautes Études en Sciences Sociales, Paris.

- President of the PhD thesis jury for I. Chraibi Kaadoud (PhD in Computer Science, supervised by F. Alexandre and J.N. Rougier), 2018, Université de Bordeaux.

- Reviewer in the PhD thesis jury for L. Quillion-Dupré (PhD in Cognitive Sciences, Psychology and Neurocognition, supervised by V. Rialle and E. Monfort), 2018, Université de Grenoble.

- Examiner in the PhD jury for B. Clement (PhD in Computer Science, supervised by P.Y. Oudeyer and M. Lopez), 2018, Université de Bordeaux.

8.3. Popularization

8.3.1. Articles and contents

- Mazon, C., Fage, C. et Sauzéon, H. (2017). "Impacts des technologies numériques pour favoriser l'inclusion scolaire d'élèves avec Trouble du Spectre Autistique". In *Les Cahiers de l'Actif* (a journal for professionals working in caregiving and assistance).

8.3.2. Interventions

- Bernard Serpette, Mar 12, 2018: participating to the Week of math at the primary school St-Genes in Bordeaux: initiating 1st and 2nd grade pupils to computational thinking via problem-solving games

- Cécile Mazon, Sept 27, 2018: participating to the Open days at Inria Bordeaux: presenting to the general public the scientific projects about technology assistance for young persons with ASD.

- Cécile Mazon, Jan 18-19, 2018: Poster for the symposium UB-CNRS - "Sensibilisation et regards croisés autour du handicap", Pôle juridique, Université de Bordeaux, France

- Cécile Mazon, Jan 15-19, 2018: managing the internship of a high-school pupil (Roxane Allouche) at Inria Bordeaux

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POEMS-POST Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Advisory and management activities

- E. Lunéville is the Head of UMA (Unité de Mathématiques Appliquées) at ENSTA ParisTech.
- P. Ciarlet is coordinator of the *Mathematics & Engineering Program* of the Mathematics Hadamard Labex (LMH)

10.1.2. Scientific events organisation end selection

- S. Chaillat co-organized with X. Claeys (LJLL, EPI ALPINES) the symposium of the International Association for Boundary Element Methods (IABEM), which took place in Paris in June 2018. They were about 140 attendees.
- A.-S. Bonnet-Ben Dhia co-organized a workshop entitled *"Advanced Theoretical and Numerical Methods for waves in structured Media"* in Paris in March 2018, in the framework of the GDR Ondes. They were about 90 attendees.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- A. S. Bonnet-Ben Dhia is an associate editor of SIAP *(SIAM Journal of Applied Mathematics)*.
- M. Bonnet is an associate editor of *Engineering Analysis with Boundary Elements*, *Journal of Optimization Theory* and *Application and Journal of Integral Equations and Applications*. He is in the editorial board of *Inverse Problems* and *Computational Mechanics*.
- P. Ciarlet is an editor of ESAIM:M2AN *(Mathematical Modeling and Numerical Analysis)*.
- P. Joly is a member of the Book Series Scientific Computing of Springer Verlag.

10.1.3.2. Reviewer - Reviewing Activities

The team members regularly review papers for many international journals.

10.2. Teaching - Supervision

10.2.1. Teaching

The permanent members of POEMS are involved in the engineering program at ENSTA ParisTech, the master program *"Analyse, Modélisation et Simulation"* (AMS) and the master program *"Modélisation et Simulation en Mécanique des Structures et Systèmes Couplés"* (MS2SC) of Université Paris-Saclay.

Eliane Bécache

- *Fonctions de variable complexe*, ENSTA (1st year)
- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Analyse et approximation par éléments finis d'EDP*, ENSTA (2nd year) and Master AMS (M1)
- *Résolution des problèmes de diffraction par équations intégrales*, ENSTA (3rd year), Master AMS (M2) and Master MS2SC (M2)

Marc Bonnet

- *Problème inverses et Identification*, Master MS2SC (M2)

- Co-head of the master program *"Modélisation et Simulation en Mécanique des Structures et Systèmes Couplés"* (MS2SC) of Université Paris-Saclay

Anne-Sophie Bonnet-Ben Dhia

- *Fonctions de variable complexe*, ENSTA (1st year)
- *Théorie spectrale des opérateurs autoadjoints*, ENSTA (2nd year) and Master AMS (M1)
- *Propagation et diffraction dans les guides d'ondes*, ENSTA (3rd year) and Master AMS (M2)
- *Non Destructive Testing*, Master "Acoustical Engineering" (M2)
- *Propagation des ondes élastiques dans les solides*, Master MS2SC (M2)

Laurent Bourgeois

- *Outils élémentaires pour l'analyse des équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *Complétion de données et identification dans les problèmes gouvernés par des équations aux dérivées partielles*, ENSTA (3rd year) and Master AMS (M2)

Stéphanie Chaillat

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Résolution des problèmes de diffraction par équations intégrales*, ENSTA (3rd year), Master AMS (M2) and Master MS2SC (M2)
- *Equations intégrales et multipôles rapides*, Ecole doctorale MODES (Univ. Paris Est, Marne la Vallée)

Colin Chambeyron

- *Remise à niveau en maths*, Licence (1st year), Paris-Dauphine University
- *Outils mathématiques*, Licence (L1), Paris-Dauphine University
- *Analyse - Optimisation*, Licence (L1), Paris-Dauphine University
- *Algèbre linéaire*, Licence (L2), Paris-Dauphine University

Patrick Ciarlet

- *Analyse et approximation par éléments finis d'EDP*, ENSTA (2nd year) and Master AMS (M1)
- *Préformation filière ModSim*, ENSTA (3rd year)
- *Calcul scientifique parallèle*, ENSTA (3rd year) and Master AMS (M2)
- *Modèles mathématiques et leur discrétisation en électromagnétisme*, ENSTA (3rd year) and Master AMS (M2)
- Deputy head of the master program *"Analyse, Modélisation et Simulation"* of Université Paris-Saclay

Sonia Fliss

- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Homogénéisation périodique*, ENSTA (3rd year), Master AMS(M2), Masters ANEDP, M4S
- *Propagation des ondes dans des milieux périodiques*, ENSTA (3rd year) and Master AMS (M2)

Laure Giovangigli

- *Calcul stochastique*, ENSTA (3rd year) and Master MMMEF (M2)

Christophe Hazard

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA (1st year)
- *Théorie spectrale des opérateurs autoadjoints*, ENSTA (2nd year) and Master AMS (M1)

Patrick Joly

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *Analyse fonctionnelle*, ENSTA (2nd year) and Master AMS (M2)
- *Propagation des ondes dans des milieux périodiques*, ENSTA (3rd year) and Master AMS (M2)

Maryna Kachanovska

- *Fonctions de variable complexe*, ENSTA (1st year)
- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Systèmes Dynamiques: Analyse et Stabilité*, ENSTA (1st year)

Nicolas Kielbasiewicz

- *Programmation scientifique en C++*, ENSTA (2nd year) and Master AMS (M1)
- *Projet de simulation numérique*, ENSTA (2nd year) and Master AMS (M1)
- *Calcul scientifique parallèle*, ENSTA (3rd year) and Master AMS (M2)

Eric Lunéville

- *Introduction au calcul scientifique*, ENSTA (2nd year).
- *Programmation scientifique en C++*, ENSTA (2nd year) and Master AMS (M1)
- *Projet de simulation numérique*, ENSTA (2nd year) and Master AMS (M1)
- *Propagation et diffraction dans les guides d'ondes*, ENSTA (3rd year) and Master AMS (M2)

Jean-François Mercier

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *Théorie spectrale des opérateurs autoadjoints*, ENSTA (2nd year) and Master AMS (M1)

Axel Modave

- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Calcul scientifique à haute performance*, ENSTA (2rd year) and Master AMS (M1)
- *Calcul scientifique parallèle*, ENSTA (3rd year) and Master AMS (M2)
- *Modèles mathématiques et leur discrétisation en électromagnétisme*, ENSTA (3rd year) and Master AMS (M2)

10.2.2. Supervision

PhD: Antoine Bensalah, *"Une approche nouvelle de la modélisation mathématique et numérique en aéroacoustique par les équations de Goldstein et applications en aéronautique"*, July 2018, Patrick Joly and Jean-François Mercier

PhD: Léandre Giret, *"Analyse numérique d'une méthode de décomposition de domaine non-conforme pour les équations SPN multigroupes"*, June 2018, Patrick Ciarlet and Erell Jamelot

PhD: Zouhair Adnani, *"Modélisation numérique tridimensionnelle de l'interaction sol-structure avec prise en compte des effets de site"*, May 2018, Marc Bonnet and Stéphanie Chaillat

PhD: Arnaud Recoquillay, *"Méthodes d'échantillonnage appliquées a l'imagerie de guides d'ondes élastiques"*, January 2018, Laurent Bourgeois

PhD in progress: Antoine Bera, *"Conception de perturbations invisibles pour les ondes électromagnétiques ou acoustiques"*, October 2016, Anne-Sophie Bonnet-Ben Dhia and Lucas Chesnel

PhD in progress: Sandrine Paolantoni, *"Analyse spectrale et simulation numérique de la diffraction électromagnétique par des métamatériaux"*, October 2016, Christophe Hazard and Boris Gralak

PhD in progress: Yohanes Tjandrawidjaja, *"Modélisation de la propagation d'ondes guidées et de leur interaction avec des défauts localisés dans une plaque élastique anisotrope pour des applications en SHM"*, October 2016, Anne-Sophie Bonnet-Ben Dhia and Sonia Fliss

PhD in progress: Emile Parolin, *"Non overlapping domain decomposition methods with non local transmission conditions for electromagnetic wave propagation"*, October 2017, Patrick Joly and Xavier Claeys

PhD in progress: Clément Beneteau, *"Asymptotic analysis of time harmonic Maxwell equations in presence of metamaterials"*, October 2017, Sonia Fliss and Xavier Claeys

PhD in progress: Hajer Methenni, *"Mathematical modelling and numerical method for the simulation of ultrasound structural health monitoring of composite plates"*, October 2017, Sonia Fliss and Sébastien Impériale

PhD in progress: Damien Mavaleix, *"Modeling of the fluid-structure interaction resulting from a remote underwater explosion"*, December 2017, Marc Bonnet and Stéphanie Chaillat

PhD in progress: Damien Chicaud, *"Méthodes de décomposition de domaine pour la résolution de problèmes harmoniques d'ondes électromagnétiques en milieux complexes"*, October 2018, Patrick Ciarlet and Axel Modave

PhD in progress: Mahran Rihani, *"Équations de Maxwell en présence de méta-matériaux"*, November 2018, Anne-Sophie Bonnet-Ben Dhia and Lucas Chesnel

PhD in progress: Yacine Abourrig, *"Boundary element method for modeling electromagnetic non-destructive testing: perturbative techniques for efficient and accurate parametric studies involving multiple simulations"*, October 2017, Marc Bonnet and Edouard Demaldent

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- M. Kachanovska is a member of the *comité scientifique* of Inria-Saclay.
- A.-S. Bonnet-Ben Dhia is a member of the *bureau du comité des équipes-projets* (BCEP).

10.3.2. Interventions

- POEMS has been involved in the exhibition *"Rencontre diffractante"*, which has been presented successively at ENSTA *(from December 2017 to February 2018)* and at Inria *(in April and May 2018)*. The inspiring material of this exhibition was made up of numerical simulations of various diffraction problems studied within by POEMS team. They served as a basis for the creation of artistic objects made by several classes of the Ecole Boulle. *Curators of the exhibition : Jérôme Perez, ENSTA, and Virginie Gannac, doctor in art, design and applied arts from Université Paris I Sorbonne, Ecole Boulle de Paris*

- POEMS has been involved in the event *"Fête de la science"* at ENSTA-ParisTech in October 2018.

- E. Bécache presented a talk entitled *"Promenade mathématique"* during the day *"Filles et mathématiques, une équation lumineuse"* (March 27, 2018 at Ecole Polytechnique, Palaiseau) and during the awards ceremony of the National Olympiad of Mathematics (May 30, 2018 at Créteil).

- E. Bécache has been involved in a meeting of young female mathematics, organized on November 17-18, 2018 at ENSTA ParisTech.

<p style="text-align:center; color:red;">**POLARIS Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Panayotis Mertikopoulos was involved in the following events:

- 2018 French Days on Optimization and Decision Science ("Journées SMAI MODE 2018"): general co-chair
- 2018 Paris Symposium on Game Theory (Paris, June 2018): co-organizer
- GDO '18: the 2018 Workshop on Games, Dynamics, and Optimization (Vienna, March 2018): co-organizer

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- SBAC-PAD 2018 (Arnaud Legrand: chair of the performance evaluation track)

10.1.2.2. Member of the Conference Program Committees

- Performance 2018 (Bruno Gaujal, Nicolas Gast)
- SIGMETRICS 2018 (Nicolas Gast)
- WiOpt 2018 (Bruno Gaujal, Patrick Loiseau)
- NetGCoop 2018 (Bruno Gaujal, Patrick Loiseau)
- NIPS 2018 (Panayotis Mertikopoulos, Patrick Loiseau)
- ICML 2018 (Patrick Loiseau)
- SuperComputing 2018 (Arnaud Legrand)
- RescueHPC 2018 (Arnaud Legrand)
- EPEW 2018 (Jean-Marc Vincent)
- Valuetools 2018 (Jean-Marc Vincent)
- NetEcon 2018 (Patrick Loiseau)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Patrick Loiseau is Associate Editor of ACM Trans. on Internet Technology and of IEEE Trans. on Big Data.

10.1.4. Invited Talks

- Arnaud Legrand gave a keynote on "Simulation of Large-Scale Distributed Computing Infrastructures" at Orange Labs, Chatillon, October 2018 and on "Reproducible Research"at Inria Rennes in May 2018.
- Bruno Gaujal gave invited presentations at Paris Symposium on Game Theory (Paris), International Symposium on Dynamic Games (Grenoble), New trends in Scheduling (Aussois).
- Panayotis Mertikopoulos gave invited presentations at Trinity College Dublin, Ireland on *Efficient network utility maximization algorithms*, at National Technical University of Athens (Athens Polytechnic) Athens, Greece on *Traffic in congested networks: Equilibrium, efficiency, and dynamics*, at GDO 2018 in Vienna, Austria, and on *Bandit learning in concave N-person games*, at UC Berkeley (Simons Institute for the Theory of Computing), USA on *Online learning in games*.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

The POLARIS members teach regularly. We only mention here lectures at the Master level.

- Master: Bruno Gaujal and Mouhcine Mendil, *"Advanced Performance Evaluation"*, 18h (M2), ENSIMAG
- Master: Bruno Gaujal and Panayotis Mertikopoulos, *"Online decision making"*, M2 ENS Lyon
- Master: Bruno Gaujal and Ana Busic, *"Cours théorie des réseaux"*, M2 MPRI, Paris
- Master M2R : Nicolas Gast *"Optimization Under Uncertainties"*, 18h (M2), Master ORCO, Grenoble.
- Master: Arnaud Legrand and Jean-Marc Vincent, *"Scientific Methodology and Performance Evaluation"*, 18h M2, M2R MOSIG
- Master: Arnaud Legrand, *"Scientific Methodology and Performance Evaluation"*, 18h M2, ENS Rennes
- Master: Panayotis Mertikopoulos, *"Advanced optimization algorithms"*, 16h M2, University of Athens, Athens, Greece
- Master: Guillaume Huard, *"Conception des Systèmes d'Exploitation"* (M1), Université Grenoble-Alpes
- Master: Guillaume Huard, *"Conception des Systèmes d'Exploitation"* (M1), Université Grenoble-Alpes
- Master: Florence Perronnin, *"Simulation"*, M1, Université Versailles – Saint-Quentin
- Master: Arnaud Legrand and Florence Perronnin, *"Probabilités–Simulation"* and *"Performance evaluation"* 72 h (M1), RICM4 Polytech Grenoble
- Master: Jean-Marc Vincent, Mathematics for computer science, 18 h , (M1) Mosig.
- Master/PhD: Jean-Marc Vincent, Litterate Programming and Statistics, UFRGS (Porto Alegre, Brazil)
- Master: Vincent Danjean, Architecture and Software project, engineering school
- Master: Vincent Danjean, Conception of operating systems, concurrent programming and systems project, MOSIG and CS Master, Grenoble

  E-learning Arnaud Legrand has designed and organized a MOOC on Reproducible Research with Konrad Hinsen (CNRS/Centre de Biophysique Moléculaire) and Christophe Pouzat (CNRS/ Mathématiques Appliquées à Paris 5) with the support of the Inria MOOC-lab.

This MOOC is hosted on the FUN platform https://www.fun-mooc.fr/courses/course-v1:inria+41016+session01bis/about and the first edition (Oct-Dec 2018) targets graduate students, PhD students, post-doc, engineers and researchers working in any scientific domain relying on computations. In this MOOC, some modern and reliable tools are presented: GitLab for version control and collaborative working, Computational notebooks (Jupyter, RStudio, and Org-Mode) for efficiently combining the computation, presentation, and analysis of data. More than 3,400 people have registered to the first edition.

10.2.2. Supervision

Stephane Durand (PhD UGA defended on Dec. 11, 2018): Distributed Best Response Algorithms in random Potential Games, co-advised by Bruno Gaujal and Federica Garin (funded by Labex Persyval, Grenoble).

Benoit Vinot (PhD UGA defended on April 2018): Design of a distributed information system for the control of flexibilities in a power distribution network: modelling, simulation and implementation, co-advised by Nicolas Gast and Florent Cadoux

Vinicius Garcia Pinto (PhD in co-tutelle with UFRGS defended in 2018): Performance analysis and visualization of dynamic task-based applications: co-advised by Arnaud Legrand, Lucas Schnorr and Nicolas Maillard (funded by the Brazilian government).

Rafael Tesser (PhD in co-tutelle with UFRGS defended in 2018): Simulation and performance evaluation of dynamical load balancing of an over-decomposed Geophysics application, co-advised by Arnaud Legrand, Lucas Schnorr and Philippe Navaux (funded by the Brazilian government).

Alexis Janon (PhD in progress, 2018-...): Tasks Placement on Hierarchical Computational Platforms, co-advised by Guillaume Huard and Arnaud Legrand (funded by the French Ministry)

Stephan Plassart (PhD in progress, 2016-...): Energy Optimization in Embedded Systems, co-advised by Bruno Gaujal and Alain Girault (funded by Labex Persyval, Grenoble).

Baptiste Jonglez (PhD in progress, 2016-...): Leveraging Diversity in Communication Networks, co-advised by Bruno Gaujal and Martin Heusse (funded by Univ Grenoble Alpes).

Vitalii Emelianov (PhD in progress, 2018-...): Fairness and transparency in data-driven decision making, co-advised by Patrick Loiseau and Nicolas Gast (funded by Inria).

Benjamin Roussillon (PhD in progress, 2018-...): Classification in the presence adversarial data: models and solutions, co-advised by Patrick Loiseau and Panayotis Mertikopoulos (funded by IDEX UGA and DGA).

Dong Quan Vu (PhD in progress, 2017-...): Learning in Blotto games and applications to modeling attention in social networks, co-advised by Patrick Loiseau and Alonso Silva (Cifre PhD with Nokia Bell-Labs)

Athanasios Andreou (PhD in progress, 2015-...): Bringing transparency to personalized systems through statistical inference, co-advised by Patrick Loiseau and Oana Goga (funded by Institut Mines Telecom and ANR)

Alexandre Marcastel (PhD in progress, 2015-...): co-advised by E. Veronica Belmega, Panayotis Mertikopoulos and Inbar Fijalkow

Kimon Antonakopoulos (PhD in progress, 2017-...): Variational inequalities and optimization, co-advised by E. Veronica Belmega, Panayotis Mertikopoulos and Bruno Gaujal

Bruno Donassolo (PhD in progress, 2017-...): Decentralized management of applications in Fog computing environments, co-supervised by Panayotis Mertikopoulos, Arnaud Legrand and Ilhem Fajjari (Cifre PhD with Orange)

Pedro Bruel (PhD in progress co-advised with USP 2017-...): Design of experiments and autotuning of HPC computation kernels, co-advised by Arnaud Legrand, Alfredo Goldman and Brice Videau (funded by the Brazilian Government).

Tom Cornebize (PhD in progress 2017-...): Capacity planning and performance evaluation of supercomputers, advised by Arnaud Legrand (funded by the French Ministry for Research).

Christian Heinrich (PhD in progress 2015-...): Modeling of performance and energy consumption of HPC systems, advised by Arnaud Legrand (funded by Inria).

Umar Ozeer (PhD in progress 2017-...): co-advised by Jean-Marc Vincent, Gwen Salaün, François-Gaël Ottogalli and Loic Letondeur (within the Inria-Orange lab).

Amélie Héliou (PostDoc, Sep. 2017-May 2018): co-supervised by Panayotis Mertikopoulos and Bruno Gaujal

Mouhcine Mendil (PostDoc, 2017-...): supervised by Nicolas Gast

Takai Kennouche (PostDoc, 2017-...): supervised by Nicolas Gast

Luigi Vigneri (PostDoc, Sep. 2017-Sep.2018): co-supervised by Panayotis Mertikopoulos and G. Paschos

Olivier Bilenne (PostDoc, 2018-...): co-supervised by Panayotis Mertikopoulos and E. V. Belmega

10.2.3. Juries

- Bruno Gaujal was president of the jury for the CRCN Inria Grenoble Rhone-Alpes competition.
- Jean-Marc Vincent was member of the jury of Capes de mathématiques (option Informatique).
- Bruno Gaujal was reviewer of the PhD of Adil Salim (Telecom Paris Tech) and Panayotis Mertikopoulos was examinator.
- Nicolas Gast was reviewer of the PhD of Fabbio Cecchi (Univ. Eindhoven).
- Arnaud Legrand was president of the jury for the PhD of Louis Poirel (Univ. Bordeaux).
- Arnaud Legrand was president of the jury for the PhD of Nicolas Denoyelle (Univ. Bordeaux).
- Arnaud Legrand was president of the jury for the PhD of Valentin Reis (Univ. Grenoble Alpes).
- Arnaud Legrand was examinator of the jury for the PhD of Marcos Amaris Gonzales (Univ. São Paulo).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Jean-Marc Vincent is responsible for the mediation in the Inria Rhône-Alpes center in relation with the Rectorat de l'Académie de Grenoble (organisation of ISN conferences, Class'Code for digital referents)
- Jean-Marc Vincent coordinates the group "Info sans ordi" (computer science without computer)–in which Florence Perronnin participates

10.3.2. Articles and contents

Jean-Marc Vincent has coordinated and participated to the redaction of the 96 pages special issue of *Tangente* on *Informatique Débranchée*: http://www.infinimath.com/librairie/descriptif_livre.php?type=magazines&theme=7&soustheme=26&ref=2568#article.

10.3.3. Education

- Highschool Professors: Vincent Danjean is responsible of the University Dept. for Highschool Professors Training in Computer Science (in relation with the rectorat).
- Highschool Professors: Jean-Marc Vincent is member of the steering committee for the training of Highschool Professors towards the new option NSI (Numérique et Sciences Informatiques) for Baccalauréat and participated in the creation of a inter-university diploma in CS.
- Arnaud Legrand gave a lecture on "Reproducible Research" at CIRM in May 2018 to the computer science teachers of classes préparatoires.
- Bruno Gaujal: Course on game theory at the 7 laux of ENS Lyon students
- Bruno Gaujal: Course on dynamique optimization for high school teachers.
- Florence Perronnin: creation of an option in Licence on "Sciences Informatiques et Médiation" (CS and mediation)

10.3.4. Interventions

- Arnaud Legrand made a podcast with Interstice on reproducible research https://interstices.info/la-recherche-reproductible-pour-une-science-transparente/
- Participation to mediation events of the center (Fête de la science, journées math C2+, journée login)
- Participation to mediation actions Inria/Irem/Maison for Science (Jean-Marc Vincent)

<p style="text-align:center; color:red;">**RESIST Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

Abdelkader Lahmadi: IEEE Conference on Network Softwarization (NetSoft 2018), Workshops co-chair.

Lucas Nussbaum: Grid'5000/FIT School 2018.

Jérôme François: IEEE Conference on Network Softwarization (NetSoft 2018), demonstration co-chair.

Rémi Badonnel: IEEE/IFIP Network Operations and Management Symposium (NOMS 2018), demonstration co-chair; IEEE International Conference on Networks of the Future (NOF 2018), publicity co-chair; IEEE International Symposium on Integrated Network Management (IM 2019), experience track co-chair; IFIP International Conference on Autonomous Infrastructure, Management, Security (AIMS 2018), steering committee member.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Rémi Badonnel: IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet 2018); IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2019).

Isabelle Chrisment: Member of the steering committee for RESSI'18 (Rendez-vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information); IFIP, in-cooperation with ACM SIGCOMM. Network Traffic Measurement and Analysis Conference (TMA 2019).

Jérôme François: 12th International Conference on Autonomous Infrastructure, Management and Security (AIMS 2018); IEEE/IFIP international workshop on Managing and Managed by Blockchain (Man2block 2018); 5th IEEE/IFIP Workshop on Security for Emerging Distributed Network Technologies (DISSECT 2018); IEEE Workshop on Emerging Trends in Softwarized Networks (ETSN 2018)

Abdelkader Lahmadi: IEEE/IFIP international workshop on Managing and Managed by Blockchain (Man2block 2018), co-chair.

10.1.2.2. Member of the Conference Program Committees

Rémi Badonnel: IEEE/IFIP Network Operations and Management Symposium (NOMS 2018); IEEE Conference on Network Softwarization (NetSoft 2018); IEEE/IFIP/In Assoc. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2018); IEEE Global Information Infrastructure and Networking Symposium (GIIS 2018); IEEE Global Communications Conference - SAC IoT (GLOBECOM 2018); IEEE International Conference on the Network of the Future (NoF 2018); Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (Algotel 2018).

Thibault Cholez: IEEE/IFIP International Workshop on Managing and Managed by Blockchain (Man2Block 2018); IEEE/IFIP International Workshop on Security for Emerging Distributed Network Technologies (DISSECT 2018); IFIP/IEEE International Symposium on Integrated Network Management (IM 2019).

Isabelle Chrisment: IFIP International Conference on Autonomous Infrastructures, Management and Security (IFIP AIMS'18) ; Rencontres Francophones sur la Conception de Protocoles, l'évaluation de Performance et l'Expérimentation Aspects Algorithmiques de Télécommunications (CoResl'18) ; IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet 2018); IEEE/IFIP Network Operations and Management Symposium (NOMS 2019).

Jérôme François: IEEE/IFIP Network Operations and Management Symposium (NOMS 2018); IEEE Conference on Network Softwarization (IEEE NetSoft 2018); Principles, Systems and Applications of IP Telecommunications (IPTComm'18); 3rd Workshop on MIning DAta for financial applicationS (MIDAS 2018).

Abdelkader Lahmadi: IEEE Conference on Network Softwarization (IEEE NetSoft 2018) ; IEEE/IFIP Network Operations and Management Symposium (NOMS 2018); 2nd Cyber Security in Networking Conference (CSNet 2018); 1st Workshop on Cryptocurrencies and Blockchains for Distributed Systems (CryBlock 2018); IEEE – 13th System of Systems Engineering Conference (SoSE 2018).

Lucas Nussbaum: International Conference on Enabling Technologies: Infrastructure for Collaborative Entreprises (WETICE 2018); European Symposium on Serverless Computing and Applications (ESSCA 2018); 15th International Conference on Mining Software Repositories (MSR 2018 – FOSS award); 10th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2018); 4th International Workshop on Serverless Computing (WoSC 2018); IEEE INFOCOM International Workshop on Computer and Networking Experimental Research Using Testbeds (CNERT 2018).

10.1.2.3. Other selection activities

Rémi Badonnel served as a member of the Selection Committee for the Best Paper Awards of IEEE/IFIP/In Assoc. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2018).

Abdelkader Lahmadi served as a member of the Selection Committee of the 2018 ComSoc Student Competition "Communications Technology Changing the World".

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Rémi Badonnel: Associate Editor for the Wiley International Journal of Network Management (IJNM).

Isabelle Chrisment: Associate Editor for the IEEE Transactions on Network and Service Management (TNSM).

Jérôme François: Associate Editor for the Wiley International Journal of Network Management (IJNM); Guest Editor for a Special Issue on on Security for Emerging Open Networking Technologies in the same journal.

10.1.3.2. Reviewer - Reviewing Activities

Laurent Andrey: Wiley International Journal of Network Management (IJNM); Elsevier Journal on Communication Networks (COMNET).

Rémi Badonnel: IEEE Transactions on Network and Service Management (TNSM); Journal of Intelligent Manufacturing (JIMS); Journal of Network and System Management (JNSM); IEEE Communications Magazine (COMMAG).

Thibault Cholez: Elsevier Journal on Communication Networks (COMNET).

Isabelle Chrisment: Elsevier Journal Computer Communications (COMCOM).

Jérôme François: IEEE Transactions on Network and Service Management (TNSM); IEEE Journal on Selected Areas in Communications (JSAC); Elsevier Journal on Communication Networks (COMNET).

Abdelkader Lahmadi: IEEE Transactions on Network and Service Management (IEEE TNSM); Springer Journal of the Network and Systems Management (JNSM); Wiley International Journal of Network Management (IJNM).

Lucas Nussbaum: International Journal of Grid and Utility Computing (IJGUC); IEEE Transactions on Cloud Computing (TCC); Wiley Software: Practice and Experience (SPE).

10.1.4. Invited Talks

Thibault Cholez:

- SDN DAY 2018, Paris. Une architecture orchestrée de microservices pour les réseaux ICN.

Jérôme François:

- Panelist at IEEE/IFIP NOMS 2018: Cognitive Management versus Privacy in a Cyber World: Collision or Opportunity?
- Inria tech talk at Station-F, Paris. AI Platform for Automated Security Testing of Connected Devices. With Abdelkader Lahmadi, Frédéric Beck and Loïc Rouch.
- ETSI NEW INTERNET FORUM at SDN NFV world congress, Managing the Security of IoT Devices out of your Control.

Abdelkader Lahmadi:

- 12th International Conference on Autonomous Infrastructure, Management and Security (AIMS 2018), Munich, Germany. Security Analysis of Internet of Things Devices [32]. With Frédéric Beck.
- Inria tech talk at Station-F, Paris. AI Platform for Automated Security Testing of Connected Devices. With Jérôme François, Frédéric Beck and Loïc
.
- SDN DAY 2018, Paris. Toward Self-Driving Networks: A new era of network management.

Xavier Marchal:

- Journées Cloud 2018, Troyes. Une architecture de microservices pour les réseaux ICN.

Lucas Nussbaum:

- dotScale 2018, Paris. Distributions and package management in the containers era.
- Colloque Sciences ouvertes: expériences, enjeux et perspectives, Oct 2018, Vandœuvre-lès-Nancy, France. Table ronde sur les aspects "utilisateurs" : intérêts et retours d'expériences de chercheurs et enseignants-chercheurs du site [26].

10.1.5. Scientific Expertise

Isabelle Chrisment served as a member of the GDR RSD/ASF selection committee for the thesis award.

Olivier Festor jointed Orange scientific council.

Jérôme François serves as reviewer for the program *Etablissement de nouveaux chercheurs et de nouvelles chercheuses universitaires du Fonds de recherche du Québec – Nature et technologies* (FRQNT)

10.1.6. Research Administration

Thibault Cholez is a member of the executive council of the Digitrust project (I-Site project of the Université de Lorraine to foster research on trust and security in IT).

Isabelle Chrisment is a member of the AFNIC's scientific council. She is also an elected member of the scientific pole AM2I (Automatique, Matheématiques, Informatique et leurs Interaction) at Universiteé de Lorraine. She is a member of the COMIPERS at Inria Nancy Grand Est. She is also involved in Inria's CVP (Cellule de Veille et Prospective) and in the CMI (Commission de la Mention Informatique) board, which is a part of the doctoral school IAEM.

Olivier Festor is member of the Scientific Council of Telecom Sud Paris. He is leading the IFIP TC6 Working Group 6.6 : Network and Service Management.

Jérôme François is a member of the Horizon Startup local committee in Nancy Grand Est.

Abdelkader Lahmadi is a member of the CDT of Inria Nancy Grand Est.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Olivier Festor is the Director of the TELECOM Nancy Engineering School.

Rémi Badonnel is heading the Internet Systems and Security specialization of the 2nd and 3rd years at the TELECOM Nancy engineering school, and is coordinating the Security Pathway Program at the same school, elaborated in the context of the International Master of Science in Security of Computer Systems built with the Mines Nancy school.

Team members are teaching the following courses:

Rémi Badonnel 242 hours - L3, M1, M2 - Networks, Systems and Services, Software Design and Programming, Cloud Computing, Network and Security Management - TELECOM Nancy, Université de Lorraine

Thibault Cholez 300 hours - L3, M1, M2 - Computer Networks, Object-Oriented Programming, C Programming, Network Services, Constraint development on small Connected Objects, Mobile applications and Internet of Things, IT tools for Project Management - TELECOM Nancy, Université de Lorraine

Isabelle Chrisment 220 hours -L3, M1, M2 -C and Shell Programming, Computer Networking, Operating Systems, Network Security. - TELECOM Nancy, Université de Lorraine

Jérôme François 70 hours - M1, M2 -Network security, Big Data - TELECOM Nancy, Université de Lorraine

Abdelkader Lahmadi 280 hours - L3, M1, M2 - Real time and Embedded Systems Programming, Distributed Systems and Algorithms, Green IT, Algorithms and Advanced Programming, Security of Cyber Physical Systems - ENSEM Engineering School, Université de Lorraine

Lucas Nussbaum 200 hours - L2, Licence Pro (L3), M1 - several courses about systems administration, monitoring, virtualization, configuration management, networking, operating systems. - IUT Nancy-Charlemagne

E-learning

MOOC *Supervision de Réseaux et Services (Session 1)*, FUN Project, Université de Lorraine, Ingénieur, formation initiale et continue, Thibault Cholez, Rémi Badonnel, Laurent Andrey, Olivier Festor, Abdelkader Lahmadi, Jérôme François, de janvier à mars 2018, over 6400 inscriptions from 74 countries, and 370 certificates of achievement. Each MOOC Resist participant contributed to the 2018 maintenance for a second opening on January 2019.

10.2.2. Supervision

PhD in progress: Ahmad Abboud, *Compressed and verifiable filtering rules in Software-defined Networking*, supervised by Michael Rusinowitch, Abdelkader Lahmadi, and Adel Bouhoula.

PhD in progress: Paul Chaignon, *Software Datapaths for Multi-Tenant Packet Processing*, supervised by Olivier Festor, Jérôme François and Kahina Lazri.

PhD in progress: Pierre-Olivier Brissaud, *Encrypted traffic analysis*, since July 2016, supervised by Isabelle Chrisment, Jérôme François and Thibault Cholez.

PhD in progress: David Espinel, *SDN solution for Massively Distributed Cloud Infrastructure*, since February 2018, supervised by Lucas Nussbaum, Adrien Lebre and Abdelhadi Chari.

PhD in progress: Adrien Hemmer, *Predictive Security Monitoring for Large-Scale Internet-of-Things*, since October 2018, supervised by Isabelle Chrisment and Rémi Badonnel.

PhD in progress: Pierre-Marie Junges, *Internet-wide automated assessment of the exposure of the IoT devices to security risks*, supervised by Olivier Festor and Jérôme François.

PhD in progress: Mingxiao Ma, *Cyber-Physical Systems defense through smart network configuration*, supervised by Isabelle Chrisment, Abdelkader Lahmadi.

PhD in progress: Xavier Marchal, Secure operation of virtualized Named Data Networks, since December 2015, supervised by Olivier Festor & Thibault Cholez.

PhD in progress: Abdulqawi Saif, *Open Science for the scalability of a new generation search technology*, since December 2015, supervised by Ye-Qiong Song & Lucas Nussbaum.

PhD in progress: Nicolas Schnepf, *Orchestration and Verification of Security Functions for Smart Environments*, since October 2016, supervised by Stephan Merz, Rémi Badonnel and Abdelkader Lahmadi.

PhD: Giulia De Santis, Modeling and Recognizing Network Scanning Activities with Finite. Mixture Models and Hidden Markov Models, Université de Lorraine, 20 December 2018, supervised by Olivier Festor and Abdelkader Lahmadi (not yet registred).

PhD: Maxime Compastié, *Software-defined Security for Distributed Clouds*, University of Lorraine, defended on December 18, 2018, supervised by Olivier Festor and Rémi Badonnel (not yet registred).

10.2.3. *Juries*

Team members participated to the following Ph.D. defense committees:

- Abdelhadi Azzouni, PhD in Computer Science from Université Pierre et Marie Curie - Sorbonne Universités, France. Title: Smart and Secure Network Softwarization, April 2018 – (Olivier Festor as reviewer).

- Lyes Bayou, Phd in Computer Science from from IMT Atlantique Bretagne-Pays de la Loire, France. Title: Evaluation et mise en oeuvre de la sécurité dans les systèmes SCADA à base de réseaux de capteurs sans fil, June 2018 – (Isabelle Chrisment as reviewer).

- Quang-Vinh Dang, Phd in Computer Science from Université de Lorraine, France. Trust assessment in large-scale collaborative systems, January 2018 – (Isabelle Chrisment as president).

- Pierre-Edouard Fabre, Phd in Computer Science from TELECOM SudParis, France. Title: Utiliser les ressources réseaux pour atténuer les attaques DDoS volumétriques, December 2018 – (Isabelle Chrisment as reviewer).

- Ghada Jaber, PhD in Computer Science from University of Toulouse, France. Title: A Content-Centric Approach for ireless Sensor Networks, December 2018 – (Olivier Festor as reviewer).

- Oualid Koucham, PhD in Automatic Control fromCommunauté Université Grenoble Alpes, France. Title: Détection d'intrusions pour les systèmes de contrôle industriels, November 2018 – (Isabelle Chrisment as reviewer).

- Alassane Samba, Phd in Computer Science from from IMT Atlantique Bretagne-Pays de la Loire, France. Title: Science des données au service des réseaux d'opérateur, October 2018 – (Isabelle Chrisment as reviewer).

- Farah Slim, PhD in Computer Science from IMT Atlantique Bretagne-Pays de la Loire, France. Title: Etude et impléementation d'algorithmes de gestion de ressources pour un système d'exploitation de réseau, March 2018 – (Olivier Festor as examiner).

10.3. Popularization

10.3.1. *Interventions*

- Débats Grenats, February 2018, Metz, France. Round table on the theme of security over its different forms, including risks induced by cyber-security. Rémi Badonnel.

- Libre sur la place, Nancy. Plongée au cœur des communautés De Debian à l'Open Core. Lucas Nussbaum.

RMOD Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Marcus Denker and Stéphane Ducasse are in the board of ESUG and organized ESUG 2018, the yearly Smalltalk conference that brings together research and industry (http://www.esug.org/).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Anne Etien has been PC chair of IWST since 2015.

10.1.2.2. Reviewer

Nicolas Anquetil: SCAM'18, the 18th IEEE International Working Conference on Source Code Analysis and Manipulation.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

Nicolas Anquetil reviewed articles for the following international journals:

- IEEE Transactions on Software Engineering;
- Information and Software Technology;
- Journal of Systems and Software.

10.1.4. Scientific Expertise

- Anne Etien: expert for the French government on Research tax credit.
- Marcus Denker: reviewer for EUREKA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Christophe Demarey, Intégration continue, 16 EdTD, M2, Université de Lille, France

Licence: Anne Etien, Bases de données, 30h, L3, Polytech-Lille, France

Licence: Anne Etien, Programmation par objet, 40h, L3, Polytech-Lille, France

Master: Anne Etien, Metamodelisation for Reverse Engineering, 5h, M2, Université de Montpellier, France

Master: Anne Etien, Metamodelisation for Reverse Engineering, 12h, M2, Université Paris 1, France

Master: Anne Etien, Metamodelisation for Reverse Engineering, 5h, M2, Tunis, Tunisie

Master: Anne Etien, Test et Maintenance, 10h, M2, Polytech-Lille, France

Master: Anne Etien, Test et Maintenance, 14h, M2, Polytech-Lille, France

Master: Anne Etien, Syste`me d'information objet, 10h, M1, Polytech Lille, France

Master: Anne Etien, Bases de donnés Avancés, 20h, M1, Polytech-Lille, France

Master: Anne Etien, Qualité logicielle, 8h, M2, Université Lille 1, France

Licence : Vincent Aranega, Initiation à l'informatique, 51 EdTD, L1, Université de Lille, France

Licence : Vincent Aranega, Architecture des ordinateurs, 42 EdTD, L2, Université de Lille, France

Licence : Vincent Aranega, Génie Logiciel, 42 EdTD, M1, Université de Lille, France

License : Damien Pollet, OpenDevs, 35h, L3, Université de Lille, France

License : Damien Pollet, Programmation objet en Java, 155h, L3, IMT Lille-Douai, France

License : Damien Pollet, Systèmes numériques, 14h, L3, IMT Lille-Douai, France

Master : Damien Pollet, Technologies des systèmes d'informations, 21h, M1, IMT Lille-Douai, France

Master : Damien Pollet, Ingénierie du logiciel, 7h, M2, IMT Lille-Douai, France

Master : Damien Pollet, Algorithmes pour les réseaux, 27h, M2, IMT Lille-Douai, France

Master: Meta modeling, Ecole des Mines de Douai, 22 EdTD, M1, Nov 2018, Douai, France

Master: Advanced Design, ENIS M1, Dec 2017/2018, Tunis, 22 EdTD, Tunisia

License: Object-oriented programming, Prague L3, Dec 2017/2018, 16 EdTD, Prague, Tcheque Republic

Master: Meta modeling, Pantheon Sorbonne, 27 EdTD, M2, Dec 2018, Paris, France

Master: Meta programming, Universite de Bretagne Occidental, 9 EdTD, brest, France.

Licence : Thomas Dupriez, Mathématiques Discrètes, 39 heures en équivalent TD, L2, Université Lille, France

Master : Marcus Denker, 2 hours (spring and fall each), Advanced Reflection. MetaLinks, VUB Brussels, Belgium.

License: open-dev L3 option 17 hours Lille, France

License: Introduction à la Programmation L3 option 31.5 hours Paul Sabatier Toulouse, France

E-learning

Pharo Mooc, 7 weeks, Licences and Master students

Pedagogical resources: Books, Learning Object-Oriented Programming, Design and TDD with Pharo, A simple reflective object kernel.

10.2.2. Supervision

PhD: Brice Govin, *Support to Implement a Rejuvenated Software Architecture in Legacy Software* CIFRE Thales, 26 June 2018, Anne Etien, Nicolas Anquetil. [1]

PhD: Pablo Tesone, *Hot Software Update In Robotics Applications*, IMT Lille-Douai, 16 December, Luc Fabresse, Stéphane Ducasse

PhD in progress: Jason Lecerf, *Reuse of Code Artifacts for Embedded Systems Through Refactoring*, started Oct 2016, CEA Thierry Goubier, Stéphane Ducasse

PhD in progress: Julien Delplanque, *Software Engineering Techniques Applied to Databases*, started Oct 2017, Anne Etien, Nicolas Anquetil

PhD in progress: Lionel Akue, *Fortran Analysis*, started Oct 2018, Anne Etien, Nicolas Anquetil

PhD in progress: Thomas Dupriez, *New Generation Debugger and Application Monitoring*, started Oct 2018, Stephane Ducasse, Guillermo Polito

PhD in progress: Houekpetodji Mahugnon Honore, *Multi-Facet Actionable for Information System Rejuvenation*, SPI Lille, France, Stephane Ducasse, Nicolas Anquetil, Nicolas Dias, Jerome Sudich

PhD in progress: Carolina Hernandez, *Tools for MicroKernels* Guillermo Polito and Luc Fabresse

10.3. Popularization

10.3.1. Articles and contents

- Stéphane Ducasse and Guillermo Polito. Stéphane Ducasse (Ed.). Physche: A Little Scheme in Pharo, p. 50, Square Bracket Associates, 2018. [20]
- Stéphane Ducasse. Stéphane Ducasse (Ed.). A Simple Reflective Object Kernel, p. 40, Square Bracket Associates, 2018. [19]

10.3.2. Education

- A MOOC for Pharo is online (Stéphane Ducasse).
  http://mooc.pharo.org

10.3.3. Interventions

- Multiple public Pharo Sprints in Lille.
  https://association.pharo.org/events
- IoT Hackathon. One Day Event in Cologne, Germany. Using PharoIoT
  http://zweidenker.de/de/iot-hackathon-2018
  Video: https://www.youtube.com/watch?v=dIl9FAatKyw
- RMOD co-organized and participated at ESUG 2018.
  http://www.esug.org/wiki/pier/Conferences/2018
    - Presentation about PharoIoT.
      https://www.slideshare.net/MarcusDenker/pharo-iot

ROMA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Bora Uçar was the general chair of 32nd IEEE IPDPS 2018 (IEEE International Parallel & Distributed Processing Symposium), held in Vancouver, Canada, May 21–25, 2018.

10.1.1.2. Member of the Organizing Committees

- Bora Uçar was a member of the organizing committee of ICGT 2018 (10th International Colloquium on Graph Theory and combinatorics), held in Lyon, July 9–13, 2018

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Anne Benoit was the program chair of 32nd IEEE IPDPS 2018 (IEEE International Parallel & Distributed Processing Symposium), held in Vancouver, Canada, May 21–25, 2018. She was also the global chair for topic 3: "Scheduling and Load Balancing" of the 24th Int. European Conf. on Parallel and Distributed Computing (EuroPar 2018), held in Torino, Italy, August 27–31, 2018.

10.1.2.2. Member of the Conference Program Committees

- Bora Uçar was a member of the program committee of **IA**^{3}, 2018 The Eight Workshop on Irregular Applications: Architectures and Algorithms, in conjunction with SC'18, November 11–16, 2018, Dallas, Texas, USA; **CSC18**, The 8th SIAM Workshop on Combinatorial Scientific Computing, Bergen, Norway June 6-8, 2018; **HiPC 2018**; 25th IEEE International Conference on High Performance Computing, Data, and Analytics, Bengaluru, India, 17–20 December 2018; **SC18** Doctoral Showcase of The International Conference for High Performance Computing, Networking, Storage, and Analysis, Dallas, TX, USA; **33rd IEEE IPDPS 2019 Workshops Committee**, 33rd IEEE International Parallel and Distributed Processing Symposium, Rio de Janeiro, Brazil, May 20–24, 2019.
- Loris Marchal was a member of the program committee of **IPDPS 2018** , **ICPP 2018** and the workshop of IPDPS **APDCM 2018**.
- Jean-Yves L'Excellent was a member of the program committee of **CSC18**, The 8th SIAM Workshop on Combinatorial Scientific Computing, Bergen, Norway June 6-8, 2018.
- Frédéric Vivien was a member of the program committee of **IPDPS 2018**, **PDP 2018**; **EduPar 18**, and the Poster session of **SC18**.
- Yves Robert was a member of the program committee of the FTXS, Scala and PMBS workshops co-located with SC'18 in Dallas, TX.

10.1.2.3. Reviewer

Bora Uçar reviewed a paper for 33rd IEEE IPDPS 2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Anne Benoit is Associate Editor (in Chief) of ParCo, the journal of Parallel Computing: Systems and Applications (from July 2018). She is also a member of the editorial board (Associate Editor) of TPDS, IEEE Transactions on Parallel and Distributed Systems since 2015, and of JPDC, the Journal of Parallel and Distributed Computing, since 2011.

- Bora Uçar is a member of the editorial board of Parallel Computing, April 2016–on going, and SIAM Journal on Matrix Analysis and Applications (SIMAX), May 2018–ongoing.

- Frédéric Vivien is Associate Editor of Parallel Computing (Elsevier) and of JPDC (Elsevier Journal of Parallel and Distributed Computing).

- Yves Robert is Associate Editor of JPDC (Elsevier Journal of Parallel and Distributed Computing) and TOPC (ACM Trans. On Parallel Computing).

10.1.3.2. Reviewer - Reviewing Activities

Bora Uçar reviewed papers for the journals SIAM Journal on Scientific Computing (4 in 2018); ACM Transactions on Mathematical Software (2 in 2018); IEEE Transactions on Parallel and Distributed Systems (1 in 2018); Future Generation Computer Systems (1 in 2018); IEEE Transactions on Signal Processing (1 in 2018); SIAM Journal on Matrix Analysis and applications (1 in 2018);

Anne Benoit, Loris Marchal, Yves Robert and Frédéric Vivien reviewed papers for the journals IEEE Transactions on Parallel and Distributed Systems and Elsevier Journal of Parallel and Distributed Computing.

10.1.4. Invited Talks

- Bora Uçar delivered an invited talk at the Scientific Computing Group's Seminar at the Emory University, Atlanta, USA, September 2017.

- Frédéric Vivien delivered the keynote presentation of the 8th IEEE Workshop PDCO, held in conjunction with IPDPS 2018, in Vancouver, Canada, on Monday May 21, 2018.

- Yves Robert delivered a keynote presentation at SBAC-PAD'2018, the 30th International Symposium on Computer. Architecture and High Performance Computing.

- Yves Robert delivered the keynote presentation at SCALA'2018, the 9th Workshop on Latest Advances in Scalable Algorithms for Large-Scale Systems, held in conjunction with SC'18

10.1.5. Leadership within the Scientific Community

- Anne Benoit is a member of the Steering Committee of HCW (Heterogeneity in Computing Workshop, co-located with IPDPS) since 2018.

- Yves Robert is a member of the Steering Committee of IPDPS and HCW . He is the liaison between the Steering and Program committees of IPDPS.

- Bora Uçar is a member of the Steering Committee of Combinatorial Scientific Computing (2014–on going); and IPDPS for the years 2017–2019. He is also a vice-chair of IEEE Technical Committee on Parallel Processing (TCPP).

10.1.6. Scientific Expertise

Yves Robert is an expert for the Horizon 2020 program of the European Commission and has reviews two projects in 2018.

10.1.7. Research Administration

Loris Marchal is responsible of the competitive selection of ENS Lyon Student for Computer Science.

Frédéric Vivien is the vice-head of the LIP laboratory since September 2017. He is a member of the scientific council of the École normale supérieure de Lyon and of the academic council of the University of Lyon.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Anne Benoit, Responsible of the L3 students at ENS Lyon, France

Licence: Yves Robert, Algorithmique, ENS Lyon, France

Master: Anne Benoit, Parallel and Distributed Algorithms and Programs, 42, M1, ENS Lyon, France

Master : Bora Uçar, Combinatorial Scientific Computing (with Fanny Dufossé), 36, M2 Informatique Fondamentale, ENS Lyon, France.

Master: Yves Robert, Scheduling at scale, 36, M2 Informatique Fondamentale, ENS Lyon, France

Master: Yves Robert, Responsible of M2 Informatique Fondamentale, ENS Lyon, France

Master : Loris Marchal, Complexity and calculability (practicals), 16, M1, Univ. Lyon 1, France.

10.2.2. Supervision

HdR: Loris Marchal, Memory and data aware scheduling, ENS Lyon, March 30, 2018.

PhD in progress: Yiqin Gao, "Replication Algorithms for Real-time Tasks with Precedence Constraints", started in October 2018, ENS Lyon, advisors: Yves Robert and Frédéric Vivien

PhD in progress: Changjiang Gou, Task scheduling on distributed platforms under memory and energy constraints, started in Oct. 2016, supervised by Anne Benoit & Loris Marchal.

PhD in progress: Li Han, "Algorithms for detecting and correcting silent and non-functional errors in scientific workflows", started in September 2016, funding: China Scholarship Council, advisors: Yves Robert and Frédéric Vivien

PhD in progress: Aurélie Kong Win Chang, "Techniques de résilience pour l'ordonnancement de workflows sur plates-formes décentralisées (cloud computing) avec contraintes de sécurité", started in October 2016, funding: ENS Lyon, advisors: Yves Robert, Yves Caniou and Eddy Caron.

PhD in progress: Valentin Le Fèvre, "Scheduling and resilience at scale", started in October 2017, funding: ENS Lyon, advisors: Anne Benoit and Yves Robert.

PhD: Gilles Moreau, On the solution phase of direct methods for sparse linear systems with multiple sparse right-hand sides, ENS Lyon, December 10, 2018, supervised by Jean-Yves L'Excellent and Patrick Amestoy.

PhD in progress: Ioannis Panagiotas, "High performance algorithms for big data graph and hypergraph problems", started in October 2017, funding: Inria, advisors: Frédéric Vivien and Bora Uçar.

PhD in progress: Filip Pawlowski, "High performance tensor computations", started in October 2017, funding: CIFRE, advisors: Yves Robert, Bora Uçar and Albert-Jan Yzelman (Huawei).

PhD: Loïc Pottier, Co-scheduling for large-scale applications: memory and resilience, ENS Lyon, September 18, 2018, supervised by Anne Benoit & Yves Robert.

PhD: Issam Raïs, Discover, model and combine energy leverages for large scale energy efficient infrastructures, ENS Lyon, September 28, 2018, supervised by Laurent Lefèvre & Anne Benoit & Anne-Cécile Orgerie.

PhD: Bertrand Simon, Scheduling task graphs on modern computing platforms, ENS Lyon, July 4, 2018, supervised by Loris Marchal & Frédéric Vivien.

10.2.3. Juries

Yves Robert was a Reviewer for the HDR of Alfredo Buttari (Toulouse) and Head of the Committee for the HDR of Abdou Guermouche and Pierre Ramet (Bordeaux). At ENS Lyon, he was a Committee member for the HDR of Loris Marchal, and for the PhD of Loic Pottier.

10.3. Popularization

10.3.1. Interventions

- Frédéric Vivien took part in the committee which listened to the presentations of high-school students in the scope of a "MATh.en.JEANS" action (December 2018).
- Yves Robert gave the honorary speech for the Honoris Causa Diploma of ENS Lyon awarded to Marc Snir on November 9, 2018.

<p style="text-align:center">**SOCRATE Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

The Socrate team launched two new workshops in relation with FIT/CorteXlab:

- First French GNU Radio days: https://gnuradio-fr-18.sciencesconf.org/. The workshop aimed at the development of radio prototyping why GNU Radio in France and in Europe, by Leonardo Sampaio-Cardoso and Tanguy Risset.
- ISP-IoT : First Winter School on Information Theory and Signal Processing for Internet of Things : https://isp-iot.sciencesconf.org by Jean-Marie Gorce.

Socrate organized *Journée plateformes d'évaluations radio*, 28-03-2018, joint event between the GDR ASR and the GDR ISIS. Co-organized by Leonardo Sampaio-Cardoso and Jean-Marie Gorce with Thalès.

9.1.1.1. Member of the Organizing Committees

- Tanguy Risset, Leonardo Sampaio-Cardoso, Guillaume Villemaud and Jean-Marie Gorce were members of the organizing committee of the first French GNU Radio days.
- Samir M. Perlaza, Claire Goursaud, Leonardo Sampaio-Cardoso were members of the organizing committee of ISP-IOT, the first Winter School on Information Theory and Signal Processing for Internet of Things.
- Seed meeting *Dynamic Modeling and Simulation for Molecular Communication Networks*. Workshop funded by the French Embassy in the UK, London. Co-organized by Malcolm Egan. 17th and 18th September 2018, London UK.

9.1.1.2. Chair of Conference Program Committees

- Jean-Marie Gorce (chair) was co-chair of the ISP-IOT, the first Winter School on Information Theory and Signal Processing for Internet of Things.
- Samir M. Perlaza is chair of the special session on "Energy Harvesting and Wireless Powered Communications" hosted at the 20th IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), July 2-5, 2019, Cannes, France.
- Samir M. Perlaza is co-chair of the Workshop on "Mathematical Tools for IoT Networks Modeling (MOTION)" hosted at the IEEE Wireless Communications and Networking Conference (WCNC). April, 15-18 2019, Marrakech, Morocco.
- Samir M. Perlaza is Publication Chair of the International Symposium on Information Theory (ISIT), July, 2019, Paris, France.

9.1.1.3. Member of Conference Program Committees

Tanguy Risset was a member of the following technical program committees:

- IEEE Computer Society Annual Symposium on VLSI (ISVLSI) 2018
- Design Automation and Test in Europe (DATE) 2018
- International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM) 2018
- International Conference on Advances in Cognitive Radio (COCORA) 2018.
- PIMRC 2018

Guillaume Villemaud was a member of the following technical program committees:

- CROWNCOM2018
- PIMRC 2018
- EUCAP 2018.

Florent de Dinechin was a member of the following technical program committees:

- 25th IEEE Symposium on Computer Arithmetic (Arith 2018)
- Design Automation and Test in Europe (DATE 2018) (as co-chair of track D11),
- 26th IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM 2018)

Malcolm Egan was a member of the following technical program committees:

- IEEE Global Communications Conference (Globecom), 9-13 December 2018, Abu Dhabi, UAE.
- International Conference on Advanced Technologies for Communications (ATC) 2018
- International Conference on Recent Advances on Signal Processing, Telecommunications & Computing (SigTelCom) 2018.

Jean-Marie Gorce was a member of the following technical program committees:

- IEEE International Conference on Communications (ICC), 20-24 May 2018, Kansas City, MO, USA.
- IEEE Global Communications Conference (Globecom), 9-13 December 2018, Abu Dhabi, UAE.
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 9-12 September 2018, Bologna, Italy.
- IEEE 5G World Forum 2018 (WF-5G), 9-11 July 2018, Santa Clara, California, USA
- International Conference on Telecommunications(ICT), June, 26-28, 2018, Saint-Malo, France.
- IEEE Wireless Communications and Networking Conference (WCNC). April, 15-18, 2018, Barcelona, Spain.
- IEEE 5G World Forum 2019 (WF-5G), 2019.
- International Conference on Telecommunications(ICT), 2019.

Samir M. Perlaza was a member of the following program committees :

- International Conference on Computing, Networking and Communications (ICNC), 18-21 February, 2019, Honolulu, Hawaii, USA.
- IEEE International Conference on Communications (ICC), 20-24 May 2019, Shanghai, China.
- Workshop on Green and Sustainable 5G Wireless Networks at IEEE Global Communications Conference (Globecom), 9-13 December 2018, Abu Dhabi, UAE.
- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC), 9-12 September 2018, Bologna, Italy.

Claire Goursaud was a member of the following technical program committees:

- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2018
- EAI International Conference on Body Area Networks (BodyNet) 2018

Leonardo Sampaio-Cardoso was a member of the following technical program committees:

- IEEE Wireless Communications and Networking Conference (WCNC) 2019
- IEEE International Conference on Communications (ICC) 2019

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Guillaume Villemaud is an associate editor of Annals of Telecommunications (Springer).

Malcolm Egan is an associate editor of IEEE Communications Letters and guest editor for IEEE Access special section on Molecular Communication Networks.

Jean-Marie Gorce is an an associate editor of Journal of Wireless Communications and Networking.

Claire Goursaud is associate editor for ETT and ITL, Wiley.

Samir M. Perlaza is editor of the IEEE Transactions on Communications for the term 2018-2021 in the area of Simultaneous Information and Energy Transmission, Feedback and Applications of Game Theory in Wireless Communications.

Samir M. Perlaza is Associate Editor of the IET Smart Grid for the term 2018-2021.

9.1.3. Scientific Expertise

Guillaume Villemaud served as Research Expert for the European commission for the H2020-MSCA-NIGHT-2018.

Tanguy Risset is member of the Administration council (Conseil d'administration) of the GRAME institute (centre national de création musicale).

Guillaume Villemaud is a member of the Delphi Expert Panel on Software Defined Networks (SDN) and Network Functions Virtualisation (NFV).

Jean-Marie Gorce was appointed as scientific expert for Haute école spécialisée de Suisse occidentale and for FNRS (Belgium).

Jean-Marie Gorce is member of the Administration council (Conseil d'admistration) of ESISAR, Valence.

Jean-Marie Gorce was member of the jury for prix de thèse en signal-image de EEA-ISIS-GRETSI 2017.

Jean-Marie Gorce was the chair of a recruitment committee for a full professor position at Insa.

9.1.4. Invited Talks

Malcolm Egan gave invited talks in the Poor group in Princeton University and Prof. Erkip's group in NYU. With Samir M. Perlaza, he had an invited paper at CISS 2018.

Jean-Marie Gorce gave invited talks at IEMN/Ircica, invited by Prof. Laurent Clavier (June 2018), and at Orange Labs (Sept 2019).

Samir M. Perlaza gave a keynote on "Key Technologies in the IoT: Simultaneous Wireless Information and Energy Transmission" at the First Winter School on Information Theory and Signal Processing for Internet of Things, Villeurbanne, France, November 20, 2018.

Florent de Dinechin gave two talks at the FPGA days organized at LIP, Lyon, june 21, "Introduction to FPGA computing", then "computing just right on FPGAs"

Florent de Dinechin gave a talk at the RiscV days organized at CEA, October 16, Grenoble, "Dark silicon: a computer arithmetic perspective"

Florent de Dinechin gave a talk at the RiscV days organized at CEA, October 16, Grenoble, "Dark silicon: a computer arithmetic perspective"

Florent de Dinechin gave an invited lecture at the Advanced Workshop on FPGA-based Systems-On-Chip for Scientific Instrumentation and Reconfigurable Computing, organized by the International center for Theoretical Physics in Trieste, Italy, November 29, 2018.

Florent de Dinechin gave a talk at the Institute for Systems Programming of the Russian Academy of Science in Moscow, Russia, December 24, 2018.

Guillaume Salagnac and Tanguy Risset gave an invited talk at Spintec (Grenoble, FR), October 23rd, 2018, untitled "Peripheral State Persistence and Interrupt Management For Transiently Powered Systems".

Guillaume Villemaud gave an invited talk in the special session on Wake-up radio at the IEEE ICECS 2018 conference in december 2018

9.1.5. Research Administration

Jean-Marie Gorce is Adjoint to Scientific Director of Inria Rhônes-Alpes center.

Tanguy Risset is Vice-director of the FIL (CNRS Computer Science Research Federation of Lyon/Saint-Etienne).

Florent de Dinechin is director of the Citi-Lab.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Tanguy Risset and Jean-Marie Gorce are professors at the Telecommunications Department of Insa Lyon.

Florent de Dinechin is a professor at the Computer Science Department of Insa Lyon.

Claire Goursaud and Malcolm Egan are an associate professor at the Telecommunications department of Insa Lyon.

Leonardo Sampaio-Cardoso is an associate professor at the FIMI department as well as the Telecommunications Department of Insa Lyon

Guillaume Salagnac and Kevin Marquet are associate professors at the Computer Science Department of Insa Lyon.

Guillaume Villemaud and Florin Hutu are associate professor at the Electrical Engineering Department of Insa Lyon.

Samir M. Perlaza and Jean-Marie Gorce teach the course on Network Information Theory at École Normale Supérieure de Lyon.

9.2.2. Supervision

PhD in progress **Gautier Berthou***Operating system for transiently powered systems*, Inria, (IPL ZEP) since 01/2018.

PhD in progress **Tristan Delizy***memory management for normally-of NV-RAM based systems*, Insa-Lyon, (Region ARC6) since 09/2016.

PhD in progress **Yohan Uguen***Synthesis of arithmetic operators*, Insa-Lyon, (Mininstry of research) since 09/2016.

PhD in progress **David Kibloff***New strategy for Physical Layer Security in wireless networks: self-jamming using Full-Duplex Transceivers*, École Doctorale EEA de Lyon, funded by Inria-DGA grant since 10/2015.

PhD in progress **Nizar Khalfet***Stochastic Energy Sources to Power Communication Systems*, École Doctorale EEA de Lyon, funded by EU Project COM-MED since 10/2016.

PhD in progress : **Andrea Bocco**: *Porposition d'une unité de caclul U-NUM pour le calcul scientifique*, ANR Metalibm grant, since 12/2016.

PhD in progress : **Hassan Kallam**: *Topology aided multi-user interference management in wireless network* , Fed4PMR Insavalor project grant, since 01/2017.

PhD in progress : **Anade Akpo Dadja**: *Non assymptotic fundemental limits of bursty communications*, ANR Arburst grant, since 10/2017.

PhD in progress : **Diane Duchemin**: *Distributed coding in dense IoT Network*, ANR Ephyl grant, since 01/2017.

PhD starting **Luc Forget** : *Algèbre linéaire calculant au plus juste*, ANR Imprenum, since 10/2018.

PhD starting **Yanni Zhou** : *Full Duplex and spatial modulation*

PhD starting **Tarik Lassouaoui**: *Tag 2 Tag communication*

PhD starting **Regis Rousseau**: *Wireless Power Transfer*

PhD defended: **Yuqi Mo***Scaling of Iot Communication issues*, École Doctorale EEA,sept. 2018.

9.2.3. Juries

- Guillaume Salagnac was examiner in the jury of the PhD Nadir Cherify "Assistance au développement de logiciels embarqués contraints en énergie"
- Florin Hutu was examiner int the PhD Jury of Frank Itoua, defended on March 12, 2018 at Limoges University.
- Tanguy Risset was a member of the jury of the following theses:
  - Maxime France-Pillois (U. Grenoble)
  - Perrin Njoyah Ntafam (U. Grenoble)
  - Simon Rokicki (U. Rennes)
- Florent de Dinechin was a reviewer in the jury of Hugues de Lassus Saint-Genis, defended on May 17 2018 at Université de Perpignan Via Domitia.
- Malcolm Egan was a co-supervisor in the jury of Mauro de Freitas, defended at Université de Lille 1.
- Claire Goursaud and Jean-Marie Gorce were co-supervisors in the jury of Yuqi Mo, defended at Insa Lyon.
- Jean-Marie Gorce was :
  - a reviewer of the HdR jury of Guillaume Andrieux (IETR, Nantes U., December 2018).
  - a reviewer of the PhD jury of Philippe Ezran (Supelec Paris Saclay U., January 2018).
  - a reviewer of the PhD jury of Antony Pottier (IMT Atlantique, Nov 2018).
  - a reviewer of the PhD jury of Luca Feltrin (Bologna U., Italy, December 2018).
  - an examiner of the PhD jury of Xavier Leturc (IMT Paris, U. Paris Saclay, December 2018),
- Guillaume Villemaud was a reviewer for the PhD defense of
  - Andreina Liendo (Univ. Grenoble)
  - Mai-Thanh TRAN (Univ. Rennes 1)
  - Manuel Milla Peinado (Univ. Poitiers)
- Claire Goursaud was a member in the jury of Alaa Khreis, defended at l'Université Paris Saclay, prepared at Télécom ParisTech .
- Claire Goursaud was a reviewer in the jury of Remi Bonnefoi, defended at CentraleSupelec

<p align="center" style="color:red">SPIRALS Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Simon Bliudze

- co-chair International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS)
- co-chair International Workshop on Methods and Tools for Rigorous System Design (MeTRiD)

Laurence Duchien

- IEEE TCSE Distinguished Women in Science and Engineering Leadership Award Committee
- co-chair ECSA Track for Women in Software Architecture

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Simon Bliudze

- International Conference on Formal Aspects of Component Software (FACS)
- International Symposium on Formal Approaches to Parallel and Distributed Systems (4PAD)
- Interaction and Concurrency Experience International Workshop (ICE)
- Euromicro Conference on Software Engineering and Advanced Applications (SEAA)
- International Conference on Coordination Models and Languages (COORDINATION)
- FME Workshop on Formal Methods in Software Engineering (FormaliSE)
- International Workshop on Foundations of Coordination Languages and Self-Adaptative Systems (Foclasa)

Pierre Bourhis

- International Joint Conferences on Artificial Intelligence (IJCAI)
- AAAI Conference on Artificial Intelligence

Laurence Duchien

- International Workshop on Variability Modelling of Software-Intensive Systems (VAMOS)
- Live Adaptation of Software Systems (LASSY)
- International Workshop on Software Qualities and their Dependencies (SQUADE)
- Workshop on Distributed Software Development, Software Ecosystems and Systems-of-Systems (WDES)
- Doctoral Symposium ECSA
- ICSE Poster Session
- International Workshop on Software Engineering Research and Industrial Practise (ICSE/SER&IP)
- Conference on Software Engineering Education and Training (CSEE&T)
- European Conference on Software Architecture (ECSA)

Philippe Merle

- International Conference on Cooperative Information Systems (CoopIS)
- International Conference on Cloud Computing Work-in-Progress Track (IEEE CLOUD)
- International Conference on Web Engineering (ICWE)
- International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM)
- International Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUT-ING)
- International Conference on Advanced Service Computing (SERVICE COMPUTATION)
- Workshop on CrossCloud Infrastructures & Platforms (CrossCloud)

Clément Quinton

- International Workshop on Software Engineering for Systems-of-Systems (SESOS)
- Euromicro Conference on Software Engineering and Advanced Applications (SEAA)
- International Systems and Software Product Line Conference (SPLC)

Romain Rouvoy

- IEEE/ACM International Conference on Automated Software Engineering (ASE), demonstration track
- ACM/USENIX European Conference on Computer Systems (Eurosys)
- IEEE International Conference on Cloud Engineering (IC2E)
- IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft)
- ACM Symposium on Applied Computing (SAC), DADS track

Lionel Seinturier

- International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS)
- IEEE/ACM International Conference on Mobile Software Engineering and Systems (MOBILESoft)
- ACM Symposium on Applied Computing (SAC) SA-TTA & OS Tracks
- Australasian Software Engineering Conference (ASWEC)
- International Conference on Software Technologies (ICSOFT)
- International Conference on Service Oriented Computing (ICSOC)
- ACM International Conference on Management of Emergent Digital EcoSystems (MEDES)

Faiez Zalila

- International Conference on Verification and Evaluation of Computer and Communication Systems (VECoS)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Lionel Seinturier is editor for software engineering of the ISTE-Wiley Computer Science and Information Technology book collection.

10.1.3.2. Reviewer - Reviewing Activities

Yahya Al-Dhuraibi: IEEE Transactions on Services Computing (TSC), The Computer Journal of Oxford University Press.

Simon Bliudze: Elsevier Science of Computer Programming (SCICO).

Stéphanie Challita: Wiley Software: Practice & Experience (SPE), Wiley Concurrency and Computation: Practice and Experience (CCPE).

Laurence Duchien: Elsevier Journal of Systems and Software (JSS), IEEE Transaction on Cloud Computing (TCC).

Philippe Merle: Elsevier Future Generation Computer Systems (FGCS), Wiley Software: Practice and Experience (SPE), Elsevier Sustainable Computing, Informatics and Systems (SUSCOM), Wiley Concurrency and Computation: Practice and Experience (CCPE), IGI Global International Journal of Web Services Research (IJWSR).

Romain Rouvoy: Elsevier Information and Software Technology (IST).

Lionel Seinturier: Springer Software Quality Journal (SQJ), Elsevier Sustainable Computing, Informatics and Systems (SUSCOM), Springer Empirical Software Engineering (EMSE), Elsevier Future Generation Computer Systems (FGCS).

Faiez Zalila: Elsevier Future Generation Computer Systems (FGCS), IEEE ACCESS, Springer Journal of Internet Services and Applications (JISA).

10.1.4. Invited Talks

Philippe Merle: International Conference on Cloud and Robotics (ICCR), invited talk.

Faiez Zalila: Cloudification of the Internet of Things Conference (CIoT), tutorial.

10.1.5. Leadership within the Scientific Community

Romain Rouvoy is the co-head of the "Groupe de Travail Génie Logiciel pour les Systèmes Cyber-physiques" of the GDR GPL.

10.1.6. Scientific Expertise

Laurence Duchien was member of the recruitment committee for Professor in Computer Science at Université du Littoral Côte d'Opale. She was scientific expert for DGRI PHC Ulysse, NSERC-Canada, PHC Van Gogh Netherlands, PHC Amadeus Austria, Programme Emergence Ville de Paris Vinci, Prix de thèse GDR GPL, Prix de valorisation de la MESHS.

Philippe Merle was member of the recruitment committee for junior researcher (CRCN) at Inria Lille - Nord Europe, and Associate Professor at Télécom SudParis. He was scientific reviewer for ANR.

Romain Rouvoy was member of the recruitment committees for associate professor in Computer Science at ENSEIRB MATMECA (Bordeaux), Université de Nantes and Université de Rennes. He was also a member of the scientific evaluation committee of ANR (CES25). He was scientific expert for DRRT IDF, ADEME PERFECTO and FET-OPEN - Novel Ideas for Radically New Technologies - *Research and Innovation Actions* (RIA).

Lionel Seinturier was member of the recruitment committee for Professor in Computer Science at CNAM Paris, and Associate Professor at University of Lille. He was member of the Promotion Committee to Full Professor for Charles University, Prague. He was scientific expert for ANRT, ECOS Nord, DRRT IDF, PICOM/Silab Retail Booster.

10.1.7. Research Administration

Laurence Duchien is member of the CNRS CoCNRS section 6 committee, and of the "bureau" of this committee. She is elected member-at-large for the IEEE Technical Council of Software Engineering (TCSE) 2016–18.

Philippe Merle is member of the Inria scientific board, president of the CUMI (Comité des Utilisateurs des Moyens Informatiques), permanent secretary of the CLHSCT (Comité Local d'Hygiène, de Sécurité et de Conditions de Travail), and member of the centre committee for the Inria Lille - Nord Europe research center. He is member of the steering committee of the Inria's continuous integration service. He is member of the steering committee of CIEL (Conférence en Ingénierie du Logiciel).

Romain Rouvoy is an elected member of the "bureau" of the ACM SIGOPS French chapter (ASF) and elected member of the administrative council of SpecifCampus.

Lionel Seinturier is president of the CDT (Commission Développement Technologique), and member of the BCEP (Bureau du Comité des Équipes-Projets), for the Inria Lille - Nord Europe research center. He is Scientific Advisor for the evaluation of ICT research laboratories at the Hcéres.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Simon Bliudze is, in addition to his tenure junior research position at Inria, chargé d'enseignement at École Polytechnique, Palaiseau, France, in the Department of Computer Sciences (DIX).

- INF411: Les bases de la programmation et de l'algorithmique, 40h, 2e année du Cycle ingénieur
- INF442: Traitement des données massives, 40h, 2e année du Cycle ingénieur

Pierre Bourhis is, in addition to his tenure junior research position at CNRS, chargé d'enseignement spécialité Sciences des données at École Polytechnique, Palaiseau, France, in the Department of Computer Sciences (DIX).

- École Polytechnique, Bases de données, 18h, Cycle Polytechnique Info553
- École Polytechnique, Modal Graphe Géant, 36h
- École Centrale de Lille, Master DAD, Bases de données, 12h

Laurence Duchien teaches at the University of Lille in the FST faculty. She headed the Carrières et Emplois service. She was Director of Doctoral Studies for Computer Science in the Doctoral School Engineering Science (SPI) - ComUE Lille Nord de France. She is now project leader for the doctoral studies at University of Lille.

- Software Project Management, 50h, Level M2, Master MIAGE
- Design of distributed applications, 42h, Level M1, Master of Computer Science
- Research and Innovation Initiation, 22h, Level M2 IAGL, Master of Computer Science
- Tutoring Internship, 16h, Level M2, Master of Computer Science

Clément Quinton teaches at the University of Lille in the FST faculty.

- Introduction to Computer Science, 46.5h, Level L1, Licence of Computer Science
- Object-oriented programming, 36h, Level L2, Licence of Computer Science
- Object-oriented design, 42h, Level L3, Licence of Computer Science
- Design of distributed applications, 42h, Level M1, Master of Computer Science
- Advanced design of distributed applications, 37.5h, Level M2, Master MIAGE
- Infrastructure and frameworks for the Internet, 33.75h, Level M2, Master of Computer Science
- Software product lines, 7.5h, Level M2, Master of Computer Science
- Suivi de stages et de projets, 30h, Licence and Master of Computer Science

Romain Rouvoy teaches at the University of Lille in the FST faculty. He heads the Master of Computer Science program at the University of Lille.

- Design of distributed applications, 12h, Level M1, Master of Computer Science
- Object-oriented design, 4h, Level L3, Licence of Computer Science
- Suivi de projets, 20h, Level M2, Master of Computer Science

Walter Rudametkin Ivey teaches at the University of Lille in the Polytech engineering school.

- GIS4 Programmation par Objets, 32h
- GIS4 Architectures Logicielles, 26h
- GIS2A3 (apprentissage) Projet programmation par Objet, 24h
- IMA2A4 (apprentissage) Conception Modélisation Objet, 24h
- IMA3 Programmation Avancée, 62h
- GBIAAL4 Bases de données, 22h
- GIS5 Suivi de projets, 42h
- GIS2A (apprentissage) Suivi d'apprentis, 28h

Lionel Seinturier teaches at the University of Lille in the FST faculty. He heads the Computer Science Department at the Faculty of Science and Technology of the University of Lille.

- Conception d'Applications Réparties, 50h, Level M1, Master MIAGE
- Infrastructures et Frameworks Internet, 70h, Level M2 E-Services IAGL TIIR, Master of Computer Science

10.2.2. Supervision

- PhD: Yahya Al-Dhuraibi, Flexible Framework for Elasticity in Cloud Computing, University of Lille, December 2018, Philippe Merle.
- PhD: Stéphanie Challita, Inferring Models from Cloud APIs and Reasoning over Them: a Tooled and Formal Approach, University of Lille, December 2018, Philippe Merle.
- PhD: Thomas Durieux, From Runtime Failures to Patches: Study of Patch Generation in Production, University of Lille, September 2018, Lionel Seinturier & Martin Monperrus. [11]
- PhD: Gustavo Sousa, A Software Product Lines-Based Approach for the Setup and Adaptation of Multi-Cloud Environments, University of Lille, June 2018, Laurence Duchien & Walter Rudametkin Ivey. [12]
- PhD in progress: Mohammed Chakib Belgaid, Développement durable des logiciels vers une optimisation énergétique de bout en bout des systèmes logiciels, January 2018, Romain Rouvoy & Lionel Seinturier.
- PhD in progress: Vikas Mishra, Collaborative Strategies to Protect Against Browser Fingerprinting, October 2018, Romain Rouvoy & Walter Rudametkin & Lionel Seinturier.
- PhD in progress: Marion Tommasi, Collaborative Data-centric Workflows: Towards Knowledge Centric Workflows and Integrating Uncertain Data, October 2018, Pierre Bourhis & Lionel Seinturier.
- PhD in progress: Antonin Durey, Leveraging Browser Fingerprinting to Fitht Fraud on the Web, October 2018, Romain Rouvoy & Walter Rudametkin & Lionel Seinturier.
- PhD in progress: Sacha Brisset, Automatic Spotting and fixing or Recurrent user Experience issues. Detecting and Fixing Anomalies by applying Machine Learning on user Experience Data, November 2018, Lionel Seinturier & Romain Rouvoy & Renaud Pawlak & Yoann Couillec.
- PhD in progress: Zakaria Ournani, Eco-conception des logiciels : modélisation de l'efficience énergétique des logiciels et conception d'outils pour mesurer et réduire leur consommation d'énergie, November 2018, Romain Rouvoy.
- PhD in progress: Zeinab Abou Khalil, November 2017, Laurence Duchien & Clément Quinton, co-supervision with Tom Mens (University of Mons, Belgium).
- PhD in progress: Guillaume Fieni, GreenData : Vers un traitement efficient et éco-responsable des grandes masses de données numériques, October 2017, Romain Rouvoy & Lionel Seinturier.

- PhD in progress: Benjamin Danglot, Software Testing Amplification, December 2016, Martin Monperrus & Lionel Seinturier.
- PhD in progress: Lakhdar Meftah, Cartography of the Quality of Experience for Mobile Internet Access, November 2016, Romain Rouvoy, co-supervision with Isabelle Chrisment (Inria Madynes).
- PhD in progress: Sarra Habchi, Une supervision de contexte sensible à la confidentialité pour les développements logiciels en crowdsource, October 2016, Romain Rouvoy.
- PhD in progress: Antoine Vastel, Cartographie de la qualité d'expérience pour l'accès à l'internet mobile, October 2016, Romain Rouvoy & Walter Rudametkin.

10.2.3. Juries

Simon Bliudze

- Maaz Mashood Mohiuddin (EPFL, Switzerland), examiner
- Emmanouela Stachtiari (Aristhotle U. of Thessaloniki, Greece), examiner

Laurence Duchien

- HDR Chouki Tibermacine (U. Montpellier), reviewer
- HDR Thomas Ledoux (U. Nantes), reviewer
- HDR Nikolaos Georgantas (U. Pierre et Marie Curie), examiner
- HDR Matthieu Roy (U. Toulouse), president
- HDR Raul Mazo (U. Paris 1 Sorbonne), reviewer
- Anne-Lucie Vion (U. Grenoble), reviewer
- Van Cam Pham, CEA, examiner
- Benjamin Allaert (U. Lille), president
- Farzan Kalantari (U. Lille), president
- Eddy Habach (U. Nice Côte d'Azur), examiner
- Mathieu Allon (U. Lille), president
- Juan Carlos Munoz (U. Paris 1 Sorbonne)
- Paola Andreas Gomez Barreto (U. Grenoble), examiner

Philippe Merle

- HDR Sylvain Vauttier (U. Montpellier), reviewer
- Nabila Belhaj (Télécom SudParis), examiner

Lionel Seinturier

- Mohamed Mosli (Telecom SudParis), president
- William Excoffon (U. Toulouse), president
- Alex Palesandro (U. Lyon 3), president
- Bassirou Ngom (Sorbonne U.), reviewer
- Gabriel Campeanu, (Märladalen U., Sweden), examiner
- Isabelle Astic (CNAM Paris), examiner

10.3. Popularization

10.3.1. Interventions

Lionel Seinturier participated in October to the Chercheur itinérant event organized by the Inria Lille Nord Europe research center in the context of La fête de la science. Two classrooms (2nde and terminale) have been visited. The theme of the visit was crowdsensing and data gathering from mobile devices.

<p style="text-align:center; color:red;">**STACK Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- A. Lebre has co-organized the 1st edition of the SILECS (Grid'5000/FIT) School, Nice, April 2018 (50 persons).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- H. Coullon was the chair of the IEEE Big Data Congress 2018 "Quality of Big Data Services" track.
- S. Ibrahim was the program chair of the IEEE Big Data Congress 2018.
- S. Ibrahim was the program co-chair of the International workshop on the Convergence of Extreme Scale Computing and Big Data Analysis (CEBDA 2018), co-located with IPDPS'18, Vancouver, Canada, May 2018.
- S. Ibrahim was the track co-chair for the "Big data management and scalable storage technologies track" of the 6th International Conference on Emerging Internet, Data and Web Technologies (EIDWT 2018).
- A. Lebre was the chair of the System Software track at SBAC-PAD'18.

10.1.2.2. Member of the Conference Program Committees

- H. Coullon was a member of the program committees of CloudCom'18, ICCS'18, ScalCom'18, CIoT'18.
- S. Ibrahim was a member of the program committees of SC'18, CCGrid'18, ICA3PP'18, IPCCC'18, SCA'18, CloudCom'18, Trust-Com'18, Innovate-Data'18, PDSW-DISCS@SC'18, WAC-18@HPDC'18, HPBDC@IPDPS'18.
- A. Lebre was a member of the program committees of IC2E'18, CCGRID'18, ICFEC'18,CloudCom'18, and the Vancouver OpenStack summit.
- T. Ledoux was a member of the program committees of the conference Compas'18 and Cross-Cloud'18@EuroSys, Greens'18@ICSE workshops.
- M. Südholt was a member of the program committees of CloudCom'18, ProWeb'18, ICICS'18, SBAC-PAD'18, and COP'18.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- A. Lebre is an Associate Editor of the IEEE Transactions on BigData
- S. Ibrahim is a Guest Editor of Springer FGCS Journal – Special Issue on the Convergence of Extreme Scale Computing and Big Data Analysis.
- M. Südholt is an Associate Editor of the journal Programming (Springer).

10.1.3.2. Reviewer - Reviewing Activities

- H. Coullon has been a reviewer for the Future Generation Computer Systems journal
- H. Coullon has been a reviewer for the following conferences: IPDPS'18, CCGrid'18.
- A. Lebre has been a reviewer for the Future Generation Computer Systems journal.

- T. Ledoux has been a reviewer for the following journals: Journal of Systems Architecture - Elsevier; Future Generation Computer Systems.
- S. Ibrahim has been a reviewer for the following journals: Journal of Parallel and Distributed Computing, Future Generation Computer Systems, IEEE Internet of Things, Computer Networks, and Big Data Research.
- J.-M. Menaud has been a reviewer for IEEE Transactions on Parallel and Distributed Systems

10.1.4. Invited Talks

- H. Coullon has been invited to present a talk at the Northern Arizona University, USA, September 2018: "Performance, Software engineering and verification: a wining combination for HPC and Utility computing?".
- H. Coullon has been invited to present a talk at Irisa 68NQRT seminar, Rennes, France: "Toward efficient and safe deployment and reconfiguration of distributed software".
- H. Coullon has been invited to present a talk at the Languages, Compilation, and Semantics LIP Seminar in Lyon, France: "Toward efficient and safe deployment and reconfiguration of distributed software".
- R.A. Cherrueau has been invited to present a talk at the "Opérations France Grille" workshop on "Edge Computing Infrastructure with OpenStack"
- M. Südholt has been invited to present a talk at the French Institute of Bioinformatics (IFB) on "Compositional security and privacy for biomedical analyses using shared genetic data."
- M. Südholt has been invited to present a talk at the IMT Cybersecurity day on "Privacy and sharing of genomic data."
- J.-M. Menaud has been invited to present a talk at the IMT Energy and IoT day on "Energy Management on Cloud/Edge Computing"

10.1.5. Scientific Expertise

- A. Lebre has been the chair of the OpenStack "Fog/Edge/Massively Distributed Clouds" Special Interest Group until May 2018 (further information at: https://wiki.openstack.org/wiki/Massively_Distributed_Clouds).
- A. Lebre is a member of the scientific committe of the Inria - Nokia/Bell Labs.

10.1.6. Research Administration

- S. Ibrahim is the co-coordinator of the international Master's program in Cloud Computing and Services at University of Rennes 1.
- S. Ibrahim was a member of Grid'5000 Sites Committee – Responsible for the Rennes site till April 2018.
- A. Lebre is a member of the executive committee of the GDR CNRS RSD "Réseau et Système distribué" and Co-leader of the transversal action Virtualization and Clouds of this GDR since 2015.
- A. Lebre is a member of the executive and architect committees of the Grid'5000 GIS (Groupement d'intérêt scientifique).
- A. Lebre is a member of the executive committee of the <I/O> Lab, a joint lab between Inria and Orange Labs.
- T. Ledoux is the head of the apprenticeship program in Software Engineering FIL (http://www.imt-atlantique.fr/formation/ingenieur-par-apprentissage/ingenieurs-specialite-ingenierie-logicielle).
  This 3-year program leads to the award of a Master degree in Software Engineering from the IMT Atlantique.
- J.-M. Menaud is the organizer of "Pôle Science du Logiciel et des Systèmes Distribués" in Laboratoire des Sciences du Numérique à Nantes (LS2N) since June 2015.

- J. Noyé is deputy head of the Automation, Production and Computer Sciences department of IMT Atlantique.

10.2. Teaching - Supervision - Juries

10.2.1. Supervision

- HdR : Thomas Ledoux, "Reconfiguration dynamique d'architectures logicielles : des métaclasses aux « nuages verts »", Université de Nantes, defended on July 2018, the 17th.
- PhD: Bastien Confais, co-director: A. Lebre, director: B. Parrein (RIO, LS2N Nantes), "Conception d'un système de partage de données adapté aà un environnement de Fog Computing ", defended on July 2018, the 10th.
- Phd: Mohamed Abderrahim (Orange CIFRE), director: A. Lebre, ""Conception d'un système de supervision programmable et reconfigurable pour une infrastructure informatique et réseau répartie", defended on Dec 2018, the 19th.
- PhD: Mohammad Mahdi Bazm: codirectors: Mario Südholt, J-M. Menaud.
- PhD: Maxime Belair, director: J-M. Menaud.
- PhD: Emile Cadorel, director: advisor: H. Coullon, director: J-M. Menaud.
- PhD: Fatima-zahra Boujdad, director: Mario Südholt.
- PhD: Maverick Chardet, advisor: H. Coullon, director: A. Lebre.
- PhD: David Espinel (Orange CIFRE), director: A. Lebre.
- PhD: Yewan Wang, director: J-M. Menaud.
- PhD: Thuy-Linh NGuyen, director: A. Lebre
- PhD: Dimitri Saingre, advisor: T. Ledoux, director: J-M. Menaud.
- PhD: Jad Darrous, advisor: S. Ibrahim, director: C. Perez (Avalon)
- Postdoc: Thomas Lambert, advisor: S. Ibrahim.
- Postdoc: Jonathan Pastor, advisor: J-M. Menaud.
- Postdoc: Alexandre Van Kempen, advisor: A. Lebre.

10.2.2. Juries

- H. Coullon was a reviewer of the PhD of Stéphanie Challita, "Inferring Models from Cloud APIs and Reasoning over Them: A Tooled and Formal Approach", University of Lille, Inria Lille-Nord Europe, France, Dec. 21 2018.
- H. Coullon was a reviewer of the PhD of Gustavo Sousa, "A Software Product Lines-Based Approach for the Setup and Adaptation of Multi-Cloud Environments", University of Lille, France, June 5 2018.
- J.-M. Menaud was a member of the PhD committee of David Guyon (Dec. 7, 2018) "Supporting Energy-awareness for Cloud Users", UBL, Dec 2018.
- S. Ibrahim was reviewer of the PhD of Paul Hermann Lensing, "Direct Lookup and Hash-Based Metadata Placement - Impact on Architecture, Performance and Scalability of Local and Distributed File Systems", Universitat Politecnica de Catalunya Barcelona, Spain, Oct. 10 2018.
- A. Lebre was a member of the PhD Committee of Xia Yé, "Combining Heuristics for Optimizing and Scaling the Placement of IoT Applications in the Fog", University of Grenoble, Dec 2018.
- T. Ledoux was reviewer of the PhD of Yahya Al-Dhuraibi, "Flexible Framework for Elasticity in Cloud Computing", Univ. Lille, December 2018

10.3. Popularization

- J.-M. Menaud, Online publication http://www.lemondeinformatique.fr: *L'IMT Atlantique veut réduire le coût des calculs lourds*.
- J.-M. Menaud, Online publication http://www.mtom-mag.com: *Le projet HYDDA, développer une plateforme innovante, associant Cloud et HPC*.
- J.-M. Menaud, Online publication http://www.agence-api.fr: *L'Institut Mines-Telecom Atlantique monte une plateforme cloud et HPC*.

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STORM Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Olivier Aumage, hosting of the OpenMP Language Committee week at Inria Bordeaux, May 14-18, 30 participants.
- Raymond Namyst, Organization of the "Inria National Scientific Days" in Bordeaux, June 27-29, 250 participants.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Olivier Aumage: Cluster 2018, ICPP 2018, SC Asia 2018.
- Emmanuelle Saillard: COMPAS 2018, ISC HPC 2018 (poster committee), SC18 (workshop committee).
- Samuel Thibault: HCW, P3MA'18
- Denis Barthou: CF 2018
- Raymond Namyst: ISC 2018, IPDPS 2018, SC 2018, Euro-MPI 2018, SC Asia 2018.

9.1.2.2. Reviewer

- Olivier Aumage: Cluster, HCW, ICPP, PDP, PDSEC, SC Asia.
- Emmanuelle Saillard: COMPAS, ISC HPC, SC.
- Samuel Thibault: HCW

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Olivier Aumage: CCPE special issue.

9.1.3.2. Reviewer - Reviewing Activities

- Olivier Aumage: CCPE, IJPEDS, JPDC
- Samuel Thibault: JPDC, TPDS, IJHPCA

9.1.4. Invited Talks

- Olivier Aumage: SIAMPP (Tokyo), EPCC (Edinburgh), COMPAS (Toulouse), HPCS (Orléans).
- Emmanuelle Saillard: Journées GDR-GPL (Grenoble), Journée LaMHA (Paris).
- Samuel Thibault: ROMA seminar (Lyon), COMPAS (Toulouse), Task-based seminar (Uppsala)

9.1.5. Scientific Expertise

- Olivier Aumage: ANR (1 project in phase 2).
- Samuel Thibault: ANR (1 project in phase 2).

9.1.6. Research Administration

- Olivier Aumage: Permanent Contact for Team STORM.
- Nathalie Furmento: Member of the Commission de Développement Technologique at Inria Bordeaux Sud-Ouest

- Nathalie Furmento: Member of the technical team for PlaFRIM, Federative Platform for Research in Computer Science and Mathematics
- Nathalie Furmento: Member of the HCERES evaluation committee for the IRIF laboratory
- Nathalie Furmento: Member of the selection committee for an engineer position at the Université de Bordeaux

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Engineering School: Olivier Aumage, High Performance Communication Libraries, 20HeTD, M2, ENSEIRB-MATMECA.
- Engineering School: Olivier Aumage, Languages and Supports for Parallelism, 14HeTD, M2, ENSEIRB-MATMECA.
- Engineering School: Emmanuelle Saillard, Introduction to Algorithms, 16HeCI, L3, ENSEIRB-MATMECA.
- Engineering School: Emmanuelle Saillard, Tree Structure, 16HeCI, L3, ENSEIRB-MATMECA.
- Engineering School: Adrien Cassagne, Projet d'algorithmique et de programmation, 30HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Adrien Cassagne, Introduction aux réseaux, 15HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Adrien Cassagne, Applications TCP/IP, 15HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Philippe Virouleau, Programmation Impérative, 18HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Philippe Virouleau, Projet d'algorithmique et de programmation, 25HeTD, L3, ENSEIRB-MATMECA.
- Licence: Samuel Thibault is responsible for the computer science topic of the first university year.
- Licence: Samuel Thibault is responsible for the new Licence Pro ADSILLH (Administration et Développeur de Systèmes Informatiques à base de Logiciels Libres et Hybrides)
- Licence: Samuel Thibault, Introduction to Computer Science, 32HeTD, L1, University of Bordeaux.
- Licence: Samuel Thibault, Networking, 51HeTD, Licence Pro, University of Bordeaux.
- Engineering School: Denis Barthou is the head of the computer science teaching department of ENSEIRB-MATMECA (300 students, 20 faculty, 120 external teachers)
- Engineering School: Denis Barthou, Architectures (L3), Parallel Architectures (M2), Procedural Generation for 3D Games (M2), C/Algorithm projects (L3)
- Licence: Marie-Christine Counilh, Introduction to Computer Science (64HeTD), Introduction to C programming (52HeTD), L1, University of Bordeaux.
- Master MIAGE: Marie-Christine Counilh, Object oriented programming in Java (30HeTD), M1, University of Bordeaux.

9.2.2. Supervision

- PhD in progress: Ksander Ejjaaouani, Novembre 2016, Olivier Aumage, Michel Mehrenberger, Julien Bigot.
- PhD in progress: Adrien Cassagne, "Parallelization and Code Generation for Error Correcting Codes from Factor Graphs" October 2017, Olivier Aumage, Denis Barthou, Christophe Jego, Camille Leroux.
- PhD in progress: Idriss Daoudi, October 2018, Olivier Aumage, Thierry Gautier.

- PhD in progress: Romain Lion, October 2018, Samuel Thibault
- PhD in progress: Pierre Huchant, "Static analysis and dynamic adaptation of parallelism", oct. 2015, supervised by Marie-Christine Counilh, Denis Barthou.
- PhD in progress: Hugo Brunie, "Optimization of data allocations for high performance applications on heterogeneous memory architectures", oct. 2015, supervised by Julien Jaeger (CEA), Patrick Carribault (CEA) and Denis Barthou.
- Internship: Antoine Tirel, June 2018 - Sept. 2018, Emmanuelle Saillard

9.2.3. *Juries*

- Olivier Aumage: Ph.D defense of Adrián Castelló Gimeno at the University of Castellon Jaume I, (reviewer).
- Samuel Thibault: Ph.D defense of Germán Ceballos at the University of Uppsala (opponent).
- Denis Barthou: Ph.D defense of Van Long TRAN at Institut Telecom Sud-Paris, University Paris-Saclay (reviewer), Ph.D defense of Arnaud Durocher at the University of Bordeaux (president)

9.3. Popularization

9.3.1. *Interventions*

- Olivier Aumage, Emmanuelle Saillard, Denis Barthou: Welcoming of the general public for the open days at the Inria research center, October 2018.
- Emmanuelle Saillard, Corentin Salingue: Fête de la Science, Inria, October 2018.
- Emmanuelle Saillard, Corentin Salingue: Semaine des maths, Lycée Saint Genès, March 2018.
- Corentin Salingue: Printemps de la mixité, Inria, April 2018.
- Corentin Salingue: Welcoming of schoolchildren: internship of Matthieu Vigier-Lafosse, January 2018.

9.3.2. *Internal action*

- Emmanuelle Saillard: DevDays, October 2018
- Denis Barthou: Unithé ou café, June 2018

TADAAM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

In the context of ANR Dash, Guillaume AUPY organized a workshop on I/O in Europe https://project.inria.fr/dash/events/. He was the co-chair of the FTS workshop at Cluster 2018.

10.1.1.2. Member of the steering committee

Emmanuel JEANNOT is member of the steering committee of Euro-Par and the Cluster international conference.

10.1.1.3. Member of the Organizing Committees

- Guillaume AUPY was a member of the Organizing Committee of Per3S 2019.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Guillaume AUPY was workshop Chair at SC 2018, Inclusivity Vice-Chair at SC 2018, Algorithm track vice-chair at ICPP 2018.
- Emmanuel JEANNOT was the program chair of the COLOC workshop.

10.1.2.2. Member of the Conference Program Committees

- Emmanuel JEANNOT was member of the program committee of IPDPS 2019, HPML 2018, Heteropar 2018, Compas 2018.
- Brice GOGLIN was a member of the program committee of EuroMPI 2018, SuperComputing 2018 (posters), and of the COLOC, ExaComm and ROME Workshops.
- Alexandre DENIS was a member of the program committee of CCGrid 2018, CCGrid 2019, HiPC 2018, SC 2018 (workshops).
- Guillaume AUPY was a member of the program committee of SuperComputing 2018 (Doctoral Showcase), HPML 2018, CEBDA 2018 (IPDPS workshop).
- Guillaume MERCIER was a member of the programm committe of SuperComputing 2018 (Performance Measurement, Modeling, and Tools Track), EuroMPI 2018, CCGrid 2018, HPCS 2018 and Compas 2018

10.1.2.3. Reviewer

- Alexandre DENIS was a reviewer for IPDPS 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Emmanuel JEANNOT is associate editor of the International Journal of Parallel, Emergent & Distributed Systems (IJPEDS).
- Emmanuel JEANNOT was an invited editor for the Special Issue of *Concurrency and Computation: Practice and Experience* for best papers of HCW 2018.

10.1.3.2. Reviewer - Reviewing Activities

- Guillaume AUPY was a reviewer for IEEE TPDS, Cluster Computing.

- Emmanuel JEANNOT was a reviewer for IEEE TPDS, Journal of Computational Science.
- Alexandre DENIS was a reviewer for IEEE TPDS.

10.1.4. Invited Talks

- Guillaume AUPY was invited to give a talk at Per3S 2018.
- Guillaume AUPY and Emmanuel JEANNOT were invited to give a talk at CCDSC 2018.

10.1.5. Scientific Expertise

- Emmanuel JEANNOT have been reviewer for the PRACE 6IP call (WP8).
- Emmanuel JEANNOT was a member of the hiring committee of an Inria junior researcher position at Bordeaux.
- François PELLEGRINI has been appointed as co-pilot of the project group on free/libre software at *Comité pour la science ouverte* (CoSO), an arm of the CODORNUM of the French Ministry of Higher Education and Research.
- François PELLEGRINI was a member of the former *Comité d'Orientation sur l'Information Scientifique et Technique* (CORIST) of *Institut National de la Recherche Agronomique* (INRA).
- François PELLEGRINI participated in a roundtable on "*the societal impact of digital identity*" during the *Assises de l'identité numérique* organized by the French ministries of the Interior and Justice, and the State Secretariat for digital issues.
- François PELLEGRINI was heard by members of the Law Commission of the French Senate, on e-voting.
- François PELLEGRINI was a member of the hiring committee for an assistant professor position at Université de Pau et des Pays de l'Adour.

10.1.6. Research Administration

- Emmanuel JEANNOT is deputy head of science of the Inria Bordeaux research center.
- Emmanuel JEANNOT is member of the Inria evaluation committee
- Emmanuel JEANNOT is member of LaBRI scientific coouncil and head of the Satanas team.
- Alexandre DENIS is head of the Inria Bordeaux CUMI-R (IT users committee).
- Brice GOGLIN and Guillaume MERCIER are elected members of the research centre committee.

10.1.7. Standardization Activities

TADAAM attended the MPI Forum meetings on behalf of Inria (where the MPI standard for communication in parallel applications is developed and maintained). TADAAM also created of a new working group in the MPI Forum, dedicated to hardware topologies management and currently leads this working group. The HSPLIT proposal in currently under early discussions for submission to the forum and eventual inclusion in the MPI standard.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Members of the TADAAM project gave hundreds of hours of teaching at Université de Bordeaux and the Bordeaux INP engineering school, covering a wide range of topics from basic use of computers, introduction to algorithmics and C programming to advanced topics such as probabilities and statistics, scheduling, computer architecture, operating systems, parallel programming and high-performance runtime systems, as well as software law and personal data.

Brice GOGLIN participated in the section about fondamentals of computer science in the MOOCs *Informatique et Création Numérique* and *Sciences Numériques et Technologie* which focus at bringing basics about computer science to high-school teachers.

François PELLEGRINI gave a doctoral course at the University of Luxembourg on "*Law and freedom(s) in the digital age*". He also taught at Télécom Sud Paris and École Nationale de la Magistrature.

10.2.2. Supervision

PhD: Nicolas DENOYELLE, advanced memory hierarchies and new topologies, defended on November 6th 2018. Advisor: Brice GOGLIN and Emmanuel JEANNOT.

PhD: Hugo TABOADA, *Recouvrement des Collectives MPI Non-bloquantes sur Processeur Manycore*, defended on 11 December 2018. Advisors: Alexandre DENIS and Emmanuel JEANNOT.

PhD in progress: Benjamin LORENDEAU, new programming models and optimization of Code Saturn, started in 2015. Advisors: Yvan FOURNIER and Emmanuel JEANNOT.

PhD in progress: Valentin Honoré, Partitioning Strategies for high throughput Applications, started in November 2017. Advisors: Guillaume AUPY and Brice GOGLIN.

PhD started: Andrès RUBIO, Management on heterogeneous and non-volatile memories, started in October 2018. Advisor: Brice GOGLIN.

PhD started: Nicolas VIDAL, IO scheduling strategies, started in October 2018. Advisors: Guillaume AUPY and Emmanuel JEANNOT.

10.2.3. Juries

Guillaume AUPY was a reviewer of the mid-PhD defense of Massinissa Ait Aba (CEA, supervisors: Alix Munier, Safia Kedad Sidhoum).

Emmanuel JEANNOT was member of the Ph.D defense jury of:

- Yann Barsamian (University of Strasbourg, Reviewer)
- Loic Pottier (University of Lyon, ENS Lyon, Reviewer)
- Philippe Virouleau (University of Grenoble-Alpes, Reviewer)

François PELLEGRINI was member of the Ph.D defense jury of:

- Grégoire Pichon (University of Bordeaux)

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Brice GOGLIN is in charge of the diffusion of the scientific culture for the Inria Research Centre of Bordeaux. He organized several popularization activities involving colleagues.

Guillaume AUPY co-organized (with Marthe Bonamy) a 2-day visit of Inria & Labri for undergrad students from ENS Lyon.

10.3.2. Education

- Brice GOGLIN was involved in the MOOC *Informatique et Création Numérique* which focuses at bringing basics about computer science to high-school teachers. He answered numerous questions on the forum. More than 19 000 people registered to the course, and more than 1 500 successfully finished it.
- Brice GOGLIN was involved in the building of the MOOC *Sciences Numériques et Technologie* which focus at bringing basics about computer science to high-school teachers.
- François PELLEGRINI, created a set of ten animated short videos on the digital revolution and its consequences, for high-school pupils and freshman students (Pix/C2i), in collaboration with the services of Université de Bordeaux.

10.3.3. Interventions

- Valentin HONORÉ and Brice GOGLIN went to the St Genes middle school in Bordeaux in March for *Semaine des Maths* to give hands-on sessions about basics of algorithmics and computer science.

- TADAAM presented its research to the general public during the 10th anniversary of the research centre on September 27th.

- Emmanuel JEANNOT was the roundtable presenter of the topic HPC and scientific computing at the Inria Bordeaux 10 years event on September 27th.

- Valentin HONORÉ and Brice GOGLIN presented TADAAM research during the research centre open day on October 13th.

- Guillaume AUPY, Valentin HONORÉ, Nicolas VIDAL and Brice GOGLIN gave seminars and hands-on session about computer science to schools attending *Fete de la Science* in October.

- Guillaume AUPY went to the Sainte-Foy-La-Grande middle school in the context of Maths-en-Jeans to talk about finding a way to share messages in class and how it relates to the internet.

- Brice GOGLIN introduced research, research carriers, high performance computing and data centers to middle-school interns on December 17th.

- François PELLEGRINI delivered a conference entitled "*Tous pirates ?*", at the National Theater of Bordeaux-Aquitaine (TNBA), in relation with the play of same name created by the Traverse and OS'O artist collectives.

- François PELLEGRINI participated in a conference and roundtable "*Ingénieurs, éthique et valeurs face à l'industrie 4.0*" organized by Fondation Anthony Mainguené at École Nationale Supérieure des Arts et Métiers.

- François PELLEGRINI was member of the jury during a fake trial of a self-driving artificial intelligence (*Carambolage du siècle*") at the Appeal Court of Paris, during the *Nuit du droit*.

- François PELLEGRINI delivered a conference on the digital revolution at Le Bar Commun during the *Week of digital Freedoms*.

<center>**WHISPER Project-Team**</center>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- Gilles Muller: DSN 2018
- Julia Lawall: ASE 2018 Tool Demo track.

10.1.1.2. Member of the Conference Program Committees

- Gilles Muller: OSDI 2018, EuroSys 2018
- Julia Lawall: EuroSys 2018, ICSE-NIER 2018, ASPLOS 2018 ERC, PEPM 2018, SCAM 2018, APSys 2018, USENIX ATC 2018, CARI 2018

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Julia Lawall: Editorial board of Science of Computer Programing (2008 - present).

10.1.2.2. Reviewer - Reviewing Activities

- Julia Lawall: Transactions on Software Engineering, Software: Evolution and Process, IEEE Transactions on Reliability, ACM Transactions on Embedded Computing Systems

10.1.3. Invited Talks

- Gilles Muller:
    - "Provably Work Conserving Multicore Schedulers", University of Bordeaux, June 13, 2018.
    - "Safe multicore scheduling in a Linux cluster environment", 3rd GDR RSD and ASF Winter School on Distributed Systems and Networks, Sept Laux, March 20, 2018.
- Julia Lawall:
    - "Coccinelle: 10 Years of Automated Evolution in the Linux Kernel", 8th Inria/Technicolor Workshop On Systems, Rennes, December 11, 2018.
    - "Software evolution and bug finding using Coccinelle", Lightweight analysis and verification techniques, Verimag, Grenoble, December 11, 2018.
    - "Coccinelle: 10 Years of Automated Evolution in the Linux Kernel", Conférence d'informatique en Parallélisme, Architecture et Système (COMPAS), Toulouse, July 3, 2018.
    - "Coccinelle: Practical Program Transformation for the Linux Kernel", EJCP 2018 : École Jeunes Chercheurs et Jeunes Chercheuses en Programmation 2018, June 25, 2018.
    - "Introduction to Coccinelle and its usage in the Linux Kernel", Conférence MiNET, Telecom SudParis, May 24, 2018.
- Pierre-Évariste Dagand gave a seminar at the Collège de France entitled "Types dépendants : tout un programme" (November 28, 2018), as part of Xavier Leroy's chair "Sciences du logiciel".
- Lucas Serrano: "Inference of Semantic Patches from Code Examples", The Seventh International Workshop on Software Mining, with ASE, September 3, 2018.

- Cedric Courtaud "Toward an Efficient Data Plane for Memory Systems Interference Regulation in COTS Multi-core Systems", The NExt Step TOwards multi-core Real-time systems workshop, ULB, May 18, 2018.

10.1.4. Scientific Expertise

- Julia Lawall was part of the midterm review panel of the NSF Expedition in Computing project DeepSpec.

10.1.5. Research Administration

- Julia Lawall: IFIP TC secretary (2012 - present). Elected member of IFIP WG 2.11 (Program Generation).

  Member of a hiring committee for a Maître de conférences position at Université Paris Diderot

  Board member of Software Heritage (https://www.softwareheritage.org/).

- Gilles Muller: Elected member of IFIP WG 10.4 (Dependability), representative of Inria in Sorbonne University's advisory committee for research, member of the project committee board of the Inria Paris Center.

- Bertil Folliot: Elected member of the IFIP WG10.3 working group (Concurrent systems)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Professional Licence: Bertil Folliot, Programmation C, L2, UPMC, France
- Professional Licence: Bertil Folliot, Lab projects, L2, UPMC, France
- Master: Pierre-Évariste Dagand, Specification and Validation of Programs, M2, UPMC, France
- Licence: Pierre-Évariste Dagand, INF311: Introduction to Programming, L1, École Polytechnique, France
- Master: Pierre-Évariste Dagand, INF559: Computer Architecture and Operating Systems, M1, École Polytechnique, France

10.2.2. Supervision

- PhD : Mariem Saeid, soutenue le 25/9/2018, Jens Gustedt (Camus), Gilles Muller.
- PhD in progress : Cédric Courtaud, CIFRE Thalès, 2016-2019, Gilles Muller, Julien Sopéna (Delys).
- PhD in progress : Redha Gouicem, 2016-2019, Gilles Muller, Julien Sopéna (Delys).
- PhD in progress : Darius Mercadier, 2017-2020, Pierre-Évariste Dagand, Gilles Muller.
- PhD in progress : Lucas Serrano, 2017-2020, Julia Lawall.

10.2.3. Juries

- Julia Lawall: PhD juries of Ferdian Thung, SMU (reporter), Thibaut Girka, Université Paris Diderot (president), Thomas Durieux, Lille (examiner).

10.3. Popularization

- Julia Lawall: Coordinator of the Outreachy internship program for the Linux kernel, until March 2018. Outreachy provides remote 3-month internships twice a year for women and other underrepresented minorities on open source projects. Julia Lawall also mentored Aishwarya Pant as part of this program.

- Julia Lawall, "Building Stable Trees with Machine Learning", Open Source Summit North America, August 2018, with Sasha Levin. Open Source Summit Europe, October 2018, with Sasha Levin. Linux Plumbers Conference, kernel summit track, November 2018, with Sasha Levin.

- Julia Lawall, "Coccinelle: 10 Years of Automated Evolution and Bug Finding in the Linux Kernel", Open Source Summit Europe, October 2018.

- Julia Lawall, "Panel Discussion: Outreachy Kernel Internship Report" (moderator), Open Source Summit Europe, October 2018.

- Julia Lawall, "Panel Discussion: An Exploration of Insights & Issues Related to Mentoring Programs" (participant), Open Source Summit Europe, October 2018.

- Julia Lawall, "Interprocedural Static Analysis Strategies for the Linux Kernel: Detecting SAC Bugs as an Example (Work in Progress)", Linux Kernel Real Time Summit, October 2018.

- Julia Lawall, "Kernel Panel" (participant), Linux Plumbers Conference, November 2018.

WIDE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

François Taïani served as Co-Organizer of the 8th Inria/Technicolor Workshop On Systems (WOS8), Rennes, France, December 2018.

François Taïani served as Communication Chair of the 19th ACM/IFIP/Usenix International Conference on Middleware (Middleware), Rennes, France, December 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

François Taïani served as PC Co-Chair of the 2nd Workshop on Scalable and Resilient Infrastructures for Distributed Ledgers (SERIAL), Rennes, France, December 2018.

François Taïani served as PC Co-Chair of the 6th Edition of The International Conference on NETworked sYStems (NETYS), Essaouira, Morocco, May 2018.

9.1.2.2. Member of the Conference Program Committees

Pierre-Louis Roman served on the PC of the 16th IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC), Athens, Greece, August 2018.

Pierre-Louis Roman served on the PC of the 15th International Symposium on Pervasive Systems, Algorithms and Networks (I-SPAN), Yichang, China, October 2018.

Pierre-Louis Roman served on the PC of the 8th IEEE International Symposium on Cloud and Service Computing (SC2), Paris, France, November 2018.

Pierre-Louis Roman served on the PC of the 11th IEEE International Conference on Service-Oriented Computing and Applications (SOCA), Paris, France, November 2018.

Davide Frey served of the PC of the Industry Track of the 2018 ACM/IFIP International Middleware Conference, Rennes, France, December 2018.

Davide Frey served on the PC of the 18th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS), 2018.

François Taïani served on the PC of the 19th ACM/IFIP/Usenix International Conference on Middleware (Middleware), Rennes, France, December 2018.

François Taïani served on the PC of the 38th IEEE International Conference on Distributed Computing Systems (ICDCS), in the Dependability Track track, Vienna, Austria, July 2018.

François Taïani served on the PC of the Conférence d'informatique en Parallélisme, Architecture et Système (Compas), Toulouse, France, July 2018.

François Taïani served on the PC of The 48th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Luxembourg, June 2018.

George Giakkoupis served on the PC of he 22nd International Conference on Principles of Distributed Systems (OPODIS), Hong Kong, December 2018.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

Anaïs Durand was a reviewer for Theoretical Computer Science (TCS).

Davide Frey was a reviewer for IEEE Transactions on Parallel and Distributed Systems (TPDS).

François Taïani was a reviewer for Journal of Systems Architecture (JSA, Elsevier).

George Giakkoupis was a reviewer for Journal of the ACM (JACM).

George Giakkoupis was a reviewer for Algorithmica (ALGO).

George Giakkoupis was a reviewer for ACM Transactions on Parallel Computing (TOPC).

George Giakkoupis was a reviewer for Theoretical Computer Science (TCS).

9.1.4. Invited Talks

Pierre-Louis Roman. Shortcutting the Bitcoin verification process for your smartphone. EPFL, Lausanne, Switzerland, 1 November 2018.

Pierre-Louis Roman. Shortcutting the Bitcoin verification process for your smartphone. Master Workshop Layer 1 Solutions, Amsterdam, The Netherlands, 18 November 2018.

Anaïs Durand. Contention-Related Crash Failures. Descartes ANR project meeting, IRIF, Université Paris Diderot, Paris, France, 1 October, 2018.

François Taïani. Possible Future Careers after the PhD. Nantes Plenary Meeting and Training School, BigStorage European Training Network (ETN), Nantes, France, 25-28 June 2018.

François Taïani. Pleiades: Distributed Structural Invariants at Scale. Delyss/Whisper Inria Team Retrait, Saint-Valéry, France, 18-20 June 2018.

François Taïani. Pleiades: Distributed Structural Invariants at Scale. Plenary Meeting of the Dionasys Project, Saint-Jacut, France, 23 May 2018.

François Taïani. Being Prepared in a Sparse World: The Case of KNN Graph Construction. EPFL, Lausanne, Switzerland, January 2018.

George Giakkoupis. Random binary search trees with concurrent insertions. Theory Seminar, Technion, Haifa, Israel, 31 October 2018.

George Giakkoupis. Random binary search trees with concurrent insertions. Randomized Algorithms Seminar, University of Cambridge, UK, 2 August 2018.

George Giakkoupis. Random binary search trees with concurrent insertions. ART-Oberseminar, University of Hamburg, Germany, 19 July 2018.

9.1.5. Leadership within the Scientific Community

François Taïani has been a member of the Steering Committee of IFIP WG 6.1 International Conference on Distributed Applications and Interoperable Systems (DAIS) since 2013.

François Taïani served on the award committee of the Prix de thèse Gilles Kahn 2018, sponsored by the French Science Academy (Académie des Sciences), and awarded by the French Informatics Society (SiF).

Michel Raynal has been Adjunct Professor at the Polytechnic University of Hong Kong since 2013.

Michel Raynal has been a member of the Executive board of the SIF (Société d'Informatique Française) since 2013.

Michel Raynal is European representative at the IEEE Technical Committee on distributed computing.

9.1.6. Research Administration

Davide Frey is Correspondant Scientifique Europe at the DPEI for Inria Rennes

Davide Frey is an associate member of the COST-GTRI of Inria.

François Taïani has been a member of the Scientific Orientation Committee (COS) of IRISA (UMR 6074) since 2013.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Olivier Ruas, Spe-Info2, 26h, L1, Université de Rennes 1, France

Licence: Olivier Ruas, Programmation Web, 6h, L2, Université de Rennes 1, France

Master: Davide Frey, Programming Technologies for the Cloud, 28h, M2, Univ. Rennes I, France.

Master: Davide Frey, Scalable Distributed Systems, 10h, M1, EIT/ICT Labs Master School, Univ. Rennes I, France.

Master: Davide Frey, Big-Data Storage and Processing Infrastructures, 10h, M2-SIF, Univ. Rennes I, France.

Master: Davide Frey, Cloud Computing, 6h, M2-MIAGE, Univ. Rennes I, France.

Master: Davide Frey, Distributed Systems, 12h, ENSAI Rennes, France.

Master: George Giakkoupis, Systèmes Répartis, 9h (Spring), ENSAI Rennes, France.

Master: George Giakkoupis, Systèmes Répartis, 9h (Fall), ENSAI Rennes, France.

Engineering School: François Taïani, Synchronization and Parallel Programming, 62h, 2nd year of Engineering School (M1), ESIR / Univ. Rennes I, France.

Engineering School: François Taïani, Distributed Systems, 24h, 3rd year of Engineering School (M2), ESIR / Univ. Rennes I, France.

Engineering School: François Taïani, Parallel Algorithms for Big Data, 24h, 3rd year of Engineering School (M2), ESIR / Univ. Rennes I, France.

Engineering School: François Taïani, Introduction to Operating Systems, 24h, 1st year of Engineering School (L3), ESIR / Univ. Rennes I, France.

9.2.2. Supervision

PhD: Pierre-Louis Roman, Exploring Heterogeneity in Loosely Consistent Decentralized Data Replication [12], University of Rennes 1, 18 December 2018, François Taïani and Davide Frey.

PhD: Simon Bouget, Towards a Holistic Construction of Opportunistic Large-Scale Distributed Systems [11], University of Rennes 1, 20 September 2018, François Taïani and David Bromberg.

PhD: Olivier Ruas, The Many Faces of Approximation in KNN Graph Computation [13], University of Rennes 1, 17 December 2018, François Taïani and Anne-Marie Kermarrec (Mediego).

PhD in progress: Quentin Dufour, BBDA - Browser Based Data Analytics, January 2018, David Bromberg and Davide Frey.

PhD in progress: Amaury Bouchra Pilet, Robust and Lightweight Overlay Management for Decentralized Learning, University of Rennes 1, September 2018, David Bromberg and Davide Frey.

PhD in progress: Loïck Bonniot, Distributed Troubleshooting of Edge-Compute Functions, University of Rennes 1, François Taïani and Christoph Neumann (Technicolor).

PhD in progress: Hayk Saribekyan, Randomized Algorithms for Distributed Information Dissemination, University of Cambridge, UK, George Giakkoupis and Thomas Sauerwald (Cambridge).

9.2.3. Juries

François Taïani was a reviewer for Rhicheek Patra's PhD thesis: Towards Scalable Personalization, EPFL (Switzerland), 16 January 2018

François Taïani was a reviewer for Raluca Halalaï's PhD thesis: On Reducing Latency in Geo-Distributed Systems through State Partitioning and Caching, Univ. Neuchâtel (Switzerland), 14 May 2018.

François Taïani was a reviewer for William Excoffon's PhD thesis: Résilience des systèmes informatiques adaptatifs : Modélisation, analyse et quantification, Institut National Polytechnique de Toulouse, LAAS, 8 June 2018.

François Taïani was a reviewer for Wenjie Zheng's PhD thesis: A Distributed Frank-Wolfe Framework for Trace Norm Minimization via the Bulk Synchronous Parallel Model, Sorbonne Université, 13 June 2018.

George Giakkoupis was a reviewer for Rémi Varloot's PhD thesis: Dynamic Network Formation. École Polytechnique, Paris, 1 June 2018.

9.3. Popularization

Pierre-Louis Roman gave an invited talk at the E-novation Convention organized by The Notaries of Brittany, Rennes, 12 November 2018. Title: Blockchains, Distributed Ledgers, and their Utility for Notaries (talk in French).

ALICE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Members of Organizing Committees

The team contributed to the "Journées Jeunes Chercheurs 2018", organized by the GdR Informatique Mathématique.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Bruno Lévy was program co-chair of Computer Graphics International 2018

9.1.2.2. Member of the Conference Program Committees

Bruno Lévy was IPC member of Eurographics 2018, SGP 2018, GMP 2018

9.1.2.3. Reviewer

Members of the team were reviewers for Eurographics, SIGGRAPH, SIGGRAPH Asia, Computer Aided Design, ISVC, Pacific Graphics, and SPM.

9.1.3. Journal

9.1.3.1. Member of Editorial Boards

- B. Lévy is a member of the editorial board of ACM Transactions on Graphics.
- B. Lévy is a member of the editorial board of Graphical Models (Elsevier)
- B. Lévy is a member of the editorial board of Computer Graphics and Applications

9.1.3.2. Reviewer - Reviewing Activities

Members of the team were reviewers for Computer Aided Design (CAD), Discrete Applied Mathematics (Elsevier), Transactions on Visualization and Computer Graphics (IEEE), and Computers & Graphics (Elsevier).

9.1.4. Invited Talks

Bruno Lévy gave an invited course at Symposium of Geometry Processing 2018 on Numerical Optimal Transport.

9.1.5. Popularization

Dmitry Sokolov participated in the Bett Show, one of the largest gatherings of the education community, and gave STEM popularization talk in front of a general public.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Bruno Lévy, Numerical Geometry, 12h, M2, ENSG

Licence : Dobrina Boltcheva, Infographie 3D, 30h, 3A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, Advanced Object Oriented Programming & UML, 60h, 2A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, Advanced algorithmics, 50h, 2A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, Image Processing, 30h, 2A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, UML Modeling, 20h, 1A, IUT Saint-Dié-des-Vosges

Licence : Dmitry Sokolov, C++, 40h, 2A, University of Lorraine

Licence : Dmitry Sokolov, Programming, 30h, 1A, University of Lorraine

Licence : Dmitry Sokolov, Logic, 30h, 3A, University of Lorraine

Master : Dmitry Sokolov, Logic, 22h, M1, University of Lorraine

Master : Dmitry Sokolov, 3D printing, 12h, M2, University of Lorraine

Master : Dmitry Sokolov, Numerical modeling, 12h, M2, University of Lorraine

ALMAnaCH Team

9. Dissemination

9.1. Promoting Scientific Activities

- LR was invited to present an overview of information extraction methods in the humanities in the context of the conference cycle: Ringvorlesung "Open Technology for an Open Society", Jan 2018, Berlin, Germany

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- LR: Co-chair of the Lexical Data Masterclass, Berlin, 3-7 December https://digilex.hypotheses.org/551
- Mohamed Khemakhem: Chair of the GROBID-Camp: Inria de Paris 27th March 2018

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program/Scientific/Reviewing Committees

- BS: Member of the Program, Scientific or Reviewing Committee of the following conferences and workshops: ACL 2018, NAACL 2018, International Morphology Meeting 2018, Int'l Colloquium on Loanwords and Substrata 2018
- LR: Member of the Program, Scientific or Reviewing Committee of the following conferences and workshops: Fourteenth Joint ACL - ISO Workshop on Interoperable Semantic Annotation, COLING 2018, TPDL 2018, ACL 2018, NAACL-HLT 2018, TOTh 2018, ELPUB 2018, DHd2018, LDL-2018, DH 2018
- DS: Member of the Program, Scientific or Reviewing Committee of the following conferences and workshops: ACL 2018, EMNLP 2018,CoNLL 2018, COLING 2018, EthicNLP 2018, LREC 2018, WNUT 2018, LAW-MWE-CxG 2018.
- EVdLC: Program Committee member and reviewer for LREC, ACL, COLING, NAACL, ToTH, EMNLP

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- LR: Member of the JTEI advisory board
- LR: Member of the scientific board of the Revue Humanités numériques

9.1.3.2. Reviewer - Reviewing Activities

- BS: Reviewer for the following journals: *Language Resource and Evaluation*, *Traitement Automatique des Langues*
- LR: Reviewer for the following journals: Language Resource and Evaluation Journal, Journal of the TEI
- DS: Reviewer for the following journals: TALLIP, LRE, NLE, Poznan Studies in Contemporary Linguistics, Computational Linguistics

9.1.4. Invited Talks

- BS was invited to give a talk to Master 2 computational linguistics students and University staff at the Université Grenoble Alpes (November)

- LR was invited to give talks at Open-Access-Tage, Sep 2018, Graz; Workshop DARIAH-CH, University of Neuchâtel, November 2018; "Stay tuned to the future", an international conference on the impact of research infrastructures for social sciences and humanities – bologna, January 2018; NIMS, Tskuba, Japan, September 2018; Rétro-numérisation de documents historiques et partage dans le Web sémantique : l'exemple de la lexicographie – Atelier de formation annuel du consortium Cahier – Montpellier – 26-29 juin 2018; "Serving Learning and Scholarship", Fiesole retreat, Barcelona, April 2018
- DS was invited to give a talk at the Indiana University's department of linguistics (October), at Bar Ilan University (November) respectively on Noisy User-Generated Content Treebanking and on Tackling language variability via diachronic word embeddings.

9.1.5. Training

- Mohamed Khemakhem chaired and tutored the GROBID-Dictionaries series:
  - BBAW & Praxiling joint workshop - Berlin: February 2018
  - Atelier de formation annuel du consortium Cahier – Montpellier – 26-29 June 2018
  - SADiLaR GROBID-Dictionaries Workshop (Pretoria) : October 26, 2018
  - SADiLaR GROBID-Dictionaries Workshop (Potchefstroom) : October 30, 2018 from
  - SADiLaR GROBID-Dictionaries Workshop (StellenBosch) : November 2, 2018
  - Lexical Data Masterclass 2018 - Berlin 3-7 December 2018
- Mathilde Reignault attended the ESSLLI 2018 Summer School in Language and Information as part of her doctoral studies training.

9.1.6. Leadership within the Scientific Community

- LR: President of the board of directors of DARIAH (until August 2018)
- LR: Member of the board of directors or the TEI consortium
- LR: President of ISO committee TC 37 (Language and terminology)
- LR: Member of the ELEXIS Interoperability and Sustainability Committee (ISC) — ELEXIS is the European Lexicographic Infrastructure (https://elex.is)
- EVdLC: Chairman of the ACL special interest group SIGPARSE
- BS: Member, Deputy Treasurer and Member of the Board of the Société de Linguistique de Paris
- DS: Board member of the French NLP society (Atala, 2017-2020), Vice-President of the Atala and program chair of the "journée d'études".
- DS: Member of the ACL's BIG (Broad Interest Group) Diversity group.
- : Charles Riondet: Co-chair of the DARIAH Guidelines and Standards Working Group.
- : Marie Puren: Co-chair of the DARIAH Guidelines and Standards Working Group.

9.1.7. Scientific Expertise

- BS: member of the recruitment committee for the new "ingénieur d'études" position in Inria Paris's communication department
- LR: has carried out various project assesment expertises for: City University Honk Kong, the go!digital programm at the Austrian Academy of Sciences, the Haifa-Technion Joint Research Submission to Milgrom Foundation, teh Swiss National Science Foundation
- DS: Project evaluation for the Flanders Research Agency.
- EVdLC: Evaluator for a European COST proprosal
- EVdLC: Evaluator for the Program Call of DGLFLF on "Langue et Numérique"

9.1.8. Research Administration

- BS: Member of the Board of Inria Paris's Scientific Committee ("Comité des Projets")
- BS: Member of the International Relations Working Group of Inria's Scientific and Technological Orientation Council (COST-GTRI)
- BS: Deputy Head of the research strand on Language Resources of the LabEx EFL (Empirical Foundations of Linguistics), and is therefore a deputy member of the Governing Board of the LabEx; BS and DS are in charge of several research operations in the LabEx
- LR: President of the board of directors of DARIAH
- LR: President of the scientific committee of ABES (Agence Bibliographique de l'Enseignement Supérieur)
- LR: President of ISO committee TC 37 (Language and Terminology)
- Mohamed Khemakhem and LR: Project leaders of the ISO 24613-4 LMF "TEI Serialisation"
- LR: Convener of ISO working group TC 37/SC 4/WG 4 (lexical resources)
- LR: Member of the Text Encoding Initiative board
- LR: advisor for scientific information to the director for science at Inria

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master: Benoît Sagot (with Emmanuel Dupoux), "Speech and Language Processing", 20h, M2, Master "Mathématiques, Vision, Apprentissage", ENS Paris-Saclay, France
- Licence: Djamé Seddah, "Certificat Informatique et Internet", 30h, L1-L2-L3, Université Paris Sorbonne, France
- Master: Djamé Seddah, "Modèles pour la linguistique computationnelle",36h, M1, Université Paris Sorbonne, France
- Master: Djamé Seddah, "Traduction automatique", 30h, M2, Université Paris Sorbonne, France
- Master: Loïc Grobol, "Introduction à la fouille de textes", 39h, M1, Université Sorbonne Nouvelle, France
- Master: Yoann Dupont and Loïc Grobol, "Langages de script", 39h, M2, INALCO, France

9.2.2. Supervision

HdR: Benoît Sagot, "Informatiser le lexique — Modélisation, développement et exploitation de lexiques morphologiques, syntaxiques et sémantiques", 28th June 2018, mentored by Laurent Romary

PhD in progress: Mohamed Khemakhem, "Structuration automatique de dictionnaires à partir de modèles lexicaux standardisés", September 2016, Paris Diderot, supervised by Laurent Romary

PhD in progress: Loïc Grobol, ""Reconnaissance automatique de chaînes de coréférences en français par combinaison d'apprentissage automatique et de connaissances linguistiques", "Université Sorbonne Nouvelle", started in Oct. 2016, supervised by Frédéric Landragin (main superviser), Isabelle Tellier[†] (main superviser), Éric de La Clergerie and Marco Dinarelli

PhD in progress: Jack Bowers, "Technology, description and theory in language documentation: creating a comprehensive body of multi-media resources for Mixtepec-Mixtec using standards, ontology and Cognitive Linguistics", started in Oct. 2016, EPHE, supervised by Laurent Romary

PhD in progress: Axel Herold, "Automatic identification and modeling of etymological information from retro-digitized dictionaries", October 2016, EPHE, Laurent Romary

PhD in progress: Mathilde Regnault,"Annotation et analyse de corpus hétérogènes", "Université Sorbonne Nouvelle", started in Oct. 2017, supervised by Sophie Prévost (main superviser), Isabelle Tellier[†], and Éric de la Clergerie

PhD in progress: Pedro Ortiz, "Automatic Enrichment of Ancient Dictionaries", October 2018, Sorbonne Université, supervised by Laurent Romary and Benoît Sagot

PhD in progress: Benjamin Muller, "Multi-task learning for text normalisation, parsing and machine translation", October 2018, Sorbonne Université, supervised by Benoît Sagot and Djamé Seddah

PhD in progress: José Carlos Rosales, supervised by Guillaume Wisnewski (Limsi) and Djamé Seddah

9.2.3. Juries

- BS: president of the Habilitation committee for Kim Gerdes at Université Paris Nanterre on November 29th (Title: "Same Same but Different: Paradigms in Syntax"; Mentor: Sylvain Kahane)

- BS: reviewer ("rapporteur") in the PhD committee for Sébastien Delecraz at Aix-Marseille Université on December 10th (Title: "Approches jointes texte/image pour la compréhension multimodale de documents"; Supervisor:)

- LR: member of the PhD committee for Cyrille Suire, University of La Rochelle, September 2019 (Title: "Recherche d'information et humanités numériques : une approche et des outils pour l'historien")

- BS: member of the recruiting committee for a communication officer at Inria Paris (Aug–Oct 2018)

- LR: member of the selection committee for the assistant professor position on linguistics and NLP at University of Orléans (May 2018)

9.3. Popularization

9.3.1. Interventions

- Welcoming of schoolchildren at Inria Paris (half a day with ALMAnaCH members within an one-week-long stay; December 2018)

- ALMAnaCH members were involved in the Profiterole ANR project's presentation at the *Salon de l'Innovation* of the conference TALN 2018 (the "SiTAL" show).

- Presentation in Education Network ISN "Informatique et Science du Numérique" (March)

- Invited speaker in a citizen debate on Artificial Intelligence (association "Les coteaux en Seine", Bougival, November 21st 2018)

<div align="center">

AUCTUS Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

Within the Human Systems Integration DAS of the AESE Pole (see expertise section), a daily workshop has been organized the 9/11/2018 at Agen Agropole. The title of the workshop was: "Comment l'IA peut-elle améliorer l'interaction homme-machine?". Jean-Marc Salotti and David Daney participated to the organization of the workshop. Jean-Marc Salotti presented a talk entitled: "Introduction aux concepts de l'intelligence artificielle".

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- David Daney co-organized the international workshop *"Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics* at IROS 2018, Madrid.

10.1.2.2. Member of the Conference Program Committees

- IROS 2018 (IEEE/RSJ International Conference on Intelligent Robots and Systems) [Vincent Padois, associate editor]
- ICRA 2019 (IEEE/RAS International Conference on Robotics and Automation) [Vincent Padois, associate editor]

10.1.2.3. Reviewer

- ICRA 2019 (2019 IEEE International Conference on Robotics and Automation) [Vincent Padois, David Daney]
- IROS 2018 (IEEE/RSJ International Conference on Intelligent Robots and Systems) [David Daney, Vincent Padois]
- Humanoids 2018 (IEEE-RAS International Conference on Humanoid Robots) [Ganna Pugach]
- International Symposium on Experimental Robotics 2018 [Vincent Padois]

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- Mechanism and Machine Theory [David Daney]
- Acta Astronautica [Jean-Marc Salotti]
- International Journal of Human Factors Modelling and Simulation [Jean-Marc Salotti]
- behavioral Brain Research [Jean-Marc Salotti]
- Frontiers in Robotics and Artificial Intelligence [Vincent Padois]
- International Journal of Humanoid Robotics [Vincent Padois]
- Robotics and Automation Letters [Vincent Padois]

10.1.4. Invited Talks

- Sylvain Pion gave a talk entitled "The Arithmetic Toolbox in CGAL" at the iRRAM-MPFR-MPC Developers Meeting, in Dagstuhl, Germany on April 18-20, 2018, organized by Paul Zimmermann.

- Jean-Marc Salotti gave a talk at the 18th European Mars Conference that took place in La-Chaux-de-Fonds, Suisse, August 26th to 28th 2018. The title of his conference was "European Mars mission architecture using an enhanced Ariane launcher".
- Vincent Padois gave a talk entitled "Human-Robot Physical Interaction – Various considerations on collaborative robotics with control in mind" at the 2nd School on Robotics and Social Interactions, in Moliets-et-Maâ, France on October, the 3rd 2018, organized by Ghiles Mostafaoui.
- Vincent Padois gave a talk entitled "GT7 on Humanoid Robotics - An overview of activities in 2017-2018 and some perspectives" at the national biennial meeting of the "Groupement de recherche en Robotique", in Paris, France on November, the 22nd 2018.

10.1.5. Leadership within the Scientific Community

Vincent Padois is, together with Olivier Stasse from LAAS, the co-animator of GT7 "Humanoid Robotics" of the CNRS "Groupement de Recherche en Robotique" (GDR). The role of animator consists in organizing regular workshops in humanoid robotics with the members of the French research community in this domain. It also consists in reporting strategic elements to the GDR in order to better organize the structure of research in Robotics in France.

10.1.6. Scientific Expertise

Jean-Marc Salotti and David Daney are official animators of the Humans Systems Interactions AESE DAS (Strategic Activities Domain of the Aerospace Valley Pole), which gathers all regional actors concerned with human factors, human systems interactions, and collaborative robotics mainly in the aerospace sector, but not limited to that domain. At least 2 daily workshops are organized each year for the members of the group in order to focus on a specific issue. Jean-Marc Salotti and David Daney are also solicited to examine regional projects linked to the DAS in order to provide advice and eventually to participate to the labelling process of the pole.

10.1.7. Research Administration

Sylvain Pion represents the Auctus team in the CUMI-R (Comité des Utilisateurs des Moyens Informatiques) committee of Inria Bordeaux.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Jean-Marc Salotti, Intelligence Artificielle, 103,5h éqTD, M1, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France

Master: Jean-Marc Salotti, Facteurs Humains et Ingénierie Cognitive, 15h éqTD, M1, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France

Master: Jean-Marc Salotti, Interactions Hommes Robots, 15h éqTD, M2, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France. In this course, all students have practical works involving cobotic systems: programming NAOs and UR3 (Universal Robots) and testing an exoskeleton.

Master: David Daney, Interactions Hommes Robots, 3h éqTD, M2, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France.

Master: David Daney, Mathématiques pour la robotique, 24h éqTD, M2, Enseirb/Ensc, Bordeaux INP, France.

Master: Vincent Padois, Literature review - What, Why and How?, 20h éqTD, M2, Enseirb/Ensc, Bordeaux INP, France.

10.2.2. Supervision

Defended PhD

- Aurélien Massein, "Conception d'environnement instrumenté pour la veille à la personne", Université Côte d'Azur, 2018/11/22

PhD in progress:

- Nassim Benhabib (Inria / Région NA – Woobot project), "Méthodologie de conception et de commande d'un système robotique collaboratif pour assister et sécuriser les gestes d'un opérateur", November 2018 – , David Daney and Vincent Padois
- Nicolas Simonazzi (CIFRE Orange), "Analyse comportementale et détection des émotions dans le cadre de l'utilisation de chat-bots en ligne", May 2018 –, Jean-Marc Salotti
- Olfa Jema (Cotutelle Université de Sousse, Tunisie), "Analyse du mouvement humain", December 2017 –, Lotfi Romdhane, Sami Bennour, David Daney
- Pierre Laguillaumie (Thèse laboratoire PPRIME), "Méthodologie pour la mise en œuvre d'un robot collaboratif de nouvelle génération prenant en compte la sécurité et le confort biomécanique de l'opérateur en situation de travail", March 2018 – , Jean-Pierre Gazeau and Vincent Padois

10.2.3. Juries

Vincent Padois:

- PhD jury of Thomas Flayols, Examinator, "Exploitation du Retour en Force Pour l'Estimation et le Contrôle des Robots Marcheurs", Université Fédérale de Toulouse Midi-Pyrénées, 2018/10/12
- PhD jury of David Busson, Reviewer, "Gestion de manipulateurs mobiles et redondants en environnement contraint et dynamique", École Nationale Supérieure d'Arts et Métiers, 2018/11/26
- PhD jury of Lucas Joseph, Thesis advisor, "An energetic approach to safety in robotic manipulation", Sorbonne Université, 2018/12/07
- PhD jury of Philipp Schlehuber-Caissier, Thesis advisor, "Contributions to robotic control design with formal stability and safety guarantees", Sorbonne Université, 2018/12/14
- PhD jury of Florian Golemo, Examinor, "How to Train Your Robot – New Environments for Robotic Training and New Methods for Transferring Policies from the Simulator to the Real Robot", Université de Bordeaux, 2018/12/19

David Daney:

- PhD jury of Baptiste Bush, Examinator, "Optimization techniques for an ergonomic human-robot interaction", Université de Bordeaux, 2018/02/27
- PhD jury of Joshua Kevin Pickard, Reviewer, "Analysis and Synthesis Methods for the Appropriate Design of Parallel Mechanisms", University of New Brunswick, Canada, 2018/03/29
- PhD jury of Aurelien Massein, Thesis advisor, "Conception d'environnement instrumenté pour la veille à la personne", Université Côte d'Azur, 2018/11/22
- PhD jury of Oriane Dermy, Reviewer, "Prédiction du mouvement humain pour la robotique collaborative: du geste accompagné au mouvement corps entier", Université de Lorraine, 2018/12/17
- PhD jury of Adrien Koessler, Invited, "Contribution à l'agrandissement de l'espace de travail opérationnel des robots parallèles", Université Clermont Auvergne, 2018/12/19

10.3. Popularization

10.3.1. Articles and contents

- Jean-Marc Salotti published an article entitled "La robotique humanoïde", published in Questions Internationales [8]. It briefly describes the main issues and trends in humanoid robotics. Questions Internationales is a journal from La Documentation Française, which is a brand of the "Direction de l'Information Légale et Administrative", under the direction of the Central Administration of the French Prime Minister.

- David Daney was interviewed regarding the collaboration of Auctus with AIO on the Numii project [10], [11].

10.3.2. Education

- Collaboration with IUT Angoulème. A delegation of professors from IUT Angoulème, GEII Department, came to visit us on December 4, in order to benefit from our expertise on the use of UR3 (Universal Robots) for teaching activities.

10.3.3. Interventions

- Unithé ou café, Inria Bordeaux, February 26: Anna Pugach gave a presentation: "Le textile intelligent"

- Journée portes ouvertes, 10 ans Inria Bordeaux, September 27: Vincent Padois gave demonstrations on collaborative robotics with the Panda robot

- Village des Sciences, Cap Sciences, Bordeaux, October 13: Jean-Marc Salotti animated a movie/debate: "Un robot peut-il partager vos émotions?"

- Village des Sciences, Cap Sciences, Bordeaux, October 14: Vincent Padois and David Daney gave demonstrations on collaborative robotics with the Panda robot

- ENSC inauguration, November 30: Nassim Benhabib gave demonstrations on collaborative robotics with the Panda robot

AVIZ Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Jean-Daniel Fekete co-organized the Dagstuhl Seminar on Progressive Data Analysis and Visualization in 2018
- Jean-Daniel Fekete co-organized the Dagstuhl Seminar on Provenance and Logging for Sense Making in 2018
- Pierre Dragicevic co-organized the Journée Visu 2018.
- Tobias Isenberg co-organized for BELIV 2018.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- Petra Isenberg was paper chair for InfoVis 2019.

8.1.2.2. Member of the Conference Program Committees

- Jean-Daniel Fekete was a member of the program committee for VIS 2018
- Jean-Daniel Fekete was a member of the best paper committee for PacificVis 2018.
- Pierre Dragicevic was a member of the program committee for VIS 2018.
- Tobias Isenberg was a member of the program committee for ACM/Eurographics Expressive 2018.
- Tobias Isenberg was a member of the program committee for IEEE VR 2018.
- Tobias Isenberg was a member of the program committee for EuroVis 2018.
- Tobias Isenberg was a member of the program committee for IVAPP 2018.
- Petra Isenberg was a member of the program committee for CHI.

8.1.2.3. Reviewer

- Jean-Daniel Fekete reviewed for CHI and PacificVis
- Pierre Dragicevic reviewed for VIS, UIST, EuroVis, alt.CHI, EICS, TEI, IHM.
- Tobias Isenberg reviewed for CHI, Expressive, InfoVis, PacificVis, SciVis, VAST, VISAP, and VR.
- Xiyao Wang reviewed for IHM, and TEI.
- Petra Isenberg reviewed for: CHI, EuroVA, EuroVis, ISS

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Pierre Dragicevic is member of the editorial board of the Journal of Perceptual Imaging (JPI).
- Pierre Dragicevic is member of the editorial board of the Springer Human–Computer Interaction Series (HCIS).
- Tobias Isenberg is member of the editorial board of Elsevier's Computers & Graphics journal.
- Petra Isenberg is member of the editorial board of IEEE Transactions on Visualization and Computer Graphics.
- Petra Isenberg is Associate Editor in Chief for IEEE Computer Graphics and Applications.

8.1.3.2. Reviewer - Reviewing Activities

- Jean-Daniel Fekete reviewed for TVCG
- Pierre Dragicevic reviewed for TOCHI, TVCG, JPI.
- Steve Haroz reviewed for Cognition, Journal of Experimental Psychology: General, Meta-Psychology
- Petra Isenberg reviewed for: Morgan Claypool (book proposal)

8.1.4. Invited Talks

- Jean-Daniel Fekete: Seminar EDF Lab Chatou "Progressive data analysis: a new language paradigm for scalability in exploratory data analysis", Chatou, Sep. 19, 2018
- Jean-Daniel Fekete: seminaire de recherche Medialab, « Nouvelles visualisations de réseaux pour de nouvelles formes d'explorations et d'analyses », Sciences Po Paris, April 3rd, 2018
- Jean-Daniel Fekete: Delft Data Science Seminar: Visual Data Science and its role in Computational Medicine The role of visualization in the hypothetico-deductive method, Delft University of Technology, January 6th, 2018.
- Tobias Isenberg: "Illustrative Visualization and Abstraction of Scientific Data". M3DISIM joined Inria/Ecole Polytechnique research team, Orsay, France, November 2018.
- Tobias Isenberg: "Illustrative Visualization and Abstraction of Scientific Data". GraphDeco research team, Sophia-Antipolis, France, December 2018.
- Steve Haroz: "Open Practices in Visualization Research". Panel discussion at Evaluation and Beyond - Methodological Approaches for Visualization workshop, 21 Oct 2018.
- Petra Isenberg: "Evaluation in Visualization". Keynote at the EMBL-EBI Workshop on Innovations in data visualisation for drug discovery, June 2018.
- Petra Isenberg: "Micro Visualizations for Pervasive and Mobile Data Exploration". Seminar Series Talk, Technical University of Dresden, May 2018.

8.1.5. Leadership within the Scientific Community

- Jean-Daniel Fekete is the Chair of the Steering Committee of the IEEE Information Visualization Conference.
- Jean-Daniel Fekete is member of the VIS Executive Committee.
- Jean-Daniel Fekete is a member of the Eurographics Publication Board.
- Jean-Daniel Fekete is the Chair of the EuroVis Best Phd Award.
- Tobias Isenberg has been a member of the Executive Committee of the Visualization and Computer Graphics Technical Committee of the IEEE Computer Society and served as Publications Chair.
- Tobias Isenberg is a member of the Steering Committee of Expressive (Joined Symposium on Computational Aesthetics, Sketch-Based Interfaces & Modeling, and Non-Photorealistic Animation & Rendering).
- Steve Haroz is the Open Practices chair of the IEEE Information Visualization conference.

8.1.6. Scientific Expertise

- Pierre Dragicevic reviewed for an NSERC Discovery Grant proposal.

8.1.7. Research Administration

- Pierre Dragicevic: Member of the Commission Consultative de Spécialistes de l'Université Paris-Sud (CCSU).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- "Visualization and Visual Analytics" taught by Jean-Daniel Fekete, Master 2 in Data Science, 32 hours, École Polytechnique, France.
- "Photorealistic Rendering" taught by Tobias Isenberg at Polytech Paris-Sud and Université Paris-Saclay, France.
- "Introduction to Computer Graphics" taught by Tobias Isenberg at Polytech Paris-Sud, France.
- "Non-Photorealistic Rendering" taught by Tobias Isenberg at the University of Granada, Spain.
- guest lecture on "Introduction to Data Visualization" taught by Tobias Isenberg at Université Côte d'Azur, Nice, France.
- guest lecture on "Illustrative Visualization" taught by Tobias Isenberg at ENSTA, France.
- "Interactive Information Visualization" taught by Petra Isenberg at Université Paris Sud.
- "Visual Analytics" taught by Petra Isenberg at CentraleSupelec.

8.2.2. Supervision

- PhD: Marc Barnabé, Multiscale reconstruction of microbial ecosystems using semi-supervised machine learning, Université Paris-Sud, 2018, Jean-Daniel Fekete, Evelyne Lutton, INRA.
- PhD in progress: Mickaël Sereno, Collaborative Data Exploration and Discussion Supported by AR, Univ. Paris-Sud; 2018, Tobias Isenberg
- PhD in progress: Xiyao Wang, Augmented Reality Environments for the Interactive Exploration of 3D Data, Univ. Paris-Sud; 2017, Tobias Isenberg
- PhD in progress: Sarkis Halladjian, Spatially Integrated Abstraction of Genetic Molecules, Univ. Paris-Sud; 2017, Tobias Isenberg
- PhD in progress: Haichao Miao, Visual Abstraction and Modeling for DNA Nanotechnology, TU Wien, Austria, 2016, Tobias Isenberg

8.2.3. Juries

- Jean-Daniel Fekete: Member of the PhD committee of Dr. Marion Dumont.
- Jean-Daniel Fekete: Member of the PhD committee of Dr. Germán Leiva.
- Jean-Daniel Fekete: Member of the HdR committee of Dr. Eric Lecolinet.
- Pierre Dragicevic: Member of the hiring committee for Concours CRCN 2018 Centre Inria Rennes Bretagne Atlantique.
- Pierre Dragicevic: PhD defense committee of Bruno Fruchard (Télécom Paris Tech).
- Pierre Dragicevic: Mid-term PhD evaluation committee of Stacy Hsueh (Université Paris-Saclay).
- Pierre Dragicevic: Reviewer for Marguerite Peron's M2 internship.
- Petra Isenberg: Member of the PhD committee of Dr. Ulrike Kister
- Petra Isenberg: Reviewer Master Pro thesis, Ayoub Jaa, Université Paris Sud
- Petra Isenberg: Co-Supervisor Master thesis, Mathieu Louvet, Unversité Paris Sud
- Petra Isenberg: Co-Supervisor Master thesis, Mina Alipour, CentraleSupelec
- Petra Isenberg: Academic Tutor Master thesis: Marvin Rea

8.3. Popularization

8.3.1. Articles and contents

- Lonni Besançon's PhD work was featured in Le Monde's Binaire blog.
- Steve Haroz was interviewed on the Data Stories podcast, October 10, 2018

8.3.2. Creation of media or tools for science outreach

- Pierre Dragicevic and Yvonne Jansen: the data physicalization wiki and the List of Physical Visualizations and Related Artefacts (500 weekly visits) are continuously being updated.

CEDAR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Ioana Manolescu has been a general chair of the IEEE International Conference on Data Engineering (ICDE) 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Ioana Manolescu has been a member of the program committees of: the International Workshop on Semantic Big Data (SBD), in cojunction with ACM SIGMOD 2018; the Data Engineering Meets Semantic Web Workshop (DESWeb) in conjunction with IEEE ICDE 2018; the WebDB workshop, in conjunction with ACM SIGMOD 2018; the 34th *Conférence sur la Gestion de Données – Principes, Technologies et Applications* (BDA) 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Yanlei Diao has been the Editor-in-Chief of the ACM SIGMOD Record, SIGMOD's quarterly newsletter.

Ioana Manolescu has been an associate editor of the PVLDB (Proceedings of VLDB) Journal 2018.

9.1.4. Invited Talks

Ioana Manolescu has given invited keynotes at the Extended Semantic Web Conference (ESWC) 2018 , and at the *34ème Conférence sur la Gestion de Données – Principes, Technologies et Applications* (BDA) 2018.

9.1.5. Leadership within the Scientific Community

Yanlei Diao and Ioana Manolescu are both members of the PVLDB Endowment Board of Trustees.

Ioana Manolescu has been the president the ACM SIGMOD "Jim Gray" PhD Award Committee.

Ioana Manolescu is a member of the steering committee (*Comité de Pilotage*) of "Bases de Données Avancées" (BDA), the informal association organizing the database research community in France and french-speaking countries.

9.1.6. Research Administration

Y. Diao is on the advisory board of the Data Science Initiative (DSI), a joint center between the applied mathematics and computer science departments of Ecole Polytechnique.

Ioana Manolescu has been a member of Inria's Commission d'Evaluation and of the Bureau des Comités de Projets of Inria Saclay.

Team members have participated to the following hiring committees:

- Associate professor – Ecole Polytechnique, Yanlei Diao. Jury member.
- Full professor – INSA Lyon, Ioana Manolescu. Jury member.
- Associate professor – Ecole Polytechnique, Ioana Manolescu. Jury member.
- Inria researcher – Inria Nancy, Ioana Manolescu. Jury member.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master: Y. Diao is a Professor at Ecole Polytechnique, where she teaches "System for Big Data" in M1; she also teaches "Systems for Big Data Analytics" in M2 in the Data Science Master Program of Université Paris Saclay.
- Master: I. Manolescu, Architectures for Massive Data Management, 12h, M2, Université Paris-Saclay.
- Master: I. Manolescu, Database Management Systems, 52h, M1, École Polytechnique.
- Licence: I. Manolescu, Giant Global Graph, 18h, L3, École Polytechnique.

9.2.2. Supervision

PhD in progress: Maxime Buron: "Raisonnement efficace sur des grands graphes hétérogènes ", since October 2017, François Goasdoué, Ioana Manolescu and Marie-Laure Mugnier (GraphIK Inria team in Montpellier)

PhD in progress: Tien Duc Cao: "Extraction et interconnexion de connaissances appliquée aux données journalistiques", since October 2016, Ioana Manolescu and Xavier Tannier (LIMSI/CNRS and Université de Paris Sud)

PhD interrupted in July 2018: Sejla Čebirić: "CloudSelect: Data Mobility Within, Across and Outside Clouds", since September 2015, François Goasdoué Goasdoué and Ioana Manolescu. The student joined the industry.

PhD in progress: Ludivine Duroyon: "Data management models, algorithms & tools for fact-checking", since October 2017, François Goasdoué and Ioana Manolescu (Ludivine is in the Shaman team of U. Rennes 1 and IRISA, in Lannion)

PhD in progress: Enhui Huang: "Interactive Data Exploration at Scale", since October 2016, Yanlei Diao and Anna Liu (U. Massachussets at Amherst, USA)

PhD in progress: Luciano di Palma, "New sampling algorithms and optimizations for interactive exploration in Big Data", since October 2017, Yanlei Diao and Anna Liu (U. Massachussets at Amherst, USA)

PhD in progress: Felix Raimundo: "Nouveaux algorithmes et optimisations pour l'analyse profonde du génome à l'échelle de la population", since October 2017, Yanlei Diao and Avinash Abhyankar (New York Genome Center, USA)

PhD interrupted in April 2018: Alexandre Sevin: "Exploration interactive de données sur de grandes sources de données hétérogènes", since October 2017, Yanlei Diao and Peter Haas (U. Massachussets at Amherst, USA). The student joined the industry.

PhD in progress: Khaled Zaouk: "Performance Modeling and Multi-Objective Optimization for Data Analytics in the Cloud", since October 2017, Yanlei Diao

9.2.3. Juries

Ioana Manolescu reported on the PhD thesis of Louis Jachiet (Inria Grenoble).

9.3. Popularization

9.3.1. Articles and contents

- In books/journals for the general public: Our research on computational fact-checking has been featured in Le Journal Toulousain in an article titled "La science se met au service de l'information" , in February 2018 (http://www.lejournaltoulousain.fr/societe/la-science-se-met-au-service-de-linformation-pour-detecter-les-fake-news-54906). Further, I. Manolescu has been interviewed as an expert for an article in Le Figaro, in March 2018 (http://www.lefigaro.fr/secteur/high-tech/2018/03/08/32001-20180308ARTFIG00341-sur-twitter-les-fake-news-voyagent-plus-vite-que-les-vraies-informations.php).

9.3.2. Interventions

- Ioana Manolescu participated to a televised debate on fake news and the media in "Le Grand Barouf Numérique", a technology/society meet up organised by the city of Lille, in March 2018. The debate was broadcast by France 3 (https://france3-regions.francetvinfo.fr/hauts-de-france/nord-0/lille/debat-fake-news-medias-sont-ils-malades-1446365.html).

- Ioana Manolescu has participated to a debate on regulating the news media in "Les Journées de l'Economie", a national event organized in Lyon, in November 2018 (http://www.touteconomie.org/index.php?arc=bv1&manif=594)

9.3.3. Creation of media or tools for science outreach

Our research on computational fact-checking has been featured in a documentary (http://www.universcience.tv/video-tech-check-des-scientifiques-face-aux-fake-news-19501.html) by UniverScience.TV, the organization responsible of preparing scientific short movies next to Cité des Sciences. The movie has been featured in an article in Le Monde (https://www.lemonde.fr/sciences/video/2018/01/24/comment-la-science-aide-a-reperer-les-fake-news_5246356_1650684.html).

Chroma Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- C. laugier was Program Co-Chair of IEEE/RSJ IROS 2018. He also co-organized in the scope of IROS 2018, three interconnected events on Autonomous vehicles: a Workshop having attracted more than 360 people [0]; an Industrial Forum involving international companies(e.g. Renault, Nvidia, Baidu, EasyMile, Ambarella, etc) and having attracted about 80 people; an Autonomous Vehicles Demonstration which involved 5 international teams (including Chroma team with our Autonomous Renault Zoe car) [0].

- C. Laugier has been appointed as General co-Chair for IEEE/RSJ IROS 2019 (Makau).

- O. Simonin was general co-chair of PDIA 2018 "Perspective et Defis de l'IA" with Y. Demazeau (CNRS), organized in Paris Descartes, by AFIA, on October 11. The 2018 topic was "Véhicule Autonome et Intelligence Artificielle" ($\sim$ 80 people).

- O. Simonin is Chair of JFSMA [0] 2019 to be organized at the PFIA national platform, in Toulouse, July 2019.

- O. Simonin is co-chair with F. Chaprillet (Inria Larsen) of the National Conference on Robotics (JNRR), to be organized at Vittel, on October 2019.

10.1.1.2. Member of the Organizing Committees

- C. Laugier co-organized with F. Nashashibi (Inria), Ph. Martinet (Inria) and D. Wang (NTU Singapore) two special sessions on Mobile Robotics and Deep Learning at IEEE ICARCV 2018 (Singapore).

- C. Wolf co-organized the Workshop GDR ISIS & GDR IA on Machine Learning and Reasoning for Signal and Image Processing, October 4th ($\sim$ 90 people).

- F. Jumel is Member of Organizing Committees of the Robocup@Home league.

- F. Jumel is elected member of Technical Committees of the Robocup@Home league.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- O. Simonin is Chair of JFSMA 2019 to be organized at the PFIA national platform, in Toulouse, July 2019.

10.1.2.2. Member of the Conference Program Committees

- C. Laugier was Associate Editor for IEEE ICRA 2018 (Brisbane) and for IEEE ICRA 2019 (Monreal). He was also member of the Senior Program Committee of IEEE/RSJ IROS 2018 (Madrid).

- A. Martinelli was Associate Editor for IEEE ICRA 2019.

- Jilles S. Dibangoye served, in quality of program committee member, for the following conferences: AAAI, IJCAI

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[0]see : http://project.inria.fr/ppniv18
[0]see http://avdemo.car.upm-csic.es/
[0]Journées Francophone sur les Systèmes Multi-Agents https://www.irit.fr/pfia2019/jfsma/

- O. Simonin served, in quality of program committee member, for the following conferences : AAMAS (Autonomous Agent and Multi-agent Systems International Conference) Track Robotics, ICAPS (International Conference on Automated Planning and Scheduling) Track Robotics.

- O. Simonin is Program Committee member of the JFSMA conference since 2008 (Journées Francophones sur les Systèmes Multi-Agents).

- C. Wolf served, in quality of program committee member, for the following conferences: IJCAI, BMVC, CVPR 2018 Workshop on Human Pose, Motion, Activities and Shape in 3D, ECCV 2018 Workshop on Hands in Action.

10.1.2.3. Reviewer

- Agostino Martinelli served, in quality of reviewer, for following conferences: ICRA, IROS.

- Jilles S. Dibangoye served, in quality of reviewer, for the following conferences: AAAI, IJCAI, ICRA.

- Olivier Simonin served, in quality of reviewer, for the following conferences: IROS, ICAPS, ACC.

- Anne Spalanzani served, in quality of reviewer, for the following conferences: IROS, RO-MAN.

- C. Wolf served, in quality of reviewer, for the following conferences: CVPR, NIPS, ICLR, ICML, IJCAI, BMVC.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- C. Laugier is Member of the Steering Committee of the journal IEEE Transaction on Intelligent Vehicles.

- C. Laugier is member of the Editorial Board of the journal IEEE ROBOMECH.

- O. Simonin is a member of the editorial board of RIA Revue d'Intelligence Artificielle.

10.1.3.2. Reviewer - Reviewing Activities

- C. Laugier is Senior Editor of the journal IEEE Transaction on Intelligent Vehicles.

- A. Martinelli served, in quality of reviewer, for the following journals: Transaction on Robotics, Transaction on Automatic Control, Robotics and Automation Letters.

- Jilles S. Dibangoye served, in quality of reviewer, for the following journals: Revue d'Intelligence Artificielle, Mathematics and Artificial Intelligence Journal

- O. Simonin served, in quality of reviewer, for the following journals : Autonomous Robots (AURO) and RIA (Revue d'Intelligence Artificielle).

- Anne Spalanzani served, in quality of reviewer, for the International Journal Robotica.

10.1.4. Invited Talks

- O. Simonin was invited for two talks at "Institut d'Automne en IA (IA^3) : Robotics" (GDR IA), on Ocotber 15th-19th, Toulouse.

- O. Simonin gave an invited talk at the "Journée sur les Systèmes Hors Equilibres" ENS Lyon, November 27 : "Coordination d'essaims de robots, vers des systèmes auto-organisés".

- C. Laugier gave an invited tutorial at "Institut d'Automne en IA (IA^3)", GDR IA, Toulouse, October 15-19 2018.*Title: Autonomous Vehicles Technologies for Perception and Decision-making.*

- C. Laugier gave an invited keynote talk at the ECCV 2018 Workshop on "Vision-based Navigation for Autonomous Vehicles", Munich, September 2018.*Title: Dynamic Traffic Scene Understanding using Bayesian Sensor Fusion and Motion Prediction.*

- C. Laugier gave an invited talk at Vedecom SMIV [0] 2018 conference, Versailles, November 2018.*Title: Dynamic Traffic Scene Understanding: Analysis, Prediction and Collision Risk Assessment.*

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[0]Smart Mobility and Intelligent Vehicles

- C. Laugier gave an invited plenary talk at RWIA [0] 2018 conference, Guangzhou, December 7-10 2018.*Title: Dynamic Scene Understanding and Upcoming Collision Prediction to Improve Autonomous Driving Safety: A Bayesian Approach.*

- A. Spalanzani gave a talk at the "Journée Véhicule autonome et intelligence artificielle" organized by AFIA, Paris Descartes, October 11.

- C. Wolf gave an invited tutorial talk at the national "CORESA" conference, Poitiers, France, on November 12th.

- C. Wolf gave an invited talk at the Strasbourg doctoral school on mathematics, computer science and engineering, Strasbourg, France, on September 21st.

- C. Wolf gave an invited talk at the CVPR 2018 Workshop on "HUMAN 3D: HUman pose, Motion, Activities aNd Shape in 3D", Salt Lake City, USA, June 18th.

- C. Wolf gave an invited talk at the Heudiasyc Laboratory, Compiegne, France, June 5th.

- C. Wolf gave an Invited talk at Inria Stars, Nice, France, May 30th.

- C. Wolf gave an invited talk at the LABRI Laboratory, Bordeaux, France, March 5th.

- C. Wolf gave an invited talk at Inria THOTH, Grenoble, France, February 23rd.

- J.S. Dibangoye was an invited talk at "a NeurIPS-18 international workshop on Deep Reinforcement Learning in partially observable domains" (NeurIPS-18), on December, Montreal, Canada.

10.1.5. Leadership within the Scientific Community

- A. Spalanzani served, in quality of Vice President, for the 2018 ANR project selection in Interaction and Robotics.

- C. Laugier is co-chair with Philippe Martinet and Christoph Stiller, of the IEEE RAS Technical Committee on "Autonomous Ground Vehicles and Intelligent Transportation Systems (AGVITS)".

- C. Laugier is member of the Committee "safety of autonomous vehicles" (committee leaded by ARDI in the scope of the Innovation Regional Strategy).

- C. Laugier is member of the Scientific Committee of the French GDR Robotique.

- C. Laugier is member of several International Award Committee. In 2018, he was Chair of the Best Paper Award Committee of IEEE/RSJ IROS 2018 and Member of several IROS 2018 award committees (Fellow Award, Harashima Award for Innovative Technologies, Distinguished Service Award and Young Professional Award). In 2018, he was also a member of the Best Paper Award Committee of IEEE ICARCV 2018 and Member of the IEEE Chapter Award Committee.

- O. Simonin is an elected member of the Board of AFIA, the French Association for Artificial Intelligence.

- C. Wolf is part of the *Comité de direction* of the GDR ISIS "Information, Signal, Image et ViSion" and co-leads its theme "Machine Learning" (together with N. Thome, CNAM)

- C. Wolf is part of the *Comité scientifique* of the GDR IA "Aspects Formels et Algorithmiques de l'Intelligence Artificielle"

- C. Wolf co-leads the theme "Machine Learning and Robotics" of the GDR Robotique (together with D. Filiat, ENSTA)

10.1.6. Scientific Expertise

- C. Laugier is member of the Advisory Board of ISR University of Coimbra.

- C. Laugier is Scientific Advisor for the ProbaYes SA and for Baidu.

- O. Simonin served, in quality of reviewer, for ANR project submissions.

- J. Dibangoye served, in quality of reviewer, for ANR project submissions.

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[0]International conference on Robotics Welding, Intelligence and Automation

- C. Wolf was part of the ANR Committee CES 33 "Interaction and Robotics"

10.1.7. Research Administration

- C. Laugier is a member of several Ministerial and Regional French Committees on Robotics and Autonomous Cars.
- O. Simonin is an elected member of the AFIA Council (Association Française pour l'Intelligence Artificielle)
- O. Simonin is member of the Auvergne-Rhone-Alpes Robotics cluster (Coboteam), for Inria and INSA de Lyon entities.
- O. Simonin is member of the Scientific Council of the Digital League (Auvergne-Rhone-Alpes).
- F. Jumel is member of the International RoboCup competition (as Chief Referee for the RoboCup@Home league)
- F. Jumel is member of the board of IMAGINOVE cluster (digital content industry)
- F. Jumel is member of the Rhone-Alpes Robotics cluster (Coboteam)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

CPE Lyon 4-5th year : F. Jumel, resp. of the Robotics option, 400h M1/ M2, Dept. SN CPE Lyon France.

CPE Lyon 4-5th year : F. Jumel, 250h (robotic vision, cognitive science, Interface robot machine, deeplearning, Robotic frameworks, robotic plateforms, Kalman Filter)

INSA Lyon 3rd year : Jilles S. Dibangoye, Algorithmics, 24h, L3, Dept. Telecom INSA de Lyon, France.

INSA Lyon 3rd year : Jilles S. Dibangoye, WEB, 42h, L3, Dept. Telecom INSA de Lyon, France.

INSA Lyon 3rd year : Jilles S. Dibangoye, Operating Systems, 56h, L3, Dept. Telecom INSA de Lyon, France.

INSA Lyon 4rd year : Jilles S. Dibangoye, Operating Systems, 16h, Master, Dept. Telecom INSA de Lyon, France.

INSA Lyon 5th year : Jilles S. Dibangoye, the Robotics option : AI for Robotics, Robotics projects, 8h, M2, Dept. Telecom INSA de Lyon, France.

M2R MoSIG: A. Martinelli, Autonomous Robotics, 12h, ENSIMAG Grenoble.

INSA Lyon 5th year : O. Simonin, Resp. of the Robotics option (25 students): AI for Robotics, Software and Hardware for robotics, Robotics projects, 90h, M2, Telecom Dept., France.

INSA Lyon 3rd year : O. Simonin, Resp. of Introduction to Algorithmics, 32h (100 students), L3, Telecom Dept., France.

INSA Lyon 5th year : A. Spalanzani, Navigation en environnement humain, 2h, M2, INSA de Lyon, France.

Master : Laetitia Matignon, Multi-Agents and Self-* Systems, 10h TD, M2 Artificial Intelligence, Lyon 1 University, France.

Master : Laetitia Matignon, Multi-Robot Systems, 20h TD, 5th year of engineer, Polytech Lyon Informatics Department, France.

10.2.2. Supervision

PhD in progress: David Sierra Gonzalez, Autonomous Driving (cooperation Toyota), 2014, C. Laugier, J. Dibangoye, E. Mazer (Inria Prima). Defense planned in March 2019.

PhD in progress: Mathieu Barbier, Decision making for Intelligent Vehicles (cooperation Renault), 2015, C. Laugier, O. Simonin and E. Mazer (Inria Pervasive Interaction). Defense planned in April 2019.

PhD in progress: Mihai Popescu, Robot fleet mobility under communication constraints, 2015, O. Simonin, A. Spalanzani, F. Valois (CITI/Inria Agora).

PhD in progress: Pavan Vasishta, Natural vision based perception and prediction, 2016, A. Spalanzani and D. Vaufreydaz (Inria Pervasive Interaction)

PhD in progress: Guillaume Bono, Global-local Optimization Under Uncertainty for Goods Distribution Using a Fleet of Autonomous Vehicles, 2016, O. Simonin, J. Dibangoye, L. Matignon.

PhD in progress: Remy Grunblatt, Mobilité contrôlée dans les réseaux de drones autonomes", 2017, I. Guerrin-Lassous (Inria Dante) and O. Simonin.

Starting PhD: Maria Kabtoul, Proactive Navigation in dense crowds, A. Spalanzani and P. Martinet (Inria Chorale).

Starting PhD: Manon Prédhumeau, Crowd simulation and autonomous vehicle, A. Spalanzani and J. Dugdale (LIG Hawai).

Starting PhD: Luiz Serafim-Guardini, Conduite Automobile Autonome : Utilisation de grilles d'occupation probabilistes dynamiques pour la planification contextualisée de trajectoire d'urgence à criticité minimale, A. Spalanzani, C. Laugier, P. Martinet (Inria Chorale).

Starting PhD: Benoit Renault, Navigation coopérative et sociale de robots mobiles en environnement modifiable, O. Simonin and J. Saraydaryan.

Starting PhD: Edward Beeching, Large-scale automatic learning of autonomous agent behavior with structured deep reinforcement learning, C. Wolf, O. Simonin and J. Dibangoye.

10.2.3. Juries

1. PhD thesis juries

    – C. Laugier was reviewer and president of the defense committee of the PhD thesis of Fernando Ireta Munoz, I3S Sophia-Antipolis, April 4th 2018.

    – C. Laugier was member of the defense committee of the PhD thesis of Tomasz Kucners, Örebro University (Sweden), September 20th 2018.

    – O. Simonin was reviewer and member of the defense committee of the PhD thesis of Nesrine Mahdoui Chedly, Compiegne (UTC), December 7th, 2018.

    – O. Simonin was reviewer and member of the defense committee of the PhD thesis of Thadeu Knychala Tucci, Université Franche Comté, Montbéliard, November 12th, 2018.

    – C. Wolf was reviewer and member of the defense committee of the PhD thesis of Michaël Blot, Sorbonne Université, Paris, November 11th.

    – C. Wolf was reviewer and member of the defense committee of the PhD thesis of Farhood Negin, Université de Nice, Inria Stars, October 15th.

    – C. Wolf was reviewer and member of the defense committee of the PhD thesis of Bruno Stuner, Université de Rouen, June 11th.

    – C. Wolf was member of the defense committee of the PhD thesis of Stéphane Lathuilière, Université de Grenoble, Inria Perception, May 22nd.

    – C. Wolf was reviewer and member of the defense committee of the PhD thesis of Nicolas Chesneau, Université de Grenoble, Inria Thoth, February 2nd.

10.3. Popularization

10.3.1. Articles and contents

- O. Simonin participated to the writing of "Livre blanc sur les Véhicules Autonomes et Connectés" [0]

- O. Simonin given several interviews in order to popularize AI & Robotics, and Autonomous Vehicles: JDN (Journal du Net), INSA letter, etc.

- C. Laugier, J. Lussereau and J.A. David have been interviewed in October 2018 by Radio France in order to popularize Autonomous Vehicles. The interview has been broadcasted by France Bleu Isere on October 11th 2018 at respectively 6:40 a.m and 8:15 a.m.

10.3.2. Education

- J. Dibangoye created a MOOC on deep reinforcement learning for drones, which will be launched in 2019 on OpenClassRooms.

10.3.3. Interventions

- C. Wolf gave a talk for developers at the journéé ARAMIS on May 24th.
- C. Wolf gave a talk for developers at the conference #MixIT, Lyon on April 20th.

10.3.4. Internal action

- Demo "Crazyflie micro-drones" at the Journées Recherche Inria & Industrie (O. Simonin and S. d'Alu), Paris, November 20th. Lien video : https://youtu.be/Tgwrb4xpJOA

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[0] https://www.inria.fr/actualite/actualites-inria/livre-blanc-vehicules-autonomes-et-connectes

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- E. Dupoux Co-Program Chair of NIPS 2018 workshop on intuitive physics, Montreal.
- E. Dupoux Co-Program chair of of the LEGRAIN Conference on Learning in Humans and Machines, Ecole Normale Supérieure, 2018 (this conference had a scientific, an industrial and a general public track)

9.1.1.2. Member of the Organizing Committees

- Executive committee of SIGMORPHON (Association for Computational Linguistics Special Interest Group, http://www.sigmorphon.org/).
- Executive committee of DARCLE www.darcle.org.

9.1.2. Scientific Events Selection

9.1.2.1. Reviewer

Invited editor for international conferences: Interspeech, NIPS, ACL, etc. (around 5-10 papers per conferences, 2 conferences per year)

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Member of the editorial board of: Mathématiques et Sciences Humaines, L'Année Psychologique, Frontiers in Psychology.

9.1.3.2. Reviewer - Reviewing Activities

Invited Reviewer for Frontiers in Psychology, Cognitive Science, Cognition, Transactions in Acoustics Signal Processing and Language, Speech Communication, etc. (around 4 papers per year)

9.1.4. Invited Talks

- Nov/29/2018, E. Dupoux, Invited Department Colloquium, Linguistics, U. Maryland: Reverse Engineering Language Acquisition
- Nov/21/2018, E. Dupoux, Invited Department Colloquium, LORIA, Nancy: Developmental AI
- Oct/17/2018, E. Dupoux, Invited Seminar, Departement Physics ENS& chaire Sciences des Données: Reverse Engineering Cognitive Development
- Jul/4/2018, E. Dupoux, Invited Seminar, PRAIRIE AI Summer School: Unsupervised Speech Technology
- Nov/23/2018, E. Dupoux, Invited Seminar, GDR "Cognitive Neurosciences of Development": What AI can bring to Cognitive Development (and vice versa)
- 2018, N. Zeghidour, invited Seminar, LORIA, Nancy: learning from raw waveforms
- 2018, N. Zeghidour, invited Talk, Legrain Conference on AI and Cognition, Paris: learning from raw waveforms

9.1.5. Scientific Expertise

E. Dupoux is invited expert for ERC, ANR, and other granting agencies, or tenure committees (around 2 per year).

9.1.6. Research Administration

E. Dupoux is on the Executive committee of the Foundation Cognition, the research programme IRIS-PSL "Sciences des Données et Données des Sciences", the industrial chair Almerys (2016-) and the collective organization DARCLE (www.darcle.org).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master : E. Dupoux, "Theoretical Cognitive Science: Connections and symbols", 8h, M1/M2, PSL,Paris 5, Paris France
- Master : E. Dupoux (with B. Sagot, ALMANACH, N. Zeghidour & R. Riad, COML), "Algorithms for speech and language processing", 30h, M2, (MVA), ENS Cachan, France
- Master : E. Dupoux, "Cognitive Engineering", 80h, M2, ITI-PSL, Paris France
- Doctorat : E. Dupoux, "Computational models of cognitive development", 32 h, Séminaire EHESS, Paris France

9.2.2. Supervision

- PhD : Julia Maria Carbajal, Separation and acquisition of two languages in early childhood: a multidisciplinary approach, Ecole Normale Supérieure, sept 21, 2018, co-advised E. Dupoux, S. Peperkamp
- PhD : Adriana Rukoz Gevara, Decoding perceptual epenthesis: Experiments and Modelling., Ecole Normale Supérieure, oct 19, 2018, co-advised E. Dupoux, S. Peperkamp
- PhD in progress : Neil Zeghidour, Learning speech features from raw signals, Feb 2015, co-advised E. Dupoux, N. Usunier (Facebook-CIFRE)
- PhD in progress : Elin Larsen, Models of word learning in infants, Sept 2017, co-advised E. Dupoux, A. Cristia– abandon
- PhD in progress : Rama Chaabouni, Language learning in artificial agents, Sept 2017, co-advised E. Dupoux, M. Baroni (Facebook-CIFRE)
- PhD in progress : Ronan Riochet, Learning models of intuitive physics, Sept 2017, co-advised E. Dupoux, I. Laptev, J. Sivic
- PhD in progress : Rachid Riad, "Speech technology for biomarkers in neurodegenerative diseases" , Sept 2018, co-advised E. Dupoux, A.-C. Bachoud-Lévi

9.2.3. Juries

E. Dupoux participated in the PhD Jury of Andreux Mathieu, Nov 12, ENS, 2018.

9.3. Popularization

E. Dupoux talked in two general public conferences on speech technologies, one organized by the Institut Carnot Cognition (La Vilette, oct, 2018), one by the Institut IA in Toulouse (oct 2018), both with around 200 participants. He gave and/or organized smaller meetings geared towards enhancing contacts between industry and research in the general area of AI and Cognition (1 day and a half of scientific meetings between PSL and Facebook, seminar-style intervention with MSR, and with the CVT Athena). He co-chaired the conference Legrain on AI and Cognition which, besides the scientific track had a general public track and an industry track, which were both attended by 100-200 attendees (see http://olivierlegrain.ens.psl.eu/ia-et-cognition.html).

N. Zeghidour did a high level presentation of AI in Vivatech on the Facebook Stand (100 000 visitors). He presented the state of the art in ASR and TTS in the BNP Paribas-PRAIRIE Summer School with participants from the IT Industry. He co-redacted a 5 pages popularization article on neural networks and deep learning in the magazine "Tangent, the mathematical adventure" for high school students,   20,000 printed copies.

DEFROST Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Gang Zheng is a vice-chair of the IFAC Technical Committee "Social Impact of Automation", International Federation of Automatic Control, TC9.2
- Gang Zheng is co-chair of the working group "Commande et pilotage en environnement incertain" of GRAISYHM

10.1.1.2. Member of the Organizing Committees

- Gang Zheng, Associate Editor, SIAM CT19, Chengdu, China (SIAM Conference of Control & Its Applications 2019)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Gang Zheng is IPC member of SIAM-CT19, ICSRT 2019, ICFCTA 2019.

10.1.2.2. Reviewer

Kruszewski:

- ICRA
- ECC
- ACC

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Gang Zheng is the member of Editorial Board, Journal of Control Science and Engineering.
- Christian Duriez is member of Editorial Board of IEEE Transactions on Haptics

10.1.3.2. Reviewer - Reviewing Activities

Kruszewki:

- Systems & Control Letters
- Fuzzy Sets and Systems
- IEEE TFS
- Automatica
- IET Control Theory & Applications
- IEEE TCST
- IEEE Transactions on Industrial Informatics
- Nonlinear Analysis: Hybrid Systems

Olivier Goury:

- IEEE Robotics and Automation Letters

Christian Duriez:

- IEEE Robotics and Automation Letters
- IEEE Transactions on Robotics
- ACM Transactions on Graphics
- Computer Methods in Applied Mechanics and Engineering

Thor Morales Bieze:

- MDPI Actuators
- IEEE Transactions on Robotics
- Soft Robotics
- IEEE Robotics & Automation Magazine

10.1.3.3. Tutorials

- A tutorial on the Soft-Robotics plugin for SOFA was presented at the IEEE International Conference on Soft Robotics (Robosoft 2018) in Livorno.
- Tutorials about SOFA Plugins *BeamAdapter*, *Soft-Robots* and *Model Order Reduction* were presented during the 1st International SOFA week 2018 in Strasbourg.

10.1.4. Invited Talks

Christian Duriez:

- Stanford Robotic Seminar
- Harvard School of Engineering
- University of Madison Department of Mechanical Engineering
- Tufts University, Soft robotics seminar
- MIT CSAIL
- Toyota Research (Los Altos, California)
- Séminaire de Robotique, Université Jules Verne d'Amiens

10.1.5. Leadership within the Scientific Community

Christian Duriez has been invited to participate to the NSF-NIST-DARPA- workshop on "Simulation and Machine Learning in Robotics". The outcome was to have an impact on the future calls of research projects in the field.

10.1.6. Scientific Expertise

Christian Duriez has been expert for evaluation of ANR Projects and is an evaluator of the European project (FET) Hybridheart. Damien Marchal has been expert for evaluation of HCERES.

10.1.7. Research Administration

A. Kruszewski and C. Duriez are members of the Laboratory council (CRIStAL). C. Duriez is vice-president of the "Commission des Emplois de Recherche" of Lille. O. Goury is an elected member of the "Comité de Centre" of Inria Lille.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Ingénieur: Kruszewski, Start & Go Metallophone, 15h, niveau L3, Centrale Lille, France

Ingénieur: Kruszewski, Start & Go Robotique, 46h, niveau L3, Centrale Lille, France

Ingénieur: Kruszewski, Start & Go Conception et environnement, 6h, niveau L3, Centrale Lille, France

Ingénieur: Kruszewski, Modélisation et commande de système: application à la robotique, 17h, niveau L3, Centrale Lille, France

Ingénieur: Kruszewski, Projet recherche, 12h, niveau M1, Centrale Lille, France

Master 2: Christian Duriez, Simulation physique interactive, 24h, Université de Lille

10.2.2. Supervision

PhD in progress: Thieffry, Modélisation et contrôle de robots déformables à grande vitesse, 01/09/2016, C. Duriez, T.M. Guerra, A. Kruszewski

PhD in progress: Zhang, New methods of visual servoing for soft-robots, 01/10/2015, C. Duriez, J. Dequidt, A. Kruszewski

PhD in progress: Coevoet, Méthodes d'optimisation pour la robotique déformable, 01/05/2017, C. Duriez

PhD in Progress: F. Vanneste, Design and simulation of Soft Robots made of mesostructured materials, 01/12/2018, C Duriez, O. Goury

PhD in Progress: Walid Amehri, Property analysis of soft robots, G. Zheng, A. Kruszewski

10.2.3. Juries

Christian Duriez a participé aux jurys suivant:

PhD: Yinoussa Adagolodjo, Couplage de La robotique et de la simulation médicale pour les procédures automatisées, Université de Strasbourg, septembre 2018, M De Matelin et H. Courtecuisse (président du jury)

PhD: Inderjeet Singh, Curve Based Approach for Shape Reconstruction of Continuum Manipulators, R. Merzouki (examinateur)

PhD in progress: Camille Krewcun, Simulation personnalisée de l'implantation de stent à partir de la géométrie coronaire acquise en imagerie OCT, phD start: 1er octobre 2016 , encadrant(s): Laurent Sarry, Émilie Péry

PhD in progress: LAGNEAU Romain, Data-driven models for dexterous manipulation of robots, Maud MARCHAL, Alexandre KRUPPA

10.3. Popularization

- Damien Marchal, Olivier Goury and Christian Duriez participated in "Fête de la science: Opération Chercheurs itinérants", which involves giving scientific lectures in middle and high schools.
- Olivier Goury presneted a tutorial for the "Journée de l'Enseignement de l'Informatique et de l'Algorithmique (Journée JEIA)", which is an event for high school teachers willing to learn more about computer science.
- Olivier Goury et Thomas Morzadec took part in the "Journée RIC (Recherche - Innovation - Créativité)", happening at IMT Lille Douai. A demonstration was made for students of engineering schools and the university of Lille.

10.3.1. Interventions

- National events: Fête de la Science: participations à l'opération "chercheur itinérant".

10.3.2. Creation of media or tools for science outreach

Développement du site hands-soft-robotics. http://handsonsoftrobotics.lille.inria.fr/

<p style="text-align:center">**EX-SITU Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- ACM/ISMIR 2018, International Society for Music Information Retrieval Conference, Music and Technology co-chair: Wendy Mackay
- HAMAC International Research Workshop 2018, Human-Machine Collaboration in Embodied Interaction, main organiser: Baptiste Caramiaux
- UIST 2018, ACM Symposium on User Interface Software and Technology, Publicity Co-Chair: Michael Wessely
- UIST 2018, ACM Symposium on User Interface Software and Technology, Video Preview Co-Chair: Carla Griggio
- UIST 2018, ACM Symposium on User Interface Software and Technology, Doctoral Symposium jury: Wendy Mackay
- CHI 2018 workshop "Rethinking Interaction: From instrumental interaction to human-computer partnerships Toolkits", organizers: Wendy Mackay, Michel Beaudouin-Lafon
- Interaction 2018, Program Co-Chair: Nolwenn Maudet

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- IHM 2018, Conférence Francophone d'Interaction Homme-Machine, Work-in-Progress (TeC) co-chair: Cédric Fleury

9.1.2.2. Member of the Conference Program Committees

- ACM CHI 2019, *ACM CHI Conference on Human Factors in Computing Systems*: Michel Beaudouin-Lafon, Wendy Mackay, Theophanis Tsandilas
- ACM UIST 2018, *ACM Symposium on User Interface Software and Technology*: Michel Beaudouin-Lafon, Wendy Mackay
- ACM UIST 2018 Doctoral Symposium: Wendy Mackay
- ACM UIST 2018 Best Paper Award Committee: Wendy Mackay
- ACM UIST 2018 Student Innovation Awards Committee
- IUI 2018, *ACM IUI Conference on Intelligent User Interfaces*: Wendy Mackay
- IUI 2019, *ACM IUI Conference on Intelligent User Interfaces*: Wendy Mackay
- MOCO 2018, *International Conference on Movement and Computing*: Sarah Fdili Alaoui
- 3DCVE 2018, *IEEE VR Workshop on Collaborative Virtual Environments*: Cédric Fleury
- ACM C&C 2018, *Creativity and Cognition*: Andrew Webb

9.1.2.3. Reviewer

- ACM CHI 2018-19, *ACM CHI Conference on Human Factors in Computing Systems*: Andrew Webb, Carla Griggio, Wanyu Liu, Sarah Fdili Alaoui, Cédric Fleury, Michael Wessely, Baptiste Caramiaux
- ACM UIST 2018, *ACM Symposium on User Interface Software and Technology*: Theophanis Tsandilas, Michael Wessely

- ACM DIS 2018, *ACM Conference on Designing Interactive Systems*: Nolwenn Maudet, Sarah Fdili Alaoui, Wendy Mackay
- ACM ISS 2018, *ACM International Conference on Interactive Surfaces and Spaces*: Ignacio Avellino, Philip Tchernavskij
- IEEE VR 2018-19, *Virtual Reality Conference*: Cédric Fleury
- Interaction 19: Carla Griggio, Germán Leiva
- ACM C&C 2018, *Creativity and Cognition*: Sarah Fdili Alaoui
- MOCO 2018, *Movement Computing*: Sarah Fdili Alaoui, Baptiste Caramiaux
- Mobile HCI '18 Late Breaking, *19th International Conference on Human-Computer Interaction with Mobile Devices and Services*: Germán Leiva, Philip Tchernavskij
- IHM 2018, *Conférence Francophone d'Interaction Homme-Machine*: Theophanis Tsandilas, Baptiste Caramiaux
- Salon des Refusés 2018, workshop at <PROGRAMMING> 2018, *The International Conference on the Art, Science, and Engineering of Programming*: Philip Tchernavskij

9.1.3. Journal

9.1.3.1. Member of Editorial Boards

- Editor for the Human-Computer Interaction area of the ACM Books Series (published with Morgan & Claypool Publishers): Michel Beaudouin-Lafon (2013-)
- CACM, *Communications of the ACM Web Editorial Board*, ACM: Wendy Mackay (2008-)
- ACM, *ACM New Publications Board*, ACM: Wendy Mackay (2015-)
- TOCHI, *Transactions on Computer Human Interaction*, ACM: Michel Beaudouin-Lafon (2009-), Wendy Mackay (2016-)
- PloS ONE: Baptiste Caramiaux (2018-)
- JIPS, *Journal d'Interaction Personne-Système*, AFIHM: Michel Beaudouin-Lafon (2009-)

9.1.3.2. Reviewer - Reviewing Activities

- TOCHI, *Transactions on Computer Human Interaction*, ACM: Baptiste Caramiaux
- CG&A, *Computer Graphics and Applications*, IEEE: Cédric Fleury
- Frontiers in *Robotics and AI*, Virtual Environments section: Cédric Fleury

9.1.4. Invited Talks

- Univ. of Calfornia San Diego (UCSD), *Towards Unified Principles of Interaction*, March 2018: Michel Beaudouin-Lafon
- Univ. of Calfornia San Diego (UCSD), *Human-Computer Partnerships*, March 2018: Wendy Mackay
- ETH Zürich, *Towards Unified Principles of Interaction*, 11 April 2018: Michel Beaudouin-Lafon
- Université de Zürich, *Human-Computer Partnerships*, 12 April 2018: Wendy Mackay
- Creativity Across Disciplines Symposium, Aarhus University, *Towards a Unified Theory of Interaction*, 5 April 2018: Wendy Mackay
- Workshop on Human-Computer Partnerships, ACM CHI 2018, *Human-in-the-loop? or Human-Computer Partnerships?*, May 2018: Wendy Mackay
- SIG: Transparent Statistics Guidelines, Panel Discussion, ACM CHI 2018, May 2018: Wendy Mackay
- SIFED 2018 : Symposium International Francophone sur l'Ecrit et le Document, *Interactions à base d'esquisses sur papier et ordinateur*, 1 June 2018, Tours, France: Theophanis Tsandilas

- DATAIA-JST International Symposium on Data Science and AI, *AI and HCI: Towards Human-Computer Partnerships*, Paris, 11 July 2018: Michel Beaudouin-Lafon
- Science & Research Panel, *Interactive Materials with Printed Electronics*, 2018 Fab14 Paris, 13 July 2018: Micheal Wessely
- Rencontres Jeunes Chercheurs, RJIHM, *Experiment Design in HCI*, July: Wendy Mackay
- Workshop on Human-Computer Collaboration in Embodied Interaction (HAMAC), *Creating Human-Computer Partnerships*, IRCAM, Paris, 8 July 2018: Michel Beaudouin-Lafon
- Inria seminar Unithé ou Café, *Machine Learning and Teaching for Interaction Design*, 13 Septembre 2018: Baptiste Caramiaux
- Visual Computing Conference, Stuttgart, *Human-Computer Partnerships*, 8 October 2018: Wendy Mackay
- ECSS 2018, *European Computer Science Summit, Informatics Europe*, Gothenberg, 11 October 2018: Wendy Mackay
- GOTO Copenhagen, Keynote address, *Human-Computer Partnerships*, November 2018: Wendy Mackay
- Université de Poitiers, Techné Séminaire 1 *Technologie Numérique pour l'Education*, *Designing Interactive Systems*, 15 November 2018: Wendy Mackay
- Université de Poitiers, Techné Séminaire 2 *Technologie Numérique pour l'Education*, *Exploratory Experiment Design*: 15 November 2018: Wendy Mackay

9.1.5. Scientific Expertise

International

- NSERC Evaluation: Wendy Mackay, external expert (2018)
- ACM SIGCHI "Lifetime Service Award" committee member: Michel Beaudouin-Lafon

National

- Agence Nationale de la Recherche (ANR), Appel à projets jeunes chercheuses et jeunes chercheurs: Theophanis Tsandilas, reviewer
- ERC Generator program, Université de Lille: Michel Beaudouin-Lafon, external expert
- CNRS INS2I "Cellule ERC": Michel Beaudouin-Lafon, member

9.1.6. Research Administration

Information Science and Technology (STIC) Department, Université Paris-Saclay: Michel Beauouin-Lafon (chair since June 2018), Wendy Mackay (member)

Research division, Université Paris-Saclay: Michel Beaudouin-Lafon (advisor for Digital Sciences since June 2018)

Digiteo RTRA research network, Université Paris-Saclay: Michel Beauouin-Lafon (director since June 2018)

STIC Doctoral School, Université Paris-Saclay: Michel Beaudouin-Lafon (adjunct director of pole 3 until May 2018)

CNRS INS2I, "Conseil Scientifique de l'Institut": Michel Beaudouin-Lafon (member)

Telecom ParisTech, "Comité de la recherche": Michel Beaudouin-Lafon (member)

Pôle Systematic, Working group on Information Systems: Michel Beaudouin-Lafon (member of steering committee)

Computer Science Department, Université Paris-Sud: Michel Beaudouin-Lafon (vice-President for research)

"Conseil de Laboratoire", LRI: Wendy Mackay, Cédric Fleury (members)

"Conseil Scientifique", LRI: Michel Beaudouin-Lafon (member)

CCSU, "Commission Consultative de Spécialistes de l'Université", Université Paris-Sud: Michel Beaudouin-Lafon, Wendy Mackay (members)

"Commission Locaux", LRI: Theophanis Tsandilas (member)

"Commission Scientifique", Inria: Theophanis Tsandilas (member), since March 2017

"Comité de sélection, Professeur", Université de Bordeaux: Michel Beaudouin-Lafon (president)

"Comité de sélection, Maître de Conférence", Université Paris-Sud: Wendy Mackay

"Tenure review committee", University of California, Irvine: Wendy Mackay

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Sarah Fdili Alaoui, *Programmation des interfaces interactives avancées*, 22.5h, L3, Univ. Paris-Sud

International Masters: Theophanis Tsandilas, *Probabilities and Statistics*, 32h, M1, Univ. Paris-Saclay

HCID Masters: Sarah Fdili Alaoui, *Business Development Labs*, 30h, M1, Univ. Paris-Sud

HCID Masters: Sarah Fdili Alaoui, *Innovation & Entrepreneurship thesis*, 3h, M2, Univ. Paris-Sud

HCID Masters: Sarah Fdili Alaoui, *Design Project*, 36h, M1 et M2, Univ. Paris-Sud

HCID Masters: Michel Beaudouin-Lafon, Wendy Mackay, *Fundamentals of Situated Interaction*, 21 hrs, M1/M2, Univ. Paris-Sud

Interaction & HCID Masters: Sarah Fdili Alaoui, *Stage en entreprise*, 2h, M2, Univ. Paris-Sud

Interaction & HCID Masters: Sarah Fdili Alaoui, *Creative Design*, 27h, M1 et M2, Univ. Paris-Sud

Interaction & HCID Masters: Sarah Fdili Alaoui, *Digital Fabrication*, 13,5h, M1 et M2, Univ. Paris-Sud

Interaction & HCID Masters: Michel Beaudouin-Lafon, *Fundamentals of Human-Computer Interaction*, 21 hrs, M1/M2, Univ. Paris-Sud

Interaction & HCID Masters: Michel Beaudouin-Lafon & Cédric Fleury, *Groupware and Collaborative Interaction*, 31.5 hrs, M1/M2, Univ. Paris-Sud

Interaction & HCID Masters: Wendy Mackay, *Career Seminar* 6 hrs, M2, Univ. Paris-Sud

Interaction & HCID Masters: Wendy Mackay, *Design of Interactive Systems*, 21 hrs, M1/M2, Univ. Paris-Sud

Interaction & HCID Masters: Wendy Mackay, *Advanced Design of Interactive Systems*, 21 hrs, M1/M2, Univ. Paris-Sud

Interaction & HCID Masters: Baptiste Caramiaux, *Gestural and Mobile Interaction*, 24 hrs, M1/M2, Univ. Paris-Sud

Polytech: Sarah Fdili Alaoui, *Graphisme et Visualisation*, 18h, "Apprentis" 5th year, Univ. Paris-Sud

Polytech: Cédric Fleury, *Projet Java-Graphique-IHM*, 24 hrs, 3st year, Univ. Paris-Sud

Polytech: Cédric Fleury, *Interaction Homme-Machine*, 18 hrs, 3st year, Univ. Paris-Sud

Polytech: Cédric Fleury, *Option Réalité Virtuelle*, 56 hrs, 5th year, Univ. Paris-Sud

Polytech: Cédric Fleury, *Réalité Virtuelle et Interaction*, 48 hrs, "Apprentis" 5th year, Univ. Paris-Sud

9.2.2. Supervision

PhD students

PhD: Wanyu Liu, *Modeling the speed-accuracy trade-off of pointing tasks using the tools of information theory*, 22 November 2018. Advisors: Olivier Rioul (Institut Mines Telecom) & Michel Beaudouin-Lafon

PhD: Carla Griggio, *Interactive Human-Machine Learning*, Université Paris-Saclay, 11 December 2018. Advisor: Wendy Mackay

PhD: Germán Leiva, *Interaction-driven Software Development*, Université Paris-Saclay, 12 December 2018. Advisors: Wendy Mackay & Michel Beaudouin-Lafon

PhD: Michael Wessely, *Sketching and Physical Prototyping for Creative Fabrication Design*, Université Paris-Saclay, 13 December 2018. Advisors: Theophanis Tsandilas & Wendy Mackay

PhD: Marianela Ciolfi Felice, *Substrates and Co-adaptive Instruments for Creativity*, Université Paris-Saclay, 14 December 2018. Advisors: Wendy Mackay & Sarah Fdili Alaoui

PhD in progress: Yujiro Okuya, *Sensorimotor interface for Collaborative Virtual Environments based on heterogeneous interactive devices: application to industrial design*, October 2015. Advisors: Patrick Bourdot (LIMSI-CNRS) & Cédric Fleury

PhD in progress: Stacy (Shu-Yuan) Hsueh, *Embodied design for Human-Computer Co-creation*, November 2015. Advisors: Wendy Mackay & Sarah Fdili Alaoui

PhD in progress: Philip Tchernavskij, *Towards Unified Principles of Interaction*, October 2016. Advisor: Michel Beaudouin-Lafon

PhD in progress: Jean-Philippe Rivière, *Embodied Design for Human-Computer Partnership in Learning Contexts*, October 2017. Advisors: Wendy Mackay, Sarah Fdili Alaoui & Baptiste Caramiaux

PhD in progress: Yiran Zhang, *Telepresence for remote and heterogeneous Collaborative Virtual Environments*, October 2017. Advisors: Patrick Bourdot (LIMSI-CNRS) & Cédric Fleury

PhD in progress: Téo Sanchez, *Co-Learning in Interactive Systems*, September 2018. Advisors: Baptiste Caramiaux & Wendy Mackay

PhD in progress: Elizabeth Walton, *Inclusive Design in Embodied Interaction*, November 2018. Advisors: Baptiste Caramiaux, Sarah Fdili Alaoui & Wendy Mackay

PhD in progress: Miguel Renom, *Theoretical bases of human tool use in digital environments*, October 2018. Advisors: Michel Beaudouin-Lafon & Baptiste Caramiaux

PhD in progress: Dimitrios Christaras Papageorgiou, *Design, implementation and evaluation of a conceptual model of interactive substrates*, October 2018. Advisor: Michel Beaudouin-Lafon

PhD in progress: Han Han, *Participatory design of digital environments based on interaction substrates*, October 2018. Advisor: Michel Beaudouin-Lafon

PhD in progress: Viktor Gustafsson, *Co-adaptive Instruments fo Game Design*, October 2018. Advisor: Wendy Mackay

PhD in progress: Yi Zhang, *Generative Design using Instrumental Interaction, Substrates and Co-adaptive Systems*, October 2018. Advisor: Wendy Mackay

Masters students

Téo Sanchez, ENS, Sorbonne Université, "Gesture Interaction with Active Machine Learners": Baptiste Caramiaux

Miguel Renom, "Transfer of tool-based skills from physical to digital tools": Michel Beaudouin-Lafon

Dimitrios Christaras Papageorgiou, "Prototype of an environment based on information substrates and digital instruments": Michel Beaudouin-Lafon

Tong Xue, "Analysis of information substrates and digital instruments in existing interactive software": Michel Beaudouin-Lafon

Viktor Gustafsson, "Narrative Substrates for Interactive Video Games": Wendy Mackay

Yi Zhang, "Situated Breakdowns in Video-Mediated Communication": Wendy Mackay

Wuji Geng, "Interaction Museum Design": Wendy Mackay

Krishnan Chandran, "Collocated Collaboration over Augmented Reality Models": Theophanis Tsandilas and Cédric Fleury

9.2.3. *Juries*

PhD theses

Emaline Brulé, Télécom ParisTech (advisor: Annie Gentes): Wendy Mackay, reporter

Julien Gori, Télécom ParisTech (advisor: Olivier Rioul): Michel Beaudouin-Lafon, invited

Benjamen Bressolette, Centrale Marseille (advisor: Richard Kronland-Martinet): Michel Beaudouin-Lafon, examiner

Habilitations

- Marcos Serrano, Université de Toulouse, November 2018: Michel Beaudouin-Lafon, reviewer
- Eric Lecolinet, Télécom ParisTech, December 2018: Michel Beaudouin-Lafon, examiner

9.3. Popularization

9.3.1. *Articles and contents*

- Radio show "Les P'tits Bateaux" on France Inter public radio: Michel Beaudouin-Lafon (interviews in response to children questions on 10 June 2018, 16 September 2018, 7 October 2018)
- Panel at "*La Fabrique de la Danse*", Centre 104, Paris, 5 Avril 2018: Baptiste Caramiaux (panel member)

9.3.2. *Interventions*

- Le Plateau des Recherches Infinies: art-science project with photographer Didier Goupy presenting the portraits of 100 researchers of Université Paris-Saclay. Fête de la Science, Gif-sur-Yvette, October 2018
- Workshop on "Rapid Prototyping with Interactive Materials", Fab14, Toulouse, July 2018: Michael Wessely
- Workshop "*Relational Listening*", CLOUD/Danslab, Lake Studios, Berlin, 22 July 2018: John MacCallum (co-facilitator).

FLOWERS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- PY. Oudeyer has been general co-chair (with J. Gottlieb, A. Shankar and P. Zurn) of the international conference "Curiosity: Emerging Sciences and Educational Innovations" at University of Pennsylvania, US, gathering researchers from multiple disciplines (neuroscience, psychology, artificial intelligence, HCI, robotics, philosophy, education) around the topic of curiosity, learning and education. https://www.sp2.upenn.edu/sp2-event/curiosity-emerging-sciences-and-educational-innovations.

- PY Oudeyer has been vice-chair of the IEEE CIS Technical Committee on Cognitive and Developmental Systems.

10.1.2. Scientific Events Selection

10.1.2.1. Conference Reviewer

- N. Diaz Rodriguez was reviewer for ICSC18 (International Conf. on Semantic Computing) and Artificial Intelligence and Knowledge Engineering Conference (IEEE AIKE 2018)

- O. Sigaud was reviewer for NIPS, ICLR and ICML 2018

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- PY. Oudeyer was associate editor of IEEE Transactions on CDS and Frontiers in Neurorobotics.

10.1.3.2. Reviewer - Reviewing Activities

- David Filliat was reviewer for Frontiers in Robotics and AI

- N. Diaz Rodriguez was reviewer for: Transactions on Emerging Telecommunications Technologies, Knowledge-Based Systems, Robotics and Autonomous Systems, IEEE Robotics & Automation Magazine, IEEE Transactions on Cognitive and Developmental Systems.

- PY Oudeyer was reviewer for Cognitive Science, Child Development Perspectives and Nature Scientific Reports.

10.1.4. Invited Talks

- David Filliat gave an invited presentation at 'Journées Robotique et IA' in PFIA18, on July 5th, 2018.

- PY Oudeyer, "Apprentissage autonome développemental et modèles du développement cognitif chez l'enfant", Paris, Académie des Sciences, Oct. 2018.

- PY Oudeyer, "Developmental Autonomous Learning: Can a Machine Learn like a Child?", Académie des Technologies, Paris, Oct. 2018

- PY Oudeyer, "Computational Theories of Curiosity-driven Learning: Cognitive Science and AI", Exploring Curiosity conference, Amsterdam, Nov. 2018.

- PY Oudeyer, "Developmental Autonomous Learning: Artificial Intelligence and Cognitive Sciences", Univ. Columbia, NY, Oct. 2018.

- PY Oudeyer, "Le projet KidLearn: motivations intrinsèques, apprentissage et edTech", Rectorat de l'Académie de Bordeaux, Bordeaux, Jan. 2018.

- PY Oudeyer, "Computational Theories of Curiosity-driven Development", Multidisciplinary Developmental Dynamics conference (ETF 18), University of East Anglia, UK, June 2018.

- PY Oudeyer, "Developmental Autonomous Learning: AI, Cognitive Science and Educational Technologies", joint lab Inria and Microsoft Research event, Paris, june 2018.

- PY Oudeyer, "Developmental Autonomous Learning: AI, Cognitive Science and Educational Technologies", Ubisoft, Paris, June 2018.

- PY Oudeyer, "Developmental Autonomous Learning: AI, Cognitive Science and Educational Technologies", Summer School on Human-Robot Interaction, Animatas project, Paris, sept. 2018.

- PY. Oudeyer, "Developmental exploration and active learning", Cloud Temple event on AI and machine learning, Paris, january 2018.

- PY Oudeyer, "From models of curiosity-driven learning to applications in Personalized eLearning technologies", international conference "Curiosity: Emerging Sciences and Educational Innovations" at University of Pennsylvania, US, Dec. 2018.

- PY Oudeyer, "Computational Theories of Curiosity-driven Learning", Symposium on the Biology of Decision Making (SBDM 2018), Ecole Normale Supérieure, Paris, june 2018.

- N. Diaz Rodriguez gave an invited talk at Inria Flowers Deep RL workshop 4/4/2018, Research seminar on State representation learning for robotics control at JRC Sevilla European Commission, Spain, 23 April 2018 [0]

- N. Diaz Rodriguez gave an invited talk at Satellite workshop 24 May 2018 @ Sorbonne Université on Learning and decision-making at the interface between Neuroscience, Artificial Intelligence and Robotics. http://sbdm2018.isir.upmc.fr/index.php?perma=1520611011

10.1.5. Leadership within the Scientific Community

- PY. Oudeyer has been editor of the IEEE CIS Newsletter on Cognitive and Developmental systems, organizing two interdisciplinary dialogs, see https://openlab-flowers.inria.fr/t/ieee-cis-newsletter-on-cognitive-and-developmental-systems/129.

10.1.6. Scientific Expertise

- PY. Oudeyer has been a reviewer for the European Commission (FET program).
- D. Filliat has been a member of the ANR ASTRID evaluation comittee.
- N. Diaz Rodriguez has been external expert reviewer for ANR-JST CREST IS 2018 program.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

ENSEIRB, 12h, Robotics project (Thibault Desprez)

IUT Informatique, 64h, IUT Informatique Bordeaux (Rémy Portelas).

Master: Robotique Mobile, 21 heures. M2, ENSTA - ParisTech (David Filliat).

Master: Perception pour la Robotique, 6 heures. M2, ENSTA - ParisTech (David Filliat).

Master: Perception pour la robotique, 12 heures. M2 Systemes Avances et Robotique, Sorbonnes University (David Filliat)

Master: Perception pour la Robotique Développementale, 3 hours, CogMaster (David Filliat)

Master: IN104 Projet Informatique, 20 h. TD (N. Diaz Rodriguez).

Master: IA301 (Telecom ParisTech): Logics and Symbolic Artificial Intelligence, 9h (N. Diaz Rodriguez)

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[0]https://ec.europa.eu/jrc/communities/community/event/research-seminar-natalia-diaz-rodriguez-ensta-paris-state-representation-learning

Master: ROB313: Computer vision for autonomous systems, 8.5 h TD (Perception pour les Systèmes Autonomes, N. Diaz Rodriguez)

Master: Cours de robotique développementale, option robot, ENSEIRB (2h), PY. Oudeyer

10.2.2. Supervision

PhD in progress: Rémy Portelas, Intrinsically Motivated Goal Exploration in Open-Ended Worlds (Minecraft) (superv. P-Y. Oudeyer)

PhD in progress: Cédric Colas, Algorithms for Intrinsically Motivated Goal Exploration (superv. P-Y. Oudeyer)

PhD in progress: Sébastien Forestier, Models of curiosity-driven learning of tool use and speech development, started in sept. 2015 (superv. P-Y. Oudeyer)

PhD in progress: Thibault Desprez, Design and study of the impact of educational robotic kits in computer science education, started in dec. 2016 (superv. P-Y. Oudeyer)

PhD completed in 2018: Benjamin Clement, Intelligent Tutoring Systems, started oct 2015 (superv. Manuel Lopes and Pierre-Yves Oudeyer).

PhD completed in 2018: William Schueller, Study of the impact of active learning and teaching in naming games dynamics, started in sept. 2015 (superv. P-Y. Oudeyer)

PhD completed in 2018: Florian Golemo, Design and study of policy learning and Sim2Real transfer algorithms for robotics (superv. Pierre-Yves Oudeyer and Aaron Courville)

PhD completed: Baptiste Busch, Interactive Learning, started oct 2014 (superv. Manuel Lopes).

PhD completed in 2018: Alexandra Delmas, Auto-Apprentissage Auto-Adaptable pour la compliance au traitement, started oct 2014 (superv. Hélène Sauzéon and Pierre-Yves Oudeyer).

PhD completed in 2018: Adrien Matricon : Task dependent visual feature selection for optimising and generalizing robotics skills (superv. David Filliat, Pierre-Yves Oudeyer), defended June, 11th, 2018.

PhD in progress: José Magno Mendes Filho, Planning and control of an autonomous AGV in environment shared with humans, started Oct. 2015 (superv. David Filliat and Eric Lucet (CEA))

PhD in progress: Timothée Lesort, Incremental Deep Learning for Detection and Classification in a Robotic Context. started june 2017 (superv. David Filliat and Jean-Francois Goudou (THALES)).

PhD in progress: Vyshakh Palli Thazha, Data fusion for autonomous vehicles. started sept 2017 (superv. David Filliat and Hervé Illy (Renault)).

PhD in progress: Florence Carton, Exploration of reinforcement learning algorithms for drone visual perception and control started dec 2017 (superv. David Filliat and Jaonary Rabarisoa (CEA)).

PhD in progress: Hugo Caselles-Dupré, Incremental learning for sensori-motor control started june 2018 (superv. David Filliat and Michael Garcia-Ortiz (Softbank Robotics)).

10.2.3. Juries

David Filliat was in the PhD jury of François de la Bourdonnaye (18/12/18, Rapporteur), Arnaud Tanguy (28/11/18, Rapporteur), Dinesh Atchuthan (23/10/18, Examinateur), Zhan Wang (19/10/18, Examinateur), Quentin Bateux (12/02/18, Examinateur), Clément Delgrange (reviewer).

David Filliat was in the Hdr jury of Sylvain Argentieri (06/12/18, Rapporteur)

PY Oudeyer was in the PhD jury of Héloise Thero (ENS Paris, examiner), Matthieu Geisert (Univ. Toulouse, reviewer), Konstantinos Chatzilygeroudis (Univ. Lorraine, reviewer), Clément Delgrange (Univ. Dijon, examiner).

Thibault Desprez was in the internship jury at Enseirb Bordeaux in October 2018.

10.3. Popularization

10.3.1. Teaching and Education

10.3.1.1. Inirobot

IniRobot (a project done in collaboration with EPFL/Mobsya) aims to create, evaluate and disseminate a pedagogical kit which uses Thymio robot, an open-source and low cost robot, for teaching computer science and robotics.

IniRobot Project aims to produce and diffuse a pedagogical kit for teachers and animators, to help them and to train them directly or by the way of external structures. The aim of the kit is to initiate children to computer science and robotics. The kit provides a micro-world for learning, and takes an inquiry-based educational approach, where kids are led to construct their understanding through practicing an active investigation methodology within teams. See https://dm1r.inria.fr/ or http://www.inirobot.fr.

Deployment: After 4 years of activity, IniRobot is used by more than 3000 adults, 30 000 children in France. Inirobot is also used in higher education, for example in Master 2 "Neurosciences, human and animal cognition" at the Paul Sabatier University in Toulouse. Inirobot is additionally used to train the management and elected officials of the Bordeaux metropolitan area (20 people). The digital mediators of the 8 Inria centers are trained to Inirobot and use it in their activities.

The project continues to be carried out in main collaboration with the LSRO Laboratory from EPFL (Lausanne) and others collaborations such as the French National Education/Rectorat d'Aquitaine, the Canopé Educational Network, the ESPE (teacher's school) Aquitaine, the ESPE Martinique, the ESPE Poitiers and the National Directorate of Digital Education.

Created pedagogical documents and resources:

- The inirobot pedagogical kit [83]: This pedagogical booklet provides activities scenarized as missions to do. An updated version of the Inirobot pedagogical kit is available at: https://dm1r.inria.fr/uploads/default/original/1X/70037bdd5c290e48c7ec4cb4f26f0e426a4b4cf6.pdf. Another pedagogical booklet has been also created by three pedagogical advisers for primary school, with pedagogical instructions and aims, under our supervision. The new pedagogical kit,"Inirobot Scolaire, Langages et robotique", which extends Inirobot to a full primary school approach is available at http://tice33.ac-bordeaux.fr/Ecolien/ASTEP/tabid/5953/language/fr-FR/Default.aspx

- Inirobot website and forum: https://dm1r.inria.fr/ or http://www.inirobot.fr On this website, teachers, animators and general public can download documents, exchange about their use of inirobot's kit.

Inirobot activities are used by several projects: Dossier 123 codez from Main à la Pâte Fundation, Classcode project, ...

10.3.1.2. MOOC Thymio

Didier Roy played a central role in the design and making of The MOOC Thymio, released in october 2018, in collaboration with Inria Learning Lab and EPFL (Lausanne, Switzerland), on FUN platform and edX EPFL Platform), use Inirobot activities to teach how to use Thymio robot in education. Web: https://www.fun-mooc.fr/courses/course-v1:inria+41017+session01/about

10.3.1.3. Poppy Education

As part of the Poppy Education project, thanks the robotic platform Poppy we created pedagogical kits opensource and low cost for teaching computer science and robotics. It is designed to help young people to take ownership with concepts and technologies of the digital world.

The Pedagogical kits includes robots and pedagogical resources. They have been co-created directly with users (mainly high schools teachers) and evaluated in real life by experiments in classrooms [120].
The activities were designed with the visual programming language Snap! (Scratch like) and Python, but some are in Java / Processing (thanks the robot API you can use the language of your choice).

Most activities are using the robot Poppy Ergo Jr, but some use Poppy Torso (mostly in higher school because of its cost) and Poppy Humanoid (in kinder-garden for dance projects) :

- The Poppy Ergo Jr robot is a small and low cost 6-degree-of-freedom robot arm. It consists of simple shapes which can be easily 3D printed. It has several 3D printed tools extending its capabilities (there are currently the lampshade, the gripper and a pen holder but you can design new ones). They are assembled via rivets which can be removed and added very quickly with the OLLO tool. Each motor has LEDs on (8 different color can be activated). The electronic card (raspberry Pi) is visible next to the robot, that allow to manipulate, and plug extra sensors.

- The Poppy Torso robot is an open-source humanoid robot torso which can be installed easily on tabletops. More affordable than the robot Poppy Humanoid, it is an ideal medium to learn science, technology, engineering and mathematics.

We continued to improve the robots functionalities and you can see below the resources we created :

- A website have been created to present the project and to share all resources and activities. https://www.poppy-education.org/

- To complete the pedagogical booklet [119] that provides guided activities and small challenges to become familiar with Poppy Ergo Jr robot and the Programming language Snap! (https://drive. google.com/file/d/0B2jV8VX-lQHwTUxXZjF3OGxHVGM/view) we provided a list of Education projects. Educational projects have been written for each activity carried out and tested in class. So each projects have its own web page including resources allowing any other teacher to carry out the activity (description, pedagogical sheet, photos / videos, pupil's sheet, teacher's sheet with correction etc.). Their is now 32 activities documented available on Poppy Education website.

You can see the activities on this links (in french):

- Introduction to Ergo Jr and Snap! : https://www.poppy-education.org/activites/initiation-ergo-jr-et-snap

- Ergo Jr and Python tutorials : https://www.poppy-education.org/activites/tuto-python-robot-ergojr

- High-school levels : www.poppy-education.org/activites/activites-lycee

- Middle-school level : www.poppy-education.org/activites/activites-college

- Primary Schools level : https://www.poppy-education.org/activites/activites-primaire/

- Demonstrations (just videos to show the possibilities) : https://www.poppy-education.org/activites/demos/

- We continued to improve the documentation of the robotic platform Poppy (https://docs.poppy-project.org/en/) and the documentation has been translated into French (https://docs.poppy-project.org/fr/.

- A FAQ have been written with the most frequents questions to help users: https://www.poppy-education.org/aide/

- New activities on Poppy Education website and forum.

- New section : Activities with Python.

- Improvements in the Resources page of the Poppy Education website.

10.3.2. Talks and Hands-on

- Thibault Desprez, December 2018 at Inria Bordeaux, welcomed three students from middle-school during two days to discover the working environment and to introduce them to robotics.
- Thibault Desprez, Inria Bordeaux open day, November 2018, exhibition stand to present Poppy Education and Poppy robots
- Thibault Desprez, National Meeting of Educational Robotics, October 2018 at ifé ENS Lyon, two talk to present Poppy robots kits in school.
- Thibault Desprez, National Meeting of Educational Robotics, October 2018 at ifé ENS Lyon, exhibition stand to present Poppy Station and Poppy robots.
- Thibault Desprez, Théo Segonds, Fête de la science (Inria Bordeaux Sud-Ouest), October 2018, 4 programming workshop in 2 days (with middle school students) using Snap! and the robot Poppy Ergo Jr.
- Thibault Desprez, Meet-up & Educate, October 2018 at INP Bordeaux, exhibition stand to student recruitment for a project on Poppy robots.
- Thibault Desprez, PI space inauguration, July 2018 at ESPE Mérignac, exhibition stand to present Poppy Station and Poppy robots.
- Thibault Desprez, Bordeaux Geek Festival, May 2018, Parc expo, Talk about societal problem on robotics.
- Thiabult Desprez, Usine Végétale inauguration, May 2018 at Le Fieu, exhibition stand to present Poppy Education and Poppy robots in rural zone.
- Thibault Desprez, Connect'thouars, April 2018 at Talence, Workshops to initiate in programming.
- Thibault Desprez, Didapro 7, February 2018 at HEP Vaud, Lausanne, talk to present the article : "Poppy Ergo Jr : un kit robotique au coeur du dispositif Poppy Éducation"
- Thibault Desprez, Théo Segonds, Fondation Main à la pate, February 2018 at Paris, Two days to train a group of teachers to robotics and programmation with Poppy Ergo Jr robot.
- Thibault Desprez, e-Fran seminar, January 2018 at Minister of Higher Education, Research and Innovation, poster to present my thesis.
- Théo Segonds. Poppy Ergo Jr Workshop at CERN (Geneve). Construction and programming of the robotic arm Poppy Ergo Jr.
- Théo Segonds. Scientae Robotica, Lausanne. Poppy Ergo Jr Workshop. Construction and programming of the robotic arm Poppy Ergo Jr.
- Benjamin Clement and Alexandra Delmas, EdTech days, may 2018. Presentation of kidlearn and kidbreath projects.
- Theo Segonds, Didier Roy. PLAIRE Festival in Evian with Poppy exhibition during 2 days.
- Alexandra Delmas, Didier Roy. Forum Educavox in Bordeaux. Presentation of kidlearn and kidbreath projects.
- Didier Roy. R2T2 Richter event, remote robotics programming, in caribbean islands, in collaboration with EPFL.
- Didier Roy. Inria Scientific Days, presentation of educational projects in Flowers Team.
- Stephanie Noirpoudre. Poppy Education présent à la journée EIDOS 65 : Le forum des pratiques numériques pour l'éducation. Description and feedback of the 9th edition of the EIDOS 65 day (the digital practice forum for education).
- PY Oudeyer mentored students from College de Cadillac for their robotics project (2 days), march 2018.
- PY Oudeyer gave a talk "Intelligence artificielle: un outil pour nous aider à mieux comprendre l'intelligence naturelle?" at Collège Cadillac, Gironde, may 2018.

- PY Oudeyer gave a talk "Intelligence artificielle: apprentissage automatique et sciences cognitives" at a training event for members of Bordeaux Metropole political and decision staff, Nov. 2018.

- PY Oudeyer gave a talk "Intelligence artificielle: apprentissage automatique et sciences cognitives" at Université de Tous les Savoirs, Arcachon, janv. 2018.

10.3.3. Popularizing inside Inria

- Théo Segonds and Thibault Desprez. Poppy Ergo Jr training for Inria Scientific Mediation members.

- Inria National Scientific Mediation Seminar: Presentation by Stéphanie Noirpoudre and Théo Segonds of Poppy Ergo Jr, and workshop.

- Sébastien Forestier made a presentation on models of curiosity-driven development at Unithé ou Café.

10.3.4. Innovation and transfer

- Since 1 september 2017 until february 2019, PerPoppy and Poppy Station Projects : D. Roy, P.-Y. Oudeyer. These projects aim to perpetuate the Poppy robot ecosystem by creating an external structure from outside Inria, with various partners. After the Poppy Robot Project, the Poppy Education Project has ended and Poppy Station structure is born. Many exchanges have already taken place with potential partners such as the EPFL, the ENSAM network, the «Ligue de l'Enseignement», Génération Robots, the French Institute of Education, several academies, the direction of digital education of the Ministry of Education, ... PerPoppy is the project which is building the new structure, and Poppy Station is the name of the new structure. Poppy Station, which includes Poppy robot ecosystem (hardware, software, community) from the beginning, is a place of excellence to build future educational robots and to design pedagogical activities to teach computer science, robotics and Artificial Intelligence. https://www.poppystation.org

10.3.5. Internal or external Inria responsibilities

D. Roy is member of the Class'code team (Inria is member of the consortium of this project) https://pixees. fr/classcode/accueil/. Class'code is a blended formation for teachers and animators who aim to initate young people to computer science and robotics. D. Roy has in charge the robotics module of the project.

D. Roy is adviser of the organization of computer science exhibition in "Palais de la découverte" which has begun on 2018 March. He helps for robotics part.

D. Roy is member of the team "Education en Scène" which organize educational activities with robotics in Bordeaux Digital City.

D. Roy is member of the scientific committee of "Learning Computer Science at School" project in Canton de Vaud (Switzerland).

D. Roy is member of the Robocup Junior French committee, an international robotics challenge http://rcj. robocup.org/.

D. Roy is member of the scientific committee of "Ludovia CH" Conference which will be held in Yverdon (Switzerland) on 2019 March.

D. Roy is project co-leader of MOOC Thymio, in collaboration with EPFL and Inria Learning Lab. The aim of this MOOC is to propose to teachers a training on basics of computer science, using the robotic platform Thymio.

D. Roy is associate member of the EPFL "LEARN" center.

PY. Oudeyer continued to be the PI of the Poppy Education project.

PY. Oudeyer was scientific mentor for stiudents of College de Cadillac, within the program "Main à la pâte" of Maison des Sciences.

10.3.6. Articles and contents

- Adrien Laversanne-Finot wrote a blog post on "Discovery of independently controllable features through autonomous goal setting", https://openlab-flowers.inria.fr/t/discovery-of-independently-controllable-features-through-autonomous-goal-setting/494

- Cédric Colas wrote a blog post on "How Many Random Seeds Should I Use? Statistical Power Analysis in (Deep) Reinforcement Learning Experiments", https://openlab-flowers.inria.fr/t/how-many-random-seeds-should-i-use-statistical-power-analysis-in-deep-reinforcement-learning-experiments/457

- Cédric Colas wrote a blog post on "Bootstrapping Deep RL with population-based diversity search"

- PY Oudeyer was interviewed for an article of **The Economist** on curiosity-driven learning, http://www.pyoudeyer.com/TheEconomist2018.pdf

- PY Oudeyer was interviewed for an article of **Scientific American** on curiosity-driven learning, http://www.pyoudeyer.com/IntelligentMachinesThatLearnLikeChildren-Scientific%20American2018.pdf

- PY Oudeyer was interviewed for an article of **MIT Technology Review** on curiosity-driven learning, http://www.pyoudeyer.com/may17MITTechnology%20Review.pdf

<p style="text-align:center;color:red;font-weight:bold;">GRAPHDECO Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

G. Drettakis chairs the Eurographics (EG) working group on Rendering, and the steering committee of EG Symposium on Rendering.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- George Drettakis participated in the program committee of Eurographics Symposium on Rendering (EGSR) 2018 and Eurographics 2018 STAR.
- Adrien Bousseau participated in the program committee of Eurographics 2018 and SIGGRAPH 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- George Drettakis was an Associate Editor of ACM Transactions on Graphics until May 2018, and of Computational Visual Media (CVM). He also chaired the ACM TOG Editor-in-Chief (EiC) search committee, which appointed Marc Alexa as ACM TOG EiC.
- Adrien Bousseau is an Associate Editor of The Visual Computer Journal.

9.1.3.2. Reviewer - Reviewing Activities

- Yulia Gryaditskaya has been a reviewer for Eurographics.
- Tibor Stanko has been a reviewer for DGCI 2019 – International Conference on Discrete Geometry for Computer Imagery, and the Computers and Graphics journal.
- Adrien Bousseau was reviewer for SIGGRAPH Asia 2018, ACM Transactions on Graphics, ACM CHI.
- George Drettakis was reviewer for SIGGRAPH.

9.1.4. Invited Talks

- George Drettakis gave a keynote talk at Driving Simulation Conference (DSC '18) (http://dsc2018.org/)
- Adrien Bousseau gave an invited talk at the SophIA summit event on artificial intelligence (http://sophia-summit.fr/) and a keynote talk at the Skin of Things workshop on material perception and depiction (https://theskinofthings.github.io/).
- Tibor Stanko was invited to present his PhD work at Journées Informatique et Géométrie (JIG) 2018 in Lyon.

9.1.5. Scientific Expertise

Adrien Bousseau reviewed a grant proposal for the ANR.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Simon Rodriguez, theoretical computer science (L1) and software engineering (L3), 40h eq. TD, Polytech Nice-Sophia - Université Côte d'Azur (France)

Licence : Julien Philip, Introduction au Web et Application du Web, L2, 64h, Polytech Nice-Sophia - Université Côte d'Azur (France)

Master: George Drettakis and Adrien Bousseau, Introduction to Computer Graphics, M1, 20h eq. TD, Université Côte d'Azur (France)

9.2.2. Supervision

PhD : Jean-Dominique Favreau, Compact image vectorization by stochastic approaches, Université Côte d'Azur, March 15th 2018, Florent Lafarge (Titane) and Adrien Bousseau

PhD in progress : Johanna Delanoy, Data-driven sketch-based modeling, since October 2015, Adrien Bousseau

PhD in progress : Valentin Deschaintre, Data-driven material capture, since November 2016, Adrien Bousseau and George Drettakis

PhD in progress : David Jourdan, Interactive architectural design, since October 2018, Adrien Bousseau and Melina Skouras (Imagine)

PhD in progress : Julien Philip, Data-driven image-based rendering and relighting, since November 2016, George Drettakis

PhD in progress : Simon Rodriguez, Leveraging semantic information in image-based rendering, since November 2016, George Drettakis

PhD in progress : Théo Thonat, Image-based rendering of thin and stochastic structures, since November 2015, George Drettakis

9.2.3. Juries

- George Drettakis was a Ph.D. Reviewer for Fabian Langguth (TU Darmstadt), and member "commité suivi de thèse" of J-P. Bauchet.
- Adrien Bousseau was a Ph.D. Reviewer for James Hennessey (University College London) and Dorian Nogeng (Ecole Polytechnique).

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- George Drettakis chairs the local "Jacques Morgenstern" Colloquium organizing committee.
- Adrien Bousseau is a member of "commité du centre" and "commité du suivi doctoral".

9.3.2. Articles and contents

- Nice Matin published an article about the ERC project of George Drettakis.

9.3.3. Interventions

- Bastien Wailly gave a demo of our sketch-based modeling tool during *Fete de la Science*.
- Valentin Deschaintre presented his work to high school student and advised them on a small scientific project for *Math C2+*.

GRAPHIK Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Co-chair of the Doctoral Consortium for the KR conference, Tempe, Arizona, October 27th 2018. http://reasoning.eas.asu.edu/kr2018/.
- Co-chair of the Tutorial Track for the IJCAI conference, Stockholm, Sweden, 13th July 2018. https://www.ijcai-18.org/.
- Scientific co-chair of the international Workshop "Reasoning on Data" associated with the international conference The Web 2018, April 24, 2018. https://sites.google.com/site/2018rod/
- Co-organization of a one-day meeting of the group "Reasoning on Data", common to GDR MaDICS and IA, October 4, 2018. http://www.lirmm.fr/rod/rod3.html

9.1.1.2. Member of the Conference Program Committees

We are regularly program committee members for the major conferences in AI (i.e., IJCAI, AAAI, ECAI, AAMAS), and more focused conferences and workshops (such as RuleML+RR, Description Logics, COMMA etc.). We also take part in the animation of the national community (JIAF, EGC, IC, BDA). For 2018, we served in the following program committees:

International

- IJCAI / ECAI 2018 (International Conferences on Artificial Intelligence): Senior PC and PC
- AAAI 2018 (AAAI Conference on Artificial Intelligence): Senior PC
- AAMAS 2018 (International Conference on Autonomous Agents and Multiagent Systems): PC
- RuleML+RR 2018 (International Joint Conference on Rules and Reasoning): PC
- Description Logics 2018: PC
- KR 2018 (Knowledge Representation and Reasoning): PC

National

- IC 2018 (Ingénierie des Connaisances) : PC
- EGC 2018 (Conférence sur l'Extraction et Gestion de Connaissances): PC
- JIAF (Journées d'Intelligence Artificielle Fondamentale): PC

9.1.2. Invited Talks

- Invited tutorial, Reasoning on data: the ontology-mediated query answering problem, 6th World Congress and School on Universal Logic (in association with UNILOG 2018), Vichy, 16-20 June, 2018 (Marie-Laure Mugnier)
  https://www.uni-log.org/start6s.html
- Invited Seminar, Answering Conjunctive Regular Path Queries over Existential Rule Knowledge Bases, Quantitative Logics and Automata Seminar, TU Dresden, July 10, 2018 (Marie-Laure Mugnier)
- Invited Talk, L'interrogation de données en présence d'ontologies : Exploiter les connaissances pour mieux tirer parti des données, Journées Nationales du GDR Informatique Mathématiques (IM), April 2018 (Meghyn Bienvenu)

- Invited Talk, Accès aux données médiatisé par des ontologies, Journées plénières du GDR IA, October 2018 (Meghyn Bienvenu)

- Invited Talk, Ontology-Mediated Query Answering and Heterogeneous Data, Séminaire INRA du réseau IN-OVIVE, June 2018 (Federico Ulliana)

- Invited talk, Ontology-mediated query answering: Harnessing knowledge to get more from data, Annual Meeting of GT ALGA (GDR IM), October 2018 (Meghyn Bienvenu)

- Invited talk, Difficultés posées par les prédicats calculés en Ontology Mediated Query Answering, Meeting of GT RoD (GDR IA), October 2018 (Jean-François Baget)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

The six faculty members teach at all university levels (IUT, Licence, Master). All of them do an average of 200 teaching hours per year. The main courses they are in charge of are: Logics (L), Databases (M, IUT), Web Technologies (IUT), Artificial Intelligence (M), Knowledge Representation and Reasoning (M), Social and Semantic Web (M), Software Engineering (IUT), Human Computer Interaction (IUT). Concerning full-time researchers in 2018, Jean-François Baget gave Master courses (40 h) and Meghyn Bienvenu gave a 3-hour tutorial at the international conference KR 2018 on "Inconsistency-Tolerant Ontology-Mediated Query Answering".

Moreover, faculty members have some specific responsibilities in the Computer Science Licence and Master. Madalina Croitoru is the head of Special Conversion Year at IUT (since 2014) and the head of international relations for the computer science department at IUT (since 2018). Federico Ulliana is the head of the curriculum "Data, Knowledge and Natural Language Processing" (DECOL, about 30 students), part of the Master of Computer Science, since 2017.

9.2.2. Involvement in University Structures

Michel Leclere is deputy head of the computer science department of the faculty (since 2015). He is also in charge of the Information Systems of the faculty. Marie-Laure Mugnier is member of the Council of the Scientific Department MIPS (Mathematics Informatics Physics and Systems) of the University of Montpellier (since 2016).

9.2.3. Supervision

PhD defended: Abdelraouf Hecham, Defeasible Reasoning for Existential Rules, University of Montpellier, 9th of July 2018, P. Bisquert and M. Croitoru.

PhD in progress: Stathis Delivorias. Supervisors: Federico Ulliana, Michel Leclère and Marie-Laure Mugnier. "Boundedness and Module extraction in Existential Rules KBs". Started Oct. 2015.

PhD in progress: Bruno Yun. Supervisors: Madalina Croitoru, Rallou Thomopolous, Srdjan Vesic (CRIL). "Decision Making and Ranking Semantics in Logical Argumentation Frameworks". Started October 2016.

PhD in progress: Maxime Buron (CEDAR Inria team). "Efficient reasoning on large heterogeneous graphs",Supervisors: François Gaosdoué (IRISA/CEDAR) Ioana Manolescu (CEDAR), Marie-Laure Mugnier. Started October 2017.

9.2.4. Juries

- Marie Laure Mugnier was a PhD reviewer for Duc Minh TRAN, University of Nice, July 2018.

- Marie Laure Mugnier was a PhD jury member for Jieying CHEN, University Paris Sud, November 2018.

- Meghyn Bienvenu was a PhD jury member for Christos Rantsoudis, University of Toulouse / IRIT, December 2018.

9.3. Popularization

9.3.1. Articles and contents

- M. Chein, Sur la science informatique et son installation à Montpellier, Conf. Association française pour l'avancement des sciences, Montpellier avril 2017 /Bull. Acad. Sc. Lett. Montp., vol. 48, suppl. C1 (2017), p.89-102/
- M. Chein, L'informatique : la science au coeur du numérique , Conf. Académie des Sc ; et Lett. De Montpellier, mai 2017, /Bull. Acad. Sc. Lett. Montp., vol.48 (2017), p.203-214/

9.3.2. Interventions

- M. Chein, Intelligence artificielle : Mythes et Réalités, Médiathèque, La Boissière, mars 2018
- M. Chein, La complexité en Informatique. Complexité spatio-temporelle des programmes, des algorithmes et des problèmes. Pierre Rouge Sciences, Assas, janvier 2018

HEPHAISTOS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation, Steering committees

- J-P. Merlet is a permanent member of the International Steering Committee of the IROS conference, of the CableCon conference and chairman of the scientific Committee of the Computational Kinematics workshop,
- Y. Papegay is a permanent member of the International Steering Committee of the International Mathematica Symposium conferences series.

10.1.2. Reviewing

- The members of the team reviewed numerous papers for numerous international conferences and journals

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- J-P. Merlet is board member of the Journal of Behavorial Robotics
- E. Wajnberg is Editor-in-Chief of the journal BioControl, a board member of the journals Entomologia Experimentalis et Applicata, Neotropical Entomology, Applied Entomology and Zoology and Journal of Economical Entomology

10.1.4. Invited Talks

- J-P. Merlet has given a talk on parallel robots at the workshop "Rigidity theory for multi-agent systems meet parallel robototics", Nantes, a talk on interval analysis at SCAN, Tokyo and a talk on bibliometric indicators at the SIF workshop
- E. Wajnberg has been invited for talks by the University of Palermo (Italy, February), the University of Haifa (Israel, March), the conference "l'Ere du Temps" (Nice, June), the European Congress of Entomology, Naples (Italy, July), and the University dell'Insubria (Varese, Italy, November).

10.1.5. Leadership within the Scientific Community

- J-P. Merlet is Inria representative to the PPP Eurobotics aisbl. He is a member of the IFToMM (International Federation for the Promotion of Mechanism and Machine Science) Technical Committees on History and on Computational Kinematics and is one of the 10 elected members of IFToMM Executive Council, the board of this federation. He is a member of the scientific committee of the CNRS GDR robotique. J-P. Merlet is an IEEE Fellow, doctor honoris causa of Innsbruck University and IFToMM Awards of Merits
- Y. Papegay is a member of the OpenMath Society, building an extensible standard for representing the semantics of mathematical objects.

10.1.6. Scientific Expertise

- J-P. Merlet was involved in project evaluations for several foreign funding agencies (Israel, Austria, ERC). He was also appointed as *Nominator* for the Japan's Prize.
- E Wajnberg is involved in project evaluation for several foreign funding agencies (Belgium, Italy).
- E. Wajnberg was invited to be a committee number for recruiting an Institute Director by the CNR (Rome, Italy).

10.1.7. Research Administration

- J-P. Merlet is an elected member of the Academic Council of UCA COMUE, a corresponding member of Inria ethical committee (COERLE) and member of the Research, Ethical Committees of UCA. He is an elected member of Inria Scientific Committee and of the "Commission Administrative Paritaire" of Inria

- Y. Papegay is a member of the CUMIR (the committee managing the interaction between researchers and the computer support staff)

- O. Pourtallier is a board member of SeaTech, an Engineering School of University of Toulon. She is responsible of the NICE committee (long term invited scientists and post-doctoral student selection) and a member of the CGL AGOS

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

In February, Y. Papegay has been visiting lecturer of University of French Polynesia, where he gave an object oriented programming course.

O. Pourtallier lectured 6 hours on game theory to Master OSE (M2), at École des Mines de Paris, Sophia Antipolis, France

E. Wajnberg has taught one week course (about 30 h) about the use of the R program and statistics for PhD students and senior scientists in Rehovot (Israel, March), and another week with the same teaching program in Piracicaba (Brazil, July).

10.2.2. Supervision

PhD : A. Massein, Design of Instrumented Environment for Human Monitoring, defended in november 2018, supervisor: Y.Papegay.

PhD in progress: W. Plouvier. Improving pest control efficiency: a modelling approach (2015-2019). Supervisor: E. Wajnberg.

10.2.3. Juries

- J-P. Merlet has been a member of four PhD juries. He was also president of the jury for the Best PhD thesis award of the robotics GDR. He is a member of the "Comité de Suivi Doctoraux" (preliminary evaluation committee of PhD students) of Dayan Hassan (project team Chorale) and of Matheuse Laranjeira (Toulon University).

- E. Wajnberg has been a member of one PhD jury.

10.3. Popularization

10.3.1. Articles and contents

- J-P. Merlet has given two interviews at Nice-Matin and is a member of the scientific committee for the preparation of a permanent robotics exhibition at Cité des Sciences et de l'Industrie, Paris

10.3.2. Education

- Y.Papegay is actively participating to the Math.en.Jeans initiative for Mathematics teaching for undergraduate students. He is developing several pedagogical resources based on small robotics devices at high-school level. He has organized and animated summer schools in experimental mathematics and computer sciences. Several one week sessions have been held in Oxford in June, July, August and November gathering more than 70 high-school students - most of them were awardees in Mathematics Olympiads.

- O. Pourtallier is corresponding researcher for two MATh.en.JEANS workshops, an initiative for Mathematics teaching for undergraduate students.

10.3.3. Interventions

- J-P. Merlet and Y. Papegay have meet several schoolchildren (3ème)
- J-P. Merlet has given a talk during the Art'DI (a meeting between handicapped people and artists) day at Cannes
- J-P. Merlet and E. Wajnberg have given two talks in the framework of "Science pour tous"

10.3.4. Internal action

- J-P. Merlet has given a talk at Café Techno and at Café ADSTIC (for local PhD students), has invited Nathalie Rochet, a member of south-east CPP to give a talk at a Café-In

10.3.5. Creation of media or tools for science outreach

- the Hephaistos team proposes simple cable-driven parallel robots that are used to illustrate scientific concepts such as showing what is a sinus, instantiating the geometrical definition of an ellipse

HYBRID Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- Anatole Lécuyer was Member of the organization committee of IEEE VR 2018 (Tutorials, Best Paper Award Committee).
- Ferran Argelaguet was Member of the organization committee of IEEE VR 2018 (Workshops).
- Maud Marchal was Program Chair of IEEE Virtual Reality and 3D User Interfaces Conference Papers (IEEE VR 2018).

10.1.1.2. Member of the Conference Program Committees

- Ferran Argelaguet was Member of the conference program committee of IEEE VR 2018, IEEE ISMAR 2018 (International Symposium on Mixed and Augmented Reality) and of EuroVR 2018.
- Maud Marchal was Member of the conference program committee of Eurographics 2018, the best paper committee of "Journées Françaises de l'Informatique Graphique" 2018, and the best Phd award committee of GDR-IGRV/EGFR/AFRV.
- Jean-Marie Normand was Member of the conference program committee of IEEE VR 2018, IEEE AIVR 2018 (International Conference on Artificial Intelligence and Virtual Reality) and of AH 2018 (International Conference on Augmented Human).

10.1.1.3. Reviewer

- Ferran Argelaguet was Reviewer for IEEE VRST 2018, ACM CHI 2018, EuroHaptics 2018.
- Maud Marchal was Reviewer for Eurographics 2018, ACM Siggraph Asia 2018, ACM UIST 2018, Eurohaptics 2018, IEEE Haptic Symposium 2018, IEEE ICRA 2018, IHM 2018.
- Valérie Gouranton was Reviewer for IEEE VR 2018 Conference Track, IEEE VR 2018 Journal Track, CHI 2018.
- Guillaume Moreau was Reviewer for IEEE ISMAR 2018, ACM UIST 2018.
- Jean-Marie Normand was Reviewer for IEEE AIVR 2018, AH 2018, IEEE ISMAR 2018, IEEE VR 2018 Journal Track, IEEE VR 2018 Conference Track.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Anatole Lécuyer is Associate Editor of the IEEE Transactions on Visualization and Computer Graphics, Frontiers in Virtual Environments, and Presence journals. He was also Guest Editor of IEEE Computer Graphics and Applications Special Issue on "Virtual and Augmented Reality", and Guest Editor of Frontiers in Virtual Environments Special Topics on "Brain-Computer Interfaces and VR/AR".
- Ferran Argelaguet is Review Editor of Frontiers in Virtual Environments.
- Maud Marchal is Review Editor of Frontiers in Virtual Environments.
- Jean-Marie Normand is Review Editor of Frontiers in Virtual Environments.

10.1.2.2. Reviewer - Reviewing Activities

- Ferran Argelaguet was Reviewer for IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Graphics and Applications.

- Guillaume Moreau was reviewer for Computers & Graphics, IEEE Transactions on Visualization and Computer Graphics, Frontiers in Virtual Environments.
- Jean-Marie Normand was Reviewer for Computer Animation and Virtual Worlds.

10.1.3. Invited Talks

- Anatole Lécuyer was invited as Keynote Speaker at the BIOSTEC Conference (Funchal, Portugal, Jan. 2018), and as Invited Speaker at HAPTICS Workshop (IEEE VR 2018, Reutlingen, Germany, Mar. 2018) and at "Journée BioVR" (IRIT, Toulouse, France, Oct. 2018).
- Maud Marchal was invited to give a lecture at the Young Researchers' day (Journée jeunes chercheurs) of the "Journées de l'Informatique Graphique 2018 (j·FIG 2018)" (Poitiers, France, Nov. 2018).
- Guillaume Moreau was invited to Sino-French Symposium on Virtual Reality (Chengdu, China, Aug. 2018).
- Jean-Marie Normand was invited to give a lecture at the Young Researchers' day (Journée jeunes chercheurs) of the "Journées de la Réalité Virtuelle 2018 (j·RV 2018)" (Evry, France, Oct. 2018).
- Bruno Arnaldi was invited to give a lecture at the "Journée scientifique - systèmes intelligents : immersion et interaction" at Heudiasic Lab (UMR 7253) at Compiègne in December 2018.

10.1.4. Leadership within the Scientific Community

- Ronan Gaugne is Member of the Selection and Validation Committee for the French cluster "Pôle Images et Réseaux", and of the Consortium 3D of TGIR HumaNum.
- Valérie Gouranton is Member of the Executive Committee of AFRV (French Association for Virtual Reality). She was also Member of the organization of a French Seminar on Archaeology with Inrap, in Rennes, June 2018.
- Maud Marchal is Member of the Executive Committee of Eurographics French Chapter.
- Guillaume Moreau is Member of the Steering Committee of IEEE ISMAR Conference.

10.1.5. Scientific Expertise

- Guillaume Moreau is Member of ANSES (National Health Agency) Working Group on the "sanitary effects of Virtual, Mixed and Augmented Reality". He is also Member of the HCERES (Higher Education and Research Evaluation Council) Committee of the SAMOVAR lab.

10.1.6. Research Administration

- Bruno Arnaldi is Deputy Director of IRISA, and co-Head of the Scientific Council of University of Rennes (ENS Rennes, ENSC Rennes, IEP Rennes, INSA Rennes, University Rennes 1, and University Rennes 2).
- Maud Marchal is Co-Head of the Master of "Research in Computer Science" (SIF) at University Rennes 1.
- Valérie Gouranton is Head of cross-cutting Axis "Art, Heritage & Culture" at IRISA Laboratory.
- Jean-Marie Normand is Head of the Minor "Virtual Reality" at ECN.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Anatole Lécuyer:

Master MNRV: "Haptic Interaction", 9h, M2, ENSAM, Laval, FR

Master SIBM: "Haptic and Brain-Computer Interfaces", 4.5h, M2, University of Rennes 1, FR

Master CN: "Haptic Interaction and Brain-Computer Interfaces", 9h, M1 and M2, University of Rennes 2, FR

Master SIF: "Pseudo-Haptics and Brain-Computer Interfaces", 6h, M2, University of Rennes 1, FR

Bruno Arnaldi:

    Master INSA Rennes: "VRI: Virtual Reality and Multi-Sensory Interaction Course", 4h, M2, INSA Rennes, FR

    Master INSA Rennes: "CG: Computer Graphics", 10h, M2, INSA Rennes, FR

    Master INSA Rennes: "Virtual Reality", courses 6h, projects 16h, M1 and M2, INSA Rennes, FR

    Master INSA Rennes: Projects on "Virtual Reality", 20h, M1, INSA Rennes, FR

Ferran Argelaguet:

    Master STS Informatique: "Techniques d'Interaction Avancées", 26h, M2, ISTIC, University of Rennes 1, FR

    Master SIF: "Virtual Reality and Multi-Sensory Interaction", 8h, M2, University of Rennes 1, FR

    Master SIF: "Data Mining and Visualization", 2h, M2, University of Rennes 1, FR

Maud Marchal:

    Master of Research in Computer Science: "Haptic rendering and physically-based simulation", 4h, M2, University of Rennes 1, FR

    Master INSA Rennes: "Computer Graphics", 26h, M1 and responsible of this lecture, INSA Rennes, FR

Valérie Gouranton:

    Licence: "Introduction to Virtual Reality", 22h, L2 and responsible of this lecture, INSA Rennes, FR

    Licence: Project on "Virtual Reality", 16h, L3 and responsible of this lecture, INSA Rennes, FR

Ronan Gaugne:

    INSA Rennes: Projects on "Virtual Reality", 41h, L3/M1/M2, Insa Rennes, FR

    Master Digital Creation: "Virtual Reality", 9h, M1, University of Rennes 2, FR

Guillaume Moreau:

    Dean of studies, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "C++ Programming for VR", 30h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Fundamentals of Virtual Reality", 6h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Computer Graphics", 4h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Advanced Software Development", 20h, M1/M2, Ecole Centrale de Nantes, FR

    Computer Science Major, "Discrete Mathematics", 10h, M1/M2, Ecole Centrale de Nantes, FR

Jean-Marie Normand:

    Virtual Reality Major, "Computer Graphics", 24h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Fundamentals of Virtual Reality", 14h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Computer Vision and Augmented Reality", 24h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Advanced Concepts", 24h, M1/M2, Ecole Centrale de Nantes, FR

    Virtual Reality Major, "Projects on Virtual Reality", 20h, M1/M2, Ecole Centrale de Nantes, FR

10.2.2. Supervision

10.2.2.1. PhD (defended)

- Gwendal Le Moulec, "Model-driven Virtual Reality applications synthesis", Defended in September 2018, Supervised by Valérie Gouranton, Bruno Arnaldi and Arnaud Blouin (Diverse, Inria)
- Guillaume Cortes, "Contribution to the study of projection-based systems for industrial applications in mixed reality", Defended in October 2018, Supervised by Anatole Lécuyer and Eric Marchand (Lagadic, Inria)
- Anne-Solène Dris-Kerdreux, "Concept et modèle d'intégration des IFC en tant qu'environnement virtuel interactif", Defended in October 2018, Supervised by Valérie Gouranton and Bruno Arnaldi
- Antoine Costes, "Contribution to the study of the haptic enhancement of images on touchscreens", Defended in November 2018, Supervised by Anatole Lécuyer, Philippe Guillotel (Technicolor), Fabien Danieau (Technicolor) and Ferran Argelaguet

10.2.2.2. PhD (in progress)

- Hakim Si-Mohammed, "BCI and HCI", Started in October 2016, Supervised by Anatole Lécuyer, Géry Casiez (Mjolnir, Inria), Nicolas Roussel (Mjolnir, Inria) and Ferran Argelaguet
- Hadrien Gurnel, "Assistance robotisée d'insertion d'aiguille par comanipulation", Started in October 2016, Supervised by Alexandre Krupa (Rainbow, Inria) and Maud Marchal
- Rebecca Fribourg, "Perception and interaction with and via avatars", Started in September 2017, Supervised by Ferran Argelaguet, Ludovic Hoyet (Mimetic, Inria) and Anatole Lécuyer
- Guillaume Bataille, "Natural interactions with IoT using VR/AR", Started in October 2017, Supervised by Valérie Gouranton, Danielle Pelé (Orange Labs) and Bruno Arnaldi
- Xavier de Tinguy, "Haptic manipulation in virtual environments", Started in September 2017, Supervised by Maud Marchal, Claudio Pacchierotti (Rainbow, Inria) and Anatole Lécuyer
- Flavien Lécuyer, "Interactive digital introspection methods for archeology", Started in September 2017, Supervised by Valérie Gouranton, Grégor Marchand (CNRS) and Bruno Arnaldi
- Etienne Peillard, "Improving Perception and Interaction in Augmented Reality", Started in October 2017, Supervised by Guillaume Moreau, Ferran Argelaguet, Anatole Lécuyer and Jean-Marie Normand
- Antonin Bernardin, "Interactive physically-based simulation of dexterous manipulation for robot understanding", Started in September 2017, Supervised by Maud Marchal and Christian Duriez (Defrost, Inria)
- Romain Lagneau, "Data-driven models for dexterous manipulation of robots", Started in Septembre 2017, Supervised by Maud Marchal and Alexandre Krupa (Rainbow, Inria)
- Romain Terrier, "Presence of self and others in a collaborative virtual environment", Started in October 2017, Supervised by Valérie Gouranton, Thomas Boggini (b<>com) and Bruno Arnaldi
- Mathis Fleury, "Neurofeedback based on fMRI and EEG", Started in November 2017, Supervised by Anatole Lécuyer and Christian Barillot (Visages, Inria)
- Tiffany Luong, "Affective VR: acquisition, modelling, and exploitation of affective states in virtual reality", Started in February 2018, Supervised by Anatole Lécuyer, Marc Diverrez (b<>com), Ferran Argelaguet
- Hugo Brument, "Towards user-adapted interaction techniques based on human locomotion laws for navigating in virtual environments", Started in October 2018, Supervised by Ferran Argelaguet, Maud Marchal and Anne-Hélène Olivier (MimeTIC, Inria)
- Diane Dewez, "Avatar-Based Interaction in Virtual Reality", Started in October 2018, Supervised by Anatole Lécuyer, Ferran Argelaguet and Ludovic Hoyet (MimeTIC)
- Gerard Gallagher, "Mid-air haptics", Started in October 2018, Supervised by Maud Marchal, Anatole Lécuyer and Claudio Pacchierotti (Rainbow, Inria)

- Victor Rodrigo Mercado Garcia, "Encountered-type haptics", Started in October 2018, Supervised by Maud Marchal and Anatole Lécuyer
- Guillaume Vaillant, "Outdoor wheelchair assisted navigation: reality versus virtuality", Started in November 2018, Supervised by Valérie Gouranton and Marie Babel (Rainbow, Inria)

10.2.3. Juries

- Anatole Lécuyer was president of the PhD committee for Pierre Bourdin (Univ. Barcelona, Spain). He was also external reviewer for the HDR of Antonio Capobianco (Univ. Strasbourg).
- Maud Marchal was an external reviewer for the PhD defenses of Karolina Golec (Univ. Lyon 1), Farzan Kalantari (Univ. Lille 1), Michael Traoré (Univ. Toulouse), Gaelle Fiard (Univ. Grenoble Alpes). She was a member of the PhD defenses of Alma Cantu (IMT Atlantique), Valentin Rousselet (Univ. Toulouse) and Firas Abi Farraj (Univ. Rennes 1).
- Guillaume Moreau was external reviewer for the PhD defense of Adrien Arnaud (LIMSI), president of the committee for Guillaume Cortes (Hybrid). He was also external reviewer for the HDR of Jean-Yves Didier (IBISC).

10.3. Popularization

As a salient action in 2018, Hybrid could organize a **press conference** on the topic of "Neurofeedback" in Paris (November 14th), which ended up with numerous media coverages (radio, press, etc).

10.3.1. Articles and contents

- "Autour de la question" (07/18) Radio France International: interview of Valérie Gouranton, Ronan Gaugne and Théophane Nicolas on "cultural heritage applications in VR/AR"
- "Sciences Ouest" (11/18) : interview of Anatole Lécuyer about "Neurofeedback"
- "Journal de 7h30" (11/18) France Inter radio : interview of Anatole Lécuyer about "Neurofeedback"
- "Sciences Ouest" (10/18): interview of Maud Marchal for "Epreuve par 7".

10.3.2. Interventions

- Technoférence du Pôle Images et Réseaux (Rennes, 02/18): co-organization by Ronan Gaugne, presentation from Maud Marchal on haptic in VR, demonstrations in Immersia.
- "Journées Science et Musique 2018" (Rennes, 10/18): co-organization of this event, and presentation of several demos of the team.
- Press Conference on "Neurofeedback" (Paris, 11/18): co-organization of this event, and presentation from Anatole Lécuyer, followed by several media coverages.

ILDA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga (general co-chair)

9.1.1.2. Member of the Organizing Committees

- VIS 2019, the IEEE Visualization Conference (SciVis, InfoVis, VAST): Anastasia Bezerianos (Workshops co-chair)
- VIS 2018, the IEEE Visualization Conference (SciVis, InfoVis, VAST): Anastasia Bezerianos (Communities co-chair)
- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Caroline Appert (Doctoral Consortium co-chair)
- IHM 2018, 30ème Conférence Francophone sur l'Interaction Homme-Machine: Caroline Appert (Doctoral Consortium panel member)

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- CHI 2019, 37th ACM SIGCHI Conference on Human Factors in Computing Systems: Anastasia Bezerianos (SC - subcommittee chair)
- CHI 2018, 36th ACM SIGCHI Conference on Human Factors in Computing Systems: Emmanuel Pietriga (SC - subcommittee chair)

9.1.2.2. Member of the Conference Program Committees

- CHI 2018, 36th ACM SIGCHI Conference on Human Factors in Computing Systems: Anastasia Bezerianos
- TheWebConf (WWW) 2019, 28th Web Conference, research track Web Content Analysis, Semantics, and Knowledge: Emmanuel Pietriga
- ESWC 2019, 16th Extended Semantic Web Conference: Emmanuel Pietriga
- ISWC 2018, 17th International Semantic Web Conference: Emmanuel Pietriga
- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga
- EICS 2018 TechNote, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Caroline Appert, Olivier Chapuis
- VOILA @ ISWC 2018, Visualizations and User Interfaces for Ontologies and Linked Data, workshop co-located with ISWC 2018: Emmanuel Pietriga
- TheWebConf (WWW) 2018, 27th Web Conference, research track Web Content Analysis, Semantics, and Knowledge: Emmanuel Pietriga
- IHM 2018, 30ème Conférence Francophone sur l'Interaction Homme-Machine: Caroline Appert

9.1.2.3. Reviewer

- ACM CHI 2019, Conference on Human Factors in Computing Systems: Caroline Appert, Olivier Chapuis, Emmanuel Pietriga, Hugo Romat

- ACM UIST 2018, Interface Software and Technologies Symposium: Olivier Chapuis, Caroline Appert
- ACM ISS 2018, International Conference on Interactive Surfaces and Spaces: Olivier Chapuis
- AVI 2018, Advanced Visual Interfaces: Olivier Chapuis
- IEEE VIS 2018, Visualization Conference (InfoVis): Anastasia Bezerianos
- IHM 2018, Conference of the Association Francophone d'Interaction Homme-Machine: Olivier Chapuis, Bruno Fruchard, Marie Destandau

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- ACM ToCHI, Transactions on Computer-Human Interaction: Caroline Appert (associate editor and member of EiC search committee)

9.1.3.2. Reviewer - Reviewing Activities

- IEEE TVCG, Transactions on Visualization and Computer Graphics: Emmanuel Pietriga, Anastasia Bezerianos
- Information Visualization Journal: Emmanuel Pietriga
- Journal of Multimodal Interfaces: Caroline Appert
- Interacting with Computers: Caroline Appert

9.1.4. Invited Talks

- Olivier Chapuis: Expressive and multi-user interaction, desktops, wall displays and beyond, Dresden Talks on Interaction & Visualization, Technische Universität Dresden (Germany), May 2018.
- Caroline Appert: Low-cost Tangible Interaction with TouchTokens, Conference FAB' 14, Paris Saclay, July 2018.
- Anastasia Bezerianos: How interactive visualizations can aid us make better or at least more consistent choices, University of Calgary (Canada), Nov 2018.
- Anastasia Bezerianos: Visualization Perception at large and small scales, University of St. Andrews (UK), Dec 2018.

9.1.5. Leadership within the Scientific Community

- ANR, CES chair - Interaction, Robotique: Caroline Appert

9.1.6. Scientific Expertise

- H2020, ERC Advanced Grants (reviewer): Caroline Appert, Emmanuel Pietriga
- ANR, CES chair - Interaction, Robotique: Caroline Appert
- NSERC, Canadian Discovery Grands (reviewer): Anastasia Bezerianos

9.1.7. Research Administration

- Scientific coordinator of Inria's evaluation seminar for period 2015-2018, theme Interaction and visualization: Emmanuel Pietriga
- Deputy Director of the Laboratoire de Recherche en Informatique (LRI): Olivier Chapuis
- President of Inria Saclay - Île de France's Commission for Technological Development (CDT): Emmanuel Pietriga
- Deputy head of Pôle "Données, Connaissances, Apprentissage et Interaction" at École Doctorale Paris Saclay (ED STIC): Caroline Appert

9.1.8. Learned societies

- Association Francophone d'Interaction Homme-Machine (AFIHM), in charge of the relation with the SIF: Olivier Chapuis.
- SigCHI Paris Local Chapter, chair: Anastasia Bezerianos.
- SigCHI Paris Local Chapter, vice chair: Caroline Appert.

9.1.9. Hiring committees

- Univ. Paris-Sud hiring committee, Commission Consultative des Spécialistes de l'Université 27ème section (computer science), members: Caroline Appert, Anastasia Bezerianos.
- Assistant Professor position, Computer Science, Université Paris-Sud, 2018: Caroline Appert, Emmanuel Pietriga.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master Co-head: Anastasia Bezerianos, M2 Interaction and HCID, Univ. Paris-Saclay (until Aug 2018).

Ingénieur: Emmanuel Pietriga, Data Visualization (INF552), 36h, 3A/M1, École Polytechnique.

Ingénieur: Caroline Appert, Data Visualization (INF552), 18h, 3A/M1, École Polytechnique.

Master: Emmanuel Pietriga, Data Visualization, 24h, M2 Informatique Décisionnelle, Univ. Paris-Dauphine.

Master: Caroline Appert, Evaluation of Interactive Systems - Introduction, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Caroline Appert, Evaluation of Interactive Systems - Advanced, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Introduction to Programming of Interactive Systems, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Career Seminar, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Mixed Reality and Tangible Interaction, 11h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Information Visualization, 10h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, HCI Project, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Design Project, 21h, M1 HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Introduction aux Systèmes Interactifs, 21h, M1 Informatique, Univ. Paris-Saclay.

Master: Raphaël James, Programming of Interactive Systems, 12h, Univ. Paris-Saclay

Master: Raphaël James, Fundamentals of HCI, 21h, Univ. Paris-Saclay

Master: Tong Xue, Design of Interactive Systems, 21h, Univ. Paris-Saclay

License: Raphaël James, Algorithm/C/C++, 29h, Polytech

License: Tong Xue, Introduction à l'informatique graphique, 33h, Univ. Paris-Sud

Licence: Bruno Fruchard, Visualisation, 10h, Télécom Paristech.

Licence: Bruno Fruchard, Interaction Homme-Machine, 8h, Télécom Paristech.

Licence: Bruno Fruchard, Paradigmes de programmation, 8h, Télécom Paristech.

Licence: Bruno Fruchard, Projet d'apprentissage collaboratif thématique (student supervision), 6h, Télécom Paristech.

IUT: Marie Destandau, Programmation et administration des bases de données, 32h, Univ. Paris-Sud

IUT: Marie Destandau, Suivi de projet, 27h, Univ. Paris-Sud

IUT: Marie Destandau, Bases de données avancées, 18h, Univ. Paris-Sud

9.2.2. Supervision

PhD in progress : Eugénie Brasier, Interaction techniques for remote manipulation in multi-display environments, since October 2018, Advisors: Caroline Appert

PhD in progress : Raphaël James, Environnements de réalité physique et augmentée utilisés dans l'analyse visuelle collaborative, since October 2018, Advisors: Anastasia Bezerianos, Olivier Chapuis, Tim Dwyer

PhD in progress : Tong Xue, Interactive Visualization for Data Journalism, since October 2018, Advisors: Anastasia Bezerianos, Emmanuel Pietriga

PhD in progress : Marie Destandau, Interactive Visual Exploration of Webs of Data, since October 2017, Advisors: Caroline Appert, Emmanuel Pietriga

PhD in progress : Anna Gogolou, Iterative and expressive querying for big data series, October 2016, Advisors: Anastasia Bezerianos, Themis Palpanas

PhD in progress : Hugo Romat, Visual exploration and interactive manipulation techniques for collections of heterogeneous data and documents, since June 2016, Advisors: Caroline Appert, Emmanuel Pietriga

PhD in progress : Bruno Fruchard, Techniques d'interaction exploitant la mémoire spatiale pour faciliter l'accès rapide aux commandes et aux données, since October 2015 – December 2018, Advisors: Eric Lecolinet, Olivier Chapuis

9.2.3. Juries

PhD: Kashyap Todi, Hasselt University, Belgium: Emmanuel Pietriga (rapporteur)

PhD: Anonymous, University of Swinburne, Australia: Emmanuel Pietriga (rapporteur)

PhD: Ulrich von Zadow PhD, Technische Universität Dresden, Germany: Olivier Chapuis (reviewer)

PhD: Juliette Rambourg, Université de Toulouse, France: Caroline Appert (rapporteur)

PhD: Julien Gori, Université Paris Saclay, France: Caroline Appert (président)

PhD: Marion Dumont, Université Paris-Est, France: Caroline Appert (examinateur)

PhD: Fatemeh Rajabiyazdi, University of Calgary, Canada: Anastasia Bezerianos (rapporteur)

PhD: Amira Chalbi, Université Lille 1, France: Anastasia Bezerianos (examinateur)

HDR: Marcos Serrano, Université de Toulouse, France: Caroline Appert (président)

<p align="center" style="color:red">IMAGINE Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

Remi Ronfard is a member of the selection committee for Inria-MCC (Ministry of Culture and Communication) activitites.

Stefanie Hahmann is a member of the Comité d'Etudes Doctorales (CED) at Inria Grenoble.

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Stefanie Hahmann was Program Chair of Conference Shape Modeling International (SMI18) held in LIsbon 2018.

10.1.1.2. Member of the Organizing Committees

Rémi Ronfard is a member of the steering committee for the Eurographics workshop on intelligence cinematography and editing (WICED).

Rémi Ronfard was a co-organizer of the international workshop Attention machine ! Pratiques artistiques et recyclages médiatiques at Univ. Grenoble Alpes in February 2018.

Stefanie Hahmann served in the International Program Committee for the Symposium on Solid and Physical Modeling (SPM18), Bilbao 2018

Jean-Claude Léon was a member of the program committee for the SPM 2018 conference.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Mélina Skouras was the Poster Chair for ACM/Eurographics Symposium on Computer Animation 2018.

10.1.2.2. Member of the Conference Program Committees

Rémi Ronfard was a member of the Program Committees for Expressive 2018, International Conference on Interactive Storytelling (ICIDS) 2018, and Eurographics workshop on intelligence cinematography and editing (WICED) 2018.

Mélina Skouras was a member of the Program Committees for Eurographics 2018, Advances in Architectural Geometry 2018, Shape Modeling International 2018, and ACM/Eurographics Symposium on Computer Animation 2018.

10.1.2.3. Reviewer

Remi Ronfard was an external reviewer for Siggraph 2018 and Siggraph Asia 2018.

Jean-Claude Léon was a reviewer for the CAD 2018 conference.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Stefanie Hahmann is an Associate Editor of CAG (Computers and Graphics, Elsevier) and CAD (Computer Aided Design, Elsevier). She also was a guest Editor of the journal Computers and Graphics Vol. 74 (Elsevier): Special Issue on Shape Modeling International 2018,

Jean-Claude Léon is a member of the editorial board of the CAD journal.

10.1.3.2. Reviewer - Reviewing Activities

Rémi Ronfard was a reviewer for Siggraph 2018, Siggraph Asia 2018 and ACM transactions on Graphics (TOG).

Mélina Skouras was a reviewer for Siggraph Asia 2018 and ACM Transactions on Graphics.

Stefanie Hahmann was a reviewer for the journals CAD, Computers and Graphics,

10.1.4. Invited Talks

Mélina Skouras gave invited guest talks at Bellairs Workshop on Computer Animation, Fields Workshop on Robust Geometric Algorithms for Computational Fabrication, and Dagstuhl Seminar on Computational Aspects of Fabrication.

Remi Ronfard Remi Ronfard gave an invited talk on "Authoring and directing animated story worlds" at the national meeting of the GTAS (Groupe de Travail sur l'Animation et la Simulation) organized by GdR IG-RV (Informatique Géométrique et Graphique, Réalité Virtuelle et Visualisation) in Paris, July 2018.

10.1.5. Leadership within the Scientific Community

Stefanie Hahmann serves as a member of the Advisory Board (2014-2018) for the European Marie-Curie Training Network ARCADES.

Remi Ronfard and Julie Valéro (Litt & Arts, Univ. Grenoble Alpes) started a research group on Digital Dramaturgies as part of the Performance Lab, IDEX Univ. Grenoble Alpes (2018-2021). This research group is actively investigating (i) how contemporary dramaturgies represent digital worlds on stage; (ii) how contemporary dramaturgies use digital tools for writing and staging performances combining real actors with virtual actors and scenographies; and (iii) how contemporary dramaturgies can be digitally captured, indexed and analyzed for a better comprehension of the creative processes at work during pre-production and rehearsals. The research group is composed of researchers of Univ. Grenoble Alpes from multiple disciplines, i.e. litterature, theatre, choreography, film studies, social sciences, geography, computer science and applied mathematics.

10.1.6. Scientific Expertise

Remi Ronfard was a member of the scientific committee of IMAGINOVE in 2018.

Remi Ronfard was a member of the scientific committee for EXPERIMENTA 2018.

10.1.7. Research Administration

Stefanie Hahmann is the head of the French working group "GTMG" (Groupe de travail en Modélisation Géométrique) part of the CNRS GDR IM and GDR IGRV.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Stefanie Hahmann, Numerical Methods, Ensimag - Grenoble INP, 240 students, 3rd year Bachelor level, 42h,

Master : Stefanie Hahmann, Geometric Modeling, Ensimag - Grenoble INP, 60 students, Master 1st year, 47h.

Master : Stefanie Hahmann, Surface Modeling, Ensimag - Grenoble INP, 30 students, Master 2nd year, 51h.

Master : Rémi Ronfard, Advanced Computer Graphics, 18 HETD, M2, Univ. Grenoble Alpes, France

Master : Rémi Ronfard, Game Engine Programming, 18 HETD, M2, Univ. Montpellier, France

Licence : Mélina Skouras, Surface modeling, 14.5 HETD, Ensimag, Grenoble, France

Doctorate : Rémi Ronfard, Spatial Media, 90 HETD, ENSAD, Paris Sciences et Lettres (PSL), France

Stefanie Hahmann is co-responsible of the department MMIS (Images and Applied Maths) at Grenoble INP with 120 students. Stefanie Hahmann was also president of the jury for over 30 Masters (PFE) thesis defences in 2018.

Jean-Claude Léon is in charge of the module Mechanical Systems at Grenoble-INP ENSE3 (300 students, 64h, coordination of three courses).

Olivier Palombi is responsible for the French Campus numérique of anatomy. He is responsible and national leader of the project SIDES. All the French medical schools (43) have planed to use the same e-learning framework (SIDES) to manage evaluations and to create a large shared database of questions.

10.2.2. Supervision

PhD : Romain Brégier, Détection et estimation de pose d'instances d'objet rigide pour la manipulation robotisée, Univ. Grenoble Alpes, June 11, 2018, supervised by James Crowley and Frédéric Devernay

PhD : Even Entem, Interprétation et modélisation 3D automatique à partir de dessins au trait de formes organiques, Univ. Grenoble Alpes, October 26, 2018, supervised by Marie-Paule Cani and Loic Barthes

PhD : Sandra Nabil, Evaluation de la qualité de vidéos panoramiques synthétisées, Univ. Grenoble Alpes, November 27, 2018, supervised by James Crowley and Frédéric Devernay

PhD : Guillaume Cordonnier, Modèles à couches pour simuler l'évolution de paysages à grande échelle, Univ. Grenoble Alpes, December 6, 2018, supervised by Marie-Paule Cani and Eric Galin

PhD in progress : Maxime Garcia, Animation transfer: character animation by playing and acting, since October 2016, supervised by Rémi Ronfard

PhD in progress : Youna Le Vaou, Virtual Sculpture: shape creation and modification through immersive CAVE-like systems, since March 2017, supervised by Jean-Claude Léon and Stefanie Hahmann. Funded by CIFRE contract with PSA

PhD in progress : Amélie Fondevilla, Modélisation et animation de surfaces développables, since September 2016, supervised by Stefanie Hahmann and Damien Rohmer

PhD in progress : Ameya Murukutla, Storyboarding augmented reality anatomy lessons, since Octobre 2017, supervised by Rémi Ronfard and Olivier Palombi

PhD in progress : Pierre Casati, Modeling and animation of antique statues, since October 2017, supervised by Rémi Ronfard and Stéfanie Hahmann

PhD in progress : Qianqian Fu, Computational video editing of live performances, since November 2018, supervised by Rémi Ronfard and Benjamin Lecouteux (GETALP, LIG).

PhD in progress : Thomas Buffet, Efficient multi-layered cloth animation using implicit surfaces, since December 2017, supervised by Marie-Paule Cani and Damien Rohmer.

PhD in progress : Robin Roussel, Function-aware design for objects to be fabricated, since October 2015, supervised by Niloy Mitra, Marie-Paule Cani and Jean-Claude Léon.

PhD in progress : Geoffrey Guingo, Synthesis of animated textures, since October 2015, supervised by Marie-Paule Cani, Jean-Michel Dischler and Basile Sauvage.

PhD in progress : Nachwa Aboubakr, Observation and modeling of human activities, since October 2016, supervised by James Crowley and Rémi Ronfard.

PhD in progress: David Jourdan, Support optimization for tensile membrane structures, since October 2018, supervised by Adrien Bousseau and Mélina Skouras.

PhD in progress: Mickaël Ly, Inverse elastic shell design with contact and friction with applications to garment design, since October 2017, supervised by Florence Descoubes and Mélina Skouras.

Master's thesis : David Jourdan, Optimization of support structures for tensile architecture, June 2018, supervised by Adrien Bousseau and Mélina Skouras.

Master's thesis : Rémi Colin de Verdière, Mutli-target inverse kinematics for real-time character animation, June 2018, supervised by Remi Ronfard.

Master's thesis : Sami Chibane, What makes motion beautiful?, June 2018, supervised by Rémi Ronfard.

10.2.3. Juries

Rémi Ronfard was the president of the jury for Sandra Nabil's Phd Thesis.

Rémi Ronfard was part of the selection committee for recruiting an assistant professor at Univ. Montpellier in May 2018.

Stefanie Hahmann was member of the HDR committee of Julie Digne at Univ. Lyon 1 and a reviewer of the HDR Thesis of Alexandra Bac at Univ. Aix-Marseille. She also was a reviewer of 2 PhD thesis, Univ. Claude Bernard Lyon 1 (Mathieu Giroux) and Univ. Nice (Jean-Dominique Favreau) in 2018.

Stefanie Hahmann also participated in 2018 in 2 committees for recruiting assistent professors, one at UGA, Grenoble, the other at Univ. Aix-Marseille.

10.3. Popularization

Rémi Ronfard and Julie Valéro organized a panel at Experimenta on "Virtual reality storytelling between cinema and theatre", with invited guests Christelle Derré, (collectif Or Norme), Philippe Fuchs (MINES ParisTech), Pauline Bouchet (Univ. Grenoble Alpes), Pierre-Emmanuel Le Goff (France TV) and Annick Jakobowicz (France TV).

Rémi Ronfard presented new results of the COLLODI2 project to Computer Animation professionals at MIFA in June 2018, Next-generation computer animation with RUMBA, International Animation Film Festival Annecy.

Marie-Paule Cani and Rémi Ronfard were featured in a special report on Intelligence artificielle et création artistique, Science et Avenir, aout 2018.

Rémi Ronfard and Julie Valéro published online three new video documentaries shot using our KINO AI virtual cinematography system during rehearsals of the stage adaptation of Mary Shelley's Frankenstein, written and directed by Jean-Francois Peyret.

Rémi Ronfard and Julie Valéro wrote a blog entry, L'informatique rentre en scène, Blog Binaire, Le Monde, 4 décembre 2018.

LACODAM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- General co-chair (E. Fromont) of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD'19, http://www.ecmlpkdd2019.org/)
- Journal-track co-chair (E. Fromont) of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD'18) (http://www.ecmlpkdd2018.org/)
- Organization co-chair (T. Guyet) of the technical track "Geoinformatic analytics" of the 34rd ACM/SIGAPP Symposium On Applied Computing (https://gia.sciencesconf.org/)
- Organization co-chair (T. Guyet) of the 3nd ECML/PKDD Workshop on Advanced Analytics and Learning on Temporal Data @ ECML (https://project.inria.fr/aaldt18/)
- Organization chair (T. Guyet) of GAST workshop at EGC 2018 (https://gt-gast.irisa.fr/)
- Organization chair and program committee member (L. Galárraga) of the AIMLAI workshop (https://project.inria.fr/aimlai/) that will take place at EGC 2019.
- Organization of the first workshop of the Data Mining axis of the #DigitAg project (A. Termier)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Senior PC member of the Symposium on Intelligent Data Analysis 2018 (E. Fromont)
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases 2018 (E. Fromont, T. Guyet)
- AAAI Conference on Artificial Intelligence 2018 (T. Guyet)
- International Conference on Data Mining (ICDM) 2018 (A. Termier)
- International Joint Conference on Artificial Intelligence (IJCAI) 2018 (A. Termier)
- International Conference on Information Management and Big Data (SimBig) 2018 (T. Guyet)
- International Symposium on Computing and Networking (CANDAR) 2018 (A. Termier)
- Extraction et Gestion de Connaissances (EGC) 2018 (T. Guyet, A. Termier)
- Conférence Nationale en Intelligence Artificielle (CNIA) 2018 (T. Guyet, A. Termier)
- Conférence Française en Photogramétrie et Télédétection (CFPT) 2018 (T. Guyet)

10.1.2.2. Reviewer

- Conference on Information and Knowledge Management (CIKM) 2018 (L. Galárraga)
- Conference on Practice of Knowledge Discovery in Databases (PKDD) 2018 (L. Galárraga)
- Conference on Very Large Databases (VLDB) 2018, demo track (L. Galárraga)
- Extended Semantic Web Conference (ESWC) 2018, demo track (L. Galárraga)
- The Web Conference (WWW) 2018 (L. Galárraga)
- International Workshop on the Web and Databases (WebDB) 2018 (L. Galárraga)
- Symposium on Theoretical Aspects of Computer Science (STACS) 2019, (A. Termier)

- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD) 2018 (A. Termier)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Machine Learning journal for the ECMLPKDD 2018 special issue (E. Fromont)
- Data Mining journal for the ECMLPKDD 2018 special issue (E. Fromont)
- Revue d'Intelligence Artificielle (RIA, T. Guyet)

10.1.3.2. Reviewer - Reviewing Activities

- Remote Sensing (T. Guyet)
- Journal of Biomedical Informatics (T. Guyet)
- Journal of Machine Learning (T. Guyet)
- Artificial Intelligence Review (T. Guyet, L. Galárraga)
- Annals of Mathematics and Artificial Intelligence (T. Guyet)
- Data Mining and Knowledge Discovery (L. Galárraga, A. Termier)
- Information Systems (L. Galárraga)

10.1.4. Invited Talks

- Invited to the Dagstuhl Seminar 18401 on "Automating Data Science", Germany (E. Fromont and A. Termier)
- Invited talk for the IA^2 (Autumn school) organized by the GDR IA. (E. Fromont)
- Invited talk for the Labex Henri Lebesgue at Technicolor, Rennes. (E. Fromont)
- Invited talk for the "Transfer Learning: From Theory to Applications" summer school in Cachan. (E. Fromont)
- Invited talk for the conference "Brain Hack", Rennes. (E. Fromont)
- Invited talk for the Machine Learning Meetup, Rennes. (E. Fromont)
- Invited talks by ONERA, LAAS, Strasbourg University (T. Guyet)
- Keynote talk at CITT 2018 (International Conference on Technology Trends), Universidad Técnica de Babahoyo, Ecuador (L. Galárraga)

10.1.5. Scientific Expertise

- Member of an ANR (CE 23) evaluation committee (E. Fromont)
- Working group initiated by ALLISTENE about a Research Infrastructure for AI in France. It was proposed in the "Villani report" under the name GENIAL (Grand Equipement National pour l'Intelligence Artificielle)
- Evaluation of an ERC proposal (A. Termier)
- Evaluation of a project proposal for Université Catholique de Louvain (A. Termier)
- Evaluation of projects proposals for ANR (T. Guyet: 3 projects, A. Termier: 1 project)
- Evaluation of a project proposal for Pays de Loire Region (A. Termier)
- Audit of the AI activities of a major French industrial group with a group of Inria experts (A. Termier)

10.1.6. Research Administration

- Elected (college A) at IRISA research institute scientific council (E. Fromont)
- Nominated at the scientific council of the "Fondation Blaise Pascal", dedicated to scientific mediation (E. Fromont)

- Co-chair of the national evaluation committee of INRA Engineers (section Mathematics and Informatics) (T. Guyet)
- Member of INRA (National Agronomy Institute) Scientific Committee (A. Termier)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Some members of the project-team LACODAM are also faculty members and are actively involved in computer science teaching programs in ISTIC, INSA and Agrocampus-Ouest. Besides these usual teachings LACODAM is involved in the following programs:

1. Master 2 IL, CCN: Option Machine Learning, Istic, University of Rennes 1, 32h (E. Fromont)
2. Master 2 DMV Module: Data Mining and Visualization, 13h, M2, Istic, University of Rennes 1 (A. Termier)
3. Master 1 SIF: Option IA, Istic, 20h University of Rennes 1 (A. Termier, E. Fromont)
4. Master 2 DataViz with R 10h, Computer Science for BigData 30h, Master Datascience, Agrocampus Ouest Rennes (Louis Bonneau, C. Largouët)
5. Master 1 Scientific Programming, Data Management, Agrocampus Ouest Rennes (C. Largouët)
6. INSA 4 Project Interpretability of Time series Machine Learning algorithms. (L. Rozé, M. Guillemé)

10.2.2. Supervision

PhD defended in 2018: Yann Dauxais, "Query-language for Care-pathway Mining and Analysis", 01/02/2015, D. Gross-Amblard, T. Guyet, A. Happe

PhD defended in 2018: Clément Gautrais, "Mining Massive Data from Client Purchases", 01/10/2015, A. Termier, P. Cellier, T. Guyet and R. Quiniou

PhD defended in 2018: Romain Deville, "Fouille de Grilles Spatio-temporelles Appliquée à la Classification d'Images et à l'Analyse d'Automates Cellulaires", 30/05/2018, E. Fromont, C. Solnon (Lyon), B. Jeudy (Saint-Etienne).

PhD in progress: Maël Guillemé, "New Data Mining Approaches for Improving Energy Consumption in Factories", 03/10/2016, L. Rozé, V. Masson, A. Termier

PhD in progress: Maël Gueguen, "Improving the Performance and Energy Efficiency of Complex Heterogeneous Manycore Architectures with On-chip Data Mining", 01/11/2016, O. Sentieys, A. Termier

PhD in progress: Alban Siffer, "Data Mining Approaches for Cyber Attack Detection", 03/2016, P-A Fouque, A. Termier, C. Largouët.

PhD in progress: Colin Leverger, "Cluster Resources Optimization Through Forecasting and Management of Metric Time Series", 01/10/2017, T. Guyet, S. Malinowski, R. Marguerie, A. Termier

PhD in progress: Raphaël Gauthier, "Modelling of Nutrient Utilization and Precision Feeding of Lactating Sows", 01/11/2017, C. Largouët, J.-Y. Dourmad

PhD in progress: Kévin Fauvel, "Using Data mining Techniques for Improving Dairy Management", 01/10/2017, V. Masson, A. Termier, P. Faverdin

PhD in progress: Anh Duong Nguyen, "Compression Based Pattern Mining", 01/03/2018, R. Gaudel, P. Cellier, A. Termier

PhD in progress: Johanne Bakalara, "Temporal Model of Care pathway to Query Medico-administrative Databases", 01/10/2018, T. Dameron O., Oger E., Guyet, S. A. Happe

PhD in progress: Erwan Bourrand, "Interactive Data Mining for Root Cause Analysis of Performance Issues in Networks", 03/12/2018, L. Galárraga, E. Fromont, A. Termier

PhD in progress: Heng Zhang, "Deep Learning on Multimodal Data for the Supervision of Sensitive Sites", 03/12/2018, E. Fromont, S. Lefevre

PhD in progress: Yichang Wang, "Interpretable Shapelet for Anomaly Detection in Time Series", 15/04/2018, E. Fromont, S. Malinowski, R. Tavenard, R. Emonet

10.2.3. Juries

- PHD defenses (E. Fromont): Jean Ogier, Paris (reviewer); Maxime Chabert, Lyon (committee member); Wissam Siblini, Nantes (committee member, president); Michaël Blot, Paris (committee member, president); Nicolas Audebert, Paris (committee member, president); Hoang Viet Tuan Nguyen, Annecy (reviewer); Soufiane Belharbi, Rouen (reviewer); Romain Deville, Lyon (supervisor); Bastien Moysset, Lyon (reviewer); Géraud Le Falher, Lille (committee member).

- Reviewer for the HDR defense of Claude Pasquier (Univ. Nice), defended on 20/09/2018 (A. Termier)

- Examiner for the HDR defense of Marc Plantevit (Univ. Lyon 1), defended on 14/12/2018 (A. Termier)

- Committee member for the PhD defense of Clément Gautrais (Univ. Rennes), defended on 16/10/2018 (A. Termier, T. Guyet, R. Quiniou)

- Committee member for the PhD defense of Yann Dauxais (Univ. Rennes), defended on 13/04/2018 (T. Guyet)

- Member of the hiring committee for Lille MCF27-0076, Paris-Sud PR27-0122, Saint-Etienne TSE MCF27-511 as president (E. Fromont)

- Member of the INRA research hiring committee on 25/04/2018 (MIA/INRA) (T. Guyet)

- Member of the associate professor hiring committee on 23/04/2018 (LERIA/Univ. Angers) (T. Guyet)

- Member of the associate professor hiring committee MCF0942 of Polytech Nancy (A. Termier)

- Thesis advisory committee member:
  - T. Guyet: Caglayan Tuna (UBS)
  - A. Termier: Mathilde Chen (INRA), Lucas Bourneuf (Univ. Rennes)

10.3. Popularization

10.3.1. Interventions

- Public debate on Artificial Intelligence at Café des Champs-Libres, Rennes (E. Fromont)

- Radio C-LAB, invited to the "Mars 2081" show on AI. (E. Fromont)

- Invited member to the focus group "Transition numérique et pratiques de recherche et d'enseignement en agriculture, alimentation, environnement et sciences vétérinaires à l'échéance 2040" (T. Guyet)

- Intervention at the Pint of Science 2018 event, topic: Artificial Intelligence and Data Science (A. Termier)

- Invited talk at "Matinale Rennes Atalante", Rennes (A. Termier, 22/12/2018) [0].

- Invited talk at Lacroix-Sofrel industrial group (A. Termier)

- Invited talk at the kickoff the OpenLab PSA-Inria, where Lacodam if actively involved (A. Termier)

- Invited talk at the conference *IN'Sciences "Big data : comment combiner intelligence artificielle et gestion de données ?"* (L. Galárraga, chaired by L. Rozé)

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[0]Video: http://www.rennes-atalante.fr/actualites-technopole/captations-matinales-rennes-atalante/2018/visionnez-la-matinale.html

LARSEN Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General chair, scientific chair

- Co-organized the French days for Humanoid Robotics (JNRH – "Journées Nationales de la Robotique Humanoïde"), sponsored by the GT7 of the GDR Robotics [Serena Ivaldi, Karim Bouyarmane, Pauline Maurice, Jean-Baptiste Mouret, François Charpillet]
- Co-organized an international workshop at IROS 2018 (*Assistance and Service Robotics in a Human Environment*) [Francis Colas]
- Co-organized an international workshop at IEA 2018 (*Collaborative Robotics and Ergonomics*) [Pauline Maurice, Serena Ivaldi]

10.1.1.2. Member of the Organizing Committees

- Publicity chair for IEEE ARSO 2018 (Advances in Robotics and its Social Impact) [Serena Ivaldi]
- Co-organized the JFPDA2018 ("Journées Francophones sur la Planification, la Décision et l'Apprentissage pour la conduite de systèmes") [Vincent Thomas]
- Co-organized the Robotics and Artificial Intelligence day at the JFPDA 2018 [Serena Ivaldi]

10.1.2. Special issues

- Co-edited a special issue about "Human-Robot Interaction" in ERCIM News [Serena Ivaldi].

10.1.3. Scientific Events Selection

10.1.3.1. Member of the Conference Program Committees

- Associate Editor for IEEE Humanoids 2018 [Serena Ivaldi]
- Robotics Science and Systems (RSS) [Serena Ivaldi]
- ALIFE 2018 (European Conference on Artificial Life) [Amine Boumaza, Jean-Baptiste Mouret]
- EVO* 2018 (EvoStar) [Jean-Baptiste Mouret]
- GECCO2018 (Genetic and Evolutionary Computation Conference) [Amine Boumaza, Jean-Baptiste Mouret]
- CEC 2018 (Congress on Evolutionary Computation) [Amine Boumaza]
- ICAART 2018(International Conference on Agents and Artificial Intelligence)[François Charpillet]
- IJCAI-ECAI 2018 (International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence [François Charpillet]
- AAAI 2019 (AAAI Conference on Artificial Intelligence) [François Charpillet]

10.1.3.2. Reviewer for Peer-reviewed Conferences

- CoRL (Conference on Robot Learning) [Jean-Baptiste Mouret, Konstantinos Chatzilygeroudis]
- ICRA 2019 (2019 IEEE International Conference on Robotics and Automation) [Karim Bouyarmane, Francis Colas, Serena Ivaldi, Jean-Baptiste Mouret]
- IJCAI ECAI 2018 (27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence) [Francis Colas, Vincent Thomas]
- IROS 2018 (IEEE/RSJ International Conference on Intelligent Robots and Systems) [Karim Bouyarmane, Francis Colas, Jean-Baptiste Mouret]

- HUMANOIDS 2018 (IEEE/RSJ International Conference on Humanoid Robots) [Francis Colas]
- IEEE ARSO 2018 (Advanced Robotics and its Social Impact) [Serena Ivaldi]

10.1.4. Journal

10.1.4.1. Member of the Editorial Boards

- IEEE Robotics and Automation Letters [Serena Ivaldi, associate editor]
- Frontiers in AI and Robotics [Amine Boumaza, Serena Ivaldi, Jean-Baptiste Mouret]

10.1.4.2. Reviewer - Reviewing Activities

- Journal of Field Robotics [Francis Colas]
- Robotics and Automation Letters [Francis Colas]
- IEEE Robotics and Automation Letters [Jean-Baptiste Mouret, Serena Ivaldi]
- IEEE Transactions on Robotics [Serena Ivaldi]
- Autonomous Robots [Serena Ivaldi]
- CEAS Aeronautical Journal [Alexis Scheuer]

10.1.5. Scientific expertise

- Serena Ivaldi evaluated a project for the Université Libre de Bruxelles.

10.1.6. Invited Talks

- Jean-Baptiste Mouret gave a keynote at the CONTROLO 2018 conference (13th APCA International Conference on Automatic Control and Soft Computing, in Ponta Delgada, São Miguel Island, Azores, Portugal), and invited talks at the IEEE ICRA 2018 workshop "Self-healing, Growing and Evolving Soft Robots" (Brisbane, Australia), the IEEE ICRA 2018 workshop "Autonomous Robot Design", the Frontiers Research and Artificial Intelligence Workshop organized by the ERC (Bruxelle, Belgium), the German-French Conference on Humanoids and Legged Robots (Munich, Germany), the French Academy of Science and Leopolodina symposium "Data Science versus Motion Intelligence" (Paris, France), the Workshop on Learning Applications for Intelligent Autonomous Robots organized at the IAS 15 Conference (Baden Baden, Germany), as well as at Uber AI labs (San Francisco, California), the Advanced Telecommunications Research (ATR, near Kyoyo, Japan), and Safran R&D (Saclay, France).
- Serena Ivaldi gave an invited talk at the Workshop on Learning Applications for Intelligent Autonomous Robots organized at the IAS 15 Conference (Baden Baden, Germany) and at the atelier santé of the Journée Federation Charles Hermite (Nancy).
- Adrien Malaisé gave an invited talk at IEEE ARSO 2018 (Genova, Italy).

10.1.7. Research administration

- Francis Colas is member of the local commissions:
  - "Commission des Utilisateurs des Moyens Informatiques" (CUMI),
  - "Commission de Développement Technologique" (CDT),
  - "Comité du Centre Inria Nancy Grand-Est",
  - "bureau de la Commission de la Mention Informatique" (CMI) of the IAEM doctoral school.
- Serena Ivaldi was a member of the commitee for the researcher selection at Inria Nancy Grand Est (Jury CR),
- François Charpillet was a member of the commitee for professor selection at Université Technologique de Troyes (PR LM2S No 4049 "Traitement du signal"),
- François Charpillet was a member of the HCERES commitee for U2IS,

- François Charpillet is member of the scientific council of the GDR Robotics.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Pauline Maurice, "Analyse du comportement", 16 eq. TD, M2 "Sciences Cognitives", Univ. Lorraine, France

Master: Francis Colas, "Robotique Autonome", 18h eq. TD, M2 "Systèmes Interactifs et Robotiques", CentraleSupélec, France.

Master: Francis Colas, "ROS", 6h eq. TD, M1, Mines de Nancy, France.

Master: Francis Colas, "Planification de trajectoires", 12h eq. TD, M2 "Apprentissage, Vision, Robotique", Univ. Lorraine, France.

Master : Vincent Thomas, "Apprentissage numérique", 15h eq. TD, M2, Université de Lorraine, France.

Master : Vincent Thomas, "Optimisation et métaheuristique", 15h eq. TD, M1, Université de Lorraine, France.

Master : Vincent Thomas, "Game Design", 16h eq. TD, M1, Université de Lorraine, France.

Master : Vincent Thomas, "Agents intelligents et collectifs", 16h eq. TD, M1, Université de Lorraine, France.

Master : Vincent Thomas, "Serious Game", 12h eq. TD, M2, Université de Lorraine, France.

Master : Alexis Scheuer, "Vie artificielle", 22,5h eq. TD, M2, CentraleSupélec, France.

Master : Alexis Scheuer, "Introduction à la robotique mobile", 30h eq. TD, M1, Université de Lorraine, France.

Master : Alexis Scheuer, "Boucle sensori-motrice et comportement autonome", 15h eq. TD, M2, Université de Lorraine, France.

Master : Alexis Scheuer, "Modélisation et commande en robotique", 16h eq. TD, M2, Université de Lorraine, France.

10.2.2. Supervision

PhD: Konstantinos Chatzilygeroudis, 14 Dec. 2018, "*Micro-Data Reinforcement Learning for Adaptive Robots*", started in Oct. 2015, Jean-Baptiste Mouret (advisor).

PhD: Oriane Dermy, 17 Dec. 2018, "*Prédiction de l'intention: du geste au mouvement corps complet*", started Oct. 2015, François Charpillet (advisor), Serena Ivaldi

PhD in progress: Waldez Avedo Gomes Junior, "*Intelligent Collaboration between Humans and Robots*", started in Oct. 2018, Jean-Baptiste Mouret (advisor), Serena Ivaldi

PhD in progress: Rituraj Kaushik, "Fast adaptation to damage by exploiting trajectory data", started in Oct. 2016, Jean-Baptiste Mouret (advisor).

PhD in progress: Adam Gaier ,"*Optimisation aerodynamic design through illumination of surrogate models*", started in June 2017, Jean-Baptiste Mouret (advisor), Alexander Asteroth.

PhD in progress: Vladislav Tempez, "*Apprentissage data-efficace de lois de commandes pour robots volants*", started in Sept. 2018, Jean-Baptiste Mouret (advisor).

PhD in progress: Adrien Malaisé, "*Capteurs portés dans la robotique collaborative : de l'apprentissage du mouvement humain à l'acceptabilitee de cette technologie*", started in January 2017, Francis Colas (advisor), Serena Ivaldi.

PhD in progress: Jérôme Truc, "*Apprentissage de comportement et interactions prédictives pour un robot d'assistance en environnement structuré*", started in September 2018, Francis Colas (advisor).

PhD in progress: Yassine El Khadiri, "*Apprentissage automatique pour l'assistance à l'autonomie à domicile*", started in September 2018, François Charpillet(advisor).

PhD in progress: Eloise Zehnder, "*Interaction entre technologie et personnes âgées : adaptabilité et acceptabilité des technologies d'assistance (AT) à domicile*", François Charpillet, Jérome Dinet (advisors).

10.2.3. Juries

- Francis Colas was a reviewer for the PhD of Marie-Lou Barnaud (Univ. Grenoble Alpes).
- Serena Ivaldi was a reviewer for the PhD of Pavan Kanajar (Italian Institute of Technology, Italy).
- François Charpillet was a reviewer for the PhD of Nicolas Duminy (Univ. Bretagne Sud),
- François Charpillet was a reviewer for the PhD of Aurélien Massein (Univ. Côte d'Azur),
- François Charpillet was a reviewer for the PhD of Jules Waldhart (Univ. Fédérale Toulouse Midi-Pyrénées),
- François Charpillet was a reviewer for the PhD of Farhood Negin (Univ. Côte d'Azur),
- François Charpillet was a reviewer for the PhD of Mathieu Lelerre (Univ. Normandie),
- François Charpillet was a reviewer for the HDR of Dominique Vaufreydaz (Univ. Grenoble Alpes).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Amine Boumaza is a member of the editorial board of "Interstice".

10.3.2. Articles and contents

- Jean-Baptiste Mouret gave interviews for France Culture (radio), France 3 Lorraine (TV), and Socialter (printed magazine)
- François Charpillet gave an interview which gave an article on Re.Med. La revue de la Recherche Médicale du CHRU de Nancy.

10.3.3. Education

- Vincent Thomas was member of the organization comitee of the "24h des DUT informatique" event (Nancy, 2018) and organized the Artificial Intelligence competition during the event (218 students from 25 DUT of computer science).
- Serena Ivaldi is in the scientific committee for the robotics exhibition at the "Cité des sciences et de l'industrie" in Paris (starting in April 2019).
- Serena Ivaldi presented our activities in robotics at the Lycée Henri Loritz in Nancy

10.3.4. Interventions

- Public workshop on robot programming with Thymio for the Ada Lovelace Day [Alexis Scheuer]
- Public workshop on robot programming with Thymio at "Fête de la Science" [Alexis Scheuer, Olivier Rochel, Francis Colas]
- The team showed demonstrations for the Ada Lovelace Day (around 20 female students)
- Participated to a panel at the "Forum des Sciences Cognitives" (Nancy, France) [Jean-Baptiste Mouret]
- Tutorials on "physics simulation" and "path planning" for teachers during "journées ISN-EPI" (Nancy, France) [Vincent Thomas]

10.3.5. Internal action

- Jean-Baptiste Mouret gave a talk for the Colloquium organied by LORIA

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LINKMEDIA Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

- LinkMedia organized the joint conferences CORIA - TALN in Rennes, May 2018, including several workshops and a hackathon on Fake News detection. Full program: https://project.inria.fr/coriataln2018/fr/.
- Guillaume Gravier and Vincent Claveau organized a special conference about "IA and media" in the framework of the European Cyber Week in Nov 2018, Rennes. Full program: https://www.european-cyber-week.eu/medias-ia-et-cyber.html

9.1.1.1. General Chair, Scientific Chair

- Laurent Amsaleg is general co-chair of ACM Intl. Conf. on Multimedia 2019.
- Guillaume Gravier is technical program co-chair for ACM Intl. Conf. on Multimedia 2019.
- Vincent Claveau was general chair of CORIA-TALN 2018.

9.1.1.2. Member of the Organizing Committees

- Guillaume Gravier was special session co-chair for IEEE Intl. Conf. on Content-Based Multimedia Indexing 2018
- Simon Malinowski was member of the Organizing Committee of the AALTD 18 Workshop (co-located with ECML-PKDD 18)
- Ewa Kijak was publication chair for IEEE Intl. Conf. on Content-Based Multimedia Indexing 2018

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- Vincent Claveau and Pascale Sébillot were program chairs of TALN 2018.
- Anne-Lyse Minard was demo chair of CORIA-TALN 2018.

9.1.2.2. Member of the Conference Program Committees

- Laurent Amsaleg was a PC member of: Extraction et Gestion de Connaissances, European Signal Processing Conference, ACM International Conference on Multimedia Retrieval, Multimedia Modeling, Content-Based Multimedia Indexing, IEEE International Conference on Multimedia & Expo, International Conference on Similarity Search and Applications, Multimedia Information Retrieval and Applications.
- Guillaume Gravier was a PC member of: ACM International Conference on Multimedia, ACM International Conference on Multimedia Retrieval, IEEE International Conference on Multimedia & Expo, European Conference on Information Retrieval, International Symposium on Multimedia, International Conference on Multimedia Modeling
- Simon Malinowski was a PC member of: Advanced analytics and Learning on Temporal Data 2018
- Vincent Claveau was a PC member of: European Conference on Information Retrieval (ECIR), Computational Linguistics (CoLing), International Conference in Artificial Intelligence (IJCAI), International Conference on MultiMedia Modeling (MMM), EMNLP (demo), ACL (demo), HumaNum workshop with EGC, TexMine workshop with EGC, DeFT workshop with TALN.
- Miaojing Shi was a PC member of: International Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Image Processing, Applications and Systems (IPAS), Asian Conference on Computer Vision (ACCV).

- Ewa Kijak was a PC member of: ACM International Conference on Multimedia, IEEE Intl. Conf. on Content-Based Multimedia Indexing
- Yannis Avrithis was a PC member of: IEEE Intl. Conf. on Computer Vision and Pattern Recognition (CVPR), European Conference on Computer Vision (ECCV).
- Teddy Furon was a PC member of: IEEE Workshop on Information Forensics and Security, IEEE International Conference on Image Processing, International Conference on Similarity Search and Applications.
- Pascale Sébillot was a PC member of: AAAI Conf. on Artificial Intelligence, European Conference on Information Retrieval (ECIR), International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence (IJCAI-ECAI), Language Resources and Evaluation Conference (LREC), Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL HLT).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Laurent Amsaleg was guest editor for the special issue of the Information Systems Journal, best papers from the SISAP 2016 conference.
- Laurent Amsaleg was guest editor for the special issue of the Information Systems Journal, best papers from the SISAP 2017 conference.
- Guillaume Gravier is associate editor of IEEE Trans. on Multimedia
- Vincent Claveau is Chief Editor of the ISTE journal RIDoWS
- Vincent Claveau is member of the editorial board of the journal Traitement Automatique des Langues (TAL)
- Christian Raymond is member of the Editorial board of the journal Discours
- Pascale Sébillot is editor of the Journal Traitement Automatique des Langues.
- Pascale Sébillot is member of the editorial board of the Journal Traitement Automatique des Langues.

9.1.3.2. Reviewer - Reviewing Activities

- Laurent Amsaleg was a reviewer for: IEEE Transactions on Information Forensics and Security, ACM Transactions on Information Systems.
- Christian Raymond was a reviewer for: Multimedia Tools and Applications
- Vincent Claveau was a reviewer for: Multimedia Tools and Applications, Technique et Sciences Informatiques, Traitement Automatique des Langues
- Miaojing Shi was a reviewer for: IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Image Processing, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Multimedia
- Yannis Avrithis was a reviewer for: IEEE Transactions on Pattern Analysis and Machine Intelligence
- Teddy Furon was a reviewer for: IEEE Transactions on Information Forensics and Security, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, MDPI Entropy Journal.
- Pascale Sébillot reviewed for Traitement Automatique des Langues.

9.1.4. Invited Talks

- Miaojing Shi gave an invited talk at Shanghai Jiaotong University, Shanghai.
- Miaojing Shi gave an invited talk at Tongji University, Shanghai.
- Miaojing Shi gave an invited keynote at FranceIsAI 2018, Oct 17-19, Paris.

9.1.5. Leadership within the Scientific Community

- Laurent Amsaleg is a member of the Steering Committee of SISAP for the 2016-2020 term
- Guillaume Gravier is member of the Community Council of the Mediaeval Multimedia Evaluation series
- Guillaume Gravier coordinated the answer to the call "Institut inter disciplinaire de l'IA" for Rennes.
- Guillaume Gravier was president of the Scientific Evaluation Committee of the National Research Agency for the theme 'Knowledge, data, content, big data - AI'
- Guillaume Gravier is a member of the scientific committee of the preGDR Traitement Automatique des Langues
- Vincent Claveau is a deputy head of the GdR CNRS MaDICS http://www.madics.fr
- Vincent Claveau is the finance head of ARIA http://www.asso-aria.org
- Pascale Sébillot is a member of the permanent steering committee of Conf. Francophone en Traitement Automatique des Langues Naturelles.
- Pascale Sébillot is a member of the committee of leaders of the preGDR Traitement Automatique des Langues reflection axes (in charge of the Intermodality and Multimodality axis (with B. Favre, LIS Marseille)).

9.1.6. Scientific Expertise

- Miaojing Shi was expert evaluator for the French National Research Agency (ANR).

9.1.7. Research Administration

- Guillaume Gravier is deputy director of Institut de Recherche en Informatique et Systèmes Aléatoires (IRISA, UMR 6074)
- Guillaume Gravier is a member of the Board of the technology cluster Images & Réseaux.
- Guillaume Gravier is a member of the Board of the Comité des Projets of Inria - Rennes Bretagne Atlantique.
- Pascale Sébillot is a member of the Conseil National des Universités 27th section (computer science).
- Pascale Sébillot is the director of the Computer Science Laboratory, INSA Rennes.
- Pascale Sébillot is the deputy director of the Scientific Advisory Committee of IRISA UMR 6074.
- Pascale Sébillot is a member of the theses advisory committee of the MathSTIC doctoral school.
- Pascale Sébillot is a member of the board of the MathSTIC doctoral school.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Laurent Amsaleg & Teddy Furon, Indexation multimédia, 10h, L3-cours invité, ENS Rennes, France

Licence: Laurent Amsaleg, Bases de données avancées, 2h, L3-option génie mathématique, INSA Rennes, France

Licence: Guillaume Gravier, Probability and statistics, 16h, L3, INSA Rennes, France

Licence: Guillaume Gravier, Natural Language Processing, 12h, L3 & M1, INSA Rennes, France

Engineering school: Vincent Claveau, Machine Learning, 16h, 3rd year, INSA Rennes, France

Engineering school: Vincent Claveau, Information Retrieval, 10h, 3rd year, ENSSAT Lannion, France

Master: Vincent Claveau, Information Retrieval, 10h, M2 MIAGE, Univ. Rennes, France

Master: Laurent Amsaleg, Bases de données avancées, 25h, M2, INSA Rennes, France

Master: Guillaume Gravier, Data analysis and probabilistic modeling, 30h, M2, University Rennes 1, France

Master: Simon Malinowski, Méthodes de prédiction, 32h, M2 Miage, Univ. Rennes

Master: Simon Malinowski, Apprentissage automatique, 24h, M2 Miage, Univ. Rennes

Master: Simon Malinowski, Fouille de données symboliques, 12h, M2 Miage, Univ. Rennes

Master: Christian Raymond, Dialogue, 4H, M2 SIF, Univ. Rennes

Master: Ewa Kijak, Image processing, 67h, M1, ESIR, France

Master: Ewa Kijak, Supervised machine learning, 15h, M2R, University Rennes 1, France

Master: Ewa Kijak, Supervised machine learning, 15h, M2, University Rennes 1, France

Master: Ewa Kijak, Image classification, 45h, M1, ESIR, France

Master: Ewa Kijak, Image indexing, 17h, M2, University Rennes 1, France

Master: Ewa Kijak, Indexing and multimedia databases, 15h, M2, ENSSAT, France

Master: Ewa Kijak, Computer vision, 22h, M2, ESIR, France

Master: Yannis Avrithis, Deep learning for vision, 20h, M2 SIF, France

Master: Teddy Furon, Rare event simulations, 20h, M2 option génie mathématique, INSA, France

Master: Pascale Sébillot, Natural Language Programming, 6h, M1, INSA Rennes, France

9.2.2. Supervision

PhD in progress: Hanwei Zhang, Deep Learning in Adversarial Contexts, October 2017, Laurent Amsaleg, Yannis Avrithis, Teddy Furon & Ewa Kijak

PhD in progress: Marzieh Gheisari-Khorasgani, Secure identification in the Internet of Things, January 2018, Laurent Amsaleg & Teddy Furon

PhD in progress: Cédric Maigrot, Détection de fausses informations dans les réseaux sociaux, October 2015, Laurent Amsaleg, Vincent Claveau & Ewa Kijak

PhD in progress: Ricardo Carlini-Sperandio, Unsupervised motif mining in multimedia time series, August 2015, Laurent Amsaleg & Guillaume Gravier

PhD in progress: Antoine Perquin, Universal speech synthesis through embeddings of massive heterogeneous data, October 2017, Laurent Amsaleg, Gwénolé Lecorvé & Damien Lolive (with Expression, IRISA team)

PhD in progress: Tong Xue, Visualization and collaborative analysis of document collections and extracted knowledge for data journalism, October 2018, Laurent Amsaleg & Anastasia Bezerianos

PhD in progress: Mathieu Laroze, Active learning on adaptive representations for object detection in high-resolution imaging, started June 2016, Romain Dambreville, Chloe Friguet, Ewa Kijak and Sebastien Lefevre (with OBELIX, IRISA team)

PhD in progress: Mikail Demirdelen, User-adapted multi-document multimedia synthesis, started Oct. 2016, Guillaume Gravier & Pascale Sébillot

PhD in progress: Cheikh Brahim El Vaigh, Incremental content to data linking leveraging ontological knowledge in data journalism, started Oct. 2017, Guillaume Gravier, Pascale Sébillot and François Goasdoué (with CEDAR, Inria team)

PhD in progress: Cyrielle Mallart, Incremental dynamic construction of knowledge bases from text mining, started Dec. 2018, Guillaume Gravier & Pascale Sébillot (with Ouest-France)

PhD in progress: Oriane Siméoni, Invariance and supervision in visual learning, started Oct. 2016, Yannis Avrithis & Guillaume Gravier

PhD in progress: Zhaohui Yang, learning visual models with minimal human supervision, Jan. 2018, Miaojing Shi & Yannis Avrithis & Chao Xu (Peking University, Beijing)

PhD in progress: Feng Xiong, Perception and self-learning of service robot in dynamic scenarios. Nov. 2019, Miaojing Shi & Qijun Chen (Tongji University, Shanghai)

PhD in progress: Yann Lifchitz, Few shot learning for object recognition in aerial images. Started Mar. 2018, Yannis Avrithis, Sylvaine Picard (Safran) and Andrei Bursuc (Valeo).

9.2.3. Juries

Laurent Amsaleg
- PhD, reviewer, André Belchior Mourão, *Towards an Architecture for Efficient Distributed Search of Multimodal Information*, Universidade Nova de Lisboa, April 2018.

Ewa Kijak
- PhD, member, Himalaya Jain, *Learning compact representations for large scale image search*, University Rennes 1, June 2018.

Guillaume Gravier
- HDR, reviewer, Anthony Larcher, Le Mans Université, Déc. 2018.
- PhD, reviewer, Sébastien Delecraz, Aix-Marseille Université, Dec. 2018.

Teddy Furon
- PhD, member, Dimche Kostadinov, *Nonlinear Transform Learning: Model, Applications, and Algorithms*

Pascale Sébillot
- PhD, member, Alexandre Bérard, Université Grenoble Alpes, June 2018.
- PhD, president, Caroline Langlet, Télécom ParisTech, Sept. 2018.

Vincent Claveau was reviewer for the mid-term PhD auditions of Anna Koroleva, LIMSI, Christopher Norman, LIMSI, Zheng Zhang, LIMSI.

9.3. Popularization

9.3.1. Articles and contents

- Interviews in order to popularize: Guillaume Gravier was interviewed on AI technology for Sciences Ouest
- Vincent Claveau gave interviews about Fake News detection in the following journals: Stratégies 06/06/2018 and 12/10/2018, LCI.fr 8/06/2018, Le Monde.fr 24/05/2018, Sciences Ouest n363, Sciences et Avenir 30/05/2018 and xx/12/2018, 01net n894
- Ewa Kijak was interviewed by LeTemps.ch

9.3.2. Interventions

- Public exhibitions: Vincent Claveau and Guillaume Gravier presented at Futur.e.s
- Vincent Claveau participated in a press conference organized by the CNRS in May 2018
- Vincent Claveau gave an invited talk about NLP and fake news at the Forum des sciences cognitives in Nancy
- Vincent Claveau was heard at the French National Assembly by the parliamentary group *Économie numérique de la donnée, de la connaissance et de l'intelligence artificielle*
- Miaojing Shi was invited for a panel discussion about *China is AI: perspective on the booming Chinese AI ecosystem* at FranceIsAI, Oct 2018, Paris.
- Miaojing Shi was invited to the 2nd Edition of the Purple Night organized by the France China Committee in order to value the Franco-Chinese cooperation.

9.3.3. Internal action

- Regional events: Guillaume Gravier was invited conferencer on AI for Café des Sciences (general public audience, ∼100 pers.)

9.3.4. Creation of media or tools for science outreach

- Cédric Maigrot and Vincent Claveau participated to the educational video from Cité des Sciences about Fake News detection https://bit.ly/2Rz7MAp

LINKS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

- F. Capelli: workshop organisation of *Graph and Constraints* (27/08) within the conference Constraint Programming (CP) 2018, Lille.
- F. Capelli: organisation of annual meeting of GT ALGA (Groupe de Travail Automata, Logic, Games, Algebra of CNRS) the 15th and 16th of October at Lille.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- J. Niehren was is was chair of the Program Committee of WPTE 2018.
- J. Niehren was is was co-chair of the Program Committee of WPTE 2019.

10.1.2.2. Member of the Conference Program Committees

- F. Capelli: member of Program Committee of International Joint Conference on Artificial Intelligence (IJCAI) 2018.
- F. Capelli: member of Program Committee of workshop Quantified Boolean Formulas (QBF) within FLoC conference (Federated Logic Conference).
- F. Capelli: member of Program Committee of workshop Graph and Constraints, 2018.
- S. Tison: member of Program Committee of RAIRO ITA, 2018.
- J. Niehren: member of the Program Committee of LATA 2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

J. Niehren is editor of Fundamenta Informaticæ.

S. Salvati is managing editor of JoLLI (Journal for Logic, Language and Information).

S. Tison is in the editorial committee of RAIRO-ITA (Theoretical Informatics and Applications).

10.1.4. Invited Talks

- B. Guillon gave invited talks at Mid-term Meeting of ANR Delta in Bordeaux in December 2018.
- A. Lemay gave invited talks at Mid-term Meeting of ANR Delta in Bordeaux in December 2018.
- Joachim Niehren gave an invited talk at the American University of Palestine in August 2018.
- F. Capelli get invited to talk at seminars of CRIL at Lens, LACL in Créteil and VALDA in Paris.

10.1.5. Scientific Expertise

- S. Tison: member of coordinator of i-SIte ULNE, about innovation and relationship with social economical world.
- S. Tison: Head of CITC-Eurarfid.
- J. Niehren is member of the board of the committee of project-teams of Inria Lille.

10.1.6. Research Administration

- F. Capelli: Co-organizer of *Groupe de Travail* of CNRS IMIA (Informatique Mathématique Intelligence Artificielle)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

I. Boneva gives a Master 1 semester on Algorithms for databases.

C. Paperman is pedagogical responsible for Master MIASHS "parcours" WebAnalyste.

A. Lemay is pedagogical responsible for Computer Science and Numeric correspondent for UFR LEA.

J. Niehren was teaching the course "Foundations of Databases" as part of the masters 2 Mocad on Information Extraction at the University of Lille.

S. Salvati is pedagogical responsible of Master Miage FA, Lille.

S. Salvati organized the research label for Computer Science Bachelor, Lille.

S. Tison is pedagogical responsible of first year ACT Master, Lille.

10.2.2. Supervision

HdR : Aurélien Lemay, *Machine Learning Techniques for Semistructured Data*, Université de Lille, Fri 16th Nov.

PhD in progress: N. Crosetti. Privacy Risks of Aggregates in Data Centric-Workflows. Supervised by Capelli, Niehren, Ramon (Team MAGNET) and Tison.

PhD in progress: D. Gallois. Since 2015. Recursive Queries. Supervised by Bourhis and Tison.

PhD in progress: M. Sakho. Hyperstreaming Query answering on graphs. Since 2016. Supervised by Niehren and Boneva.

PhD in progress: J.M. Lozano. On data integration for mixed database formats. Supervised by Boneva and Staworko.

PhD in progress: P. Gallot. On safety of data transformations. Started on October 2017. Supervised by Lemay and Salvati.

10.2.3. Juries

S. Tison: Vice-Présidente du jury Agrégation de Mathématiques (co-pillote option D- Informatique).

S. Tison: Jury de Thèse Lucien Mousin.

S. Tison: PhD Committee of Narjes Jomaa.

F. Capelli: PhD Committee of Mikaël Monet.

J. Niehren: Habilitation Committee of Aurélien Lemay.

10.3. Popularization

10.3.1. Internal action

General Assembly of Inria Lille   Niehren presented Links work on data and knowledge bases on the Dynamic Semantic Crosswords demonstration during a general assembly of Inria Lille in July 2018.

10.3.2. Creation of media or tools for science outreach

Dynamic Semantic Crosswords   Bacquey's demonstration system on dynamic semantic crosswords is presented in the new showroom of Inria Lille in the new building Place. The demo generates dynamically crosswords while streaming Twitter feeds, depending on a semantic topic specified by the user. The specification can be given by a list of hashtags, and in the future by a XPath 3.0 query, that can be executed on streams by using Links QuiXPath tool. This illustrates the work on complex event processing by Niehren and his students during the last years.

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LOKI Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- IHM (AFIHM): Stéphane Huot (Doctoral Consortium co-Chair), Thomas Pietrzak (Posters co-Chair)

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- CHI (ACM): Géry Casiez
- IHM (AFIHM): Thomas Pietrzak

9.1.2.2. Reviewer

- CHI (ACM): Sylvain Malacria, Mathieu Nancel, Thomas Pietrzak
- UIST (ACM): Géry Casiez, Sylvain Malacria, Mathieu Nancel, Thomas Pietrzak
- MobileHCI (ACM): Thomas Pietrzak
- ISS (ACM): Mathieu Nancel
- NordiCHI: Mathieu Nancel, Thomas Pietrzak
- Eurohaptics: Thomas Pietrzak
- IHM (AFIHM): Stéphane Huot, Mathieu Nancel
- NIME: Marcelo Wanderley
- GI: Mathieu Nancel

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Computer Music Journal: Marcelo Wanderley

9.1.3.2. Reviewer - Reviewing Activities

- Transactions on Computer-Human Interaction (ACM): Mathieu Nancel
- Virtual Environments (Frontiers): Géry Casiez
- IEEE Access (IEEE): Géry Casiez
- Behaviour & Information Technology (Taylor & Francis): Mathieu Nancel

9.1.4. Invited Talks

- *Human-Computer Interaction: Back to the future and... forward to the past*, Insights on the FUTURE of Computing conferences, Laboratoire d'Informatique de Grenoble, Grenoble: Stéphane Huot
- *Interaction Homme-Machine : passé composé et futur simple... ou l'inverse*, Collège de France Seminar – lecture of Gérard Berry (chair Algorithms, Machines and languages), Lille: Stéphane Huot
- *The measure and compensation of latency in touch and mouse-based systems*, DGP, Toronto, Canada: Géry Casiez
- *The measure and compensation of latency in touch and mouse-based systems*, Google, Waterloo, Canada: Géry Casiez
- *Motion Capture of Music Performances: Overview of almost 2 decades of research*, RITMO International Motion Capture Workshop, Oslo, Norway: Marcelo Wanderley (Keynote Speaker)

9.1.5. Leadership within the Scientific Community

Association Francophone d'Interaction Homme-Machine (AFIHM):

- Stéphane Huot: member of the scientific council
- Thomas Pietrzak: board member and webmaster until Oct. 2018

9.1.6. Scientific Expertise

- Agence Nationale de la Recherche: Stéphane Huot (mid-term review committee member)
- CN35 AFNOR normalization committee about normalizing the French keyboard, in collaboration with Aalto University and the Max Planck Institute: Mathieu Nancel
- FWO Research Foundation - Flanders: Géry Casiez (reviewer)
- Région Aquitaine: Géry Casiez, Sylvain Malacria (reviewer)

9.1.7. Research Administration

9.1.7.1. For Inria

- International relations working group (COST-GTRI): Stéphane Huot (member)

9.1.7.2. For Inria Lille – Nord Europe

- "Bureau du comité des équipes projets" (BCEP): Stéphane Huot (member)
- Research jobs committee (CER): Sylvain Malacria (member since Jan. 2018)
- Operational legal and ethical risk assessment committee (COERLE): Stéphane Huot (local correspondent)

9.1.7.3. For the CRIStAL lab of Univ. Lille & CNRS

- Direction board: Géry Casiez (deputy director since Sept. 2018)
- Laboratory council: Géry Casiez (member until Aug. 2018)
- Computer Science PhD recruiting committee: Géry Casiez (member)

9.1.7.4. For the Université de Lille

- Coordinator for internships at IUT A: Géry Casiez
- Computer Science Department council: Thomas Pietrzak

9.1.8. Hiring committees

- Inria's eligibility jury for Junior Researcher Positions (CRCN) in Lille: Stéphane Huot (vice-president)
- Université de Lille hiring committee for a Computer Science Assistant Professor position: Géry Casiez (president)
- Université Paris-Saclay hiring committees for Computer Science Assistant Professor positions: Géry Casiez (member), Stéphane Huot (member)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

DUT Informatique: Géry Casiez (38h), Stéphane Huot (28h), *IHM*, 1st year, IUT A de Lille - Univ. Lille

Licence Informatique: Thomas Pietrzak, *Logique*, 52.5h, L3, Univ. Lille

Licence Informatique: Thomas Pietrzak, *Automates et Langages*, 36h, L3, Univ. Lille

Licence Informatique: Thomas Pietrzak, *Image et Interaction 2D*, 10.5h, L3, Univ. Lille

Licence Sciences pour l'Ingénieur (SPI): Sylvain Malacria, *Introduction à l'Interaction Homme Machine*, 30h, L3, Institut Villebon Georges Charpak

Cursus ingénieur: Sylvain Malacria (10h), *3DETech*, IMT Lille-Douai

Master Informatique: Thomas Pietrzak (18h), *NIHM*, M2, Univ. Lille

Master Informatique: Sylvain Malacria (20h), *NIHM*, M2, Univ. Lille

Master Informatique: Géry Casiez (4h), Thomas Pietrzak (4h), *Projets*, M2, Univ. Lille

Master Informatique: Thomas Pietrzak (34.5h), Sylvain Malacria (34.5), *IHM*, M1, Univ. Lille

Master Informatique: Mathieu Nancel, *Evaluation*, 4h, M2, Univ. Lille

Master: Thomas Pietrzak (10.5h), *3DETech : 3D Digital Entertainment Technologies*, M2, IMT Lille Douai

Doctorat: Géry Casiez, *Expériences contrôlées et analyses statistiques*, École doctorale SPI

Master & Doctorat: Marcelo Wanderley (39h), MUMT-619 Input Devices for Musical Expression

9.2.2. Supervision

PhD: Amira Chalbi, *Understanding and Designing Animations in the User Interfaces*, defended in April 2018 [11], advised by Nicolas Roussel & Fanny Chevalier

PhD in progress: Marc Baloup, *Interaction with avatars in immersive virtual environments*, started Oct. 2018, advised by Géry Casiez & Thomas Pietrzak

PhD in progress: Axel Antoine, *Helping Users with Interactive Strategies*, started Oct. 2017, advised by Géry Casiez & Sylvain Malacria

PhD in progress: Nicole Ke Chen Pong, *Understanding and Improving Users Interactive Vocabulary*, started Oct. 2016, advised by Nicolas Roussel, Sylvain Malacria & Stéphane Huot

PhD in progress: Thibault Raffaillac, *Languages and System Infrastructure for Interaction*, started Oct. 2015, advised by Stéphane Huot

PhD in progress: Hakim Si Mohammed, *Improving Interaction Based on a Brain-Computer Interface*, started Oct. 2016, advised by Anatole Lecuyer, Ferran Argelaguet, Géry Casiez & Nicolas Roussel (in Rennes)

PhD in progress: Jeronimo Barbosa, *Design and Evaluation of Digital Musical Instruments*, McGill University, started in 2013, advised by Marcelo Wanderley & Stéphane Huot (in Montréal)

9.2.3. Juries

Jeff Avery (PhD, Univ. Waterloo, Canada): Géry Casiez, examiner

Antoine Costes (PhD, Univ. Bretagne Loire): Géry Casiez, reviewer

Bruno Fruchard (PhD, Univ. Paris-Saclay): Géry Casiez, reviewer

Julien Gori (PhD, Univ. Paris-Saclay): Stéphane Huot, examiner

Wanyu Liu (PhD, Univ. Paris-Saclay): Géry Casiez, reviewer

Gary Perelman (PhD, Univ. Toulouse III): Géry Casiez, reviewer

Houssem Saidi (PhD, Univ. Toulouse III): Stéphane Huot, reviewer

9.2.4. Mid-term evaluation committees

- Jeff Avery (PhD, Univ. Waterloo, Canada): Géry Casiez
- Delphine Poux (PhD, Univ. Lille): Géry Casiez
- Marc Teyssier (PhD, Univ. Paris-Saclay): Géry Casiez

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

AIRLab selection committee for the funding of art and science projects, Stéphane Huot (representative for Inria Lille – Nord Europe)

9.3.2. Articles and contents

2067 ou la disparition des interfaces humains-machines, interview in an Inriality and Usbek & Rica joint article, Stéphane Huot

Le raccourci clavier: Une meilleure interaction entre l'Homme et la machine ?, in Lille by Inria N°7, Sylvain Malacria

9.3.3. Education

Structuration et fonctionnement de la recherche, training session for academic librarians at Média-Lille, Thomas Pietrzak

9.3.4. Internal action

Chorégraphie d'animation : structurer pour mieux comprendre, talk at Inria Lille – Nord Europe "13:45", Amira Chalbi

Reliability and Perceived Reliability in Ubiquitous Gestural Input, talk at Inria Lille – Nord Europe "30 minutes de sciences", Edward Lank

The TurboTouch latency compensation method, demonstration at the opening ceremony of Bâtiment Place (Inria Lille – Nord Europe), Mathieu Nancel

MAGNET Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- AURÉLIEN BELLET was a member of the organization committee of the PPML workshop at NeurIPS'18. [0] The workshop was on Privacy Preserving Machine Learning and had among its invited speakers Shafi Goldwasser (Gödel and Turing Prize), Adam Smith (Gödel Prize).
- AURÉLIEN BELLET co-organized the kick-off workshop of the associated team PAD-ML with the Alan Turing Institute. [0] The workshop was held at Inria Lille and featured speakers from MAGNET and the Alan Turing Institute.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- AURÉLIEN BELLET served as PC member for AISTATS'19, ICML'18, NIPS'18, IJCAI'18 Sister Conference, PiMLAI workshop at ICML'18, and CAP'18.
- PASCAL DENIS served as PC member for ACL'18, CONLL'18, EMNLP'18, NAACL'18, NIPS'18, IJCAI-ECAI'18 (Senior PC), CRAC Workshop at NAACL'18.
- MARC TOMMASI served as PC member for AAAI'18, ICML'18, CAP'18, IJCAI'18 (Senior PC chair), AISTATS'18, NIPS'18.
- JAN RAMON served as PC member for AAAI'19, AISTATS'19, IEEE-BigData'18, CIKM'18, DS'18, ECML/PKDD'18, EKAW'18, IEEE-ICDM'18, ICML'18, ILP'18, LOD'18, MLG'18, NIPS'18, SDM'18, TDLSG'18.
- MIKAELA KELLER served as PC member for ICML'18, CAP'18.
- RÉMI GILLERON served as PC member for NIPS'18, CAP'18, AISTATS'19 and ICLR'19.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- AURÉLIEN BELLET was reviewer for Machine Learning Journal and IEEE/ACM Transactions on Networking.
- PASCAL DENIS was reviewer for Computational Linguistics, IJCAI-ECAI Surveys, and Language Resources and Evaluation.
- JAN RAMON was member of the editorial boards of Machine Learning Journal (MLJ) and Data Mining and Knowledge Discovery (DMKD). JAN RAMON was reviewer for among others JMLR, TPAMI, JIIS.

10.1.4. Invited Talks

- AURÉLIEN BELLET gave invited talks at the EPFL-Inria 2018 workshop [0] and the Journées de Statistique 2018 (session SSFAM). [0]
- AURÉLIEN BELLET was invited to talk at the seminars of Inria WIDE, Télécom ParisTech, Statistics Seminar of Paris 6/7, CMLA (ENS Paris Saclay) and Naver Labs Europe.
- PASCAL DENIS gave an invited talk at the Séminaire Langage, SCALab, Université de Lille, 26/01/18.

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[0]https://neurips.cc/Conferences/2018/Schedule?showEvent=10934
[0]https://team.inria.fr/magnet/workshop-on-privacy-aware-distributed-machine-learning/
[0]https://project.inria.fr/epfl-Inria/workshops/workshop-2018/
[0]http://jds2018.sfds.asso.fr/

10.1.5. Scientific Expertise

- AURÉLIEN BELLET was a member of the jury for the Gilles-Kahn PhD award of the French Society of Computer Science (SIF), sponsored by the French Academy of Sciences. [0]
- AURÉLIEN BELLET acted as external reviewer for the French National Research Agency (ANR), track "Projets de Recherche Collaborative – International".
- JAN RAMON was an external reviewer for the Swiss National Science Foundation (SNF).
- JAN RAMON was an external reviewer for the Vienna Science and Technology Fund (WWTF).
- JAN RAMON acted as an expert for the H2020 CoE and IMI programs.

10.1.6. Research Administration

- MIKAELA KELLER is member of the Conseil du laboratoire CRIStAL.
- FABIEN TORRE is member of the bureau du Conseil National des Universités (section 27).
- PASCAL DENIS served as a member of the CNRS Pre-GDR NLP Group.
- PASCAL DENIS was elected to Comité National du CNRS, section 34 (Sciences du Langage).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence SHS: JOËL LEGRAND, Traitement de textes et tableur, 10h, L1, Université Lille.

Licence SHS: MARC TOMMASI, Langages du Web, 24h, L2, Université Lille.

Licence MIASHS: MIKAELA KELLER, Python 1, 40h, L1, Université Lille.

Licence MIASHS: MARC TOMMASI, Codage et représentation de l'information, 48h, L1, Université Lille.

Licence MIASHS: MIKAELA KELLER, Codage et représentation de l'information, 42h, L1, Université Lille.

Licence SoQ (SHS): MIKAELA KELLER, Algorithmique de graphes, 24h, L3, Université Lille.

Licence MARC TOMMASI C2i 12h, Université Lille.

Licence MARC TOMMASI Humanités numériques - Découvrir et faire découvrir la programmation, 20h, Université Lille/

Master MIASHS: MIKAELA KELLER, Algorithmes fondamentaux de la fouille de données, 60h, M1, Université Lille.

Master MIASHS: JOËL LEGRAND, Apprentissage et émergence de comportements, 30h, M2, Université Lille.

Master Data Analysis & Decision Making: AURÉLIEN BELLET, Machine Learning, 12h, Ecole Centrale de Lille.

Master / Master Spécialisé Big Data: AURÉLIEN BELLET, Advanced Machine Learning, 15h, Télécom ParisTech.

Formation continue (Certificat d'Études Spécialisées Data Scientist): AURÉLIEN BELLET, Supervised Learning and Support Vector Machines, 17.5h, Télécom ParisTech.

Master Informatique: PASCAL DENIS, Fondements de l'Apprentissage Automatique, 46h, M1, Université de Lille.

10.2.2. Supervision

Postdoc: MELISSA AILEM, InriaSiliconValley postdoctoral grant, supervised by AURÉLIEN BELLET, MARC TOMMASI, PASCAL DENIS and FEI SHA (University of Southern California).

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[0] https://www.societe-informatique-de-france.fr/recherche/prix-de-these-gilles-kahn/

Postdoc: Bo Li, supervised by Pascal Denis on ANR REM, Model Sense Disambiguation, since December 2017.

PhD: Géraud Le Falher, Characterizing edges in signed and vector-valued graphs. April 16th 2018, Marc Tommasi and Fabio Vitale and Claudio Gentile.

Phd: Ashraf M. Kibriya, Mining Frequent Patterns in Large Networks, June 2018, Jan Ramon.

PhD in progress: Mathieu Dehouck, Graph-based Learning for Multi-lingual and Multi-domain Dependency Parsing, since Oct 2015, Pascal Denis and Marc Tommasi.

PhD in progress: Onkar Pandit, Graph-based Semi-supervised Linguistic Structure Prediction, since Dec. 2017, Pascal Denis, Marc Tommasi and Liva Ralaivola (University of Marseille).

PhD in progress: Mariana Vargas Vieyra, Adaptive Graph Learning with Applications to Natural Language Processing, since Jan. 2018. Pascal Denis and Aurélien Bellet and Marc Tommasi.

PhD in progress: Brij Srivastava, Representation Learning for Privacy-Preserving Speech Recognition, since Oct 2018 Aurélien Bellet and Marc Tommasi and Emmanuel Vincent.

PhD in progress: Mahsa Asadi, On Decentralized Machine Learning, since Oct 2018. Aurélien Bellet and Marc Tommasi.

PhD in progress: Nicolas Crosetti, Privacy Risks of Aggregates in Data Centric-Workflows, since Oct 2018. Florent Capelli and Sophie Tison and Joachim Niehren and Jan Ramon.

PhD in progress: Robin Vogel, Learning to rank by similarity and performance optimization in biometric identification, since 2017 (CIFRE thesis with IDEMIA and Télécom ParisTech). Aurélien Bellet, Stéphan Clémençon and Anne Sabourin.

10.2.3. *Juries*

- Aurélien Bellet was member of the PhD jury of Guillaume Papa (Télécom ParisTech), Wenjie Zheng (Sorbonne Université), Michael Blot (Sorbonne Université).

- Marc Tommasi was member of the Phd jury of Gaëtan Hadjeres (*Rapporteur*), Alexandre Bérard (*Head*), Olivier Ruas (*Rapporteur*), Valentina Zantedeschi.

- Pascal Denis was *rapporteur* on the Phd jury of Elena Knyazeva, Université Paris-Saclay.

- Mikaela Keller was member of the recruitment committee for Assistant Professors in Computer Science at Université of Lille and at Université de St-Étienne.

- Mikaela Keller was member of the Phd jury of Damien Fourure (Université de St-Étienne) and of the HDR jury of Renaud Lopes (CHRU Lille).

- Rémi Gilleron was head of the PhD jury of Romain Warlop (Université de Lille).

- Pascal Denis was a member of hiring committee for Junior Research Scientist at Inria Lille.

- Marc Tommasi was member of the recruitment committee Assistant Professors in Computer Science at Université of Lille and for professor position at INSA de Lyon.

10.3. Popularization

10.3.1. *Internal or external Inria responsibilities*

- Aurélien Bellet is the scientific mediation contact for Inria Lille center.

- Pascal Denis served as committee member on the Inria Lille Commission Emploi Recherche (CER).

- Pascal Denis also served as committee member on Commission de Développement Technologique (CDT).

- PASCAL DENIS is administrator of Inria membership to Linguistic Data Consortium (LDC).

10.3.2. Articles and contents

- AURÉLIEN BELLET and MARC TOMMASI provided expertise for an upcoming TV program on Arte about new technologies.

10.3.3. Interventions

- National events: JAN RAMON and MARC TOMMASI participate to a round-table meeting at the *Fête des libertés numériques* for the RGPD day [0].

- In educational institutions: MARC TOMMASI gave a talk on privacy and machine learning in Journées polytech [0].

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[0] https://www.meshs.fr/page/donnees_personnelles_et_droits_et_libertes_numeriques
[0] http://www.polytech-lille.fr/big-data-machine-mearning-p11419.html#.WqlHjExFxPb

<p style="text-align:center">**MAGRIT Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- Fabien Pierre co-organized an ICPR satellite Workshop on Reproducible Research in Pattern Recognition (RRPR 2018, Beijing, China).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- M.-O. Berger was a member of the program committee of: International Conference on Robotic and automation (ICRA 2018), International Conference on Information Processing in Computer assisted interventions (IPCAI 2018), International Conference on Robotics and Automation (IROS 2018), International Symposium on Mixed and Augmented Reality (ISMAR 2018), International Conference on Pattern Recognition (ICPR 2018).
- Erwan Kerrien was a member of the program committe of MICCAI 2018.
- G. Simon was a member of the program committee of IEEE VR 2019 and IEEE ISMAR 2018
- F. Sur was a member of the program committe of RFIAP 2018 (Reconnaissance des formes, image, apprentissage et perception)

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

The members of the team reviewed articles in IEEE Transactions on Visualization and Computer Graphics, IEEE Transaction on Image Processing, MDPI Journal of Imaging, Image Processing On Line, Computer Methods and Programms in Biomedicine, Medical Image Analysis.

9.1.4. Invited Talks

- Fabien Pierre gave a talk during a one-day workshop organized in Paris in november 2018 by GDR ISIS. Title : *Géométrie et représentation de la couleur*.
- Pierre-Frederic gave a seminar at the department of information technology of Uppsala University on May 30th. Title: ' Mitral Valve Biomechanical Model Construction ' http://user.it.uu.se/~maya/ seminar_abstracts/sem_spring18/PFVillard.html.
- Daryna Pancheva gave a talk at the Harvard Biorobotics Lab on November 19th. Title: 'Automatic Segmentation of Mitral Valve Chordae'.
- Pierre-Frederic Villard gave a talk at the Harvard Biorobotics Lab on November 26th. Title: 'Mitral Valve modeling: from CT scan to FEM model'.

9.1.5. Scientific Expertise

- Marie-Odile Berger is the president of the Association française pour la reconnaissance et l'interprétation des formes (AFRIF).
- Gilles Simon was reviewers for two CIFRE grant proposals (ANR).

9.1.6. Research Administration

- Marie-Odile Berger is a member of the Inria evaluation committee. She was scientific referent for the Evaluation Seminar "Vision, perception and multimedia interpretation".
- Gilles Simon is Chargé de Mission Loria to take part in an EIT's KIC (Knowledge and Innovation Communities) proposal in the thematic of manufacturing (KIC Added-value Manufacturing).

9.2. Teaching - Supervision - Juries

9.2.1. *Teaching*

The assistant professors of the MAGRIT team actively teach at Université de Lorraine with an annual number of around 200 teaching hours in computer sciences, some of them being accomplished in the field of image processing. Inria researchers have punctual teaching activities in computer vision and shape recognition mainly in the computer science Master of Nancy and in several Engineering Schools near Nancy (ENSMN Nancy, SUPELEC Metz, ENSG). Our goal is to attract Master students with good skills in applied mathematics towards the field of computer vision.

The list of courses given by staff members which are related to image processing and computer vision is detailed below:

- M.-O. Berger
    - Master : Shape recognition, 15 h, Université de Lorraine.
    - Master : Introduction to image processing, 12 h, École des Mines de Nancy .
    - Master : Image processing for Geosciences, ENSG, 12h.
- E. Kerrien
    - Master : Introduction to image processing, 15 h, École des Mines de Nancy.
- Fabien Pierre
    - Licence: Introduction to image processing and compression, 30h, IUT Saint-Dié des Vosges.
- G. Simon
    - Master: Augmented reality, 24 h, Télécom-Nancy.
    - Master : Augmented reality, 24h, M2 IHM Metz.
    - Master : Augmented reality, 3 h, SUPELEC Metz.
- F. Sur
    - Master: Introduction to machine learning, 50 h, Université de Lorraine.
    - Master : Introduction to signal processing and applications, 21 h, Ecole des Mines de Nancy.
- P.-F. Villard
    - Licence: 3D programming, 16h, IUT Saint-Dié des Vosges.
    - Licence: Game design with Unity3D , 15h, IUT Saint-Dié des Vosges.
    - Licence: Introduction to augmented reality, 4h, IUT Saint-Die´ des Vosges.
    - Master : Augmented and Virtual Reality, 16h, M2 Cognitive Sciences and Applications, Institut des Sciences du Digital, Université de Lorraine.

Frédéric Sur was the head of the Industrial Engineering and Applied Mathematics department at Mines Nancy until August 2018.

9.2.2. *Supervision*

PhD: Antoine Fond, Introduction de sémantique dans la modélisation urbaine dans un contexte de calcul du point de vue, octobre 2014, Marie-Odile Berger, Gilles Simon. PhD defended in avril 2018.

PhD in progress: Jaime Garcia Guevara, Vers une utilisation clinique de la réalité agmentée pour la chirurgie hépatique, octobre 2015, Marie-Odile Berger, Stéphane Cotin (MIMESIS).

PhD in progress: Raffaella Trivisonne, Image-guided real-time simulation using stochastic filtering, novembre 2015, Erwan Kerrien, Stéphane Cotin (MIMESIS).

PhD in progress: Vincent Gaudillière, Reconnaissance de lieux et d'objets pour la réalité augmentée en milieux complexes, décembre 2016, Marie-Odile Berger, Gilles Simon.

PhD in progress: Daryna Panicheva, Image-based Biomechanical Simulation of Mitral Valve Closure, octobre 2017, Marie-Odile Berger, Pierre-Frédéric Villard.

9.2.3. *Juries*

- Marie-Odile Berger was external reviewer of the PhD of Philippe-Antoine Gohard (Univ. Toulouse), Guillaume Cortes (Univ. Rennes), Giang Nguyen (Univ Paris-Est) and of the HdR of Céline Fouard (Univ. Grenoble). She was examiner of the PhD of Nader Mamoud (Univ. Saragosse) and Alexandre Morgand (Univ. Clermont-Ferrand).

- Erwan Kerrien was external reviewer of the PhD of Mohammad Rezza Maddah (IMT Atlantique and Wright State University).

9.3. Popularization

Members of the team participate on a regular basis, to scientific awareness and mediation actions.

9.3.1. *Internal or external Inria responsibilities*

Erwan Kerrien is Chargé de Mission for scientific mediation at Inria Nancy-Grand Est, and thereby is part of the Inria scientific mediation network. As such, he is a member of the steering committee of "la Maison pour la Science de Lorraine" [0], and member of the IREM [0] steering council. He also serves as the academic referent of an IREM working group aiming at introducing computer science in lower and upper secondary school curricula.

9.3.2. *Articles and contents*

Erwan Kerrien was interviewed for a special edition of the journal of Nancy University Hospital about AI in medicine.

9.3.3. *Education*

- Gilles Simon participated to the "Fête de la science 2018" at the Faculté des Sciences et Technologies of the Université de Lorraine. He presented unplugged activities of computer science.

- Pierre-Frédéric Villard participated to open days and science festival in the IUT of Saint-Dié des Vosges. He presented augmented and virtual reality demos and their link to the high school mathematics program.

- Erwan Kerrien participated in the creation of a MOOC for teachers of the new ICN option (Informatique et Création Numérique - *Computer Science and Digital Creation*) at the beginning of high school curriculum (see https://www.fun-mooc.fr/courses/inria/41014/session01/info). This MOOC is part of the Class'Code project (https://pixees.fr/classcode-v2). During the year, he took his part in the animation and participated in the evolution of this MOOC to adapt to the new SNT

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[0]"Houses for Science" project, see http://maisons-pour-la-science.org/en
[0]Institut de Recherche sur l'Enseignement des Mathématiques - *Research Institute for Teaching Mathematics*

class (Sciences du Numérique et Technologie - *Digital Science and Technology*) that generalizes ICN, and is included in the 1st year core curriculum in upper secondary education.

He also participated in the creation and teaching, of a 5-day training course for scientific animators (in a broad sense, from science club animators to science teachers). This course was funded by Région Lorraine (see https://fan.loria.fr).

He gave a 2-day course about the use of unplugged computer science to introduce computer science in science class, along with another researcher and 2 secondary school maths teachers. This course has been organized with Maison pour la Science since 2015, and is proposed to around 20 maths and science secondary school teachers each year.

9.3.4. Interventions

- Gilles Simon was invited to participate in a round table on geomatics as part of the Saint-Dié-des-Vosges Geography Festival.

- Erwan Kerrien was an associate researcher to a MATh.en.JEANS workshop within Loritz high school in Nancy. He was also part of the organizing committee of the MATh.en.JEANS conference that took place in Nancy, and gathered around 500 pupils and teachers from North-East France, Belgium and Romania. He also proposed computer science unplugged activities to secondary school pupils, especially when around 100 girls were welcome in the Inria Nancy-Grand Est center to celebrate the Ada Lovelace Day.

<p align="center">**MANAO Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

Eurographics 2018 and 2019, Eurographics Symposium on Rendering 2018 (EGSR), Eurographics Workshop on Graphics and Cultural Heritage (GCH), Symposium on Geometry Processing 2018 (SGP), Geometric Modeling and Processing 2018 (GMP), ACM Conference on 3D Web Technology (Web3D)

10.1.1.2. Reviewer

ACM Siggraph 2018, ACM Siggraph Asia 2018, Eurographics 2019, High-Performance Graphics 2018 (HPG), ACM CHI Conference on Human Factors in Computing Systems (CHI), ACM Conference on 3D Web Technology (Web3D), Eurographics Workshop on Graphics and Cultural Heritage (GCH)

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

ACM Transactions on Graphics (TOG), IEEE Transactions on Visualization and Computer Graphics (TVCG), Computer Graphics Forum (CGF), Journal of Vision (JoV), i-Perception, ACM Journal on Computing and Cultural Heritage (JOCCH), ACM Transactions on Applied Perception (TAP), Royal Society Open Science, Computer and Graphcis

10.1.3. Invited Talks

Pierre Bénard – *Rendu stylisé d'animations 3D : une approche centrée utilisateur* at Rencontres Animation Développement Innovation (RADI), Angouleme, France, November 14th, 2018. Gaël Guennebaud – *A fast solver for transport maps on 2D grids* at ANR MAPA, Nancy, France, December 18th, 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

The members of our team are involved in teaching computer science at University of Bordeaux, ENSEIRB Engineering School, and Institut d'Optique Graduate School (IOGS). General computer science is concerned, as well as the following graphics related topics:

Master : Pierre Bénard, Gaël Guennebaud, Romain Pacanowski, Advanced Image Synthesis, 60 HETD, M2, Univ. Bdx, France.

Master : Xavier Granier & Antoine Lucat, Numerical Techniques, 45 HETD, M1, IOGS, France

Master : Xavier Granier, Image Synthesis, 14 HETD, M2, IOGS, France

Master : Gaël Guennebaud, Geometric Modeling, 31 HETD, M2, IOGS, France

Master : Gaël Guennebaud, Parallel Programming, 9 HETD, M1, IOGS, France

Master : Romain Pacanowski, Antoine Lucat, Algorithmic and Object Programming, 60 HETD, M1, IOGS, France

Master : Xavier Granier, Romain Pacanowski, Colorimetry and Appearance Modeling, 20 HETD, M1, IOGS, France.

Master : Gaël Guennebaud and Pierre Bénard, 3D Worlds, 60 HETD, M1, Univ. Bdx and IOGS, France.

Master : Pierre Bénard, Patrick Reuter, Virtual Reality, 20 HETD, M2, Univ. Bdx, France.

Master : Patrick Reuter, Graphical user interfaces and Spatial augmented reality seminars, M2, ESTIA, France.

Master : Pierre Bénard, Image Synthesis and 3D modeling, 20 HETD, M2, ENSEIRB, France.

Licence : Patrick Reuter, Digital Imaging, 30 HETD, L3, Univ. Bdx, France.

Some members are also in charge of some fields of study:

Master : Xavier Granier, M2, IOGS (Bordeaux), France.

10.2.2. Supervision

PhD : Loïs Mignard-Debize, Plenoptic function and its application to spatial augmented reality, Inria & Univ. Bordeaux, P. Reuter & I. Ihrke, 5 February 2018

PhD : David Murray, Expressive Rendering of Volumetric Data, Thermo Fisher Scientific & Univ. Bordeaux, J. Baril & X. Granier, 10 December 2018

PhD in progress : Antoine Lucat, Appearance Acquisition and Rendering, IOGS & Univ. Bordeaux, R. Pacanowski & X. Granier

PhD in progress : Thomas Crespel, Autostereoscopic 3D display, Inria & Univ. Bordeaux, P. Reuter & X. Granier

PhD in progress : Charlotte Herzog, 3 dimensions X-rays imaging for medical applications, Imaging Optics, IOGS & Univ. Bordeaux, X. Granier

PhD in progress : Camille Brunel, Real-Time Animation and Deformation of 3D Characters, Inria & Univ. Bordeaux, P. Barla, G. Guennebaud & P. Bénard

PhD in progress : Megane Bati, Inverse Design for Complex Material Apperance, IOGS & Univ. Bordeaux, R. Pacanowski & P. Barla

10.2.3. Juries

PhD (jury member) : Even Entem, Université Grenoble Alpes, October 26th, 2018.

PhD (reviewer) : Alexandre Bleron, Université Grenoble Alpes, November 8th, 2018.

10.3. Popularization

10.3.1. Interventions

- Public exhibitions: Station Campus, Live Painting with Maud Mulliez at the Musée Ethnographique de Bordeaux (November 29th, 2018).

- Talks for schoolchildren: Camille Brunel and Pierre Bénard gave a 30 minutes talk titled *L'art et la science des films d'animation 3D* in front of secondary students during "la semaine des Maths" (March 15th, 2018), "le Printemps de la Mixité" (March 27th, 2018), and "la Fête de la Science" (October 10th, 2018).

- Talk at e-artsup: Pierre Bénard gave a 1 hour talk titled *Sciences et techniques pour l'animation 3D* in front of art students (October 8th, 2018).

- Open days at Inria Bordeaux Sud-Ouest : Demonstration of the *Wedge Camera* at "la Fête de la Science" (October 13th, 2018)

10.3.2. Internal action

- 10-year-celebration of Inria Bordeaux Sud-Ouest : Demonstration of the *Wedge Camera* (September 27th, 2018)

<h1 style="text-align:center; color:red">MAVERICK Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

- Nicolas Holzschuch is a member of the steering committee for the Eurographics Working Group on Rendering.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Georges-Pierre Bonneau: *Solid and Physical Modeling* 2018, *Shape Modeling International* 2018, *EnvirVis* 2018, Short paper track for *Eurographics Visualization Symposium* 2018,
- Joëlle Thollot: *Expressive* 2018.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

All members of the Maverick team work as reviewers for the most prestigious journals, including ACM TOG, IEEE TVCG, etc.

9.1.4. Research Administration

- Georges-Pierre Bonneau is member of the "conseil du Laboratoire Jean Kuntzmann".
- Romain Vergne is member of the "conseil du Laboratoire Jean Kuntzmann".
- Romain Vergne is co-responsible of the GT Rendu.
- Romain Vergne is co-responsible of the PhD students of the Laboratoire Jean Kuntzmann.
- Nicolas Holzschuch is an elected member of Inria Evaluation Committee (CE), an elected member of Inria Comité Technique (CTI) and a reserve member of Inria Scientific Council (CS).
- Nicolas Holzschuch is responsible for the department "Geometry and Images" of the Laboratoire Jean Kuntzmann.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Joëlle Thollot and Georges-Pierre Bonneau are both full Professor of Computer Science. Romain Vergne is an associate professor in Computer Science. They teach general computer science topics at basic and intermediate levels, and advanced courses in computer graphics and visualization at the master levels. Nicolas Holzschuch teaches advanced courses in computer graphics at the Master level.

Licence: Joëlle Thollot, Théorie des langages, 27h, L3, ENSIMAG, France

Licence: Joëlle Thollot, Séminaire d'innovation, 10h, L3, ENSE3, France

Master: Joëlle Thollot, Responsable de la flière MMIS (Modélisation mathématique, image, simulation) 24h, M1-M2, ENSIMAG, France

Master: Joëlle Thollot, Tutorat d'apprentis, 10h, M1-M2, ENSIMAG, France

Licence : Romain Vergne, Introduction to algorithms, 64h, L1, UGA, France.

Licence : Romain Vergne, WebGL, 29h, L3, IUT2 Grenoble, France.

Master : Romain Vergne, Geometric modeling, 18h, M1, UGA, France.

Master : Romain Vergne, Image synthesis, 27h, M1, UGA, France.

Master : Romain Vergne, Image synthesis, 15h, M1, Polytech, France.

Master : Romain Vergne, 3D graphics, 15h, M1, UGA, France.

Master : Nicolas Holzschuch, Computer Graphics II, 18h, M2 MoSIG, France.

Master : Nicolas Holzschuch, Synthèse d'Images et Animation, 32h, M2, ENSIMAG, France.

Licence: Georges-Pierre Bonneau, Algorithmique et Programmation Impérative, 23h, L3, Polytech-Grenoble, France.

Master: Georges-Pierre Bonneau, responsable de la 4ième année du département INFO, 32h, M1, Polytech-Grenoble, France

Master: Georges-Pierre Bonneau, Image Synthesis, 23h, M1, Polytech-Grenoble, France

Master: Georges-Pierre Bonneau, Data Visualization, 40h, M2, Polytech-Grenoble, France

Master: Georges-Pierre Bonneau, Digital Geometry, 23h, M1, UGA

Master: Georges-Pierre Bonneau, Information Visualization, 22h, Mastere, ENSIMAG, France.

Master: Georges-Pierre Bonneau, Scientific Visualization, M2, ENSIMAG, France.

Master: Georges-Pierre Bonneau, Computer Graphics II, 18h, M2 MoSiG, UGA, France.

9.2.2. Supervision

PhD: Guillaume Loubet, Efficient representations for sub-pixel appearence, 25/06/2018, Fabrice Neyret

PhD: Jérémy Wambecke, Visualisation de Données Temporelles Personnelles, 22/10/2018, Georges-Pierre Bonneau, Romain Vergne, Renaud Blanch

PhD: Alexandre Bléron, Stylization of animated 3D scenes in a painterly style, 8/11/2018, Joëlle Thollot, Romain Vergne

PhD in progress: Alban Fichet, Efficient representation for measured reflectance, 1/10/2015 Nicolas Holzschuch.

PhD in progress: Vincent Tavernier, Procedural stochastic textures, 1/10/2017, Fabrice Neyret, Joëlle Thollot, Romain Vergne.

PhD in progress: Sunrise Wang, Light transport operators simplification using neural networks, 1/9/2018, Nicolas Holzschuch

PhD in progress: Morgane Gérardin, Connecting physical and chemical properties with material appearance, 1/10/2018, Nicolas Holzschuch

PhD in progress: Ronak Molazem, Dimensional Analysis of Light Transport, 1/09/2018, Cyril Soler

9.2.3. Juries

Nicolas Holzschuch, member of the jury and referee, PhD of Laurent Gilles, Telecom Paristech, 12/11/2018

Nicolas Holzschuch, member of the jury and referee, PhD of Hélène Perrier, University of Lyon, 7/3/2018

Joëlle Thollot, member of the jury and referee, PhD of Jean-Dominique Favreau (Inria Sophia-Antipolis) 15/03/2018,

Joëlle Thollot, member of the jury, HdR of Aurélie BUGEAU, University of Bordeaux, 30/05/2018

Georges-Pierre Bonneau, president of the jury, PhD of Ali Jabbari, University of Grenoble, 4/07/2018

Georges-Pierre Bonneau, member of the jury, HdR of Basile Sauvage, University of Strasbourg, 16/07/2018

Georges-Pierre Bonneau, president of the jury, PhD of Even Enthem, University of Grenoble, 26/10/2018

9.3. Popularization

Every year, "MobiNet" (see section 6.7) classes are conducted with high school pupils of the large Grenoble area to practice initiation and intuition on Computer Science, Maths and Physics. Depending on the year, we have 2 to 4 groups in the scope of INP-Grenoble "Enginneering weeks", and 0 to 2 groups in the scope of Math-C2+ operations.

Fabrice Neyret published a popularization article "Le mouvement sous toutes ses coutures" [19] in the booklet "Maths Mouvement Express 2018".

Fabrice Neyret maintains the blog shadertoyunofficial (https://shadertoyunofficial.wordpress.com/) and various shaders examples on Shadertoy site (https://www.shadertoy.com/) to popularize GPU technologies as well as disseminates academic models within computer graphics, computer science, applied math and physics fields.

Cyril Soler presented at FOSDEM2018 his work on privacy preserving data distribution over decentralized mesh networks ([https://www.youtube.com/watch?v=FR9SSdGN0K8]).

MFX Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

Sylvain Lefebvre co-organized the first multidisciplinary workshop on academic research in additive manufacturing within the Lorraine area, which hosted 70 participants over two days. The two days workshop started on May 31, 2018 at Inria-Nancy Grand Est and was co-organized with Sandrine Hoppe (LRGP), Samuel Kenzari (IJL) and Hakim Boudaoud (ERPI). See https://www.inria.fr/centre/nancy/agenda/workshop-fa.

9.1.2. Scientific Events Selection

9.1.2.1. Member of Conference Program Committees

- Samuel Hornus was on the program committee for the "short papers track" at Eurographics.
- Jonàs Martínez was on the program committee of Pacific Graphics and the "short papers track" at Eurographics.
- Sylvain Lefebvre is on the advisory board of the technical paper committee of EUROGRAPHICS 2019.

9.1.2.2. Reviewer

Jonàs Martínez and Sylvain Lefebvre were reviewers for SIGGRAPH and SIGGRAPH Asia.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

- Samuel Hornus did some reviewing for ACM Transactions on Graphics and Computer Graphics Forum.
- Jonàs Martínez was reviewer of Computer Aided Geometric Design (Elsevier) and Transactions on Visualization and Computer Graphics (IEEE).

9.1.4. Invited Talks

Jonàs Martínez gave an invited talk in Journées Scientifiques Inria 2018.

Sylvain Lefebvre gave a one hour class at the 2018 SPG Graduate School (https://sgp2018.sciencesconf.org/resource/page/id/7). He was keynote speaker at the WCCM workshop *Expanding the Frontiers of Engineering Design using Computation* (http://www.wccm2018.org/MS_1407). Sylvain also gave an invited talk at the JIGS (*Journées Informatique et Géométrie 2018*, June 21-22).

9.1.5. Scientific Expertise

Sylvain Lefebvre participated in a strategy meeting at ANRT on the topic of 4D printing, on November 12, 2018.

9.1.6. Research Administration

Samuel Hornus leads the local "Commission du Dévelopement Technologique." Sylvain Lefebvre joined the Inria center *bureau du comité des projets* (BCP) in November.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

École d'ingénieur : Samuel Hornus, Mathématiques pour l'informatique, 32 HeqTD, niveau L1, Télécom Nancy, France.

Master 1: Jonàs Martínez, Infographie, 24 HeqTD, Université de Lorraine, France.

Master 1: Jonàs Martínez, Introduction au parallélisme de données, 12 HeqTD, Université de Lorraine, France.

PhD School: Jonàs Martínez, International School on Graphics and Geometry Processing for Digital Manufacturing, 3h, Italy.

École d'ingénieur : Cédric Zanni, Informatique 1, 20h ETD, niveau L3, École des Mines de Nancy, France.

École d'ingénieur : Cédric Zanni, Informatique 2, 27.5h ETD, niveau L3, École des Mines de Nancy, France.

École d'ingénieur : Cédric Zanni, Introduction au Parcours Information et Systèmes 13.5h ETD, niveau L3, École des Mines de Nancy, France.

Master: Cédric Zanni, Software Engineering, 20h ETD, M1, École des Mines de Nancy, France.

Master: Cédric Zanni, Operating System, 12h ETD, M1, École des Mines de Nancy, France.

Master: Cédric Zanni, Introduction au C/C++, 27h ETD, M1, École des Mines de Nancy, France.

Master: Cédric Zanni, Techniques de l'animation et du jeu vidéo, 27h ETD, M1, École des Mines de Nancy, France.

Master: Sylvain Lefebvre, Programmation pour le jeu vidéo, 12h ETD, École des Mines de Nancy, France.

Master: Sylvain Lefebvre, Introduction au parallélisme et au graphisme, 9h ETD, ENSG Nancy, France.

Master: Sylvain Lefebvre, Introduction à la fabrication additive, 9h ETD, ENSEM Nancy, France.

9.2.2. Supervision

PhD in progress : Thibault Tricard, *Multi-material microstructures*, started in October 2018, co-advised by Sylvain Lefebvre and Didier Rouxel (Institut Jean Lamour).

PhD in progress : Jimmy Etienne, *Curved additive manufacturing*, started in September 2018, co-advised by Sylvain Lefebvre and Cédric Zanni.

PhD in progress : Semyon Efremov, *Stochastic procedural microstructures: 3D modeling and analysis*, started in October 2018, co-advised by Jonàs Martínez and Sylvain Lefebvre.

9.2.3. Juries

Sylvain Lefebvre was reviewer for the HdR thesis of Basile Sauvage (ICube, Strasbourg, France). He also served on the mid-PhD juries of Pascal Guehl (Icube) and Tim Kuipers (TU-Delft).

9.3. Popularization

9.3.1. Ada Lovelace Day

In the context of the Ada Lovelace Day, 9th October 2018, Noémie Vennin received about twenty young girls in our 3D printer room. The Ada Lovelace Day is an international celebration of the achievements of women in science, technology, engineering and maths (STEM). It aims to increase the profile of women in these fields and, in doing so, create new role models who will encourage more girls into STEM careers and support women already working in.

Figure 11. Ada Lovelace Day at MFX Team.

9.3.2. IceSL Event for non-academic users

The IceSL event was held on February 22, 2018 in Paris. The objective was to bring together our community as well as new users. We invited external users, industrial partners and FabLabs at large (through national mailing lists).

The program (https://www.weezevent.com/icesl) involved training with the software (by all the IceSL team members, 6 sessions in total), then we had our most experienced users present advanced use of IceSL: advanced modeling with implicit volumes by Loic Fejoz, modeling of orthopedic braces by Pierre Alexandre Hugron, the making-of of a complex table with our partner Creative Industry. We finally had a social event with an exhibition of our best parts.

The gathering was a success, with 50 attendees – the maximum we could host – from a variety of backgrounds (makers and industry). Following the event we saw a clear growth in the interest around the software, with a tripled visit rate to our website and a steep increase in downloads (25% additional downloads since then). The French IceSL community is especially active, with 15% of our total visits, just after the United States (23%).

We are scheduled to repeat this event (in a more compact format) in March 2019 at Station F, in Paris.

<p align="center" style="color:red">MIMETIC Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Anne-Hélène Olivier, Workshop VHCIE 2018, IEEE VR 2018, Reutlingen, Germany, March 2018
- Anne-Hélène Olivier, Workshop "walkers behaviour: from analysis to applications", Rennes, June 2018, broadcasted as a Webinar for the International Society of Posture and Gait Research.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Ludovic Hoyet: Animation & Simulation Area Program Chair, International Conference on Computer Graphics Theory and Applications 2019, Prague, Czech Republic, Feb. 2019

Anne-Hélène Olivier: co-chair of the IEEE VR 2019 Conference paper track, Osaka, Japan.

10.1.2.2. Member of the Conference Program Committees

Ludovic Hoyet, ACM Motion in Games MIG 2018, Cyprus, Nov. 2018

Ludovic Hoyet, ACM Symposium on Applied Perception 2018, Vancouver, Canada, Aug. 2018

Ludovic Hoyet, ACM Siggraph Asia Courses 2018, Tokyo, Japan, Deb. 2018

Anne-Hélène Olivier, ACM Motion in Games MIG 2018, Cyprus, Nov. 2018

Anne-Hélène Olivier, Euro-VR 2018 London, UK, October 2018.

Franck Multon, ACM Motion in Games MIG 2018, Cyprus, Nov. 2018

Franck Multon, Computer Animation and Social Agents 2018, Beijing, May 2018

Marc Christie, ACM Motion in Games 2018, Cyprus, Nov. 2018

Marc Christie, ACM TVX 2018, Seoul, June. 2018

Richard Kulpa, International Conference on Computer Graphics Theory and Applications (GRAPP), 2018

10.1.2.3. Reviewer

Ludovic Hoyet, ACM Siggraph 2018, IEEE VR 2019, Artificial Intelligence and Virtual Reality

Anne-Hélène Olivier, IEEE VR 2019 TVCG Conference paper, ACM VRST 2018, IEEE International Conference on Automatic Face and Gesture Recognition

Richard Kulpa, IEEE VR, ACM CHI (Computer Human Interface), Computer & Graphics

Franck Multon, IEEE VR 2019, Pacific Graphics 2018

Marc Christie, ACM Siggraph, ACM Siggraph Asia, ACM CHI, Eurographics

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Franck Multon, Presence, MIT Press
- Franck Multon, Computer Animation and Virtual Worlds CAVW, John Wiley
- Antonio Mucherino, Guest Editor of Optimization Letters, Springer
- Armel Crétual, Editorial board of Journal of Electromyography and Kinesiology
- Marc Christie, Associate Editor of the Visual Computer

10.1.3.2. Reviewer - Reviewing Activities

Franck Multon, Medical & Biological Engineering & Computing, Applied Ergonomics, IEEE Journal of Biomedical and Health Informatics, International Journal of Industrial and Operations Research, Human Movement Sciences

Ludovic Hoyet, IEEE Transactions on Visualization and Computer Graphics, Computers & Graphics, Computer Graphics Forum, ACM Transactions on Applied Perception

Anne-Hélène Olivier, Gait and Posture, Human Movement Science, TVCG, CAG, Transactions on Neural Systems & Rehabilitation Engineering, VIRE

Antonio Mucherino, Journal of Global Optimization, Springer, Discrete Applied Mathematics, Elsevier

Armel Crétual, ACM Transactions on Graphics, Clinical Biomechanics, IEEE Robotics and Automation Letters

Richard Kulpa, PlosOne, Journal of Sport Science, Human Movement Science, Sports Medicine, Journal of Sports Engineering and Technology, International Journal of Sports Science & Coaching,

Marc Christie, IEEE TVCG, The Visual Computer, CGF

Charles Pontonnier, Applied Ergonomics, Multibody System Dynamics

10.1.4. Invited Talks

Anne-Hélène Olivier, IFSTTAR Marne la Vallée, March 2018

Ludovic Hoyet, IFSTTAR Marne la Vallée, March 2018

Charles Pontonnier, EMC2 Institute, Matinale "Opérateur du futur", November 2018

Marc Christie, ACM TVX, Seoul, Korea, 2018

Marc Christie, Beijing Film Academy, Beijing, China, October 2018

Marc Christie, ChinaVR, Qingdao, China, October 2018

Franck Multon, Université Reims Champagne Ardennes, July 2018

Franck Multon, Université Paris Sud, July 2018

10.1.5. Scientific Expertise

Franck Multon, ANR expert, member of the ANR CPDS 4 "Santé Bien-être" through the Allistene national Alliance to design the next ANR call for projects,

Armel Crétual, ANR expert (TecSan)

10.1.6. Research Administration

Franck Multon is member of the University Rennes2 Research steering committee "commission recherche", and Academic Council "CAC"

Franck Multon is coordinator of Inria national initiative "Sport @ Inria" in relation with the French Ministry of Sports, and the French Ministry of Research, for Olympic Games 2024

Ludovic Hoyet is an elected member of the Board of Managers for the French Computer Graphics Association (Association Française d'Informatique Graphique) since Oct. 2017

Georges Dumont is president of the elected group at scientific council of École Normale Supérieure de Rennes, member of the scientific council of École Normale Supérieure de Rennes

Georges Dumont is scientific head of Immerstar platforms (Immersia + Immermove) jointly for Inria and Irisa Partners

Richard Kulpa is member of the University Rennes2 Research steering committee "commission recherche", Academic Council "CAC" and Committee of International Affairs "CAI"il "CAC",

Benoit Bideau is director of the M2S Lab

Fabrice Lamarche is an elected member of the CNU (French National Cuoncil of Universities).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Franck Multon, co-leader of the IEAP Master (1 and 2) "Ingénierie et Ergonomie de l'Activité Physique", STAPS, University Rennes2, France

Master : Franck Multon, "Santé et Performance au Travail : étude de cas", leader of the module, 30H, Master 1 M2S, University Rennes2, France

Master : Franck Multon, "Analyse Biomécanique de la Performance Motrice", leader of the module, 30H, Master 1 M2S, University Rennes2, France

Master: Charles Pontonnier, "Analytical Mechanics" , 40H (M1), École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Design and control of legged robots", 38H (M1), École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Simulation of multibody system dynamics", 34H (M1), École Normale Supérieure de Rennes, France

Master: Charles Pontonnier, "oral preparation to agregation competitive exam", 18H (M2), École Normale Supérieure de Rennes, France

Master : Georges Dumont, Responsible of the second year of the master Engineering of complex systems, École Normale Supérieure de Rennes and Rennes 1 University, France

Master : Georges Dumont, Mechanical simulation in Virtual reality, 36H, Master Engineering of complex systems and Mechatronics, Rennes 1 University and École Normale Supérieure de Rennes, France

Master : Georges Dumont, Mechanics of deformable systems, 40H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, oral preparation to agregation competitive exam, 20H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Vibrations in Mechanics, 10H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Multibody Dynamics, 9H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Finite Element method, 12H, Master FE, École Normale Supérieure de Rennes, France

Master : Ludovic Hoyet, Motion for Animation and Robotics, 9h, University Rennes 1, France

Master : Ludovic Hoyet, Motion Analysis and Gesture Recognition, 12h, INSA Rennes, France

Master : Ludovic Hoyet, Réalité Virtuelle pour l'Analyse Ergonomique, Master Ingénierie et Ergonomie des Activités Physique, 21h, University Rennes 2, France

Master : Anne-Hélène Olivier, "Biostatstiques", 7H, Master 2 APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Evaluation fonctionnelle des pathologies motrices", 9H Master 2 APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Maladie neurodégénératives : aspects biomécaniques", 2H Master 1 APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Biostatstiques", 7H, Master 1 EOPS, University Rennes2, France

Master : Anne-Hélène Olivier, "Méthodologie", 4H, Master 1 EOPS/APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Contrôle moteur : Boucle perceptivo-motrice", 3H, Master 1IEAP, Université Rennes 2, France

Master: Antonio Mucherino, "Programmation Parallèle", M1 en Informatique, 16H, University of Rennes, France

Master: Fabrice Lamarche, "Compilation pour l'image numérique", 29h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Synthèse d'images", 12h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Synthèse d'images avancée", 28h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Modélisation Animation Rendu", 36h, Master 2, ISTIC, University of Rennes 1, France

Master: Fabrice Lamarche, "Jeux vidéo", 26h, Master 2, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Motion for Animation and Robotics", 9h, Master 2 SIF, ISTIC, University of Rennes 1, France.

Master : Armel Crétual, "Méthodologie", leader of the module, 20H, Master 1 M2S, University Rennes2, France

Master : Armel Crétual, "Biostatstiques", leader of the module, 30H, Master 2 M2S, University Rennes2, France

Master : Richard Kulpa, "Boucle analyse-modélisation-simulation du mouvement", 27h, leader of the module, Master 2, Université Rennes 2, France

Master : Richard Kulpa, "Méthodes numériques d'analyse du geste", 27h, leader of the module, Master 2, Université Rennes 2, France

Master : Richard Kulpa, "Cinématique inverse", 3h, leader of the module, Master 2, Université Rennes 2, France

Master: Marc Christie, "Multimedia Mobile", Master 2, leader of the module, 32h, Computer Science, University of Rennes 1, France

Master: Marc Christie, "Projet Industriel Transverse", Master 2, 32h, leader of the module, Computer Science, University of Rennes 1, France

Licence : Franck Multon, "Ergonomie du poste de travail", Licence STAPS L2 & L3, University Rennes2, France

Licence : Anne-Hélène Olivier, "Analyse cinématique du mouvement", 100H , Licence 1, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Anatomie fonctionnelle", 7H , Licence 1, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Effort et efficience", 12H , Licence 2, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Locomotion et handicap", 12H , Licence 3, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Biomécanique spécifique aux APA", 8H , Licence 3, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Biomécanique du viellissement", 12H , Licence 3, University Rennes 2, France

Licence: Antonio Mucherino, "Informatique 1", 80H, L1, University of Rennes, France

Licence: Charles Pontonnier, "Serial robotics", 34H (L3), École Normale Supérieure de Rennes, France

Licence: Fabrice Lamarche, "Initiation à l'algorithmique et à la programmation", 56h, License 3, ESIR, University of Rennes 1, France

License: Fabrice Lamarche, "Programmation en C++", 46h, License 3, ESIR, University of Rennes 1, France

Licence: Fabrice Lamarche, "IMA", 24h, License 3, ENS Rennes, ISTIC, University of Rennes 1, France

Licence : Armel Crétual, "Analyse cinématique du mouvement", 100H, Licence 1, University Rennes 2, France

Licence : Richard Kulpa, "Biomécanique (dynamique en translation et rotation)", 48h, Licence 2, Université Rennes 2, France

Licence : Richard Kulpa, "Méthodes numériques d'analyse du geste", 48h, Licence 3, Université Rennes 2, France

Licence : Richard Kulpa, "Statistiques et informatique", 15h, Licence 3, Université Rennes 2, France

Licence : Marc Christie, "Programmation Impérative 1", leader of the module, University of Rennes 1, France

10.2.2. Supervision

PhD in progress (beginning september 2017): Simon Hilt, Haptique Biofidèle pour l'Interaction en réalité virtuelle, Ecole normale supérieure, Georges Dumont& Charles Pontonnier

PhD in progress (beginning september 2017): Pierre Puchaud, Développement d'un modèle musculo-squelettique générique du soldat en vue du support de son activité physique, Ecole normale supérieure, Charles Pontonnier& Nicolas Bideau & Georges Dumont

PhD in progress: Diane Dewez, Avatar-Based Interaction in Virtual Reality, Oct. 2018, Ferran Argelaguet & Ludovic Hoyet & Anatole Lécuyer

PhD in progress: Rebecca Fribourg, Enhancing Avatars in Virtual Reality through Control, Interactions and Feedback, Sept. 2017, Ferran Argelaguet & Ludovic Hoyet & Anatole Lécuyer

PhD in progress: Florian Berton, Design of a virtual reality platform for studying immersion and behaviours in aggressive crowds, Nov. 2017, Ludovic Hoyet & Anne-Hélène Olivier & Julien Petré

PhD in progress: Benjamin Niay, A framework for synthezing personalised human motions from motion capture data and perceptual information, Oct. 2018, Ludovic Hoyet & Anne-Hélène Olivier & Julien Petré

PhD in progress: Hugo Brument, Toward user-adapted interactions techniques based on human locomotion laws for navigating in virtual environments, Oct. 2018, Ferran Argelaguet & Anne-Hélène Olivier & Maud Marchal.

PhD in progress: Carole Puil, Impact d'une stimulation plantaire orthétique sur la posture d'individus sains et posturalement déficients au cours de la station debout, et lors de la marche, Oct. 2018, Armel Crétual & Anne-Hélène Olivier.

PhD in progress: Amaury Louarn, A topology-driven approach to retargeting of filmic style in 3D environments, University of Rennes 1, Oct. 2017, Marc Christie & Fabrice Lamarche & Franck Multon

PhD in progress: Wang Xi, Towards Robust SLAM technologies, University of Rennes 1, Oct. 2018, Marc Christie & Eric Marchand

PhD in progress: Florence Gaillard, Evaluation en situation écologique des capacités fonctionnelles des membres supérieurs d'enfants hémiplégiques, University Rennes 2, decembre 2015, Armel Crétual & Isabelle Bonan

PhD in progress: Karim Jamal, Les effets des stimulations sensorielles par vibration sur les perturbations posturales secondaires à des troubles de la cognition spatiale après un Accident vasculaire Cérébrale, University Rennes 2, septembre 2016, Isabelle Bonan & Armel Crétual

PhD in progress: Lyse Leclercq, Intérêt dans les activités physiques du rétablissement de la fonction inertielle des membres supérieurs en cas d'amputation ou d'atrophie, University Rennes 2, septembre 2017, Armel Crétual

PhD defended in October 2018: Sean D. Lynch, Perception visuelle du mouvement humain dans les interactions lors de tâches locomotrices, M2S - University Rennes 2, septembre 2015, Anne-Hélène Olivier & Richard Kulpa

PhD in progress: Pierre Touzard, Suivi longitudinal du service de jeunes joueurs de tennis élite : identification biomécanique des facteurs de performance et de risque de blessures, University Rennes 2, septembre 2014, Benoit Bideau & Richard Kulpa & Caroline Martin

PhD defended in July 2018: Yacine Said Bouhalia, Approche transversale pour l?analyse et la reconnaissance de gestes 2D et 3D, INSA of Rennes, septembre 2015, Richard Kulpa & Franck Multon & Eric Anquetil

PhD in progress: Charles Faure, Stratégies coopératives et compétitives dans des tâches d'interactions physiques multiples, Université Rennes 2 - ENS Rennes, septembre 2016, Benoit Bideau & Richard Kulpa

PhD in progress: Théo Perrin, Evaluation de l?influence des feedbacks sur la capacité d?apprentissage dans le cadre d?interactions complexes entre joueurs et influence de ces feedbacks en fonction de l?activité sportive, Université Rennes 2 - ENS Rennes, septembre 2017, Benoit Bideau & Richard Kulpa

PhD in progress: Jean Basset, Realistic Pose Motion Transfer, Inria, October 2018, Franck Multon & Edmond Boyer

PhD in progress: Olfa Haj Mamhoud, Monitoring de l'efficience gestuelle d'opérateurs sur postes de travail, University Rennes2, September 2018, Franck Multon & Georges Dumont & Charles Pontonnier

PhD in progress: Hiep Tuan Pham, Heterogeneous data fusion for safeguarding of cultural heritage of dance, University of Reims Champagne Ardennes, October 2018, Celine Loscos & Franck Multon

10.2.3. *Juries*

PhD: 2018, Marien Couvertier, Identification des paramètres inertiels segmentaires humains, Université de Poitiers. 2018 december 18st, Georges Dumont Rapporteur.

PhD: 2018, Jing Chang, Évaluation des riques de troubles musculo-squelettiques liés au travail basée sur OpenSim, École centrales de Nantes, 2018 november 30, Georges Dumont, Rapporteur.

PhD: 2018, David Desseauve, Pour une meilleure compréhension du rôle des positions d'accouchement en mécanique obstétricale: Analyse biomécanique des postures segmentaires, Université de Poitiers, Armel Crétual, Rapporteur

HDR: 2018, Antonio Mucherino, On the Discretization of Distance Geometry: Theory, Algorithms and Applications, 2018 July, Franck Multon, Examinateur

HDR: 2018, Hazem Wannous, Towards Understanding Human Behavior by Time-Series Analysis of 3D Motion, Universite Lille, 2018 December 5, Franck Multon, President

PhD: 2018, Margarita Khokhlova, Evaluation clinique de la démarche à partir de données 3D, Universite Bourgogne, 2018 November 19, Franck Multon, Rapporteur

PhD: 2018, Martin Bossard, Visual perception of selfmotion: the relative contribution of viewpoint oscillation to the perception of distance travelled, Aix-Marseille Université, 2018 October, Richard Kulpa, Président

Adrien Verhulst, Étude de Faisabilité d'Études Consommateurs d'Achat de Fruits et Légumes « Moches » dans un Supermarché Virtuel, Ecole Centrale de Nantes, Franck Multon, 2018 July 4, Examinateur

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Franck Multon is coordinator of Inria national initiative "Sport Inria" in relation with the French Ministry of Sports, and the French Ministry of Research, for Olympic Games 2024

10.3.2. Articles and contents

Co-author of a book dedicated to undergraduate STAPS students, Elsevier Health Sciences, Sept. 2018. « STAPS: anatomie, physiologie, neurosciences et biomécanique » (P Delamarche, F Multon, T Horrut, V Nougier). Author of the chapter entitled « Biomécanique de la performance motrice » (47 pages).

Book chapter "Réalité virtuelle au service du sport" in a book "Corps et Sport" dedicated to general public, pages 148–164, Editions de la Martinière, 2018.

Book chapter "The democratization of VR-AR" in a book "Virtual Reality and Augmented Reality: Myths and Realities" dedicated to general public, pages 73-123, ISTE Ltd, 2018.

Book chapter "Vers une démocratisation de la RV-RA ?" in a book "Réalité virtuelle et réalité augmentée" dedicated to general public, pages 95-141, ISTE Ltd, 2018.

10.3.3. Interventions

Richard Kulpa was member of the scientific committee for temporary exhibition (1000m2) entitled "Corps et Sport" in "Cité des sciences et de l'industrie", Octobre 16th 2018 to January 5th 2019. The idea is to propose a new approach of sports ti the wide public audience.

<p align="center">**MOEX Project-Team**</p>

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific Events Organisation

6.1.1.1. Member of the Organizing Committees

- Jérôme David had been organiser of the workshop Symbolic methods for data-interlinking of the 21st EKAW, Nancy (FR), 2018 (with Miguel Couceiro)
- Jérôme Euzenat had been organiser of the 13th Ontology matching workshop of the 18th ISWC, Monterey (CA US), 2018 (with Pavel Shvaiko, Ernesto Jiménez Ruiz, Michele Cheatham and Oktie Hassanzadeh)

6.1.2. Scientific Events Selection

6.1.2.1. Chair of Conference Program Committees

- Jérôme Euzenat had been program chairman of the "French national artificial intelligence conference (CNIA)" [10], Nancy (FR), 2018.
- Manuel Atencia had been workshop and tutorial chairman (with Marieke van Erp) of the 21st EKAW, Nancy (FR), 2018.

6.1.2.2. Member of the Conference Program Committees

- Jérôme David and Jérôme Euzenat had been programme committee members of the "International joint conference on artificial intelligence (IJCAI)" 2018
- Jérôme David and Jérôme Euzenat had been programme committee member of the "National conference on artificial intelligence (AAAI)" 2018
- Manuel Atencia and Jérôme Euzenat had been programme committee members of the "International semantic web conference (ISWC)" 2018
- Jérôme David and Jérôme Euzenat had been programme committee members of the "European Semantic Web Conference (ESWC)" 2017
- Manuel Atencia, Jérôme David and Jérôme Euzenat had been programme committee member of the "Web Conference (WWW)" 2018
- Jérôme David had been programme committee member of the "Pacific Rim Knowledge Acquisition Workshop (PKAW)" 2018
- Jérôme Euzenat had been programme committee member of the "International Conference on Semantic Systems (Semantics)" 2018
- Jérôme Euzenat had been programme committee member of the "International conference on knowledge engineering and knowledge management (EKAW)" 2018
- Jérôme David had been programme committee member of the "French national artificial intelligence conference (CNIA)" 2018.
- Jérôme Euzenat had been programme committee member of the "French fundamental artificial intelligence days (JAIF)" 2018
- Manuel Atencia and Jérôme David had been programme committee members of the ISWC "Ontology matching" workshop (OM) 2018
- Manuel Atencia and Jérôme David had been programme committee members of the "French Extraction and gestion des connaissances conference (EGC)" 2018

- Jérôme David had been programme committee member of the "29es Journées francophones d'ingénierie des connaissances (IC)" 2018

6.1.3. Journal

6.1.3.1. Member of the Editorial Boards

- Jérôme Euzenat is member of the editorial board of *Journal of web semantics* (area editor), *Journal on data semantics* and the *Semantic web journal*.

- Jérôme Euzenat had been guest editor of a special issue of *Semantic web journal* on "semantic technologies and interoperability in the build environment" (with Álvaro Sicilia, Pieter Pauwels, Leandro Madrazo, and María Poveda-Villalón).

6.1.3.2. Reviewer - Reviewing Activities

- Manuel Atencia had been reviewer for *Journal of web semantics* and *Applied ontology*.

- Jérôme David had been reviewer for *Information system journal* and *Ingénierie des systèmes d'information* (special issue on "Impact des Open et/ou Linked Data dans les systèmes d'information").

- Jérôme Euzenat had been reviewer for *ACM transactions on the web*, and *International journal on metadata, semantics and ontologies*.

6.1.4. Invited Talks

- "Towards cultural knowledge evolution: experiments with alignments repair", Seminar LIP6, Paris (FR), 2018-10-15 (Jérôme Euzenat)

- "Enhancing Link Keys: Extraction and Reasoning", BNF workshop on "Données liées et données à lier: quels outils pour quels alignements?", Paris (FR), 2018-07-10 (Manuel Atencia)

- "Link key extraction with a variation of relational concept analysis", EKAW workshop on symbolic methods for data interlinking, Nancy (FR), 2018-11-12 (Jérôme Euzenat)

6.1.5. Leadership within the Scientific Community

- Jérôme Euzenat is member of the scientific council of the CNRS GDR "Intelligence artificielle".

6.1.6. Scientific Expertise

- Manuel Atencia had been evaluator for CAPES-COFECUB projects (BR)

- Jérôme Euzenat had been member of the scientific evaluation committee "CE23: Data, knowledge, big data, multimedia content – artificial intelligence" of the French national research agency (ANR)

- Manuel Atencia had been evaluator for the French national research agency (ANR)

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

- Jérôme David is coordinator of the Master "Mathematiques et informatiques appliquées aux sciences humaines et sociales" (Univ. Grenoble Alpes)

- Manuel Atencia is co-responsible of the Master 2nd year "Mathematiques et informatiques appliquées aux sciences humaines et sociales" (Univ. Grenoble Alpes)

- Jérôme Euzenat had been, with Danielle Ziébelin, coordinator of the "AI and the web" option of the M2R in computer science and applied mathematics (Univ. Grenoble Alpes)

6.2.1.1. Lectures

Licence: Jérôme David, Algorithmique et programmation par objets, 70h, L2 MIASHS, UGA, France

Licence: Jérôme David, Introduction à Python, Licence ESSIG, 24h, UGA, France

Licence: Jérôme David, Système, L3 MIASHS, 18h, UGA, France

Licence: Manuel Atencia, Technologies du web, LP ESSIG, 18h, UGA, France

Licence: Manuel Atencia, Introduction aux technologies du Web, 60h, L3 MIASHS, UGA, France

Master: Jérôme David, Programmation Java 2, 30h, M1 MIASHS, UGA, France

Master: Jérôme David, JavaEE, 30h, M2 MIASHS, UGA, France

Master: Jérôme David, Développement Web Mobile, 30h, M2 MIASHS, UGA, France

Master: Jérôme David, Web sémantique, 3h, M2 MIASHS, UGA, France

Master: Manuel Atencia, Formats de données du web, 15h, M1 MIASHS, UGA, France

Master: Manuel Atencia, Introduction à la programmation web, 30h, M1 MIASHS, UGA, France

Master: Manuel Atencia, Intelligence artificielle, 7.5h, M1 MIASHS, UGA, France

Master: Manuel Atencia, Web sémantique, 27h, M2 MIASHS, UGA, France

Master: Manuel Atencia, Semantic web: from XML to OWL, 22.5h, M2R MoSIG, UGA, France

Master: Jérôme David, Stage de programmation, 10h, M2 MIASHS, UGA, France

6.2.2. Supervision

- PhD in progress : Nacira Abbas, "Link key extraction and relational concept analysis", 2018-10-01 (Jérôme David and Amedeo Napoli)
- PhD in progress : Khadija Jradeh, "Reasoning with link keys", 2018-10-01 (Manuel Atencia and Chan Le Duc)
- PhD in progress : Line van den Berg, "Knowledge Evolution in Agent Populations", 2018-10-01 (Manuel Atencia and Jérôme Euzenat)
- MSc: Iris Lohja, "Improving semantic recall of ontology alignments in cultural knowledge evolution", M2R Informatics, Univ. Grenoble Alpes, June 2018 (Manuel Atencia and Jérôme Euzenat)
- MSc: Khadija Jradeh, "Link key extraction under ontological constraints", M2R Informatics, Univ. Grenoble Alpes, June 2018 (Jérôme David and Jérôme Euzenat)

6.2.3. PhD panels

- Jérôme David had been panel member of the computer science PhD of Valentina Beratta (IMT Mines Alès) "Évaluation de la véracité des données: améliorer la découverte de la vérité en utilisant des connaissances a priori" supervised by Sylvie Ranwez and Isabelle Mougenot
- Jérôme Euzenat had been panel member of the computer science PhD of Paula Chocrón (Universitat Autònoma de Barcelona) "A pragmatic approach to translation: vocabulary alignment through multiagent interaction and observation" supervised by Marco Schorlemmer
- Jérôme Euzenat had been panel chair of the computer science PhD of Louis Jachiet (Université Grenoble-Alpes) "On the foundations for the compilation of web data queries: optimization and distributed evaluation of SPARQL" supervised by Nabil Layaïda and Pierre Genevès
- Jérôme Euzenat had been reviewer of the computer science habilitation of Chan Le Duc (Université Paris 8) "Raisonnement et révision pour des ontologies en logique de description"
- Jérôme Euzenat is member of the PhD supervision committee of Élodie Thiéblin (Université de Toulouse 2-Jean Jaurès) supervised by Ollivier Haemmerlé and Cássia Trojahn dos Santos

6.3. Popularization

6.3.1. Interventions

- Jérôme Euzenat gave a talk on "Artificial intelligence: a broad view" to BEST Spring course, Grenoble (FR), 2018-04-16
- Jérôme Euzenat gave a talk on "mOeX: évolution de la connaissance" Inria "Mon projet en 180 secondes", Grenoble (FR), 2018-05-29
- Jérôme Euzenat gave a talk on "Evolving knowledge: different facets of Artificial Intelligence" to the French-American Doctoral Exchange (FADEx) seminar, Grenoble (FR), 2018-06-27

MORPHEO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Reviewer

- Jean-Sébastien Franco reviewed for 3DV, CVPR and ECCV 2018, and the CVPR 2018 Humans Workshop.
- Sergi Pujades reviewed for 3DV.
- Julien Pansiot reviewed for ECCV 2018 and CVPR 2019.
- Stefanie Wuhrer reviewed for CVPR, ECCV, and SIGGRAPH.
- Edmond Boyer reviewed for 3DV, CVPR and RFIAP 2018.
- Edmond Boyer was area chair for BMVC and ECCV 2018.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Edmond Boyer is associate editor of the International Journal of Computer Vision (Springer).

10.1.2.2. Reviewer - Reviewing Activities

- Stefanie Wuhrer reviewed for IJCV and PAMI.
- Edmond Boyer reviewed for IJCV and PAMI.
- Sergi Pujades reviewed for the Journal of Imaging (MDPI), Sensors and IEEE TVCG.
- Jean-Sébastien Franco reviewed for IEEE Computer Graphics and Applications.

10.1.3. Invited Talks

- Edmond Boyer gave invited talks at: Microsoft Cambridge (visit), Institut Descarte Paris (conférence maths et mouvement), New York University (visit) and Montpellier University (Module Image).

10.1.4. Scientific Expertise

- Jean-Sebastien Franco reviewed for the Euregio Science Fund (EGTC) - Interregional Project Networks (IPN) in 2018.
- Jean-Sebastien Franco was a member of the recruiting commitee of Universite Grenoble Alpes for an Assistant Professor position in 2018.
- Jean-Sebastien Franco was a member of the Ensimag Engineering school - Grenoble INP steering commitee (Conseil d'École) in 2018.
- Jean-Sebastien Franco was a member of the recruiting commitee of Ensimag - Grenoble INP Engineering school for temporary research and teaching associates (ATER) in 2018.
- Sergi Pujades reviewed for the DFG (German ANR).

10.1.5. Research Administration

- Edmond Boyer is auditor for the Computer Vision European Association.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Jean-Sébastien Franco, Introduction to Imperative Programming, 57h, Ensimag 1st year, Grenoble INP.

Licence: Jean-Sébastien Franco, C Programming project, 27h, Ensimag 3rd year, Grenoble INP.

Master: Jean-Sébastien Franco, Supervision of the 2nd year program (300 students), 36h, Ensimag 2nd year, Grenoble INP.

Master: Jean-Sébastien Franco, Introduction to Computer Graphics, 44h, Ensimag 2nd year, Grenoble INP.

Master: Jean-Sébastien Franco, Introduction to Computer Vision, 27h, Ensimag 3rd year, Grenoble INP.

Master: Jean-Sébastien Franco, End of study project tutoring (PFE), 12h, Ensimag 3rd year, Grenoble INP.

Master: Edmond Boyer, 3D Modeling, 18h, M2R Mosig GVR, Grenoble INP.

Master: Edmond Boyer, Introduction to Visual Computing, 30h, M1 MoSig, Université Grenoble Alpes.

Master: Stefanie Wuhrer, 3D Graphics, 13.5h, M1 MoSig and MSIAM, Université Grenoble Alpes.

10.2.2. Supervision

PhD in progress: Victoria Fernandez Abrevaya, 3D Dynamic Human Motion Representations, Université Grenoble Alpes (France), started 01/10/2016, supervised by Edmond Boyer and Stefanie Wuhrer.

PhD in progress: Jean Basset, Learning Morphologically Plausible Pose Transfer, Université Grenoble Alpes (France), started 01/10/2018, supervised by Edmond Boyer, Franck Multon and Stefanie Wuhrer.

PhD in progress: Abdullah Haroon Rasheed, Cloth Modeling and Simulation, Université Grenoble Alpes (France), started 01/11/2017, supervised by Florence Bertails-Descoubes, Jean-Sébastien Franco and Stefanie Wuhrer.

PhD in progress: Jinlong Yang, Learning shape spaces of dressed 3D human models in motion, Université Grenoble Alpes (France), started 01/10/2015, supervised by Franck Hétroy-Wheeler and Stefanie Wuhrer.

HdR : Stefanie Wuhrer, Deformation Models for Human Shape Analysis, Université Grenoble Alpes (France), September 2018

PhD in progress: Claude Goubet, Dense 4D Modelling of Moving Shapes, Université Grenoble Alpes (France), started 02/10/2017, supervised by Edmond Boyer and Julien Pansiot

PhD in progress: Di Meng, Deep learning for low-dose CBCT reconstruction and registration, Université Grenoble Alpes (France), started 01/10/2018, supervised by Edmond Boyer and Julien Pansiot.

PhD in progress: Matthieu Armando, Temporal Integration for Shape and Appearance Modeling, Université Grenoble Alpes (France), started 01/01/2018, supervised by Edmond Boyer and Jean-Sébastien Franco.

PhD in progress: Vincent Leroy, 4D shape reconstruction from photoconsistency cues, Université Grenoble Alpes, started 01/10/2015, supervised by Edmond Boyer and Jean-Sébastien Franco.

MULTISPEECH Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Elected chair, Steering Committee of the Latent Variable Analysis and Signal Separation (LVA/ICA) conference series (E. Vincent)

General co-chair, 5th CHiME Speech Separation and Recognition Challenge, September 2018 (E. Vincent)

General co-chair, 5th International Workshop on Speech Processing in Everyday Environments, Hyderabad, India, September 2018 (E. Vincent)

Area chair, Latent Variable Analysis and Signal Separation (LVA/ICA), July 2018 (A. Deleforge)

Area Chair, INTERSPEECH, September 2018 (D. Jouvet)

Co-chair, special session "Geometry-Aware Auditory Scene Analysis" at ICASSP, April 2018 (A. Deleforge)

Co-chair, special session "Advances in Phase Retrieval and Application" at LVA/ICA, July 2018 (A. Deleforge)

Co-chair, special session "Distant speech processing for smart speakers" at EUSIPCO, September 2018 (R. Serizel)

Chair, IEEE signal processing cup (SPCup), 2019 (A. Deleforge)

10.1.1.2. Member of Organizing Committees

Steering Committee of the Detection and Classification of Acoustic Scenes and Events (DCASE) challenge series (E. Vincent)

Organizing Committe of Automatic Speaker Verification Spoofing and Countermeasures Challenge 2019 (ASVspoof 2019) (M. Sahidullah)

Organizing Committee of the DCASE challenge series, 2018 (R. Serizel)

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Review chair, IEEE Technical Committee on Audio and Acoustic Signal Processing, responsible for organizing the review of the 443 papers submitted to the 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) in the general AASP domain (E. Vincent)

10.1.2.2. Member of Conference Program Committees

Plate-Forme Intelligence Artificielle (PFIA), July 2018 (A. Bonneau, S. Ouni, R. Serizel)

International Conference on Multimedia and Network Information Systems (MISSI), September, 2018 (D. Jouvet)

International Conference on Speech and Computer (SPECOM), September 2018 (D. Jouvet)

International Conference on Text, Speech, and Dialogue (TSD), September 2018 (D. Jouvet)

10.1.2.3. Reviewer

ACLing 2018 - Arabic Computational Linguistics series (D. Jouvet)

APSIPA ASC 2018 - Asia-Pacific Signal and Information Processing Association - Annual Summit and Conference (M. Sahidullah)

CHiME 2018 - International Workshop on Speech Processing in Everyday Environments (E. Vincent)

EUSIPCO 2018 - European Signal Processing Conference (D. Jouvet, M. Sahidullah, R. Serizel)

ICASSP 2018 - IEEE International Conference on Acoustics, Speech and Signal Processing (A. Deleforge, I. Illina, D. Jouvet, S. Ouni, R. Serizel, E. Vincent)

ICPR 2018 - International Conference on Pattern Recognition (M. Sahidullah)

INTERSPEECH 2018 (A. Bonneau, I. Illina, S. Ouni, M. Sahidullah, E. Vincent)

IROS 2018 - International Conference on Intelligent Robots (A. Deleforge)

IWAENC 2018 - International Workshop on Acoustic Signal Enhancement (E. Vincent)

JEP 2018 - Journées d'Etudes sur la Parole (A. Bonneau, Y. Laprie, S. Ouni)

LVA/ICA 2018 - International Conference on Latent Variable Analysis and Signal Separation (E. Vincent)

MISSI 2018 - International Conference on Multimedia and Network Information Systems (D. Jouvet)

Speaker Odyssey 2018 - The Speaker and Language Recognition Workshop (M. Sahidullah)

SPECOM 2018 - International Conference on Speech and Computer (D. Jouvet)

SPEECH PROSODY 2018 (A. Bonneau, A. Deleforge, D. Jouvet)

SLT 2018 - IEEE Spoken Language Technology Workshop (D. Jouvet, M. Sahidullah, I. Illina)

10.1.3. Journal

10.1.3.1. Member of Editorial Boards

Speech Communication (D. Jouvet)

Speech Communication, special issue on Realism in Robust Speech and Language Processing (E. Vincent)

EURASIP Journal on Audio, Speech, and Music Processing (Y. Laprie)

10.1.3.2. Reviewer - Reviewing Activities

Computers in Biology and Medicine (M. Sahidullah)

Computer Speech & Language (M. Sahidullah)

Digital Signal Processing (M. Sahidullah)

Expert Systems With Applications (M. Sahidullah)

IEEE Access (M. Sahidullah)

IEEE/ACM Transactions on Audio, Speech, and Language Processing (A. Deleforge, M. Sahidullah, R. Serizel)

IEEE Journal of Selected Topics in Signal Processing (A. Deleforge, R. Serizel)

IEEE Signal Processing Letters (A. Deleforge, M. Sahidullah)

IEEE Transactions on Emerging Topics in Computational Intelligence (R. Serizel)

IEEE Transactions on Multimedia (S. Ouni)

Jasa Express Letters (Y. Laprie)

Journal of the Acoustical Society of America (Y. Laprie, S. Ouni)

Language Resources and Evaluation (S. Ouni)

Signal Processing Letters (D. Jouvet)

Speech Communication (A. Deleforge, M. Sahidullah)

10.1.4. Invited Talks

Deep learning for distant-microphone speech enhancement and recognition, Facebook AI Research, Paris, January 2018 (E. Vincent)

Multidimensional and multi-level learning of music structure for machine improvisation in the DYCI2 project, University Pompeu Fabra, Spain, February 2018 (E. Vincent)

Des difficultés aux troubles de l'apprentissage de la lecture – Impact sur l'estime de soi. Canopé, Nancy, February 2018 (A. Piquard-Kipffer)

A brief introduction to deep learning and its application to multichannel speech enhancement, Laboratoire des systèmes perceptifs, Paris, March 2018 (R. Serizel)

Speaker embeddings: from i-vector to x-vector and beyond in summer school on Machine Learning Applied to Speech Technology and Autonomous Agents, University of Eastern Finland, Finland, August 2018 (M. Sahidullah)

10.1.5. Leadership within the Scientific Community

Elected chair, ISCA Special Interest Group on Robust Speech Processing, until September 2018 (E. Vincent)

Secretary/Treasurer, executive member of AVISA (Auditory-VIsual Speech Association), an ISCA Special Interest Group (S. Ouni)

10.1.6. Scientific Expertise

Expertise of ANR project proposals (Y. Laprie)

Expertise of an ASTRID proposal (R. Serizel)

Expertise of a Netherlands Orgaadminisnisation for Scientific Research (NWO) proposal (R. Serizel)

Member of an expertise Committee for specific language disabilities (MDPH 54) (A. Piquard-Kipffer)

10.1.7. Research Administration

Head of the AM2I Scientific Pole of Université de Lorraine (Y. Laprie)

Vice Scientific Deputy of Inria Nancy - Grand Est (E. Vincent)

Member of Management board of Université de Lorraine (Y. Laprie)

Member of the Comité Espace Transfert of Inria Nancy - Grand Est (E. Vincent)

Member of the HCERES committee for the Laboratoire Psychologie de la Perception (E. Vincent)

Member of the HCERES committee for the LIMSI laboratory (D. Jouvet)

Vice-chair of the recruitement jury for an Associate Professor, Polytech Nancy (E. Vincent)

Member of the national recruitment jury for Inria Junior Research Scientists (E. Vincent)

Member of the Commission du personnel scientifique of Inria Nancy - Grand Est (R. Serizel)

Member of the Commission développement technologique of Inria Nancy - Grand Est (R. Serizel)

Member of "Commission paritaire" of Université de Lorraine (Y. Laprie)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

DUT: I. Illina, Programming in Java, 150 hours, L1, University of Lorraine, France

DUT: I. Illina, Linux System, 65 hours, L1, University of Lorraine, France

DUT: I. Illina, Supervision of student projects and stages, 50 hours, L2, University of Lorraine, France

DUT: S. Ouni, Programming in Java, 24 hours, L1, University of Lorraine, France

DUT: S. Ouni, Web Programming, 24 hours, L1, University of Lorraine, France

DUT: S. Ouni, Graphical User Interface, 96 hours, L1, University of Lorraine, France

DUT: S. Ouni, Advanced Algorihms, 24 hours, L2, University of Lorraine, France

DUT: R. Serizel, Computer science basics, 90 hours, L1, University of Lorraine, France

DUT: R. Serizel, Introduction to office software applications, 18 hours, L2, University of Lorraine, France

DUT: R. Serizel, Multimedia and web applications, 20 hours, L1, University of Lorraine, France

DUT: R. Serizel, Multimedia content indexing, 20 hours, L2, University of Lorraine, France

Licence: A. Bonneau, Phonetics, 17 hours, L2, Ecole d'audioprothèse, University of Lorraine, France

Licence: A. Bonneau, Speech manipulations, 2 hours, L1, Ecole d'orthophonie, University of Lorraine, France

Licence: V. Colotte, C2i - Certificat Informatique et Internet, 50 hours, L1, University of Lorraine, France

Licence: V. Colotte, System, 45 hours, L3, University of Lorraine, France

Licence: O. Mella, Introduction to Web Programming, 30 hours, L1, University of Lorraine, France

Licence: O. Mella, Computer Networking, 98 hours, L2-L3, University of Lorraine, France

Licence: A. Piquard-Kipffer, Education Science, 32 hours, L1, Département d'Orthophonie, University of Lorraine, France

Licence: A. Piquard-Kipffer, Learning to Read, 34 hours, L2, Département d'Orthophonie, University of Lorraine, France

Licence: A. Piquard-Kipffer, Dyslexia, Dysorthographia, 12 hours, L3, Département d'Orthophonie, University of Lorraine, France

Licence: A. Piquard-Kipffer, Mathematics Didactics, 9 hours, L3, Département d'Orthophonie, University of Lorraine, France

Master: V. Colotte, Introduction to Speech Analysis and Recognition, 18 hours, M1, University of Lorraine, France

Master: V. Colotte, Integration project: multimodal interaction with Pepper, 10 hours, M2, University of Lorraine, France

Master: D. Jouvet, Speech recognition, 12 hours, M2 University of Lorraine, France

Master: D. Jouvet and S. Ouni, Multimodal oral comunication, 24 hours, M2, University of Lorraine, France

Master: Y. Laprie, Analysis, perception and automatic recognition of speech, 30 hours, M1, University of Lorraine, France

Master: O. Mella, Computer Networking, 76 hours, M1, University of Lorraine, France

Master: S. Ouni, Multimedia in Distributed Information Systems, 31 hours, M2, University of Lorraine, France

Master: E. Vincent and T. Biasutto-Lervat, Neural networks, 38 hours, M2, University of Lorraine

Master: A. Piquard-Kipffer, Dyslexia, Dysorthographia diagnosis, 6 hours, M1, Département d'Orthophonie, University of Lorraine, France

Master: A. Piquard-Kipffer, Deaf people and reading, 21 hours, Département d'Orthophonie, University of Lorraine, France

Master: A. Piquard-Kipffer, Psycholinguistics, 20 hours, Département d'Orthophonie, University Pierre et Marie Curie-Paris, France

Master: A. Piquard-Kipffer, French Language Didactics, 53 hours, ESPE, University of Lorraine, France

Master: A. Piquard-Kipffer, Psychology, 6 hours, M2, Department of Psychology, University of Lorraine, France

Continuous training: O. Mella, Computer science courses for secondary school teachers (ISN courses), 21 hours, ESPE, University of Lorraine, France

Continuous training: A. Piquard-Kipffer, Special Educational Needs, 53 hours, ESPE, University of Lorraine, France

Doctorat: A. Piquard-Kipffer, Language Pathology, 20 hours, EHESP, University of Sorbonne-Paris cité, France

Other: V. Colotte, Responsible for "Certificat Informatique et Internet" for the University of Lorraine, France (50000 students, 30 departments)

10.2.2. Supervision

PhD: Ken Déguernel, "Apprentissage de structures musicales en contexte d'improvisation", University of Lorraine, March 6, 2018, Emmanuel Vincent and Gérard Assayag (IRCAM) [10].

PhD: Baldwin Dumortier, "Contrôle acoustique d'un parc éolien", University of Lorraine, September 25, 2018, Emmanuel Vincent and Madalina Deaconu (Inria Tosca) [9].

PhD in progress: Amal Houidhek, "Synthèse paramétrique de parole arabe", December 2015, cotutelle, Vincent Colotte, Denis Jouvet and Zied Mnasri (ENIT, Tunisia).

PhD in progress: Imène Zangar, "Amélioration de la qualité de synthèse vocale par HMM pour la parole arabe", December 2015, codirection, Vincent Colotte, Denis Jouvet and Zied Mnasri (ENIT, Tunisia).

PhD in progress: Amine Menacer, "Traduction automatique de vidéos", May 2016, Kamel Smaïli and Denis Jouvet.

PhD in progress: Mathieu Fontaine, "Processus alpha-stable pour le traitement du signal", May 2016, Antoine Liutkus and Roland Badeau (Télécom ParisTech).

PhD in progress: Anastasiia Tsukanova, "Coarticulation modeling in articulatory synthesis", May 2016, Yves Laprie.

PhD in progress: Nathan Libermann, "Deep learning for musical structure analysis and generation", October 2016, Frédéric Bimbot (IRISA) and Emmanuel Vincent.

PhD in progress: Lauréline Perotin, "Séparation aveugle de sources sonores en milieu réverbérant", November 2016, Romain Serizel, Emmanuel Vincent, and Alexandre Guérin (Orange).

PhD in progress: Théo Biasutto, "Multimodal coarticulation modeling: Towards the animation of an intelligible speaking head", December 2016, Slim Ouni.

PhD in progress: Sara Dahmani, "Modeling facial expressions to animate a realistic 3D virtual talking head", January 2017, Slim Ouni and Vincent Colotte.

PhD in progress: Guillaume Carbajal, "Apprentissage profond bout-en-bout pour le rehaussement de la parole", March 2017, Romain Serizel, Emmanuel Vincent, and Éric Humbert (Invoxia).

PhD in progress: Sunit Sivasankaran, "Exploiting contextual information in the speech processing chain", July 2017, Dominique Fohr and Emmanuel Vincent.

PhD in progress: Ioannis Douros, "Combining cineMRI and static MRI to analyze speech production", July 2017, Pierre-André Vuissoz (IADI) and Yves Laprie.

PhD in progress: Diego Di Carlo, "Estimating the Geometry of Audio Scenes Using Virtually-Supervised Learning", October 2017, Antoine Deleforge and Nancy Bertin.

PhD in progress: Lou Lee, "Du lexique au discours: les particules discursives en français", October 2017, Yvon Keromnes and Mathilde Dargnat (ATILF) and Denis Jouvet.

PhD in progress: Nicolas Turpault, "Deep learning for sound scene analysis in real environments", January 2018, Romain Serizel and Emmanuel Vincent.

PhD in progress: Raphaël Duroselle, "Adaptation de domaine par réseaux de neurones appliquée au traitement de la parole", September 2018, Denis Jouvet and Irina Illina.

PhD in progress: Nicolas Furnon, "Deep-learning based speech enhancement with ad-hoc microphone arrays", October 2018, Romain Serizel, Irina Illina and Slim Essid (Télécom ParisTech).

PhD in progress: Ajinkya Kulkarni, "Synthèse de parole expressive par apprentissage profond", October 2018, Vincent Colotte and Denis Jouvet.

PhD in progress: Manuel Pariente, "Deep learning-based phase-aware audio signal modeling and estimation", October 2018, Antoine Deleforge and Emmanuel Vincent.

PhD in progress: Adrien Dufraux, "Leveraging noisy, incomplete, or implicit labels for automatic speech recognition", November 2018, Emmanuel Vincent, Armelle Brun (LORIA), and Matthijs Douze (Facebook AI Research).

10.2.3. Juries

10.2.3.1. Participation in HDR and PhD juries

Participation in the Habilitation (HDR) Jury for Anthony Larcher (University of Le Mans, December 2018), D. Jouvet

Participation in the PhD jury of Anastasios Alexandridis (University of Crete, January 2018), E. Vincent.

Participation in the PhD jury of Marius Miron (University Pompeu Fabra, Spain, February 2018), E. Vincent, reviewer.

Participation in the PhD jury of Victor Bisot (Télécom ParisTech, March 2018), E. Vincent, reviewer.

Participation in the PhD jury of Boaz Schwarz (Bar-Ilan university, Israel, March 2018), A. Deleforge, reviewer.

Participation in the PhD jury of Jean-Rémy Gloaguen (École Centrale de Nantes, October 2018), E. Vincent, reviewer.

Participation in the PhD jury of Mathieu Andreux (Université Paris Sciences et Lettres, November 2018), E. Vincent, reviewer.

Participation in the PhD jury of Ming Xiu (Université de Strasbourg, December 2018), Y. Laprie.

10.2.3.2. Participation in other juries

Participation in CAFIPEMPF Jury - Master Learning Facilitator, Académie de Nancy-Metz & Université de Lorraine, April, May 2018, A. Piquard-Kipffer

Participation in the Competitive Entrance Examination into Speech-Language Pathology Departement, University of Lorraine, June 2018, A. Piquard-Kipffer.

10.3. Popularization

- Participation to the "Ada Lovelace Day" organized by Inria Nancy - Grand Est, October 2018 (A. Bonneau).

10.3.1. Articles and contents

- Interview for "GAFA : la voix est libre", le Magazine de la Rédaction, *France Culture*, January 5, 2018 (E. Vincent)
- Interview for "Les enceintes connectées vont révolutionner vos vies et vous ne pourrez plus vous en passer", *18h39.fr*, February 22, 2018 (E. Vincent)

- Interview for "Annecy 2018 : Dynalips, solution de lip-sync automatisée.", *3DVF.com*, June 18, 2018 (S. Ouni)

10.3.2. Interventions

- Demonstration at Journée des métiers, Collège Péguy, le Chesnay, April 2018 (A. Piquard-Kipffer)

- Exhibition of an automatic lip-sync system at The Annecy International Animation Film Festival, Annecy, 12-15 June 2018 (S. Dahmani, V. Girard, T. Biasutto-Lervat, S. Ouni)

- Demonstration at Fête de la Science, University of Lorraine, October 12, 2018 (N. Turpault, R. Serizel, E. Vincent)

- Demonstration and participation in a panel discussion at Forum des Sciences Cognitives, Artem, Nancy, November 7, 2018 (N. Turpault, E. Vincent)

- Invitation to Serbia Science Festival 2018 (Belgrade) by the French institute of Serbia to give four popularization lectures and present a demonstration on "teaching robots to hear us", November 2018 (A. Deleforge).

ORPAILLEUR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organization, General Chairs, Scientific Chairs

- Amedeo Napoli and Yannick Toussaint were the general chairs of the "21th International Conference on Knowledge Engineering and Knowledge Management" (EKAW 2018, https://project.inria.fr/ekaw2018/) held on November 12–16 2018 at Inria NGE/LORIA Nancy.

- Amedeo Napoli was the program chair with Sergei O. Kuznetsov (HSE Moscow) and Sebastian Rudolph (TU Dresden) of the sixth workshop FCA4AI ("What can do FCA for Artificial Intelligence") co-located with the IJCAI-ECAI Conference in Stockholm, July 13 2018 (http://fca4ai.hse.ru/ and http://ceur-ws.org/Vol-2149/).

- Amedeo Napoli was the co-chair with Sergei Kuznetsov of the track "General Topics of Data Analysis" at the AIST Conference in Moscow on July 5–7 2018 (7th International Conference on Analysis of Images, Social Networks, and Texts http://aistconf.org/ and http://aistconf.org/board/).

- Miguel Couceiro was an organizer of the tutorial on "Majority Logic Synthesis" at the International Conference On Computer Aided Design (ICCAD 2018, https://iccad.com/agenda/embedded-tutorials, [23]).

- Miguel Couceiro and Jérôme David (Inria Rhône Alpes, MOEX) were the organizers of the workshop "Symbolic methods for data-interlinking" co-located with EKAW 2018 (https://project.inria.fr/ekaw2018/workshops/). This workshop was organized in the framework of EKAW 2018 and of the ANR project ELKER.

9.1.2. Scientific Animation

- The scientific animation in the Orpailleur team is based on the Team Seminar which is called the "Malotec" seminar (http://malotec.loria.fr/). The Malotec seminar is held in general twice a month and is used either for general presentations of members of the team or for invited presentations of external researchers.

- Members of the Orpailleur team are all involved, as members or as head persons, in various national research groups.

- The members of the Orpailleur team are involved in the organization of conferences and workshops, as members of conference program committees (AAAI, ECAI, ECML-PKDD, ESWC, ICCBR, ICDM, ICFCA, IJCAI, ISWC, KDD, SDM...), as members of editorial boards, and finally in the organization of journal special issues.

9.2. Teaching - Supervision - Juries

- All the permanent members of the Orpailleur team are involved in teaching at all levels and mainly at University of Lorraine. Actually, most of the members of the Orpailleur team are employed on "Université de Lorraine" positions.

- The members of the Orpailleur team are also involved in student supervision, at all university levels, from under-graduate until post-graduate students, engineers, PhD, postdoc students.

- Finally, the permanent members of the Orpailleur team are involved in HDR and thesis defenses, being thesis referees or thesis committee members.

PANAMA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

- Rémi Gribonval, the scientific organizer of the 13th Peyresq summer school in signal and image processing, jointly organized in July 2018 by GRETSI and GDR ISIS.
- Rémi Gribonval, scientific and organization board of the Conference on Deep Learning: from Theory to Applications organized in the framework of the LABEX Centre Henri Lebesgue, Rennes, September 4-6 2018.
- Valentin Gillot and Romain Lebarbenchon, event coordinators of the 2018 Science and Music Day (Journée Science et Musique) organized by IRISA.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Nancy Bertin and Frédéric Bimbot, coordinators of the Science and Music Young Researcher Award (Prix Jeune Chercheur Science et Musique).
- Rémi Gribonval and Frédéric Bimbot, scientific coordinators of the Science and Music Day (Journée Science et Musique) organized by IRISA.

10.1.2.2. Member of the Conference Program Committees

- Antoine Deleforge, Area Chair in Bayesian Inference for the 14th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA 2018).
- Nancy, Area Chair in Sparsity-related Methods for the 14th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA 2018).
- Nancy, member of the program committee of the Journées d'Informatique Musicale (JIM 2018, Amiens, France).
- Rémi Gribonval, member of the program committee of the GRETSI.

10.1.2.3. Organization of special sessions

- Antoine Deleforge, organizer and co-chair with Ivan Dokmanic and Robin Schleibler of a special session on "Geometry-Aware Auditory Scene Analysis" at ICASSP 2018, Calgary, Canada.
- Antoine Deleforge, organizer and co-chair with Angélique Drémeau of a special session on "Advances in Phase Retrieval and Applications" at LVA/ICA 2018, Guildford, UK.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Frédéric Bimbot appointed as Editor-in-Chief of the international journal *Speech Communication*.
- Rémi Gribonval, Associate Editor of the international journal *Constructive Approximation*.

10.1.4. Invited Talks

- Frédéric Bimbot, JIM 2018 (Journées d'Informatique Musicale) in Amiens, France.
- Frédéric Bimbot, JEP 2018 (Journées d'Etudes sur la Parole), in Aix-en-Provence, France.
- Rémi Gribonval, Oberwolfach workshop on Applied Harmonic Analysis and Data Processing, March 25-31 2018, in Oberwolfach, Germany.

- Rémi Gribonval, CM+X workshop on Inverse Problems and Machine Learning, Feb 8-11 2018, in Caltech, Los Angeles, USA.
- Nancy Bertin, JJCAAS (Journées Jeunes Chercheurs en Audition, Acoustique musicale et Signal audio), June 6-8 2018, in Brest, France.

10.1.5. Scientific Expertise

- Rémi Gribonval, vice-president of the Scientific Advisory Board of the Acoustics Research Institute from the Austrian Academy of Sciences in Vienna.
- Frédéric Bimbot, member of the International Advisory Council of ISCA (International Speech Communication Association).
- Frédéric Bimbot, member of the ANR Expert Scientific Committee n°38, dedicated to the Digital Revolution and its relations to Knowledge and Culture.
- Rémi Gribonval, member of the EURASIP Special Area Team (SAT) on Signal and Data Analytics for Machine Learning (SiG-DML) since 2015.
- Antoine Deleforge, member of the IEEE Audio and Acoustic Signal Processing Technical Committee.

10.1.6. Research Administration

- Frédéric Bimbot, Head of the "Digital Signals and Images, Robotics" department in IRISA (UMR 6074) until June 2018.
- Rémi Gribonval, member of the organization committee of the 2019 GDR ISIS / GRETSI / Club EAA thesis prize in signal and image processing.

10.2. Teaching - Supervision - Juries

Master : N. Bertin, "Vocal and Audio Interactions", 4 hours, M2, Université Rennes 1, France.

Master : N. Bertin, "Fundamentals of Signal Processing", 24 hours, M1, Ecole Normale Supérieure (ENS) de Bretagne, Rennes, France.

Master : N. Bertin, "Foundations of Smart Sensing", 9 hours, M2, Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes, France.

Master : N. Bertin, "Sparsity in Signal and Image Processing", 12 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Master : R. Gribonval, "High dimensional statistical learning", 12 hours, M2, Université Rennes 1, France.

Master: R. Gribonval, coordination of the HDL module "High dimensional statistical learning" within the SIF M2, 20 hours, Université Rennes 1, France.

Master : R. Gribonval, "Sparsity in Signal and Image Processing", 8 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Master : R. Gribonval, coordination of the module "Sparsity in Signal and Image Processing", 48 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Bachelor : A. Deleforge, "Discovery of selected topics in audio signal processing research", 6 hours, L3, École Supérieure de Réalisation Audiovisuelle (ESRA), France.

Master : A. Deleforge, "Sparsity in Signal and Image Processing", 4 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Master : A. Deleforge, "Vocal and Audio Interaction", 6 hours, M2, Université Rennes 1, France.

Master : F. Bimbot, coordination of the VAI module "Vocal and Acoustic Interactions" within the SIF M2, 20 hours, Université de Rennes 1, France

10.3. Popularization

10.3.1. Journée Science et Musique (JSM 2018)

Participants: Valentin Gillot, Romain Lebarbenchon, Rémi Gribonval, Nancy Bertin, Frédéric Bimbot, Ewen Camberlein, Stéphanie Lemaile, Corentin Louboutin, Antoine Chatalic, Clément Gaultier, Cássio Fraga Dantas, Diego Di Carlo.

with contributions and support from: Valérie Gouranton, Ronan Gaugne, Florian Nouviale, Evelyne Orain, Agnès Cottais, Catherine Jacques-Orban and many more.

PANAMA coordinated the organization of a public event called "Journée Science et Musique" ("Music and Science Day"). This yearly event organized by the METISS/ PANAMA Team since 2011 aims at sharing with the wide audience the latest innovations and research projects in music. The motivation for hosting this event is to explain and promote the technology behind audio-processing that people face in their daily lives. The event is free to everyone and people have the possibility to attend talks by selected speakers or meet numerous experts that demonstrate current projects in which people can interactively participate. Edition 2018 hosted approximately 500 visitors and was a partner of the "Festival des Sciences" and "Festival Maintenant" in Rennes.

10.3.2. 250th Anniversary of Joseph Fourier's birth

Participants: Nancy Bertin, Frédéric Bimbot, Antoine Deleforge, Rémi Gribonval.

PANAMA has been involved in the *Comité Fourier 250* by participating to, and triggering interest for the 250th Anniversary of Joseph Fourier's birth, in the framework of *Commémorations Nationales* for the year 2018. In particular, Frédéric Bimbot has been invited to give a talk at the JEP 2018 on Fourier's heritage in Speech Processing, and the *Journée Science et Musique 2018* (see above) has included a conference where Fourier's Transform was introduced and called for to explain concepts relating to music perception.

10.3.3. Articles and contents

Rémi Gribonval wrote an article published online on Interstices [47]

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PERCEPTION Project-Team

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8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

Xavier Alameda-Pineda organized several workshops in conjunction with IEEE CVPR'18, ECCV'18, and ACM Multimedia'18.

8.1.1.2. Reviewer

Xavier Alameda-PIneda was a reviewer for IEEE CVPR'18, NIPS'18, IEEE ICASSP'18, ACM Multimedia'18 and IEEE ICRA'18.

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

Radu Horaud is associated editor for the International Journal of Computer Vision and for the IEEE Robotics and Automation Letters.

8.1.2.2. Guest Editor

Xavier Alameda-Pineda was co-guest editor of a special issue of the ACM Transactions on Multimedia Computing Communications and Applications on "Multimodal Understanding of Social, Affective, and Subjective Attributes".

8.1.3. Invited Talks

- Radu Horaud gave an invited talk at the Multimodal Machine Perception Workshop, Google, San Francisco, and at SRI International, Menlo Park, USA, on "Audio-Visual Machine Perception for Human-Robot Interaction".
- Xavier Alameda-Pineda was invited to give a seminar at the University in May 2018 on "Audio-Visual Multiple Speaker Tracking with Robotic Platforms", and
- Xavier Alameda-Pineda gave an invited talk at the SOUND Workshop at Bar-Ilan University, Israel, December 2018 on "Multi-modal Automatic Detection of Social Attractors in Crowded Meetings".

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Laurent Girin is professor at Grenoble National Polytechnic Institute (G-INP) where he teaches signal processing and machine learning on the basis of a full professor service (192 hours/year)
- Xavier Alameda-Pineda is involved with the M2 course of the MSIAM Masters Program: "Fundamentals of probabilistic data mining, modeling seminars and projects", for the practical sessions. Xavier is also preparing a doctoral course on "Learning with Multi-Modal data for Scene Understanding and Human-Robot Interaction" to be taught in spring 2019.

8.2.2. Supervision

- Radu Horaud has supervised the following PhD students: Israel Dejene-Gebru [32], Stéphane Lathuilière [33], Benoît Massé [34], Yutong Ban, Guillaume Delorme and Sylvain Guy.
- Xavier Alameda-PIneda has co-supervised Israel Dejene-Gebru, Yutong Ban, Guillaume Delorme and has supervised Yihong Xu.

8.2.3. Juries

Xavier Alameda-Pineda was reviewer and examiner of the PhD dissertations of Wei Wang (now post-doctoral fellow at EPFL) and of Dr. Dan Xu (now post-doctoral fellow at U. Oxford), both at University of Trento, Italy.

PERVASIVE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Sabine Coquillart was Conference co-chair for ICAT-EGVE 2018, Cyprus, Nov. 7-9, 2018.

10.1.1.2. Chair of Conference Program Committees

- Thierry Fraichard was Program Co-Chair for the IEEE Int. Conf. on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAR), Brisbane (AT), *May 2018*.

10.1.1.3. Member of Conference Program Committees

- Patrick Reignier was a member of the Program Committee of Smart Objects 2018 (satellite workshop to CHI 2018, Montreal (CA).

- Eric Castelli: co-organisator and "board member" of the international conference serie STLU'xx (Spoken Language Technologies for Under-resourced languages) since it-s creation. For 2018: participation of SLTU'18 (Gurugam, India) (as reminder: SLTU'16 (Jakarta, Indonesia) - SLTU'14 (St Petersburg, Russia) - SLTU'12 (Cape Town, South Africa) - STLU'10 (Penang, Malaysia) - Organisator and "co-chair" of the first edition STLU'08 (Hanoi, Vietnam))

- Sabine Coquillart was a member of the Program Committee for 3DCVE'18, CENTRIC'18, GRAPP'18, ICGI'18, ICMI'18, IEEE VR'18 Journal Papers, IEEE VR'18 Conference Papers, ICAT-EGVE'18, VRST'18, WSCG'18,

10.1.1.4. Reviewer

- Thierry Fraichard reviewed papers for the IEEE/RSJ IROS conference.

- Patrick Reignier reviewed papers for Smart Objects 2018.

- Dominique Vaufreydaz reviewed articles for IV2018, IUadapt2018, RO-MAN2018, ICARCV2018, AVEC2018, Workshop on Modeling Cognitive Processes from Multimodal Data at ICMI 2018, HRI 2019, MAPR2018.

- Eric Castelli reviewed papers of 14 international conferences and workshops: SPIN 2018 (Noida, Dehly, India) - 3ICT18 (Bahrain) – IALP 2018 (Bandung, Indonesia) – NICS 2018 (Ho Chi Minh City, Vietnam) - SCS 2018 (Bahrain) – SPECOM 2018 (Leipzig, Germany) – SigTelCom 2018 (Ho Chi Minh Citiy, Vietnam) - STLU'18 (Gurugram, India) – ATC 2018 (Ho Chi Minh City, Vietnam) – ICVES 2018 (Madrid, Spain) – SCS 2019 (Bahrain) – SigTelCom 2019 (Hanoi, Vietnam) – ICMSAO 2019 (Bahrain) – SPECOM 2019 (Istanbul, Turkey) – MAPR 2019 (Ho Chi Minh City, Vietnam)

- James Crowley Reviewed papers for ACCV 2018, ICMI 2019, and CVPR 2018.

- Sabine Coquillart Reviewed papers for Eurographics'18, Eurohaptics'18.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Sabine Coquillart is a member of the Scientific Committee of the Journal of Virtual Reality and Broadcasting.

- Sabine Coquillart is Academic Editor for PeerJ Computer Science Journal.

- Sabine Coquillart is Review Editor for Frontiers in Virtual Environments Journal.

- Sabine Coquillart is Associate Editor for Presence: Teleoperators and Virtual Environments.
- Thierry Fraichard is an Asssociate Editor for IEEE Robotics and Automation Letters (RA-L).
- Patrick Reignier is a member of the editorial board of the Modeling and Using Context Journal.
- Patrick Reignier served as a guest editor for a special issue of the Revue d'Intelligence Artificielle on Smart Homes.
- Dominique Vaufreydaz served as a guest editor for a special issue Special Issue "Human Behavior, Emotion and Representation" of Multimodal Technologies and Interaction.

10.1.2.2. Reviewer - Reviewing Activities

- Thierry Fraichard reviewed articles for IEEE Trans. Intelligent Vehicles (TIV), IEEE Robotics and Automation Letters (RA-L).
- Thierry Fraichard reviewed proposals for the IDEX Université Grenoble Alpes and the Italian Research Agency.
- Thierry Fraichard served as a reviewer for the H2020 ILIAD European project.
- Eric Castelli reviewed article for the "Romanian Human Computer Interaction" Journal (RRIOC)
- Dominique Vaufreydaz reviewed articles for the journal of Interactive Technology and Smart Education

10.1.3. Invited Talks

- Eric Castelli: *The future of scientific international cooperation in ASEAN area*. Seminar of International Research Institute MICA, Hanoi, Vietnam, 9 & 10 July 2018
- James Crowley: *Put That There: 30 Years of Research on Multi-Modal Interaction*, Invited Plenary Presentation, 2018 International Conference on Multimodal Interaction, ICMI 2018, Boulder Co. 16 Oct 2018.
- James Crowley: *Artificial Intelligence*, Invited Plenary Presentation, 2018 Colloque annuel des directeurs des écoles d'ingénieures, Marseilles, 31 May 2018.
- Sabine Coquillart: *Pseudo-haptics : résultats de recherche et perspectives d'applications*, Invited presentation, Séminaire "Sensorimotricité, intersensorialité et réalité virtuelle", Grenoble, 28 janvier 2018.

10.1.4. Leadership within the Scientific Community

- James Crowley is a member of the Steering Committee for the ACM Int. Conf. on Multimodal Interaction.
- Sabine Coquillart is serving as member of the steering committee for the ICAT Int. Conf. on Artificial Reality and Telexistence.
- Sabine Coquillart is chairing the steering committee for the EGVE Working Group – EUROGRAPHICS Working group on Virtual Environments.
- Sabine Coquillart is an elected member of the EUROGRAPHICS Executive Committee.
- Sabine Coquillart is a member of the EUROGRAPHICS Working Group and Workshop board.

10.1.5. Scientific Expertise

- James L. Crowley served on the ANR committee CE 33 Interaction, Robotics.
- Sabine Coquillart served as an expert reviewer for the Austrian Science Fund.
- Thierry Fraichard served as an expert reviewer for the European Commission and the Italian Research Agency.
- Patrick Reignier is a member of the Scientific Council of the Amiqual4Home EquipEx.
- Dominique Vaufreydaz served as an evaluator for Initiatives de Recherche Stratégiques (IRS) call of the Grenoble Idex.

- Dominique Vaufreydaz served as an evaluator for Icelandic Research Fund.
- Eric Castelli served as an international expert for the Vietnamese agency NAFOSTED (National Foundation for Science and Technology Development), Ministry of Science and Technology of Vietnam.
- Eric Castelli served as an international expert for the Cambodian Ministry of Posts and Telecommunications
- Sabine Coquillart served as member for the Best Paper Award Committee for IEEE VR 2018.
- Sabine Coquillart served as a member of the Scientific Committee of "Challenges of IoT in the Digital Tools and Uses Congress", 2018.

10.1.6. Research Administration

- James Crowley is director for the Amiqual4Home Innovation Platform (EquipEx).
- James Crowley serves on the Administrative Committee (Bureau) for the Laboratoire Informatique de Grenoble.
- James Crowley served on the Scientific Committee (CoS) for the CRI Inria Grenoble-Rhone Alpes.
- James Crowley served on the orientation committee for the Competitivety Pole Minalogic
- Patrick Reignier is head of the engineering support group of the Laboratoire d'Informatique de Grenoble (13 members). He is currently supervising the moving of the Domus Living lab to a new site on Campus.
- Patrick Reignier serves on the Administrative Office (Bureau) for the Laboratoire Informatique de Grenoble.
- Patrick Reignier is at the head of the Domus Living Lab
- Patrick Reignier is a member of the Comité Executif of the Amiqual4Home Equipex
- Patrick Reignier is a member of the Comité de pilotage of the MACI (Maison de la Création et l'Innovation)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

10.2.1.1. James Crowley

James Crowley was co-director of the Master of Science in Informatics at Grenoble (MoSIG) to Sept 2018.

Master : Computer Vision, Course 27h EqTD, M2 year, Master of Science in Informatics at Grenoble

Master 1: Intelligent Systems, Cours 54h EqTD, UFRIM2AG

ENSIMAG 2: Intelligent Systems, Cours 54h EqTD, ENSIMAG

ENSIMAG 3 : Pattern Recognition and Machine Learning, Cours 27h EqTD, ENSIMAG

10.2.1.2. Patrick Reignier

- Patrick Reignier has been elected member of the Conseil des Etudes et de la Vie Universitaire of Grenoble INP
- Patrick Reignier was a member of the consultation group for the proposal of the founding text for the integrated university.
- Patrick Reignier has been nominated as a member of the Conseil de la Formation Continue de Grenoble INP
- Patrick Reignier participated in the editing of a successful Idex Educational program proposal "FromLivingLab".

- Patrick Reignier is co-director of the "formation en apprentissage" of Ensimag (3 years program : 1 year for the Licence and 2 years for the Master)

- Patrick Reignier Supervises the industrial part of the "formation en apprentissage" of the Ensimag engineering school.

- Master: Patrick Reignier, Projet Genie Logiciel, 55h eqTD, M1, Ensimag/Grenoble INP, France.

- Master: Patrick Reignier, Développement d'applications communicantes, 18h eqTD, M2, Ensimag/Grenoble-INP, France

- Master: Patrick Reignier, Introduction aux applications reparties, 18h eqTD, M2, Ensimag/Grenoble-INP, France

- Master: Patrick Reignier, Applications Web et Mobiles , 27h eqTD, M1, Ensimag/Grenoble-INP, France

- Master: Patrick Reignier, Projet Systeme, 12h eq TD, M1, Ensimag/Grenoble-INP, France

- Licence: Patrick Reignier, Projet C, 20h eqTD, L3, Ensimag/Grenoble-INP, France.

10.2.1.3. Dominique Vaufreydaz

- Co-responsibility of the Graphic, Vision and Robotics track of the MOSIG Master program.

- In charge of the transversal numerical competence courses at the Grenoble Faculty of Economics (Grenoble and Valence campuses)

- Licence: Compétences Numériques, 126h eq TD,L1, Université Grenoble Alpes, France.

- Licence: Informatique appliquée à l'économie et à la gestion, 32 h eq TD, enseignement à distance, Licence, Université Grenoble Alpes, France.

- Licence: Pratique avancée du Tableur, 72 h eq TD, L3, Université Grenoble Alpes, France.

- Licence Professionnelle: Enquêtes et traitement d'enquêtes avec le logiciel Sphinx, 12h eq TD, Licence pro Métiers de l'Emploi et de la Formation, Université Grenoble Alpes, France.

- Licence Professionnelle: Administration en environnement hétérogène, 20h eq TD, Licence pro Administration et Sécurité des Systèmes et des Réseaux, Université Grenoble Alpes, France.

- IUT année spéciale: Programmation C++, 18h eq TD, Année Spéciale IUT Informatique, Université Grenoble Alpes, France.

- Master: Pratique avancée du Tableur, 24 h eq TD, M1 économie internationale et stratégies d'acteurs, Université Grenoble Alpes, France.

- Master: Développement Web Mobile, 24h eq TD, M2 Mathématiques et Informatique Appliquées aux Sciences Humaines et Sociales, Université Grenoble Alpes, France

10.2.1.4. Thierry Fraichard

- Master: Thierry Fraichard, Autonomous Robotics, 22.5h eqTD, M2 MOSIG, Univ. Grenoble Alpes.

10.2.2. Supervision - Doctoral theses completed in 2018

- Rémi Paulin, *Human-Robot Motion: an Attention-Based Approach*, 22 March 2018, Patrick Reignier and Thierry Fraichard.

- Nguyen Dinh Van, *Wireless Sensors Networks for Indoor Mapping and Accurate Localization for Low Speed Navigation in Smart Cities*, 5 December 2018, Fawzi Nashashibi and Eric Castelli

10.2.3. Supervision - Current Doctoral Students

- PhD in progress: Jose Grimaldo Da Silva Filho, "Human-Robot Motion, a Shared Effort Approach", Octobre 2015, Thierry Fraichard.

- PhD in progress: Matteo Ciocca, "Safe Robot Motion", Octobre 2016, Thierry Fraichard and Pierre-Brice Wieber.

- PhD in progress : Romain Bregier, Détection et estimation de pose d'instances d'objet rigide pour la manipulation robotisée, Octobre 2014, Frederic Devernay and James Crowley
- PhD in progress : Etienne Balit, expressive social robot design, Octobre 2014, Patrick Reignier and Dominique Vaufreydaz.
- PhD in progress : Interaction-Aware Tracking and Lane Change Detection in Highway Driving, David Sierra Gonzales, Octobre 2014, Dizan Vasquez and Emmanuel Mazer
- PhD in progress : Minh-khoa Nguyen, Robotics-inspired methods for modeling and simulation of large nanosystems, Octobre 2014, Leaonard Jaillet and Emmanuel Mazer
- PhD in progress : Amr Alyafi, explanatory observation of energy usage, Octobre 2015, Stephane Ploix and Patrick Reignier.
- PhD in progress : Amine Awada, activity recognition for smart energy management, Octobre 2015, Stephane Ploix and Patrick Reignier.
- PhD in progress : Liliya Tsetanova, Social Robotics, Octobre 2015, Veronique Aubergé and Patrick Reignier.
- PhD in progress : Thomas Guntz, Multimodal Observation of Subjects Engaged in Problem Solving, Octobre 2016, James Crowley and Dominique Vaufreydaz
- PhD in progress : Pavan Vashista, Situational Awareness of Autonomous Cars in Urban Areas, February 2016, Dominique Vaufreydaz and Anne Spalanzani (Inria Chroma).
- PhD in progress : Nashwa Abou Bakr, Observation of Kitchen Activities, Octobre 2016, James Crowley and Remi Ronfard
- PhD in progress : Raphael Frisch, conception de machine stochastique pour la localisation et la séparation de source sonor, Octobre 2016, Emmanuel Mazer

10.2.4. Juries

- Thierry Fraichard served as an expert evaluator in the PhD Jury of Florent Altché, Ecole Nat. Sup. des Mines de Paris, *Sep. 18*.
- Patrick Reignier served as a jury member of the Doctoral Jury of Hiary Landy Rajaonarivo (Lab-STICC, Brest)
- Patrick Reignier served as a president of the Doctoral Jury of Nathan Ramoly (Telecom Sud Paris)
- Patrick Reignier served as a president of the Doctoral Jury of Jérémy WAMBECKE (University Grenoble Alps)
- Patrick Reignier served as a president of the Doctoral Jury of Paola Gomez (University Grenoble Alps)
- Patrick Reignier served as a reporter of the Doctoral Jury of Mauricio Gomez Morales (Purdue University and Paris Est Créteil)
- Sabine Coquillart served as reporter for the doctoral jury of A. Costes at INSA Rennes
- Sabine Coquillart served as examiner for the doctoral juty of G. Cortes at Univ. Rennes 1.

PETRUS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. Member of the Organizing Committees

- Luc Bouganim: Co-organizer of Ecole thématique BDA Masses de Données Distribuées, Aussois, June 2018
- Iulian Sandu Popa: 34ème Conférence sur la Gestion de Données – Principes, Technologies et Applications (BDA 2018), Bucarest, 22-26 octobre 2018
- Iulian Sandu Popa: Colloque National Capteurs et Sciences Participatives (CASPA), Paris, 1-4 avril 2019

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Nicolas Anciaux: VLDB'18, VLDB'19, SIGMOD'19, DATA'18, BDA'18
- Luc Bouganim: Associate Editor for VLDB'18
- Philippe Pucheral: DATA'18, MOBILITY'18
- Iulian Sandu Popa: DATA'18, ICDE'19, IEEE MobileCloud'19

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Nicolas Anciaux: Associate Editor of the VLDB Journal

10.1.3.2. Reviewer - Reviewing Activities

- Iulian Sandu Popa: ACM Transactions on Spatial Algorithms and Systems, IEEE Transactions on Parallel and Distributed Systems, Geoinformatica

10.1.4. Invited Talks

- Iulian Sandu Popa: "Highly Distributed Queries on Personal Data Management Systems with Strong Privacy Guarantees", New Jersey Institute of Technology (NJIT), Newark, April 9, 2018. https://web.njit.edu/cs/CS_Seminar/abstract.php?id=391
- Célia Zolynski and Nicolas Anciaux: "L'avènement d'une gestion individuelle de nos données personnelles. Regards croisés sur certains enjeux de vie privée", Kick-Off of the DATAIA Institute, Fev. 2018. slides: http://petrus.inria.fr/~anciaux/papers/D36.pdf
- Philippe Pucheral: "Privacy-by-Obligation: Une réponse au paradoxe du Cloud Personnel ?", Inria Scientific days, June 28th, 2018.
- Célia Zolynski and Nicolas Anciaux: "GDPR and Personal Cloud: from Empowerment to Responsibility (GDP-ERE)", DATAIA-JST International Symposium on Data Science and AI, July 2018. Link: http://dataia.eu/actualites/dataia-jst-international-symposium-data-science-and-ai, slides: http://dataia.eu/sites/default/files/DATAIA_JST_International_Symposium/DATAIA-JST_SYMPOSIUM_Nicolas_Anciaux_Celia_Zolynski.pdf
- Philippe Pucheral: "Protection de la vie privée : potentiel et paradoxe du Cloud Personnel", SystemX seminar, October 18th, 2018. https://www.irt-systemx.fr/philippe-pucheral-animera-un-seminarsystemx-le-18-octobre/

- Nicolas Anciaux: "Personal Data Management Systems using Trusted Execution Environments", Zenith seminar, Inria / Univ. Montpellier, Nov. 2018. https://team.inria.fr/zenith/zenith-seminar-nicolas-anciaux-personal-data-management-systems-using-trusted-execution-environments-21-nov-2018/

10.1.5. Research Administration

- Philippe Pucheral: Member of the HDR committee of the STV doctoral school (UVSQ) since 2014
- Philippe Pucheral: Member of the steering committee of the ED STIC doctoral school of University Paris-Saclay, 'Data, Knowledge and Interactions' committee (about 250 PhD students) since 2014
- Philippe Pucheral: Member of the bureau of the DAVID lab board since 2016
- Nicolas Anciaux: Member of the Council of the Doctoral College of the University Paris-Saclay
- Nicolas Anciaux: Correspondent for the Doctoral school ED STIC of University Paris-Saclay at Inria Saclay
- Nicolas Anciaux: Responsible for the 'Mission Jeunes Chercheurs' (MJC) at Inria Saclay
- Nicolas Anciaux: Responsible for the 'Formation par la Recherche' (FPR) at Inria Saclay
- Nicolas Anciaux: Member of the bureau of the DAVID lab board
- Luc Bouganim: Member of the Scientific Commission (CS) of Inria Saclay-IDF (Cordi-S, Post-Doc, Delegation)
- Luc Bouganim: Member of the Commission for Technological Development (CDT) of Inria Saclay-IDF

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence : Iulian Sandu Popa, Bases de données (niveau L3), 96, UVSQ, France. Guillaume Scerri, Initiation aux bases de données (niveau L2), 63, UVSQ, France. Guillaume Scerri, Fondements de l'informatique (niveau L1), 36, UVSQ, France. Guillaume Scerri, Théorie des Langages (niveau L2), 45, UVSQ, France.
- Master : Iulian Sandu Popa, Bases de données relationnelles (niveau M1), Gestion des données spatiotemporelles (niveau M2), Sécurité des bases de données (niveau M2), 96, UVSQ, France. Philippe Pucheral, responsible of the DataScale master, courses in M1 and M2 in databases and in security, introductory courses for jurists,UVSQ, France. Luc Bouganim, Bases de données relationnelles et XML (niveau M1 et M2), 40, AFTI, France. Guillaume Scerri, Bases de données relationnelles (niveau M1), 36, UVSQ, France. Guillaume Scerri, Sécurité et bases de données pour juristes, 4.5, UVSQ, France. Guillaume Scerri, Sécurité, 18, UVSQ, France.
- Engineers school : Nicolas Anciaux, courses on Databases (module IN206, niveau M1), 21, and Advanced databases (module ASI13, niveau M2), 24, at ENSTA ParisTech. Nicolas Anciaux, Systèmes d'Information "privacy by design" (niveau M1), 30, at ENSIIE Evry, France. Luc Bouganim, Systèmes d'Information "privacy by design" (niveau M1), 42, ENSIIE Evry et INSA CVL, France.

10.2.2. Supervision

- PhD : Paul Tran Van, Partage de documents sécurisé dans le Cloud Personnel, UVSQ, April 3, 2018, Nicolas Anciaux and Philippe Pucheral
- PhD in progress: Axel Michel, Secure Distributed Computations, October 2015, Benjamin Nguyen and Philippe Pucheral
- PhD in progress : Julien Loudet, Highly Distributed Queries on Personal Data Management Systems with Strong Privacy Guarantees, July 2016, Luc Bouganim and Iulian Sandu Popa

- PhD in progress: Riad Ladjel, Secure Distributed Computation for the Personal Cloud, October 2016, Nicolas Anciaux, Philippe Pucheral and Guillaume Scerri

- PhD in progress: Dimitris Tsoulovos, Privacy-by-design Middleware for Urban-scale Mobile Crowd-sensing, April 2017, Nicolas Anciaux and Valérie Issarny (Inria Mimove)

- PhD in progress: Robin Carpentier, Secure and efficient data processing in trusted execution environments for the personal cloud, October 2018, Nicolas Anciaux, Iulian Sandu Popa and Guillaume Scerri

10.2.3. Juries

- Nicolas Anciaux : Reviewer of the PhD of Sakina MAHBOUBI (Université de Montpellier, 21/11/2018)

- Luc Bouganim : Reviewer of the PhD of Arezki Laga (University of Bretagne Sud, 20/12/2018)

10.3. Popularization

- Nicolas Anciaux: "Respectez les données personnelles de vos clients avec PLUGDB", Inria Tech Talk, French Tech Central - Station F, 12 Dec. 2018. video: https://youtu.be/9y3VdMe_sAQ, slides: https://french-tech-central.com/events/inria-tech-talk-respectez-les-donnees-personnelles-de-vos-clients-avec-plugdb/

- Nicolas Anciaux: auditions de la mission de préfiguration du « Health Data Hub », DREES, July 2018. Slides: http://petrus.inria.fr/~anciaux/papers/D39.pdf

- Nicolas Anciaux: interview, magazine La Recherche N°535, Mai 2018, "IA : les défis de la stratégie française", pp.14-16, by Gautier Cariou. Link: https://www.larecherche.fr/parution/mensuel-535

<p style="text-align:center; color:red;">**POTIOC Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- EduIHM 2018 (workshop at IHM 2018), Martin Hachet
- 5th Sino-French Workshop on Virtual reality (Chengdu, August 2018), Pascal Guitton
- 3rd International OpenViBE workshop, IEEE SMC 2018, (Miyazaki, Japan, October 2018), Fabien Lotte
- Workshop "Turning negative into positives! Exploiting "negative" results in Brain-Machine Interface research", International BCI Meeting 2018, Asilomar, CA, USA, Fabien Lotte

10.1.1.2. Member of the Organizing Committees

- Workshop VR/AR in BCI, BCI Meeting Asilomar, USA, May 2018, Jelena Mladenovic
- Workshop"Collaborative and Competing Multi-Brain BCI's", International BCI Meeting 2018, Asilomar, CA, USA, Fabien Lotte
- "3ème journée Nationale sur le neurofeedback : a forward step towards closed loop", Lyon, France, May 2018, Fabien Lotte
- Game Accessibility Conference EU 18, CNAM, Paris, October 2018, Pierre-Antoine Cinquin

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Cyberworlds 2018, Fabien Lotte
- IEEE Conference on Systems, Man and Cybernetics, Brain-Machine Interface Workshop (IEEE SMC) 2018, Fabien Lotte
- International Workshop on Pattern Recognition in NeuroImaging (PRNI) 2018, Fabien Lotte
- International Neuroergonomics Conference 2018 (Fabien Lotte)
- International BCI Meeting 2018, Fabien Lotte
- Augmented Human Conference (AH), 2018, Fabien Lotte

10.1.2.2. Reviewer

- ACM CHI 2018 and 2019
- ACM UIST 2018
- ACM MobileHCI 2018
- ACM IDC 2018
- ACM CHI Play 2018
- IEEE VR 2018
- 4th IEEE VR 3DCVE Workshop 2018
- IEEE SMC 2018
- ICMI 2018
- MCPMD Workshop, ICMI 2018
- Augmented Human 2018

- MobileCHI 2018
- ICASSP 2018
- Int. BCI Meeting 2018
- JJC-ICON 2018
- Neuroergonomics 2018
- PRNI 2018
- Cyberworlds 2018
- NIPS 2018
- Games User Research EU Conference 2018
- Conférence ISCRAM 2019

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- IEEE Computer Graphics and Applications, Martin Hachet
- Journal of Neural Engineering, Fabien Lotte
- Brain-Computer Interfaces, Fabien Lotte

10.1.3.2. Reviewer - Reviewing Activities

- Plos One
- Journal of Neural Engineering
- Computational Intelligence and Neuroscience
- Cognitive Computation
- Frontiers in Neuroscience
- IEEE Signal Processing Letters
- IEEE TVCG
- IEEE TBME
- IEEE Trans. Games
- IEEE TNSRE
- IEEE CGA
- IJHCS
- ACM TOCHI
- ACM TACCESS
- Springer Nature Scientific Reports

10.1.4. Invited Talks

- "Comment rendre accessible les enseignements en ligne comme les MOOC pour des étudiants en situation de handicap", Colloque Sensibilisation et regards croisés autour du handicap, 18-19 janvier 2018, Bordeaux, Pascal Guitton
- "Défis et opportunités pour l'Accessibilité numérique", 20ème anniversaire BrailleNet, 14 juin 2018, Issy les moulineaux, Pascal Guitton
- "Accessibilité numérique des systèmes d'enseignement en ligne pour des personnes en situation de handicap d'origine cognitif", 2ième Journée scientifique du centre d'excellence BIND (CHU & Université de Bordeaux) "Innovation technologique et maladies neurodégénératives", 23 novembre 2018, Bordeaux, Pascal Guitton

- "Measuring Intrinsic motivation/curiosity through Electroencephalography", UQAM Psychology Lab Montreal, Canada, Aurélien Appriou
- "Endowing the Machine with Active Inference in a P300 BCI", Seminar of Computational Neuroscience, Inria Bordeaux, November 2018, Jelena Mladenovic
- "Combining physiological sensing and User modeling for intuitive HCI at Intelligent User Interfaces: Eye Tracking and Beyond", Workshop in Haifa University, Israel, April 2018, Jelena Mladenovic
- "Taxonomy for Adaptive BCI: User and Task Modeling at Brain-computer communication: Towards real world applications", BCI Conference in IDC Herzlyia, Israel, March 2018, Jelena Mladenovic
- "Learning to control Mental Imagery-based Brain-Computer Interfaces", Journées Scientifiques Inria, Bordeaux, France, June 2018, Fabien Lotte,
- "L'interaction Cerveau-Ordinateur", Pause de l'institut des études avancées de l'université de Bordeaux, Cadillac, France, June 2018, Fabien Lotte
- "Models and tools to design non-invasive Brain-Computer Interfaces", Neurocampus annual meeting day, Bordeaux, May 2018, Fabien Lotte
- "Understanding and Redefining User Training to Mental Imagery-based Brain-Computer Interfaces Control", Laboratoire d'Étude des Mécanismes Cognitifs (EMC), Lyon, France, April 2018, Fabien Lotte
- "Redefining user training in BCI/Neurofeedback by combining machine learning, neuroscience and psychology", 2018 RIKEN-BSI-Cichocki Laboratory Alumni Japan Workshop on Frontier of Multidisciplinary Research: Brain Signal Processing and Multiway Data Mining Wakoshi, Saitama, Japan, March, 2018, Fabien Lotte
- "Learning for BCI and BCI for Learning", BCI Symposium "Brain-computer communication: Towards real world applications", Tel Aviv, Israel, March 2018, Fabien Lotte
- "Redefining User Training in Mental Imagery-based Brain-Computer Interfaces", ESPCI, Paris, February 2018, Fabien Lotte
- Présentation des travaux avec l'IRSA, 39ième congrès de la FISAF, Lauren Thevin

10.1.5. Scientific Expertise

- Expert for "Credit Impot Recherche", Martin Hachet
- Expert for the ANR, Committee CES33 "Interaction, Robotics and IA", Fabien Lotte

10.1.6. Research Administration

- Member of "Bureau du comite des projets", Martin Hachet
- Member of "Conseil administration de l'AFIHM", Martin Hachet
- Member of scientific committee of SCRIME, Martin Hachet
- Elected member of the board of the French BCI society (CORTICO), Fabien Lotte
- Representative of Inria for NEM, Fabien Lotte
- Member of Commission de recrutement des Inspecteurs Généraux de l'Education Nationale (IGEN), Pascal Guitton
- Responsable of Inria Cellule de veille et de prospective, Pascal Guitton
- Member of Inria Ethical Committee (COERLE), Pascal Guitton
- Member of Inria Comité Parité et Egalité, Pascal Guitton
- Responsable of Inria RA2020 Committee (new annual Activity Report), Pascal Guitton
- Member of Inria International Chairs Committee, Pascal Guitton

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: Martin Hachet, Réalité Virtuelle, 12h eqTD, M2 Cognitive science, Université de Bordeaux
- Master : Philippe Giraudeau, Handicap et Nouvelles technologies, 9h eqTD, M2 Cognitive science, Université de Bordeaux
- Master: Martin Hachet, Réalités Virtuelles et augmentées, 18h eqTD, M2 Computer science, Université de Bordeaux
- Master: Rajkumar Darbar, Réalités Virtuelles et augmentées, 18h eqTD, M2 Computer science, Université de Bordeaux
- Master: Pierre-Antoine Cinquin, Assistive technologies, CM-TD, 15h eqTD, M2 Cognitive Science, Université de Bordeaux
- Master: Léa Pillette, Handicap, Autonomy and cognition, 5h eqTD, M2 Cognitive science, University of Bordeaux
- Master: Fabien Lotte, Réalités Virtuelles et augmentées, 7h eqTD, M2 Computer science, Université de Bordeaux
- Master: Fabien Lotte, Réalité Virtuelle, 5h eqTD, M2 Cognitive science, Université de Bordeaux
- Master: Pascal Guitton, Digital accessibility, CM, 18h eqTD, M1 Cognitive science, University of Bordeaux
- Bachelor: Aurélien Appriou, Knowledge and Representation, 13.5h eqTD, 3rd year BD MIASHS: Cognitive science
- Bachelor: Aurélien Appriou, Knowledge and Representation, 14h eqTD, 3rd year BD MIASHS: Cognitive science
- Bachelor, Aurélien Appriou, Langugages and Mind, 20h eqTD, 3rd year BD MIASHS: Cognitive science
- Bachelor: Lauren Thevin, Culture et Compétences Numériques, Pix (nouveau C2I), 10h eqTD, 1st year, Université de Bordeaux
- IUT : Philippe Giraudeau, Algorithme et programmation, 24h eqTD, 1st year IUT, Université de Bordeaux
- Engineering school: Camille Benaroch, Advanced mathematics and computer science, 61.5h eqTD, 2nd year, ENSAM, Bordeaux
- Engineering school: Martin Hachet, Ergonomie et Interaction, 15h eqTD, 3rd year, ENSEIRB, INP
- Engineering school: Léa Pillette, Knowledge and Representations, 36h eqTD, 1st year, ENSC, INP
- Engineering school: Léa Pillette, IT projects, 8h eqTD, 2nd year, ENSC, INP, Bordeaux
- Engineering school: Lauren Thevin, Intelligence Artificielle, 15h eqTD, 2nd year, ENSC, INP, Bordeaux
- Engineering school: Pierre-Antoine Cinquin, Video Game Accessibility, TD, 18h eqTD, M2 JMIN and STMN, CNAM ENJMIN, Angoulême
- MOOC : Pascal Guitton, Accessibilité numérique, 5 weeks, Plateforme FUN, 3rd session

10.2.2. Supervision

- PhD in progress: Rajkumar Darbar, Actuated Tangible User Interfaces, 1/12/2017, Martin Hachet
- PhD in progress: Philippe Giraudeau, Collaborative learning with tangible and aumented interfaces, 1/10/2017, Martin Hachet
- PhD in progress: Marc Baloup, Interaction with Avatars, 1/10/2018, Martin Hachet (33%)
- PhD in progress: Pierre-Antoine Cinquin, Design and Experimental Validation of Accessible E-learning systems for people with cognitive disabilities, since Sept. 2016, Pascal Guitton (50%)
- PhD in progress: Jelena Mladenovic, User modeling for Adaptive BCI design, 1/1/2016, Fabien Lotte (50%)

- PhD in progress: Léa Pillette, Formative feedback for BCI, 1/10/2016, Fabien Lotte (50%)
- PhD in progress: Aurélien Appriou, Estimating learning-related mental states in EEG, 1/10/2017, Fabien Lotte
- PhD in progress: Camille Benaroch, Computational Modeling of BCI user training, 1/10/2018, Fabien Lotte (50%)

10.2.3. Juries

- PhD: Guillaume Cortes [with report], Univ. Rennes, Martin Hachet
- PhD: Alexandra Delmas, Univ. Bordeaux, Martin Hachet
- PhD: Adrien Verhulst, Centrale Nantes, Pascal Guitton
- PhD: Anne-Solène Dris [with report], INSA Rennes, Pascal Guitton
- PhD: Mark Parent [with report], Univ. Laval, Quebec, Canada, Fabien Lotte
- PhD: Ayoub Hajlaoui [with report], Université Pierre et Marie Curie and Telecom Paris, France, Fabien Lotte
- Benjamin Wittevrongel [with report], KU Leuven, Belgium, Fabien Lotte
- PhD: Benjamin Clément, Univ. Bordeaux, France, Fabien Lotte
- PhD: Bertille Somon, Univ. Grenobles Alpes, France, Fabien Lotte
- PhD: Aldo Mora, ESPCI, Paris, France, Fabien Lotte
- HdR: Antonio Capobianco [with report], Univ. Strasbourg, Pascal Guitton
- HdR: Patrick Reuter, Univ. Bordeaux, Pascal Guitton

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Member of editorial Board of Blog Binaire - Le Monde, Pascal Guitton

10.3.2. Articles and contents

- Martin Hachet, *Art et Informatique: Fertilisation croisée*, Blog Binaire - Le Monde, [46]
- Pascal Guitton, *L'accessibilité numérique, pourquoi il faut la développer*, Blog Binaire - Le Monde, [45]
- Bruno Arnaldi, Pascal Guitton & Guillaume Moreau, *Rendez-vous dans 10 ans*, Blog Binaire - Le Monde, [44]

10.3.3. Education

- Potioc booth at EdTech days, Bordeaux, May 18
- "Pensez-vous qu'il soit possible de lire dans les pensées?", Scientific debate to launch the "projets indisciplinés" of University of Bordeaux, October 2018, Fabien Lotte
- "La recherche sur les interfaces cerveau-ordinateur chez Potioc", Presentation for Bachelor 3, ENS Lyon, visiting Inria Bordeaux, December 2018, Fabien Lotte
- "Le futur des interfaces : interfaces invisibles", Master Class Festival Futur.e.s, Lauren Thevin
- Booth at Laval Virtual (Espace Révolution)

10.3.4. Interventions

- Pint of Science, Bordeaux, May 18, Martin Hachet and Philippe Giraudeau
- Cinema Sciences, Merignac, April 18, Martin Hachet
- Goûter des sciences / Les petits débrouillards (Figure 9), Bordeaux, December 18, Martin Hachet, Philippe Giraudeau, Théo Segonds, Nicolas Palard

- Organization of a workshop for middle and high school students, Ethnography museum, University of Bordeaux, 8-11th Oct. 2018, Léa Pillette
- "Optimizing humans digital learning by decoding brain activity in real time", Poster, ESOF Toulouse, France, July 2018, Aurélien Appriou
- "Flow theory for optimizing BCI", CogTalk, Bordeaux, November 2018, Jelena Mladenovic
- "Cerveau et jeux vidéo", CogTalk, Bordeaux, March 2018, Pierre-Antoine Cinquin
- L'accessibilité des jeux vidéo, Masterclass Scientific Game Jam, March 2018, Université de Bordeaux
- Seminar for PhD students – Flow theory for optimizing BCI, ISPED Bordeaux, November 2018, Jelena Mladenovic
- "Contrôler un ordinateur par l'activité cérébrale : Mythe ou Réalité ?", Conférence grand public de restitution des pauses de l'institut des études avancées de l'université de Bordeaux, Talence, June 2018, Fabien Lotte
- "Les Interfaces Cerveau-Ordinateur : Progrès et questions", Centre Culturel du Hâ, Bordeaux, France, May 2018, Fabien Lotte
- "Mixed reality for visual impaired people", Cherchons pour Voir & IJA (Institut des Jeunes Aveugles, Toulouse), Apéro Sciences, Lauren Thévin
- "Accessibilité numérique : pourquoi et comment", Inria Tech Talk, Station F, Paris, Pascal Guitton

Figure 9. The Potioc team at Gouter des Sciences / les petits débrouillards, Dec. 18.

10.3.5. Internal action

- Unithé ou Café, Martin Hachet, May 18
- Potioc Demos for 10th anniversary of Inria Bordeaux, Sept. 18
- Fete de la sciences, Demo at CapSciences, Oct. 18.

RAINBOW Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Marie Babel was the General Chair of the 2018 IROS Workshop on "Assistance and Service Robotics in a Human Environment", Madrid, Spain, co-organized by Fabio Morbidi (MIS, Université Picardie Jules Verne), Francis Colas (Inria Nancy), David Daney (Inria Bordeaux) and Samer Mohammed (LISSI, Universié of Paris-Est Creteil).

- Marie Babel was the Scientific Chair and the General co-Chair of the workshop "Robots d'assistance, handicap et vie quotidienne" organized in Inria Rennes on December 7th 2018.

10.1.1.2. Member of the Organizing Committees

- Paolo Robuffo Girodano co-organized with P. Salaris (Inria Sophia-Antipolis) and R. Spica (Stanford University) the workshop "The interplay between optimal estimation for improved action and optimal action for improved estimation" at the 2018 International Conference on Robotics and Automation, Brisbane, Australia

- Paolo Robuffo Girodano is Area Chair for RSS 2019 and Program Chair for MRS 2019

- Claudio Pacchierotti was the Publicity Chair of the Asiahaptics conference held in Songdo, Republic of Korea. He was also Award Co-Chair (Best Poster), and Session Co-Chair at Eurohaptics, Pisa, Italy. He also co-organized the Cross-Cutting Challenge "Expanding sensory interactions: the path to intelligent clothes and objects able to change the way we communicate with the world'" at the IEEE Haptics Symposium, San Francisco, USA. Finally, he co-organized the workshop on 'Haptic-enabled shared control of robotic systems: a compromise between teleoperation and autonomy" at IROS in Madrid, Spain and the workshop on "Wearable and portable haptics for VR and AR" at IEEE VR in Reutlingen, Germany.

- François Chaumette organized the tutorial on Vision-based Robot Control at the 2018 International Conference on Robotics and Automation, Brisbane, Australia. (https://team.inria.fr/rainbow/en/icra18-tutorial-vbrc)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Claudio Pacchierotti: Eurohaptics (Associate Editor)

- Paolo Robuffo Giordano: ICRA 2019 (Associate Editor)

- Eric Marchand: Orasis 2018

- François Chaumette: ICRA 2019 (Associate Editor)

- Alexandre Krupa: BioRob 2018 (Editor)

- Julien Pettré: IEEE VR 2019

10.1.2.2. Reviewer

- Claudio Pacchierotti: HAPTICS 2018, Eurohapics 2018, ICRA 2018, IROS 2018, also Senior Reviewer for IEEE Robotics & Automation Society Young Reviewers Program (from 2016)

- Alexandre Krupa: IROS 2018 (1), ICRA 2019 (1)

- Paolo Robuffo Giordano: RSS 2018 (4), ICRA 2019 (2), ECC 2019 (1)

- Marie Babel: ICRA 2018 (1), SMC 2018 (2), IROS 2018 (2), ICRA 2019 (3)
- Vincent Drevelle: IROS 2018 (2), ICRA 2019 (1), AIM 2018 (1)
- Eric Marchand: IROS 2018 (1), ICRA 2018 (2), ICRA 2019 (2)
- François Chaumette: IROS 2018 (1), CDC 2018 (1)
- Julien Pettré: ACM SIGGRAPH 2018 (1), ACM SIGGRAPH Asia 2018 (1), Eurographics 2019 (1), IEEE VR 2019 (6)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Paolo Robuffo Giordano is Associate Editor for the IEEE Transactions on Robotics
- Paolo Robuffo Giordano is Guest Editor for the Special Issue on "Multi-Robot and Multi-Agent Systems" in Autonomous Robots, 2018
- Claudio Pacchierotti has been Guest Associate Editor of the IEEE Transactions on Haptics for the Special Issue on Wearable and Hand-held Haptics.
- Alexandre Krupa is Associate Editors of the IEEE Robotics and Automation Letters.
- Eric Marchand was an Associate Editor of IEEE Robotics and Automation Letters (RA-L) (till august 2018)
- Eric Marchand is a Senior Editor of IEEE Robotics and Automation Letters (RA-L) (from august 2018)
- Eric Marchand is an Editor for Interstices)i(
- François Chaumette: Senior Editor of the IEEE Trans. on Robotics, Editorial Board of the Int. Journal of Robotics Research, Founding Senior Editor of the IEEE Robotics and Automation Letters till June 2018, Editorial Board of the Springer Tracts in Advanced Robotics, and Board Member of the Springer Encyclopedia of Robotics.

10.1.3.2. Reviewer - Reviewing Activities

- Claudio Pacchierotti: JMRR (2), TOH (7), THMS (1), TIM (1), RAL (5), TBME (3), TMECH (1), IJMRCAS (1), IJCARS (1), Plos One (1), Journal of Engineering in Medicine (3), Wiley Interdisciplinary Reviews: Cognitive Science (2), Mechatronics (1), IJHCI (4), Advanced Robotics (1), International Journal of Advanced Robotic Systems (2), Endoscopy International Open (2), Frontiers in Robotics and AI (1)
- Paolo Robuffo Giordano: IEEE TRO (1), IEEE T-CYB (1), IEEE TCST (2), IEEE RAL (3), IJRR (1), IJC (1), AURO (1)
- Eric Marchand: CVIU (1)
- François Chaumette: IEEE TIE (4), IEEE RA-L (2)
- Julien Pettré: Graphical Models (1), Frontiers in Robotics and AI (1), IEEE TVCG (1)

10.1.4. Invited Talks

- Paolo Robuffo Giordano:
  - "Human-assisted robotics". H. H. Bülthoff's Farewell Symposium - Flies, Men and Machines: A Scientific Adventure, Tübingen, Germany, August 2018
  - "Blending Human Assistance and Local Autonomy for Advanced Telemanipulation". IROS 2018 Workshop on Haptic-enabled shared control of robotic systems: a compromise between teleoperation and autonomy, October 2018 [47]
  - "Formation Control and Localization with Onboard Sensing and Local Communication". IROS 2018 Workshop on Multi-Robot Perception- Driven Control and Planning, October 2018 [48]

- "Physical Interpretation of Rigidity for Bearing Formations", Second Workshop "Rigidity Theory for Multi-Agent Systems meets Parallel Robotics", Nantes, France

- Claudio Pacchierotti:
  - "Our wearable haptics experience: story, insights, and open questions" Workshop "User-Centered Methods in Human-Robot Interaction" at IROS Conference, Madrid, Spain, 2018.
  - "Haptic feedback and robotic procedures" 10th Annual meeting on Robotic Gynaecological Surgery of the Society of European Robotic Gyneacological Surgery (SERGS), Milan, Italy, 2018.
  - "Cutaneous haptic feedback in robotic medical procedures." Presentation to Titan Medical Inc., Strasbourg, France, 2018.
  - "Wearable haptics for virtual and augmented reality: applications in the entertainment and robotic fields" Robotics Research Jam Sessions at the University of Pisa, Pisa, Italy, 2018.
  - "Wearable fingertip haptics for mixed reality." University of Aarhus, Herning, Denmark, 2018.
  - "Haptic feedback in robotic procedures: current work and perspectives." Congress of the Society of Endometriosis and Uterine Disorders, Florence, Italy, 2018.
  - "The future of haptic feedback in robotic procedures." Beyond Gynecologic Surgery conference, Clermont-Ferrant, France, 2018.
  - "Wearable fingertip haptics for Virtual Reality." Workshop on "Wearable and portable haptics for VR and AR", IEEE International Conference on Virtual Reality (VR), Reutlingen, Germany, 2018.

- François Chaumette:
  - "Visual servoing with and without image processing", 1st Symposium on Intelligent Robots: Autonomy and Vision, Abu-Dhabi, March 2018 [46]
  - "Geometric and photometric vision-based robot control: modeling approach", ICRA 2018 Tutorial on Vision-based Robot Control, Brisbane, May 2018 [45]
  - "Geometric and end-to-end visual servoing", Plenary talk at IEEE Int. Conf. on CYBER Technology in Automation, Control, and Intelligent Systems, Tianjin, China, July 2018 [44]

- Fabien Spindler
  - "Vision-based robot control with ViSP", ICRA 2018 Tutorial on Vision-based Robot Control, Brisbane, May 2018 [49]

10.1.5. Leadership within the Scientific Community

- Claudio Pacchierotti is the Chair of the IEEE Technical Committee on Haptics, and Secretary of the Eurohaptics Society.
- François Chaumette is a 2016-2018 elected member of the Administrative Committee of the IEEE Robotics and Automation Society. He is also a nominated member of the Scientific Council of the CNRS INS2I, a member of the Scientific Council of RTE Vedecom, and a founding member of the Scientific Council of the "GdR Robotique".

10.1.6. Scientific Expertise

- Alexandre Krupa was reviewer of an ANR project (Generic project call 2018)
- Paolo Robuffo Giordano was reviewer for evaluating proposals of the ANR (French National Research Agency), NWO (Netherlands Organisation for Scientific Research), SNSF (Swiss National Science Foundation), MIUR (Italian National Research Agency)

- Marie Babel served as an expert for the International Mission of the French Research Ministry (MEIRIES) - Campus France
- Vincent Drevelle has been reviewer of an ANR ASTRID project
- François Chaumette served as member of IEEE RAS Pioneer Award Evaluation Panel and IEEE RAS Awards Evaluation Panel. He was a panel member of the 2018 ICREA Academia program (similar to IUF for Catalonia). He was also involved in the evaluation of a research proposal submitted to the Research Foundation of Flanders.

10.1.7. Research Administration

- Alexandre Krupa is a member of the CUMIR ("Commission des Utilisateurs des Moyens Informatiques pour la Recherche") of Inria Rennes-Bretagne Atlantique. Alexandre Krupa also serves as Inria representative (correspondent) at the IRT Jules Verne.
- Eric Marchand served as secretary in the board of the "Association Française pour la Reconnaissance et l'interprétation des Formes" (AFRIF). He was also in charge of the Irisa Ph.D. students in the committee in charge of all the temporary recruitments ("Commission Personnel") at Inria Rennes-Bretagne Atlantique and Irisa (till september 2018). He is in the board of the "Ecole doctorale Matisse". He is the head of "Digital Signals and Images, Robotics" department at IRISA (from june 2018).
- François Chaumette serves as the president of the committee in charge of all the temporary recruitments ("Commission Personnel") at Inria Rennes-Bretagne Atlantique and IRISA. He is also a member of the Head team of Inria Rennes-Bretagne Atlantique, and of the Scientific Steering Committee (COSS) of IRISA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Marie Babel:

Master INSA2: "Robotics", 26 hours, M1, INSA Rennes

Master INSA1: "Architecture", 30 hours, L3, INSA Rennes

Master INSA2: "Computer science project", 30 hours, M1, INSA Rennes

Master INSA1: "Practical studies", 16 hours, M1, INSA Rennes

Master INSA2: "Image analysis", 18 hours, M1, INSA Rennes

Master INSA1: "Remedial math courses", 50 hours, L3, INSA Rennes

François Chaumette:

Master SISEA: "", 12 hours, M2, Université de Rennes 1

Master ENS: "Visual servoing", 6 hours, M1, Ecole Nationale Supérieure de Rennes

Master ESIR3: "Visual servoing", 8 hours, M2, Ecole supérieure d'ingénieurs de Rennes

Vincent Drevelle:

Master ESIR2: "Real-time systems and RTOS", 24 hours, M1, Esir Rennes

Master ILA: "Terrain information systems", 30 hours, M2, Université de Rennes 1

Master Info: "Artificial intelligence", 20 hours, M1, Université de Rennes 1

Licence Info: "Computer systems architecture", 22 hours, L1, Université de Rennes 1

Master Elec: "Electronics project", 8 hours, M1, Université de Rennes 1

Portail Info-Elec: "Discovering programming and electronics", 14 hours, L1, Université de Rennes 1

Licence Miage: "Computer programming", 78 hours, L3, Université de Rennes 1

Master Elec: "Instrumentation, localization, GPS", 4 hours, M2, Université de Rennes 1

Master Elec: "Multisensor data fusion", 20 hours, M2, Université de Rennes 1

Master IL: "Mobile robotics", 32 hours, M2, Université de Rennes 1

Alexandre Krupa:

>   Master SIBM (Signals and Images in Biology and Medicine): "Medical robotics guided from images", 4.5 hours, M2, Université de Rennes 1, Brest and Angers
>
>   Master FIP TIC-Santé: "Ultrasound visual servoing", 6 hours, M2, Télécom Physique Strasbourg
>
>   Master INSA1: "Programmation Informatique", 42 hours, INSA Rennes
>
>   Master ESIR3: "Ultrasound visual servoing", 9 hours, M2, Esir Rennes

Eric Marchand:

>   Master Esir2: "Colorimetry", 24 hours, M1, Esir Rennes
>
>   Master Esir2: "Computer vision: geometry", 24 hours, M1, Esir Rennes
>
>   Master Esir3: "Special effects", 24 hours, M2, Esir Rennes
>
>   Master Esir3: "Computer vision: tracking and recognition", 24 hours, M2, Esir Rennes
>
>   Master MRI: "Computer vision", 24 hours, M2, Université de Rennes 1
>
>   Master ENS: "Computer vision", 16 hours, M2, ENS Rennes
>
>   Master MIA: "Augmented reality", 4 hours, M2, Université de Rennes 1

Julien Pettré:

>   Master SIF: "Motion for Animation and Robotics", 6 hours, Unviersité de Rennes 1
>
>   Master Artificial Intelligence and Advanced Visual Computing: "Advanced 3D graphics", 3 hours, Ecole Polytechnique

10.2.2. Supervision

- Ph.D. in progress: Quentin Delamare, "Algorithmes d'estimation et de commande pour des quadrirotors en interaction physique avec l'environnement", started in September 2016, supervised by Paolo Robuffo Giordano and Antonio Franchi (LAAS)

- Ph.D. in progress: Rahaf Rahal, "Mixed tactile-force feedback for safe and intuitive robotic teleoperation", started in October 2017, supervised by Paolo Robuffo Giordano and Claudio Pacchierotti

- Ph.D. in progress: Alexander Oliva, "Coupling Vision and Force for Robotic Manipulation", started in October 2018, supervised by François Chaumette and Paolo Robuffo Giordano

- Ph.D. in progress: Axel Lopez Gandia, "Data assimilation for synthetic vision-based crowd simulation algorithms", started in October 2016, supervised by Julien Pettré and François Chaumette

- Ph.D. in progress: Zane Zake (IRT Jules Verne), "Visual servoing for cable-driven parallel robots", started in January 2018, supervised by Stéphane Caro (LS2N) and François Chaumette

- Ph.D. in progress: Xavier De Tinguy de la Girouliére, "Conception de techniques d'interaction multisensorielles pour la manipulation dextre d'objets en réalité virtuelle", started in September 2017, supervised by Maud Marchal, Anatole Lécuyer (Hybrid group) and Claudio Pacchierotti

- Ph.D. in progress: Gerard Gallagher, "Haptic-enabled interaction techniques for Mixed Reality applications", started in October 2018, supervised by Maud Marchal, Anatole Lécuyer (Hybrid group) and Claudio Pacchierotti

- Ph.D. in progress: Hadrien Gurnel "Haptic guidance of a biopsy needle", started in October 2016, supervised by Alexandre Krupa, Maud Marchal (Hybrid team) and Laurent Launay (IRT b<>com)

- Ph.D. in progress: Agniva Sengupta, "Localization and characterization of objects with unknown shapes", started in January 2017, supervised by Alexandre Krupa and Eric Marchand

- Ph.D. in progress: Romain Lagneau (Hybrid team), "Data-driven models for detexterous manipulation of robots", started in October 2017, supervised by Alexandre Krupa and Maud Marchal (Hybrid team)

- Ph.D. in progress: Guillaume Vailland, "Outdoor wheelchair assisted navigation: reality versus virtuality", started in November 2018, supervised by Marie Babel and Valérie Gouranton (Hybrid team)

- Ph.D. in progress: Salma Jiddi, "Photometric Registration of Indoor Real Scenes using an RGB-D Camera with Application to Mixed Reality", to be defended in January 2019, supervised by Eric Marchand

- Ph.D. in progress: Ide-Flore Kenmogne "Localisation ensembliste de drones á l'aide de mèthodes par intervalles", to be defended in January 2019, supervised by Eric Marchand and Vincent Drevelle

- Ph.D. in progress: Xi Wang "Robustness of Visual SLAM techniques to light changing conditions", started in September 2018, supervised by Eric Marchand and Marc Christie

- Ph.D. in progress: Agniva Sengupta "", to be defended in January 2020, supervised by Eric Marchand and Alexandre Krupa

- Ph.D. in progress: Nicolas Le Borgne, "Contrôle partagé et navigation assistée d'un fauteuil roulant en extérieur", started in October 2017, supervised by Marie Babel

- Ph.D. in progress: Aline Baudry, "Contribution à la modélisation des fauteuils roulants pour l'amélioration de leur navigation en mode semi-autonome", started in October 2016, supervised by Marie Babel and Sylvain Guégan (Mechanical Engineering Dpt/LGCGM at Insa Rennes)

- Ph.D. in progress: Axel Lopez, "Character navigation based on optical flow", started in October 2016, supervised by François Chaumette and Julien Pettré

- Ph.D. in progress: Javad Amirian, "Crowd motion prediction for robot navigation in dense crowds", started in January 2018, supervised by Jean-Bernard Hayet and Julien Pettré

- Ph.D. in progress: Fabien Grzeskowiak, "Crowd simulation for testing robot navigation in dense crowds", started in October 2018, supervised by Marie Babel and Julien Pettré

- Ph.D. in progress: Florian Berton, "Gaze analysis for crowd behaviours study", started in October 2017, supervised by Anne-Hélène Olivier, Ludovic Hoyet and Julien Pettré

- Ph.D. defended: Pedro Patlan-Rosales, "A robotic control framework for quantitative ultrasound elastography", defended in January 2018, supervised by Alexandre Krupa [5]

- Ph.D. defended: Lesley-Ann Duflot, "Direct visual servoing using shearlet and wavelet transforms of the image", defended in July 2018, supervised by Alexandre Krupa and Brahim Tamadazte (Minarob group at FEMTO-ST, Besanoṇ) [4]

- Ph.D. defended: Fabrizio Schiano, "Bearing-based Localization and Control for Multiple Quadrotor UAVs", defended in January 2018, supervised by P. Robuffo Giordano [7]

- Ph.D. defended: Louise Devigne, "Low-cost robotic solutions for safe assisted power wheelchair navigation: towards a contribution to neurological rehabilitation", defended in December 2018, supervised by Marie Babel and Philippe Gallien (Pôle Saint Hélier)

- Ph.D. defended: Quentin Bateux, "Going further with direct visual servoing", defended in January 2018, supervised by Eric Marchand [2]

- Ph.D. defended: Guillaume Cortes, "Contribution to the study of projection-based systems for industrial applications in mixed reality", defended in October 2018, supervised by Eric Marchand and Anatole Lécuyer [Hybrid]

- Ph.D. defended: Firas Abi Farraj, "Contributions to Shared Control Architectures for Advanced Telemanipulation", defended in December 2018, supervised by Paolo Robuffo Giordano [1]

- Ph.D. defended: Bryan Penin "Contributions to optimal and reactive vision-based trajectory generation for a quadrotor UAV", defended in December 2018, supervised by Paolo Robuffo Giordano and François Chaumette [6]

10.2.3. *Juries*

- Claudio Pacchierotti: Lucia Schiatti (Ph.D., member, IIT, Genova, Italy), Matteo Rossi (Ph.D., member, Univ. Pisa, Pisa, Italy)

- Alexandre Krupa: Yinoussa Adagolodjo (Ph.D., reviewer, Univ. de Strasbourg, ICube)

- Paolo Robuffo Giordano: Nicolas Staub (Ph.D., member, LAAS-CNRS), Fabrizio Boriero (Ph.D., reviewer, Univ. Verona, Italy)

- Marie Babel: Francesco Barbosa Anda (Ph.D., member, LAAS, Toulouse), Dinh Nguyen Van (PH.D., member, UPMC, Paris.

- Eric Marchand: Alexandre Morgand, (PhD, reviewer, univ. Clermont Auvergne) ; Sudhanya Chatterjee, (Ph.D. president, univ. de Rennes 1) ; Musaab Khalid, (Ph.D. president, Irstea Lyon) ; Romain Brégier, (Ph.D. president, INPG) ; Bogdan Khomutenko, (Ph.D. president, École centrale de Nantes) ; Lesley-Ann Duflot, (Ph.D. president, univ. de Rennes 1) ; Pedro Patlan-Rosales, (Ph.D. president, univ. de Rennes 1) ;

- François Chaumette: Davide Nicolis (Ph.D., Politecnico di Milano, reviewer), Marco Ferro (Ph.D., Univ La Sapienza, Roma, reviewer), Firas Abi-Farraj (Ph.D., president, Univ de Rennes 1)

- Julien Pettré: Pierre Fernbach (Ph.D. member, Univ. Toulouse Paul Sabatier, Laas)

10.3. Popularization

- Due to the visibility of our experimental platforms, the team is often requested to present its research activities to students, researchers or industry. Our panel of demonstrations allows us to highlight recent results concerning the positioning of an ultrasound probe by visual servoing, grasping and dual arm manipulation by Romeo, vision-based shared control using our haptic device for object manipulation, the control of a fleet of quadrotors, vision-based detection and tracking for space navigation in a rendezvous context, the semi-autonomous navigation of a wheelchair, and augmented reality applications. Some of these demonstrations are available as videos on VispTeam YouTube channel (https://www.youtube.com/user/VispTeam/videos).

- In October Firas Abi Farraj, Marco Aggravi, Claudio Pacchierotti and Fabien Spindler attended to the "Maker Fair" even in Rome (https://2018.makerfairerome.eu/it/) presenting various vision-based and shared control robotic demonstrations with Viper and Franka arms and haptic devices.

- Eric Marchand is an editor for Interstices)i(

10.3.1. Interventions

- Marie Babel participated to the Science Festival in October 2018 and animated an interactive animation session for general public organized in Acigné, France

- Solenne Fortun participated to the Tech'in Vitré forum with an interview in March 2018.

- Marie Babel animated an interactive session organized in INSA Rennes about "Women in Sciences" on December 19th, 2018 for female students.

<h1 style="color:red; text-align:center;">RITS Project-Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Mohammad Abualhoul and Fawzi Nashashibi: chairs and co-organizers of the 1st CA2V workshop at the IEEE VTC'18 conference, Porto (Portugal), June 2018.

Fawzi Nashashibi and Mohammad Abualhoul: chairs and co-organizers of the CA2V workshop at the IEEE ICVES'18 conference, Madrid (Spain), September 2018.

Fawzi Nashashibi: chair of the AUTOCITS international workshop ob connected and autonomous vehicles, December 13, Paris, France.

10.1.1.2. Member of the Organizing Committees

Fawzi Nashashibi was member of the organizing committee of the IEEE/RSJ IROS 2018 Autonomous Driving Events including: PPNIV Workshop, Round table and Autonomous vehicle on-site demonstrations.

Fawzi Nashashibi was member of the Steering Committee of the IEEE Global Communications Conference, 9-13 December 2018, Abu Dhabi, UAE.

10.1.2. Scientific Events Selection

Jean-Marc Lasgouttes: co-organizer of the Symposium "Large Random Networks and Constrained Random Walks" in honor of the 75th birthday of Guy Fayolle, Dijon (France), August 27–28.

10.1.2.1. Chair of Conference Program Committees

Raoul de Charette: program chair of Workshop 'Real-World Challenges for Robotic Vision' CVPR 2018 (CVPRW).

10.1.2.2. Member of the Conference Program Committees

Raoul de Charette: program committee member of 'Conférence Française de Photogrammétrie et de Télédétection' (CFPT).

Fawzi Nashashibi : co-organizer of the breakout session *Artificial Intelligence and Deep Machine Learning Tools and Algorithms for Automated Vehicles: The State of the Art and Practice* at the Automated Vehicles Symposium, San Francisco (USA), 9-12 July, 2018.

10.1.2.3. Reviewer

Mohammad Abualhoul: *IEEE ITS 2018*, *IEEE IV 2018*, *IEEE ICVES 2018*, *TRA 2018*.

Raoul de Charette: *CVPR 2018*, *ACCV 2018*, *IEEE ICRA 2018*, *CVPR Workshop 2018*, *IEEE IV 2018*.

Jean-Marc Lasgouttes: *IEEE ITSC 2018*.

Fawzi Nashashibi : *IEEE ICRA 2018*, *IEEE IROS 2018*, *IEEE IV 2018*, *IEEE ITSC 2018*, *IEEE ICARCV 2018*, *IEEE VTC 2018*, *IEEE ICVES 2018*

Anne Verroust-Blondet: *IEEE IV 2018*, *IEEE ITSC 2018*, *IEEE ICARCV 2018*.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Guy Fayolle: associate editor of the journal *Markov Processes and Related Fields*.

Fawzi Nashashibi: associate editor of the journal *IEEE Transactions on Intelligent Vehicles*, associate editor of the journal *IEEE Transactions on Intelligent Transportation Systems*.

Anne Verroust-Blondet: associate editor of the journal *The Visual Computer*.

10.1.3.2. Reviewer - Reviewing Activities

Raoul de Charette: *IEEE Transactions on Intelligent Transportation Systems*

Guy Fayolle: *AAP, MPRF, PTRF, QUESTA, European Journal of Combinatorics, JSP, Physica A, Springer Science.*

Jean-Marc Lasgouttes: *IEEE Transactions on Intelligent Transportation Systems*

Fawzi Nashashibi: *IEEE Transactions on Intelligent Transportation Systems*, *IEEE Transactions on Intelligent Vehicles*, *Transportation Research Part C*.

Anne Verroust-Blondet: *IEEE Transactions on Intelligent Vehicles*

10.1.4. Invited Talks

Mohammad Abualhoul: keynote speaker in ICVES-CA2V-2018 Worshop in Madrid, June 2018.

Raoul de Charette: public presentation at BNF Paris on Artificial Intelligence (2018-10-08).

Guy Fayolle: guest speaker at the conference *Grands réseaux aléatoires et marches contraintes*, held at the University of Bourgogne, Dijon, 27-28th August 2018, http://www.lmpt.univ-tours.fr/ConferenceGuyFayolle75/.

Guy Fayolle: four long talks on topics related to the book [2] at the working group GTMA (http://divizio.joomla.com/seminaires-et-gdt/11-groupe-de-travail-autour-des-marches-dans-le-quart-de-plan).

Gérard Le Lann: "Conduite automatisée, cyber-sécurité et enjeux de société", Espace des Sciences, Rennes, April 2018.

Gérard Le Lann: "Future Directions in Autonomic Vehicular Networks", IEEE & IFIP Med-Hoc-Net Workshop, Capri, Italy, June 2018.

Gérard Le Lann: "Future Directions in Connected Autonomous Vehicles and Autonomic Vehicular Networks", ATOS Worldwide Annual TechForum, Seclin, July 2018.

Gérard Le Lann: "Future Directions in Connected Autonomous Vehicles and Autonomic Vehicular Networks", CNIL, Paris, September 2018.

Gérard Le Lann: "Safety, Privacy and Cybersecurity in Future Vehicular Networks", AutoCITS Workshop, Inria Paris, December 2018.

Fawzi Nashashibi: keynote speaker on *Scientific and technical challenges of autonomous navigation for connected autonomous vehicles* in ICVES-CA2V-2018 Worshop in Madrid, June 2018.

Fawzi Nashashibi: keynote speaker on *Autonomous vehicles in smart cities: the next challenges* in PAMS international conference, Pangyo (S. Korea), 15-16 November 2018.

Fawzi Nashashibi: keynote and Round table speaker on *Scientific and technical challenges of autonomous navigation for connected autonomous vehicles* at the International Conference on Mobility Challenges, Gif-sur-Yvette (France), 6-7 December 2018.

Fawzi Nashashibi: keynote on *Evolution and challenges of mobility with the increased introduction of artificial intelligence*, at the TOTAL AI FOR LEADERS PROGRAM, Paris (France), March 19, 2018.

Fawzi Nashashibi: keynote on the *Challenges et opportunities of autonomous mobility in smart cities*, in the working day on Intelligent Mobility, organized by TECNALIA, Madrid (Spain), February 2018.

10.1.5. Scientific Expertise

Guy Fayolle is scientific advisor and associate researcher at the *Robotics Laboratory of Mines ParisTech*. He is also collaborating member of the research-team SPECFUN at Inria-Saclay.

Jean-Marc Lasgouttes is member of the *Conseil Académique* of Université Paris-Saclay.

Gérard Le Lann: contributions to *Report on Safer Roads with Automated Vehicles ?*, International Transportation Forum, OECD, April 2018, 45 p. [0]

Fawzi Nashashibi is an associate researcher at the *Robotics Laboratory, Mines ParisTech*. He is an evaluator/reviewer of European H2020 projects.

10.1.6. Research Administration

Jean-Marc Lasgouttes is a member of the *Comité Technique Inria*.

Guy Fayolle is a member of the working group IFIP WG 7.3.

Fawzi Nashashibi is a member of the international Automated Highway Board Committee of the TRB (AHB30). He is a member of the Board of Governors of the VEDECOM Institute representing Inria and of the Board of Governors of MOV'EO Competitiveness cluster representing Inria.

Anne Verroust-Blondet is the scientific correspondent of the European affairs and of the International Partnerships for Inria Paris, member of the COST-GTRI committee at Inria (Committee in charge of the evaluation of international projects) and member of the "emplois scientifiques" committee of Inria Paris.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Fawzi Nashashibi, "Programmation avancée", 84h, L1, Université Paris-8 Saint-Denis, France.

Master: Carlos Flores and Anne Verroust-Blondet, "Le véhicule autonome. Présentation des recherches de l'équipe-projet RITS",1.5 h, 2nd year, Ecole des Ponts ParisTech, France, September 2018.

Master: Jean-Marc Lasgouttes, "Analyse de données", 54h, second year of Magistère de Finance (M1), University Paris 1 Panthéon Sorbonne, France.

Master: Jean-Marc Lasgouttes, "Analyse de données", 52.5h, Master 1 SIC APP, University Paris 1 Panthéon Sorbonne, France.

Master: Fawzi Nashashibi, "Image synthesis and 3D Infographics", 12h, M2, INT Télécom Sud-Paris.

Master: Fawzi Nashashibi, "Obstacle detection and Multisensor Fusion", 4h, M2, INSA de Rouen.

Master: Fawzi Nashashibi, "Perception and Image processing for Mobile Autonomous Systems", 12h, M2, University of Evry.

Master: Renaud Poncelet, "Mécatronique fondamentale", 64h, 4rd year, Pôle Universitaire Léonard de Vinci, Paris La Défense, France.

Doctorat: Jean-Marc Lasgouttes, "Analyse de données fonctionnelles", 31.5h, Mastère Spécialisé "Expert en sciences des données", INSA-Rouen, France

10.2.2. Supervision

PhD: Zayed Alsayed,"Characterizing the Robustness and Enhancing the Accuracy of SLAM-based Localization Systems for Autonomous Driving", Télécom ParisTech, June 2018, supervisor: Anne Verroust-Blondet, co-supervisors: Fawzi Nashashibi, Guillaume Bresson.

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[0]https://www.itf-oecd.org/sites/default/files/docs/safer-roads-automated-vehicles.pdf

PhD: Carlos Flores, "Control Architecture for Adaptive and Cooperative Car-Following", Mines ParisTech, PSL Research University, December 2018, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés.

PhD: Fernando Garrido, "Two-staged local trajectory planning based on optimal pre-planned curves interpolation for human-like driving in urban areas" , Mines ParisTech, PSL Research University, December 2018, supervisor: Fawzi Nashashibi, co-supervisors: Vicente Milanés, Joshué Pérez.

PhD: Francisco Navas, "Stability analysis for controller switching in autonomous vehicles", Mines ParisTech, , PSL Research University, November 2018, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés.

PhD: Dinh-Van Nguyen, "Wireless Sensors Networks for Indoor Mapping and Accurate Localization for Low Speed Navigation in Smart Cities", Mines ParisTech, , PSL Research University, December 2018, supervisor: Fawzi Nashashibi, co-supervisor: Eric Castelli.

PhD in progress: Pierre de Beaucorps, "Autonomous vehicle: behavior prediction and Interaction with road users", UPMC Sorbonne University, January 2016, supervisor: Anne Verroust-Blondet, co-supervisor: Fawzi Nashashibi.

PhD in progress: Farouk Ghallabi, "Environment modeling and simultaneous localization of a mobile vehicle on motorways: a multi-sensor approach", Mines ParisTech, PSL Research University, October 2016, supervisor: Fawzi Nashashibi.

PhD in progress: Maximilian Jaritz, "Perception multi-capteur pour la conduite autonome grâce à l'apprentissage profond", Mines ParisTech, PSL Research University, January 2017, supervisor: Fawzi Nashashibi, co-supervisor: Raoul de Charette.

PhD in progress: Danut-Ovidiu Pop, "Deep learning techniques for intelligent vehicles", INSA Rouen, May 2016, supervisor: Abdelaziz Bensrhair, co-supervisor: Fawzi Nashashibi.

PhD in progress: Imane Matout, "Estimation de l'intention des véhicules pour la prise de décision et le contrôle sans faille en navigation autonome", Mines ParisTech, PSL Research University, December 2017, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés.

PhD in progress: Kaouther Messaoud, "Détermination des manoeuvres et des intentions des véhicules avoisinant un véhicule autonome", UPMC Sorbonne University, October 2017, supervisor: Anne Verroust-Blondet, co-supervisors: Fawzi Nashashibi, Itheri Yahiaoui.

PhD in progress: Luis Roldao, "Modélisation 3D de l'environnement et de la manoeuvrabilité d'un véhicule", UPMC Sorbonne University, October 2017, supervisor: Anne Verroust-Blondet, co-supervisor: Raoul de Charette.

Starting PhD: Renaud Poncelet, "Navigation autonome en présence d'obstacles fortement dynamiques au mouvement incertain", UPMC Sorbonne University, September 2018, supervisor: Anne Verroust-Blondet, co-supervisor: Fawzi Nashashibi.

10.2.3. Juries

Fawzi Nashashibi was a jury member of the PhD thesis of Mr. Laurent Delobel - *Agrégation d'Information Pour la Localisation d'un Robot Mobile sur une Carte Imparfaite* -, Université Clermont-Auvergne, Clermont-Ferrand, 16 February 2018.

Fawzi Nashashibi was a reviewer of the PhD thesis of Mr. Yrvann Emzivat *Safety System Architecture for the Design of Dependable and Adaptable Autonomous Vehicles* -, Université Bretagne Loire, Nantes (France), 30 May 2018.

Fawzi Nashashibi was a jury member of the PhD thesis of Mr. Aymeric Dujardin - *Détection d'obstacles par stéréovision en environnement non structuré* -, Normandie Université, Saint-Etienne-du-Rouvray (France), 03 July 2018.

Fawzi Nashashibi participated, as examiner and president, to the HdR committee of Oyunchimeg Shagdar *Optimizing Wireless Communications in Dense Mobile Environments*, Université de Versailles Saint-Quentin-en-Yvelines, 6 September 2018.

Anne Verroust-Blondet was a reviewer of the PhD thesis of Sarah Bertrand - *Analyse d'images pour l'identification multi-organes d'espèces végétales*, Université Lyon 2, 10 December 2018.

Anne Verroust-Blondet was a jury member of the PhD thesis of Dai-Duong Nguyen - *A vision system based real-time SLAM application*, Université Paris-Saclay, 7 December 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Fawzi Nashashibi was the coordinator of the Inria Livre Blanc "Véhicules autonomes et connectés, les défis actuels et les voies de recherche" [0].

10.3.2. Articles and contents

A few press interviews and popular science was done in 2018.

- In books/journals/radios for the general public:

Raoul de Charette was interviewed by A. Devillard for:

- *Pour la voiture autonome, l'algorithme d'apprentissage qui ne s'entraîne pas*[0], Science et Avenir, 2018-03-18;

- *Les failles de la voiture autonome*[0], Sciences et Avenir, 2018-04-26;

Raoul de Charette and Fawzi Nashashibi were interviewed by M. Moragues for *[Infographie] L'intelligence artificielle n'est pas un as du volant*[0], L'Usine Nouvelle, 2018-09-23;

Raoul de Charette was interviewed for Sciences et Avenir, *La voiture autonome en quête de la "vision" parfaite*, 2018-09-27;

Raoul de Charette and Fawzi Nashashibi were interviewed for Challenges, *L'intelligence artificielle bute sur la sécurité routière*, 2018-10-04;

Raoul de Charette was interviewed for Radio France Internationale, 2018-03-30;

Fawzi Nashashibi was interviewed for La Tribune, *Ce que l'IA change dans l'auto : l'ère de la voiture autonome*[0], 2018-05-02;

Fawzi Nashashibi was interviewed by Dominique Filippone for *Voitures autonomes : Pas avant 2040 en France selon l'Inria*[0], Le Monde Informatique, 2018-05-15;

Fawzi Nashashibi was interviewed by Loup Besmond de Senneville for *Les recommandations des chercheurs pour l'éthique des voitures autonomes*[0], La Croix, 2018-05-18;

Fawzi Nashashibi was interviewed by Frank Niedercorn for *Fawzi Nashashibi : "Il y a encore bien des obstacles pour le véhicule autonome"*[0], Les Echos, 2018-06-29;

Fawzi Nashashibi was interviewed for L'Usine Nouvelle, no 3577, *Automobile le graal de l'autonomie*, 2018-09-20;

Fawzi Nashashibi was interviewed by Laurène Le Fourner for Radio Village Innovation, July 2018.

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[0]https://www.inria.fr/institut/strategie/vehicules-autonomes-et-connectes
[0]https://www.sciencesetavenir.fr/high-tech/pour-la-voiture-autonome-un-algorithme-d-apprentissage-qui-ne-s-entraine-pas_122033
[0]https://www.sciencesetavenir.fr/high-tech/transports/les-failles-de-la-voiture-autonome_123502
[0]https://www.usinenouvelle.com/editorial/infographie-l-intelligence-artificielle-n-est-pas-un-as-du-volant.N742309
[0]https://www.latribune.fr/entreprises-finance/industrie/automobile/ce-que-l-ia-change-dans-l-auto-l-ere-de-la-voiture-autonome-776767.html
[0]https://www.lemondeinformatique.fr/actualites/lire-voitures-autonomes-pas-avant-2040-en-france-selon-l-inria-71733.html
[0]https://www.la-croix.com/Sciences-et-ethique/Ethique/recommandations-chercheurs-lethique-voitures-autonomes-2018-05-18-1200940092
[0]https://www.lesechos.fr/29/06/2018/LesEchos/22727-506-ECH_fawzi-nashashibi-—-il-y-a-encore-bien-des-obstacles-pour-le-vehicule-autonome–.htm

Fawzi Nashashibi was interviewed for France Info, 2018-09-07.

- For online publications: (Interstices, Images des Maths, Binaire, Wikipedia), and more widely blog articles:

Raoul de Charette was interviewed by K. Haske for MyScienceWork *Where are they now ? Raoul de Charette*[0], 2018-09-04, and by J. Jongwane for Interstices *Les algorithmes de vision pour les véhicules autonomes*[0] [36];

Fawzi Nashashibi was interviewed by Mrs. Barbara Vignaux to prepare an exhibition on the autonomous car for the *Science Actualités* area of the City of Science and Industry (*Cité des Sciences et des Industries*), Paris. It was followed by the development of an article entitled *"Voiture autonome: révolution en route ?"* (Autonomous Car: revolution on the way?);

In January 2018, Gérard Le Lann has been invited to contribute to Blog Binaire Le Monde on: *Sécurité routière et cybersécurité*[0];

In May 18th, an on-line article titled *Inria dévoile son Livre blanc sur les Véhicules Autonomes et Connectés* and relaying the contents of Inria white paper on connected autonomous vehicles was published at http://www.auto-innovations.com/communique/1374.html.

10.3.3. Interventions

- Raoul de Charette and Renaud Poncelet made a demonstration at Inria RII meeting ("Mobilité & environnements", 2018-11-20, Station F, Paris);
- RITS was involved in welcoming schoolchildren in Paris center on December 21st.

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[0]https://www.mysciencework.com/omniscience/now-raoul-charette
[0]https://interstices.info/les-algorithmes-de-vision-pour-les-vehicules-autonomes/
[0]http://binaire.blog.lemonde.fr/2018/01/19/securite-routiere-et-cybersecurite/

SEMAGRAMME Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Selection

8.1.1.1. Chair of Conference Program Committees

- Sylvain Pogodalla: co-chair of FG 2018*23rd Conference on Formal Grammar* [23].

8.1.1.2. Member of Conference Program Committees

- Philippe de Groote: *The 23rd Conference on Formal Grammar*.
- Maxime Amblard: 25ème conférence sur le Traitement Automatique des Langues Naturelles (TALN 2018)

8.1.1.3. Reviewer

- Guy Perrier: Universal Dependencies Workshop 2018.
- Sylvain Pogodalla: Symposium on Logic and Algorithms in Computational Linguistics 2018 (LA-CompLing2018), 25ème conférence sur le Traitement Automatique des Langues Naturelles (TALN 2018).
- Maxime Amblard: The 56th Annual Meeting of the Association for Computational Linguistics, 25ème conférence sur le Traitement Automatique des Langues Naturelles (TALN 2018)

8.1.2. Journal

8.1.2.1. Member of Editorial Boards

- Philippe de Groote: area editor of the *FoLLI-LNCS series*; associate editor of *Higher-Order and Symbolic Computation*; member of the editorial board of *Cahiers du Centre de Logique*.
- Sylvain Pogodalla: Member of the editorial board of the journal *Traitement Automatique des Langues*, in charge of the *Résumés de thèses* section.
- Maxime Amblard: Member of the editorial board of the journal *Traitement Automatique des Langues*, in charge of the hard copy editorial process, Editor of the (In)coherence of Discourse (upcoming volume of the Language, Cognition, and Mind series)

8.1.2.2. Reviewer - Reviewing Activities

- Philippe de Groote: Journal of Language, Logic and Information, Journal of Logic and Computation, The Review of Symbolic Logic.
- Sylvain Pogodalla: (In)coherence of Discourse (upcoming volume of the Language, Cognition, and Mind series), Journal of Language, Logic and Information.
- Maxime Amblard: (In)coherence of Discourse (upcoming volume of the Language, Cognition, and Mind series), Journal of Language, Logic and Information, ACM - Transaction on multimedia computing communication, *Traitement Automatique des Langues*.

8.1.3. Invited Talks

- Philippe de Groote gave an invited talk at the *Symposium on Logic and Algorithms in Computational Linguistics 2018 (LACompLing 2018)*, 28-31 August 2018, Stockholm, Sweden [11].
- Maxime Amblard gave four invited talks:
  - at the *Colloque Cathy Dufour*, November 2018, Nancy [6];
  - at the *EMLex lecture series/Séminaire de l'ATILF*, March 2018, Nancy [7];

- at the *Recherches linguistiques et corpus, séminaire STIH de la Faculté des Lettres de Sorbonne Université*, March 2018, Paris [9];
- at the *Linguistique textuelle, linguistique de corpus*, April 2018, Metz [8].
- Maria Boritchev gave a talk to the *Séminaire des doctorantes et doctorants en informatique*, June 2018, Paris [10].

8.1.4. Leadership within the Scientific Community

- Philippe de Groote: president of SIGMOL, *Association for Mathematics of Language, a Special Interest Group of the Association for Computational Linguistics*; member of the LACL steering committee.
- Bruno Guillaume: Management Committee Substitute of the COST Action CA16105 "European Network for Combining Language Learning with Crowdsourcing Techniques" (http://www.cost.eu/COST_Actions/ca/CA16105).
- Sylvain Pogodalla: member of the LACL steering committee; member of the Formal Grammar standing committee.
- Maxime Amblard: head of the work package on Natural Language Processing of the OLKI project (PIA funding), leader of the semantics topic for the national pre-GDR on *Traitement Automatique des Langues*.

8.1.5. Scientific Expertise

- Philippe de Groote: member of the scientific council of the LIRMM, *Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier*; member of the scientific council of the AREN e-FRAN project, *ARgumentation Et Numérique*.
- Sylvain Pogodalla: expert for the Research Executive Agency (REA) of the EU.
- Maxime Amblard: expert for the *Agence Nationale pour la Recherche* (ANR), expert for the *Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur* (HCERES).

8.1.6. Research Administration

- Philippe de Groote:
  - Member of the *bureau du comité des projets d'Inria Nancy – Grand Est*.
- Sylvain Pogodalla:
  - Elected member of the *comité de centre d'Inria Nancy – Grand Est*, in charge of the *commission IES (information et édition scientifique du centre d'Inria Nancy – Grand Est*.
- Bruno Guillaume:
  - Head of the Loria department NLPKD (Natural Language Processing and Knowledge Discovery).
  - Animator of the CPER 2015-2020 project *Langues, Connaissances et Humanités Numériques* (Languages, Knowledge and Digital Humanities) in which ten laboratories of the *Université de Lorraine* participate.
  - Member of the Comipers (Inria committee for PhD and Post-doctoral selection).
- Maxime Amblard:
  - Member of *conseil scientifique* of *Université de Lorraine*, in charge of the working group on *publiants*.
  - Standing invitee at the *pôle scientifique* AM2I of *Université de Lorraine*.
  - Member of the *Sénat Académique* of *Université de Lorraine*.
  - Member of the progress commission of *Université de Lorraine*.

– Member of the administration coouncil of the *Institut des sciences du digital, management et cognition.*
– Member of the board of the Maison des sciences de l'homme, MSH-Lorraine.
– Head of the master in Natural Language Processing (master 1 and 2).
– Member of the McF selection committee 4373 (section 7 and 27), Université Paris Sorbonne.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence:

Maxime Amblard, Introduction au TAL, 4h, L1, Université de Lorraine, France

Maxime Amblard, Ingénierie linguistique, 20h, L3, Université de Lorraine, France

Timothée Bernard, Algorithmique, 24h, L3, Université Paris Diderot, France.

Clement Beysson, Représentation Avancée de Données, 20h, L2, Université de Lorraine, France.

Clement Beysson, NUMOC, 40h, L1, Université de Lorraine, France.

Clement Beysson, Algorithmique et Programmation 1, 16h, L1, Université de Lorraine, France.

Clement Beysson, Introduction aux bases de données, 8h, L2, Université de Lorraine, France.

Clement Beysson, Système 2, 12h, L3, Université de Lorraine, France.

Maria Boritchev, Formalismes et représentations de raisonnements, 20h, L3, Université de Lorraine, France

Maria Boritchev, Algorithmique 1, 22h, L1, Université de Lorraine, France

Pierre Ludmann, Informatique 1, 20h, L3, Mines Nancy, France.

Pierre Ludmann, Informatique 2, 40h, L3, Mines Nancy, France.

Master:

Maxime Amblard, Python Programming (english), 44h, M1, Université de Lorraine, France.

Maxime Amblard, Algorithms (english), 30h, M1, Université de Lorraine, France.

Maxime Amblard, Methods for NLP (english), 36h, M1, Université de Lorraine, France.

Maxime Amblard, Remise à niveau (english), 3h, M1/M2, Université de Lorraine, France.

Maxime Amblard, Formalisms (english), 24h, M2, Université de Lorraine, France.

Maxime Amblard, Programming Project (english), 3h, M2, Université de Lorraine, France.

Timothée Bernard, Projet TAL, 18h, L3/M1, Université Paris Diderot, France.

Timothée Bernard, Sémantique computationnelle, 20h, M1, Université Paris Diderot, France.

Clement Beysson, Algorithmique et Complexité, 22h, M1, Université de Lorraine, France.

Maria Boritchev, Technology and Innovation (english), 15h, M1, Université de Lorraine, France.

Maria Boritchev, Remise à niveau (english), 3h, M1/M2, Université de Lorraine, France

Philippe de Groote, Computational Semantics, 18h, M2, Université de Lorraine, France.

Philippe de Groote, Computational structures and logics for natural language modeling, 18h, M2, Université Paris Diderot – Paris 7, France.

Bruno Guillaume, Remise à niveau TAL (english), 6h, M1/M2, Université de Lorraine, France.

Bruno Guillaume, Written Corpora TAL (english), 30h, M1, Université de Lorraine, France.

Pierre Ludmann, Introduction à C/C++, M1/M2, Mines Nancy, France.

8.2.2. Supervision

PhD in progress:

William Babonnaud, *Sémantique lexicale, compositionnalité et coercition de types*, since September 2018, Philippe de Groote.

Clement Beysson, *Quantificateurs généralisés dynamiques pour l'analyse discursive*, since September 2015, Philippe de Groote and Bruno Guillaume.

Maria Boritchev, *Dialogue Dynamics Modeling in the Simple Theory of Types*, since September 2017, Maxime Amblard and Philippe de Groote.

Pierre Ludmann, *Construction dynamique des structures discursives*, since September 2017, Philippe de Groote and Sylvain Pogodalla.

8.2.3. Juries

- Maxime Amblard was member of the jury of the master thesis of the master of NLP (12 students).
- Maxime Amblard was member of the jury PhD thesis of Mehdi Mirzapour, Modeling Preferences for Ambiguous Utterance Interpretations, September 28th, 2018, Université de Montpellier.
- Michel Musiol was member of the jury PhD thesis of Marine Labalestra November 21th, 2018, Université de Reims Champagne Ardenne
- Michel Musiol was member of the jury PhD thesis of Sarah Del Goleto, *Du déficit de l'intégration contextuelle au trouble de la mentalisation dans la schizophrénie - études électrophysiologiques et comportementales de la compréhension de l'ironie.*, December 4th 2018, Université Paris 8

8.3. Popularization

8.3.1. Internal or External Inria Responsibilities

- Maxime Amblard is the vice head of editorial board of Interstices.info

8.3.2. Articles and Contents

- Karën Fort and Bruno Guillaume have published an article in Interstices [27] about ZombiLingo. The paper explain to non-specialists how crowdsourcing may be used to build resources that are needed for Natural Language Processing applications. They explain the aim of the project.
- Maxime Amblard has written articles for Interstices.info as *Idée reçue : Les algorithmes prennent-ils des décisions ?*

8.3.3. Education

- Maxime Amblard participates in the event *S'orienter et se réorienter dans les sciences numériques* under the patronage of FAFIEC, ONISEP Grand Est and Académie de Nancy-Metz, November 14th, 2018

8.3.4. Interventions

- Maria Boritchev participated in *Samedi des curieux*, March 2018, Paris France: Comment confondre de faux témoignages ?

- Maxime Amblard participates in the Ada Lovelace day in Nancy Grand-Est
- Maxime Amblard gave a talk about ethics in Artificial Intelligence at the *Café des Sciences* of the Cognitive science student association
- Maxime Amblard was organizer of the *forum des sciences cognitives 2018* in Nancy
- Maxime Amblard has organized and supervised two panel discussions (new trend in IT recruitment and New Challenge for Neural Networks in Artificial Intelligence and NLP) for the *forum des sciences cognitives 2018*

8.3.5. Creation of Media or Tools for Science Outreach

- Maxime Amblard was the leader of the project Happy Family card Games, where a group of 10 researchers develop such a game for promoting computer science as a scientific field and give epistemological perspectives. More than 10 000 copies are printed and the promotion of the project will be in 2019.

<p style="text-align:center">**SIROCCO Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- C. Guillemot was tutorial co-chair of IEEE Int. Conf. on Image Processing (ICIP, Athens, 2018)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- C. Guillemot has been a member of the international program committee of PCS 2018, ACIVS 2018, VISAP 2018, ICIP 2018
- T. Maugey was publicity chair and member of the technical program committee of the Graph Signal Processing workshop at EPFL (Switzerland) (2018) and area chair of IEEE-VCIP 2018
- A. Roumy has been a member of the technical program committees of the CVPR 2018 workshop on New Trends in Image Restoration and Enhancement (NTIRE), of the ICC 2018 workshop on Promises and Challenges of Machine Learning in Communication Networks (ML4COM), and of the ICT 2018 conference.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- C. Guillemot is senior area editor of the IEEE Trans. on Image Processing
- C. Guillemot is associate editor of the International Journal on Mathematical Imaging and Vision
- A. Roumy is associate editor of the Springer Annals of Telecommunications.
- A. Roumy is associate editor of the IEEE Trans. on Image Processing (since Nov. 2018)

10.1.4. Invited Talks

- C. Guillemot gave a keynote talk on light fields image processing at COmpression and REpresentation of Audio-visual Signals (CORESA), Poitiers, 14 Nov. 2018.
- C. Guillemot gave an IEEE Distinguished lecture, Computational light field imaging, invited by the Croatian and Slovenian IEEE signal processing chapter, at Ljubljana (23rd Oct. 2018) and Zagreb (24th. Oct. 2018).
- C. Guillemot gave a lecture at the IEEE signal processing summer school at Midsweden University, Sundvall, Sweden, May 2018.
- C. Guillemot gave a seminar at KTH on light field image processing, 23rd March 2018
- C. Guillemot gave an IEEE Distinguished lecture invited by the Italian IEEE signal processing chapter, Cavalese, 22 Jan. 2018
- Thomas Maugey gave a seminar at ENS-Rennes on Free Viewpoint Television, April 2018.
- A. Roumy gave a talk on Source coding under massive random access: theory and applications, at ENSEA, Cergy-Pontoise, April 2018.
- A. Roumy gave a talk on Source coding under massive random access: theory and applications, at INSA, Lyon, Sept. 2018.
- A. Roumy gave a talk on universal compression of images, at EPFL, Dec. 2018.

10.1.5. Leadership within the Scientific Community

- C. Guillemot is member of the IEEE IVMSP technical committee
- C. Guillemot is senior member of the steering committee of IEEE Trans. on Multimedia (2016-2018).
- C. Guillemot has been appointed member of the IEEE Signal Processing Society Nominations and Appointments Committee for a two-year term (2018-2019).
- A. Roumy is a member of the Executive board of the National Research group in Image and Signal Processing (GRETSI).
- A. Roumy is Local Liaison for the European Association for Signal Processing (EURASIP).

10.1.6. Research Administration

- C. Guillemot is a member of Inria evaluation committee
- C. Guillemot is member of the "bureau du Comité des Projets"
- C. Guillemot has served as a member of the selection committee of an Assistant Prof. at Telecom ParisTech (Jan. 2018)
- L. Guillo is a member of the technological development and technology transfer committee at Inria Rennes.
- A. Roumy served as a jury member for the selection of Inria CR (researcher) candidates, Inria, Rennes, France, 2018.
- A. Roumy is a member of the technological development and technology transfer committee at Inria Rennes.
- A. Roumy is a member of the Inria Joint Administrative Committee (CAP commission administrative paritaire).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: C. Guillemot, Image and video compression, 10 hours, and advanced video processing, 4 hours, M2 SISEA, Univ. of Rennes 1, France.
- Undergraduate: L. Guillo, course of 35 hours on Functional immutable programming, 1st year of Mathematiques, Informatique, Electronique, mathematique-Economie" (MIEE), Univ. of Rennes 1
- Undergraduate: L. Guillo, talk about agility and software development, 3rd year, ENS Rennes.
- Master: T. Maugey, course on 3D models in a module on advanced video, 4 hours, M2 SISEA, Univ. of Rennes 1, France.
- Master: T. Maugey, course on Representation, editing and perception of digital images, 12 hours, M2 SIF, Univ. of Rennes 1, France.
- Engineering degree: A. Roumy, Sparse methods in image and signal processing, 13 hours, INSA Rennes, 5th year, Mathematical engineering, France.
- Master: A. Roumy, Foundations of smart sensing, 18 hours, ENSAI, Master of Science in Statistics for Smart Data, France.
- Master: A. Roumy, High dimensional statistical learning, 9 hours, University Rennes 1, SIF Master, France.
- Master: A. Roumy, Information theory, 15 hours, University Rennes 1, SIF master, France.

10.2.2. Juries

- C. Guillemot has been member of the PhD committees of:
  - D. Liu, KTH, Stockholm, March 2018

- K. Reuze, INSA, Rennes, Nov. 2018
- S. Ferdowsi, Univ. Geneva, Dec. 2018
- Thomas Maugey has been member of the jury of the PhD committee of:
  - Renata Khasanova, EPFL, Dec. 2018

10.3. Popularization

- C. Guillemot and A. Roumy participated in the editorial board of a series of articles, towards a general audience, on Fourier, in the context of his 250th birth anniversary (2018)

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Francois Brémond was a General Chair for the 3rd IEEE International Conference on Image Processing, Applications and Systems (IPAS 2018).

10.1.1.2. Member of Organizing Committees

- Abhijit Das organized 5th Sclera Segmentation Benchmarking Competition 2018, in conjunction with International Conference on Biometrics 2018.
- Abhijit Das organized 1st Thai Student Signature and Name component Recognition and Verification Competition 2018 in conjunction with ICFHR 2018.
- Antitza Dantcheva and Abhijit Das organized Recent Advances in Biometric Technology for Mobile Devices (RABTMD 2018) in conjunction with the 9th IEEE International Conference on Biometrics: Theory, Applications, and Systems BTAS 2018.
- Antitza Dantcheva and Abhijit Das were local organizing co-chairs of IEEE International Conference on Image Processing, Applications and Systems (IPAS 2018).
- Alexandra Konig was member of the organizing committee of RaPID-2018 workshop (Resources and ProcessIng of linguistic, para-linguistic and extra-linguistic Data from people with various forms of cognitive/psychiatric impairments) 8th of May 2018, Miyazaki, Japan.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Antitza Dantcheva was program Co-chair at the International Conference of the Biometrics Special Interest Group (BIOSIG) 2017 and 2018, September, 2018, Darmstadt, Germany.
- Alexandra Konig was program chair of 2nd Workshop on AI for Aging, Rehabilitation and Independent Assisted Living (ARIAL) @IJCAI'18 - In conjunction with 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence,July 15, 2018, Stockholm, Sweden.

10.1.2.2. Member of Conference Program Committees

- Francois Brémond was program committee member of WACV18.
- Francois Brémond was a member of the AVSS Steering Committee for 2018
- Monique Thonnat was program committee member of the conference ICPRAM 2019
- Antitza Dantcheva was in the technical program committee of the IAPR International Conference on Biometrics (ICB) 2018
- Jean-Paul Rigault is a member of the *Association Internationale pour les Technologies à Objets* (AITO) which organizes international conferences such as ECOOP.

10.1.3. Reviews

- Francois Brémond was reviewer for many journals, such as IEEE Transactions on Circuits and Systems for Video Technology, for the journal Frontiers in Human Neuroscience, for the journal "revue Retraite et société" and Medical Engineering & Physics.

- Antitza Dantcheva was reviewer for a number of journals including IEEE Transactions on Information Forensics and Security (TIFS), IEEE Transactions on Biometrics, Behavior, and Identity Science (T-BIOM), IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), IET Biometrics, Pattern Recognition letters, Pattern Recognition.
- Francois Brémond was reviewer for many conferences including : CVPR2018, ECCV2018, VOT2018, ICCV2018, WACV2018-19, ISG18.
- Monique Thonnat is a reviewer for the journal Artificial Intelligence in Medicine AIIM (Elsevier).
- Sabine Moisan was reviewer for the 10th ICAART'18 International Conference on Agents and Artificial Intelligence.

10.1.4. Member of Editorial Boards

- Francois Brémond has been handling editor of the international journal "Machine Vision and Application" since 2014 and editor of a PANORAMA special issue of Journal of Electronic Imaging Letters (JEI): Ultra Wide Context and Content Aware Imaging.
- Antitza Dantcheva has been in the Editorial Board of the Journal Multimedia Tools and Applications (MTAP) since 2017.

10.1.5. Invited Talks

Francois Brémond was invited by:

- Prof. Vasek Hlavac (Czech Technical University in Prague) to give a talk at the Computer Vision Winter Workshops CVWW in Cesky Krumlov, 5th February 2018.
- Derek J Collins (Huawei) to give a talk at the 3rd Annual Computer Vision / Video Intelligence Forum in Dublin, 0ct. 2018.
- Nicolas Padoy (University of Strasbourg) to give a talk at the workshop MCV at CVPR, June 2018
- Dr Lauren CAURO (City of Nice) to give a talk at the workshop "Ethique en santé connectée : La santé connectée, un progrès pour tous? ", 26 Oct 2018
- Christophe ROUSSEAU (University of Nice) to give a talk at the SophIA Summit : IA et vision, 9 Nov 2018
- Monique Thonnat was invited by INGER to give a talk on Monitoring People with Video Analysis at the Franco-Mexican workshop AI Technology Applications and Research on Frailty and Dementia, Mexico, 22-23 November 2018.
- A. Dantcheva. "Facial analysis: from soft biometrics to healthcare" at Information Sciences Institute (ISI) at the University of Southern California (USC), Los Angeles, USA, September 2018.
- A. Dantcheva. "Facial analysis: from biometrics to healthcare" at Institute of Computing Technology (ICT) at the Chinese Academy of Sciences (CAS), Beijing, China, August 2018.
- Monique Thonnat has been invited to give a talk on Activity Recognition for Neurocognitive Disorders at the International Symposium on Smart Healthcare and Age-Friendly by Taichung Veterans General Hospital, Taichung, Taiwan, 4 December 2018.
- Monique Thonnat has been invited by Taipei Medical University to give a talk on An Approach with serious Exergames for Assessment and Stimulation of Patients with Neurocognitive Disorders at Bioinformatics vs Medecine: The Elderly Care in the Information Era, The Needs and Responses, Taipei, Taiwan, 6 December 2018.
- Francois Brémond has been invited to give a talk on Activity Recognition for People Monitoring at the International Symposium on Smart Healthcare and Age-Friendly by Taichung Veterans General Hospital, Taichung, Taiwan, 4 December 2018.
- Francois Brémond has been invited by Taipei Medical University to give a talk on Activity Recognition to Monitor Older People at Bioinformatics vs Medecine: The Elderly Care in the Information Era, The Needs and Responses, Taipei, Taiwan, 6 December 2018.

10.1.6. Leadership within the Scientific Community

- Francois Brémond was a member of the Evaluation Committee (i.e. HCERES) of the research laboratory LIPADE from Paris Descartes University, 15 March 2018.
- Francois Brémond was a member of the Evaluation Committee for the professor position in computer science of Lyon University, April 24th and May 15th 2018.
- Francois Brémond was a Reviewer for the AME Programmatic Proposal "Human-Robot Collaborative AI for Advanced Manufacturing and Engineering" on behalf of (A*STAR) Singapore, 30th May 2018.
- Francois Brémond was an expert for a research program at the Campus for Research Excellence and Technological Enterprise (CREATE) from the National University of Singapore (NUS), Oct 2018.
- Francois Brémond was the working group Leader for reviewing a new Inria Project Team Proposal: CHORALE
- Francois Brémond is part of the Advisory Board of the V4Design EU project for the Horizon 2020 framework, ICT-20-2017 Call, Tools for smart digital content in the creative industries, 2018-21
- Antitza Dantcheva serves in the Technical Activities Committee of the IEEE Biometrics Council since 2017
- Antitza Dantcheva serves in the EURASIP Biomedical Image & Signal Analytics (BISA) SAT 2018-2021
- Antitza Dantcheva is member of the European Reference Network for Critical Infrastructure Protection (ERNCIP), Thematic Group Extended Virtual Fencing - use of biometric and video technologies, since 2017
- Antitza Dantcheva is member of the European Association for Biometrics, since 2018

10.2. Teaching - Supervision - Juries

10.2.1. Supervision

- PhD: Guillaume Sacco, Serious video games in gerontological practice: application to relationships between physical activity and cognition, Thèses, Université Côte d'Azur, June 2018.
- PhD: F. NEGIN, Toward Unsupervised Human Activity and Gesture Recognition in Videos, Theses, Universit´e Cote d'Azur, Sep 2018.
- PhD: L. A. NGUYEN, Long-term people trackers for video monitoring systems, Theses, Université Côte d'Azur, July 2018.
- PhD: M. K. PHAN TRAN, Maintaining the engagement of older adults with dementia while interacting with serious game, Theses, Université Côte d'Azur, April 2017,

10.2.2. Juries

Francois Brémond was part of several PhD and HDR Juries :

- Nicolas Padoy, HDR, University of Strasbourg, 19 January 2018
- Renato Baptista, University of Luxembourg, 29 January 2018
- Nicolas Chesneau, Inria Lear, Grenoble, 23 February 2018
- Dinh Van Nguyen, UPMC, Paris, 2 May 2018
- Riadh Ksantini, HDR, SUP'COM Tunis, 10 September 2018
- Yiqiang Chen, LIRIS, University of Lyon, 12 October 2018
- Katy Blanc, University of Nice, 17 December 2018
- Mohamed Adel Benamara, LIRIS, University of Lyon, 19 December 2018

Monique Thonnat was member of the selection board of professor PU27 at ENIB, Brest.

Monique Thonnat is member of the scientific board of ENPC, Ecole Nationale des Ponts et Chaussées since June 2008.

<p align="center" style="color:red">THOTH Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair
- C. Schmid is one of the general chairs for ECCV 2020.

10.1.1.2. Member of the Organizing Committees
- Several permanent members of the team co-organized the international summer school PAISS 2018.
- J. Mairal is a member of the organizing committee for the international conference SIAM Imaging Science 2020.
- J. Mairal co-organized the Journées SMAI-MODE, which will took place in March 2018.
- J. Mairal is a co-organizer of the workshop OSL'19 at Les Houches.
- G. Rogez was one of the organizers of the CVPR workshop on Human Pose, Motion, Activities and Shape in 3D (3D HUMANS 2018).
- C. Schmid was one of the organizers of Workshop on Artificial Intelligence, Horizon Maths, Paris, 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees
- K. Alahari: Area chair for CVPR 2018, ICCV 2019.
- K. Alahari: Senior program committee member for IJCAI 2018, IJCAI 2019.
- J. Mairal: Area chair for ICML and NeurIPS 2018.
- C. Schmid: Area chair for NeurIPS 2018, ICML 2018, ECCV 2018, ICCV 2019.
- J. Verbeek: Area chair for ECCV 2018, ICCV 2019.

10.1.2.2. Reviewer

The permanent members of the team reviewed numerous papers for numerous international conferences in computer vision and machine learning, including CVPR, ECCV, NeurIPS, ICML.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards
- K. Alahari: Associate editor for Computer Vision and Image Understanding journal, since 2018.
- J. Mairal: Associate editor of the International Journal of Computer Vision, since 2015.
- J. Mairal: Associate editor of Journal of Mathematical Imaging and Vision, since 2015.
- J. Mairal: Associate editor of the SIAM Journal of Imaging Science, since 2018.
- C. Schmid: Editor in Chief of the International Journal of Computer Vision, since 2013.
- C. Schmid: Associate editor for Foundations and Trends in Computer Graphics and Vision, since 2005.
- J. Verbeek: Associate editor for Image and Vision Computing Journal, 2011-2018.
- J. Verbeek: Associate editor for International Journal on Computer Vision, since 2014.
- J. Verbeek: Associate editor for IEEE Transactions Pattern Analysis and Machine Intelligence, since 2018.

10.1.3.2. Reviewer - Reviewing Activities

The permanent members of the team reviewed numerous papers for numerous international journals in computer vision (IJCV, PAMI, CVIU), machine learning (JMLR, Machine Learning). Some of them also review for journals in optimization (SIAM Journal on Optimization, Mathematical Programming), image processing (SIAM Imaging Science).

10.1.4. Invited Talks

- K. Alahari: Invited talk at IISc Bangalore, India, Dec 2018.
- K. Alahari: Invited talk at Hyderabad AI Symposium, India, Dec 2018.
- K. Alahari: Invited seminar at Simon Fraser Univ., Vancouver, Canada, Nov 2018.
- K. Alahari: Invited seminar at POSTECH, Pohang, South Korea, Oct 2018.
- K. Alahari: COVIEW workshop, ACM Multimedia, Seoul, South Korea, Oct 2018.
- K. Alahari: Le Futur des Images workshop, IXXI, Lyon, Oct 2018.
- K. Alahari: Invited seminar at Universidad de Malaga, Apr 2018.
- K. Alahari: CVPR AC Meeting, Toronto, Feb 2018.
- A. Bietti: Séminaire de statistiques et machine learning, Telecom ParisTech.
- A. Bietti: Laplace reading group, ENS Paris.
- A. Bietti: Grenoble Optimization Days, LJK, UGA.
- G. Durif: Seminar at LJK, UGA, May 2018.
- G. Durif: Seminar at Institut de Recherche Mathematique Avancée (IRMA), Strasbourg Univ., June 2018.
- M. Elbayad: Seminar at NAVER LABS Europe, Grenoble, Sep 2018.
- P. Luc: Invited talk in the class "Deep Learning for Image Analysis" at Ecole des Mines.
- J. Mairal: Seminaire Parisien d'Optimisation, Paris.
- J. Mairal: Workshop on the Future of Random Projections, Paris.
- J. Mairal: talk in mini-symposium at ISMP, Bordeaux.
- J. Mairal: keynote in Theory of Deep Learning Workshop, ICML 2018, Stockholm.
- J. Mairal: keynote in CEFRL workshop, ECCV 2018, Munich.
- J. Mairal: invited speaker at AI and ML workshop, Telecom ParisTech.
- J. Mairal: Seminar, Gatsby Unit, UCL, London.
- J. Mairal: Seminar, College de France, Paris.
- J. Mairal: Seminar, University of Geneva.
- J. Mairal: Seminar, Université d'Avignon.
- J. Mairal: Seminar, Université de Marseille.
- G. Rogez: Invited speaker, Apple Seminar, Salt Lake City, June 2018.
- G. Rogez: Seminar, NAVER LABS Europe, Grenoble, December 2018.
- C. Schmid: Invited speaker at the Google Multimodal Machine Perception Workshop, San Francisco, October 2018.
- C. Schmid: Invited speaker, "What is optical flow for?" workshop at ECCV, September 2018.
- C. Schmid: Invited speaker, 3rd Intl. Workshop on Video Segmentation at ECCV, September 2018.
- C. Schmid: Keynote speaker at Deep Learning Conference, Rennes, September 2018.
- C. Schmid: Keynote speaker at ActivityNet workshop, in conjunction with CVPR, June 2018.
- C. Schmid: Invited talk at CVPR Good Citizen of CVPR event, in conjunction with CVPR, June 2018.
- C. Schmid: Keynote speaker at 3D Humans workkshop, in conjunction with CVPR, June 2018.
- C. Schmid: Invited speaker at Symposium on AI, Académie des sciences, Paris, February 2018.
- C. Schmid: Presentation at Prairie/industry meeting, Paris, December 2018.
- C. Schmid: Presentation at Google workshop on 3D Deep Learning, October 2018.

- C. Schmid: Seminar for AI residents, Google Mountain View, June 2018.
- C. Schmid: Seminar at MPI Tübingen, April 2018.
- C. Schmid: Seminars at Google Zürich (April), Mountain View and Paris (March).
- C. Schmid: Seminar at Leopoldina section meeting, Ulm, February 2018.
- J. Verbeek: Seminar Facebook AI Research, Paris, December 2018.
- J. Verbeek: Seminar NAVER LABS Europe, Grenoble, December 2018.
- J. Verbeek: Seminar Univ. Amsterdam, July 2018.
- J. Verbeek: Workshop Mathematics and Deep Learning at Univ. Aix-Marseille, November 2018.
- J. Verbeek: ARC6 Deep Learning & Deep Reinforcement Learning Workshop, Lyon.

10.1.5. Scientific Expertise

- J. Mairal: Reviewer for ERC (Consolidator and Starting).
- J. Mairal: Panel member for ANR.
- J. Mairal: Judge for the IBM Watson AI Xprize.
- G. Rogez: reviewer for ANR.

10.1.6. Research Administration

- J. Mairal: Participation in the setting up of the 3IA institute in Grenoble.
- C. Schmid: Member, board of directors of the Computer Vision Foundation (CVF), since 2016.
- C. Schmid: Member, PAMI-TC awards committee and the PAMI-TC executive commitee.
- J. Verbeek: Member, 2018 recruitment committee for an Assistant Professor position at Univ. Grenoble Alpes, Laboratoire Jean Kuntzmann (LJK).
- J. Verbeek: Member, steering committee MinaLogic, innovation cluster for digital technologies based in France's Auvergne-Rhône-Alpes region, since 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Doctorat: K. Alahari, Lecturer at the CVIT summer school on machine learning, 4h eqTD, IIIT Hyderabad, India.

Doctorat: A. Bietti, Mini-course "Optimization for large-scale machine learning", 10h eqTD, conference SMAI-MODE, Autrans, France.

Doctorat: J. Mairal, Mini-course "Optimization for large-scale machine learning", 10h eqTD, conference SMAI-MODE, Autrans, France.

Doctorat: J. Mairal, Mini-course "Optimization for large-scale machine learning", 4.5h eqTD, conference Mascot-Num, Nantes, France.

Doctorat: J. Mairal, Lecturer at the YSU - ISTC Joint Summer School on Machine Learning, 12h eqTD, Yerevan, Armenia.

Doctorat: J. Mairal, Lecturer at the PAISS summer school, 2h eqTD, Grenoble, France.

Doctorat: C. Schmid, Course on action recognition, 2h eqTD, PRAIRIE Artifical Intelligence Summer School, July 2018, Grenoble, France.

Master: K. Alahari, Understanding Big Visual Data, 13.5h eqTD, M2, Grenoble INP, France.

Master: K. Alahari, Graphical Models Inference and Learning, 18h eqTD, M2, CentraleSupelec, Paris, France.

Master: K. Alahari, Introduction to computer vision, 9h eqTD, M1, ENS Paris, France.

Master: J. Mairal, Kernel methods for statistical learning, 15h eqTD, M2, Ecole Normale Supérieure, Cachan, France.

Master: C. Schmid, Object recognition and computer vision, 9h eqTD, M2, ENS Paris, France

Master: J. Verbeek, K. Alahari, C. Schmid, Machine Learning and Object Recognition, 27h eqTD, M2, Grenoble University, France

Master: J. Verbeek and J. Mairal, Advanced Learning Models, 27h eqTD, M2, UGA, Grenoble.

10.2.2. Supervision

PhD: N. Chesneau, Learning to Recognize Actions with Weak Supervision, Univ. Grenoble Alpes, Feb 2018, Karteek Alahari and Cordelia Schmid.

PhD: A. Mensch, Apprentissage de représentations en imagerie fonctionnelle, Univ. Paris-Saclay, Sep 2018, Gael Varoquaux, Bertrand Thirion and Julien Mairal.

PhD: P. Tokmakov, Apprentissage à partir du mouvement, Univ. Grenoble Alpes, Jun 2018, Karteek Alahari and Cordelia Schmid.

10.2.3. Juries

K. Alahari: Mostafa S. Ibrahim, November 2018, external examiner, Simon Fraser University.

K. Alahari: Ignacio Rocco Spremolla, 2018, member of "comité de suivi de thèse", ENS Paris.

J. Mairal: Magda Gregorova, 2018, rapporteur, University of Geneva.

J. Mairal: Saeed Varasteh, December 2018, examinateur, Univ. Grenoble Alpes.

J. Mairal: Olga Permiakova, November 2018, member of "comité de suivi de thèse", Univ. Grenoble Alpes.

J. Mairal: Vincent Prost, November 2018, member of "comité de suivi de thèse", Univ. Paris Saclay.

G. Rogez: Francisco Castro, December 2018, jury member, Univ. Malaga.

C. Schmid: Jean-Baptise Alayrac, September 2018, examinateur, ENS Paris.

C. Schmid: Stéphane Lathuilière, May 2018, presidente, UGA.

C. Schmid: Gunnar Atli Sigurdsson, May 2018, thesis proposal, CMU.

C. Schmid: Christoph Lassner, April 2018, rapporteur, Universitaet Tuebingen.

C. Schmid: Maxime Oquab, January 2018, examinatuer, ENS Paris.

J. Verbeek: Riccardo Del Chiaro, 2018-2020, member of supervisory committee, Univ. Florence.

J. Verbeek: Fabien Baradel, 2017-2019, member of supervisory committee, INSA Lyon.

J. Verbeek: Mélanie Ducoffe, 2018, rapporteur, Univ. Côte d'Azur, Sophia-Antipolis.

10.3. Popularization

- P. Luc: Interviews with "Computer Vision News" and "Les Echos Start".
- J. Mairal: intervention grand public sur l'IA lors d'un événement organisé par PWN (Professional Woman Network) à Lyon en octobre 2018.
- J. Mairal: conférence grand public sur l'IA avec Cédric Villani en juin 2018, mairie de Lyon.
- J. Mairal: participation à un débat public sur l'IA organisé par Mme la député Cendra Motin en avril 2018, Montalieu-Vercieu.

10.3.1. Internal or external Inria responsibilities

- C. Schmid: Member, "Comité scientifique", Inria Grenoble, since 2015.
- J. Verbeek: Scientific correspondent, national project calls, Inria Grenoble, since 2017.
- J. Verbeek: Member, Inria Grenoble working group on HPC - Big Data - Machine learning, since 2018.

TITANE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Pierre Alliez: advisory committee of the EUROGRAPHICS annual conference 2018.
- Yuliya Tarabalka: Scientific Advisory Committee of the 2nd International Electronic Conference on Remote Sensing.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Pierre Alliez is full paper co-chair of

- EUROGRAPHICS 2019 conference, organized in Genova, May 2019.
- Solid and Physical Modeling 2019, organized in Vancouver, June 2019.

10.1.2.2. Member of the Conference Program Committees

- Pierre Alliez: EUROGRAPHICS Symposium on Geometry Processing, International Conference on Geometric Modeling and Processing, Shape Modeling International, EUROGRAPHICS Workshop on Graphics and Cultural Heritage.
- Florent Lafarge: Area chair of Asian Conference on Computer Vision (ACCV)
- Yuliya Tarabalka: SPIE in Remote Sensing conference, ACIVS conference.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Pierre Alliez: associate editor of Computer Graphics Forum, Computer-Aided Geometric Design and Graphical Models. He is also a member of the editorial board of the CGAL open source project.
- Florent Lafarge: associate editor of The Visual Computer since 2015.
- Yuliya Tarabalka: associate editor for IEEE Transactions on image processing since 2018, Springer journal Sensing and Imaging since 2017, the International Journal of Computing since 2017 and journal Remote Sensing since 2017.

10.1.3.2. Reviewer - Reviewing Activities

- Pierre Alliez: reviewer for ACM Transactions on Graphics, ACM Siggraph conference, ACM Siggraph Asia conference, Computer Graphics Forum, CAGD, CAD, Symposium on Geometry Processing, Eurographics workshop on cultural heritage, Geometric Modeling and Processing, Shape Modeling International.
- Florent Lafarge: reviewer for the ISPRS journal of Remote Sensing and Photogrammetry.
- Yuliya Tarabalka: reviewer for the journals IEEE PAMI, IEEE TIP, IEEE TGRS, conferences IEEE IGARSS (student competition selection committee), ACIVS, SPIE, ECRS.

10.1.4. Invited Talks

- Pierre Alliez: invited talk at the Einstein Workshop on Geometry and Physics in Computer Graphics, organized in Berlin.

- Yuliya Tarabalka: keynote at the ACIVS 2018 conference (Advanced Concepts for Intelligent Vision Systems, Poitiers), TERRADATA workshop (Paris, 2018), conference "Challenges for imaging and modeling complex media and processes: The Earth's interior and earthquake rupture" (Sophia Antipolis, 2018). She also gave an invited tutorial on machine learning at IEEE IGARSS 2018 conference.

10.1.5. Leadership within the Scientific Community

Pierre Alliez is a member of the Steering Committees of the EUROGRAPHICS Symposium on Geometry Processing, EUROGRAPHICS Workshop on Graphics and Cultural Heritage and Executive Board Member for the Solid Modeling Association.

10.1.6. Scientific Expertise

- Pierre Alliez: reviewer for the European commission (two EU projects), ERC, evaluator for the French ANR, Belgium FNRS, Innovation Fund Denmark.
- Yuliya Tarabalka: expert evaluator for the ANR proposals and "Make Our Planet Great Again" CampusFrance proposals.

10.1.7. Research Administration

- Pierre Alliez: member of the scientific committee of the 3IA Côte d'Azur proposal.
- Yuliya Tarabalka: member of the scientific committee of the Academy 3 of the University Cote d'Azur since 2017.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Pierre Alliez and Florent Lafarge, 3D Meshes and Applications, 32h, M2, Ecole des Ponts ParisTech, France.

Master: Pierre Alliez and Florent Lafarge, Ingeniérie 3D, 21h, M2, university Nice Sophia Antipolis, France.

Master: Pierre Alliez and Florent Lafarge, Interpolation, 60h, M1, university Nice Sophia Antipolis, France.

Master: Pierre Alliez and Florent Lafarge, Mathématiques pour la géométrie, 30h, M1, EFREI, France.

Master: Florent Lafarge, Traitement d'images numériques, 6h, M2, university Nice Sophia Antipolis, France.

Master: Yuliya Tarabalka, Discrete inference and learning, 12h, M2 MVA, ENS Paris-Saclay & CentraleSupelec, France.

Master: Yuliya Tarabalka, Mathematical methods, 25h, MSc in data sciences and business analytics ESSEC-CS, CentraleSupelec, France.

Licence: Yuliya Tarabalka, Advanced algorithms, 28.5h, L2 Networks and Telecoms, IUT Nice Côte d'Azur, France.

10.2.2. Supervision

PhD defended:

Jean-Dominique Favreau, Compact image vectorization by stochastic approaches, Université Côte d'Azur, defended March 15 [11], Florent Lafarge and Adrien Bousseau.

PhDs in progress:

Hao Fang, Scale-space understanding in urban scenes, since March 2016, Florent Lafarge.

Jean-Philippe Bauchet, City modelling from high resolution satellite images, since October 2016, Florent Lafarge.

Lionel Matteo: From Pleiades images to very high resolution topography in complex zones, since September 2017, Yuliya Tarabalka and Isabelle Manighetti.

Onur Tasar, Using deep learning approaches to devise an efficient representation for large-scale satellite images, since October 2017, Yuliya Tarabalka and Pierre Alliez.

Nicolas Girard, How to structure satellite data, since November 2017, Yuliya Tarabalka.

Flora Quilichini, Geometry Compression, since January 2018, Pierre Alliez and Guillaume Lavoué (INSA Lyon).

Muxingzi Li, Image-based 3D reconstruction of indoor environments, since February 2018, Florent Lafarge and Renaud Marlet (ENPC).

Vincent Vadez, Geometric simplification of satellites for thermal simulation, since August 2018, Pierre Alliez.

10.2.3. Juries

Pierre Alliez:

- Thesis committee and president: Arnaud Bletterer (I3S Sophia Antipolis).
- HDR committee and president: Stefanie Wuhrer (Inria Grenoble).
- Comité de suivi doctoral: Simon Rodriguez (Inria Sophia Antipolis).
- Comité de suivi doctoral: Julien Renaudeau (Schlumberger).
- Comité de suivi doctoral: Oussama Ennafii (IGN).

Florent Lafarge:

- Thesis reviewer: Hassan Bouchiba (Ecole des Mines Paristech).

Yuliya Tarabalka:

- Thesis committee: Hariprasad Kannan (University Paris-Saclay), Nicolas Audebert (University Bretagne Sud and ONERA).
- Thesis reviewer: Praveer Singh (University Paris-Est), Lloyd Windrim (University of Sydney).

10.3. Popularization

Yuliya Tarabalka gave a seminar for the academic-industrial event "Les rendez-vous Université Côte d'Azur-Entreprise", May 2018.

10.3.1. Internal or external Inria responsibilities

Pierre Alliez is head of science of the Inria Sophia Antipolis Center since September 2018, and member of the Inria evaluation committee.

10.3.2. Interventions

- Pierre Alliez gave a seminar and demo for the "fête de la science", October 7th.

<h1 style="text-align:center; color:red;">TYREX Project-Team</h1>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

- P. Genevès is member of the Organizing Committee of BDA 2019.
- A. Bonifati is a permanent member of ICDT Council (The International Conference on Database Theory).

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- A. Bonifati is Co-chair of the SIGMOD 2019 Workshops.

8.1.2.2. Member of the Conference Program Committees

- P. Genevès has been program committee member for the 27th International Joint Conference on Artificial Intelligence (IJCAI'18) and for the 23rd European Conference on Artificial Intelligence (ECAI'18) and for the 18th ACM Symposium on Document Engineering (DocEng'18).
- A. Bonifati has been program committee member of VLDB 2019, AAAI 2019, ICDE 2019, EDBT 2019, SIGMOD 2019 (senior PC member), PODS 2019, DEBS 2019, ICDT 2020.

8.1.2.3. Reviewer

- P. Genevès has been reviewer for the ICALP 2018, CHI 2018, and BDA 2018 conferences.
- C. Roisin has been reviewer for the 18th ACM Symposium on Document Engineering (DocEng'18).

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- A. Bonifati is Associate Editor of ACM Trans. on Database Systems.
- A. Bonifati is Associate Editor of the VLDB Journal.

8.1.3.2. Reviewer - Reviewing Activities

- P. Genevès has been reviewer for the Sensors journal.

8.1.4. Invited Talks

- P. Genevès gave an invited talk for the Data Science in the Alps Workshop (March 20th, 2018): "On the Prediction of At-Risk Patient Profiles with Big Prescription Data"
- P. Genevès gave an invited seminar at the University of Fribourg (March 27th, 2018): "Queries for Trees and Graphs: Static Analysis and Code Synthesis"

8.1.5. Scientific Expertise

- C. Roisin has been designed as expert for the reviewing of a research proposal of the American University of Beirut.
- P. Genevès has been a scientific expert at ANRT for the CIFRE funding process.

8.1.6. Research Administration

- P. Genevès is responsible for the Computer Science Specialty at the Doctoral School MSTII (ED 217)

- P. Genevès has been Member of a Hiring Committee at IRIF.
- C. Roisin is a member of the CNU (Conseil National des Universités).
- C. Roisin is a member of the Inria Grenoble Inria-Hub committee.
- N. Layaïda is a member of the experts pool (selection committee) of the minalogic competitive cluster.
- A. Bonifati and N. Layaïda are members of the Scientific Board of Digital League, the digital cluster of Auvergne-Rhone-Alpes.
- A. Bonifati is coordinator of the theme « Masses de Données » at Liris and at « Fédération d'Informatique de Lyon » (FIL).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Licence : C. Roisin, Programmation C, 12h eq TD, L2, IUT2, Univ. Grenoble-Alpes
- Licence : C. Roisin, Architecture des réseaux, 112h eq TD, L1, IUT2, Univ. Grenoble-Alpes
- Licence : C. Roisin, Services réseaux, 22h eq TD, L2, IUT2, Univ. Grenoble-Alpes
- Licence : C. Roisin, Introduction système Linux, 21h eq TD, L1, IUT2, Univ. Grenoble-Alpes
- Licence : C. Roisin, Système et réseaux, 14h eq TD, L3, IUT2, Univ. Grenoble-Alpes
- Licence : C. Roisin, Tutorat pédagogique de 4 apprentis, 20h eq TD, L3, IUT2, Univ. Grenoble-Alpes
- Licence : C. Roisin, Suivi pédagogique de 20 étudiants (responsable de la Licence Professionnelle MI-ASSR), 13h eq TD, L1, IUT2, Univ. Grenoble-Alpes
- Licence : N. Gesbert, 'Logique pour l'informatique', 45 h eq TD, L3, Grenoble INP
- Licence : N. Gesbert, 'Bases de la programmation impérative', 30 h eq TD, L3, Grenoble INP
- Master : N. Gesbert, academic tutorship of an apprentice, 10 h eq TD, M1, Grenoble INP
- Master : N. Gesbert, 'Fondements logiques pour l'informatique', 16 h 30 eq TD, M1, Grenoble INP
- Master : N. Gesbert, 'Construction d'applications Web', 21 h eq TD, M1, Grenoble INP
- Master : N. Gesbert, 'Analyse, conception et validation de logiciels', 30 h eq TD, M1, Grenoble INP
- N. Gesbert is responsible of the L3-level course 'logique pour l'informatique' (25 apprentices) and of the M1-level course 'construction d'applications Web' (72 students).
- P. Genevès is responsible and teacher in the the M2-level course 'Semantic Web: from XML to OWL' of the MOSIG program at UGA (36h)
- P. Genevès is responsible and teacher in the the M2-level course 'Accès à l'information: du web des données au web sémantique' of the ENSIMAG ISI 3A program at Grenoble-INP (30h)

8.2.2. Supervision

- PhD: Louis Jachiet, On the foundations for the compilation of web data queries: optimization and distributed evaluation of SPARQL, University Grenoble Alpes. PhD Thesis defended on September 15th, 2018. Co-supervised by Nabil Layaïda and Pierre Genevès.
- PhD in progress: Muideen Lawal, Cost models for optimizing compilers based on mu-terms, PhD started in October 2017, supervised by Pierre Genevès.
- PhD in progress: Raouf Kerkouche, Privacy-preserving predictive analytics with big prescription data, PhD started in October 2017, co-supervised by Pierre Genevès and Claude Castelluccia.
- PhD in progress: Fateh Boulmaiz, Distributed representations of large-scale graphs, PhD started in November 2017, co-supervised by Pierre Genevès and Nabil Layaïda.

- PhD in progress: Sarah Chlyah, Algebraic foundations for the synthesis of optimized distributed code, PhD started in March 2018, supervised by Pierre Genevès.
- PhD in progress: Amela Fejza, On the extended algebraic representations for analytical workloads, PhD started in October 2018, supervised by Pierre Genevès.

8.3. Popularization

- N. Layaïda contributed to the special édition of the newspaper : Le Dauphiné libéré des enfants – C'est quoi le numérique ? – n°14 November-December 2018.
- P. Genevès presented the Tyrex team activities in 180 seconds in a dissemination event organized at Inria Montbonnot in June 2018.

8.3.1. Creation of media or tools for science outreach

- T. Michel built a mobile application for the Inria public showroom, Espace Login, called Login'AR. The application was designed to showcase the combination of indoor positioning with Augmented Reality capabilities. The application is now part of the permanent Login public exhibition. The application was developed with the help of four Grenoble INP interns (A. Convert, A. Fortecof, G. Montano and S.J. Tourangeau).

VALDA Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Luc Segoufin, chair of the steering committee of the conference series *Highlights of Logic, Games and Automata*

8.1.1.2. Member of the Organizing Committees

- Luc Segoufin and Pierre Senellart, co-organizers of École de Printemps en Informatique Théorique (EPIT) 2019
- Pierre Senellart, co-organizer of ACM-ICPC Southwestern Europe 2018 competition

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- Pierre Senellart, RoD (Reasoning on Data) workshop at The Web Conference 2018 (co-chair)

8.1.2.2. Member of the Conference Program Committees

- Camille Bourgaux, AAAI 2019
- Olivier Cappé, COLT 2018, ALT 2019
- Pierre Senellart, BDA 2018, PODS 2019
- Michaël Thomazo, IJCAI 2018, AAAI 2019

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Olivier Cappé, associate editor, *Annals of the Institute of Statistical Mathematics*

8.1.3.2. Reviewer - Reviewing Activities

- Pierre Senellart, *Transactions on Database Systems*, *VLDB Journal*

8.1.4. Invited Talks

- Pierre Senellart, keynote at Theory and Practice of Provenance (TaPP), London, United Kingdom
- Pierre Senellart, keynote at TempWeb workshop, The Web Conference, Lyon, France
- Pierre Senellart, LORIA Colloquium, Nancy, France

8.1.5. Leadership within the Scientific Community

- Serge Abiteboul is a member of the French Academy of Sciences, of the Academia Europa, and of the scientific council of the Société Informatique de France.
- Pierre Senellart is a member of the steering committee of BDA, the French scientific community on data management.

8.1.6. Scientific Expertise

- Pierre Senellart, FWO

8.1.7. Research Administration

- Olivier Cappé is a scientific deputy director of CNRS division of Information Sciences and Technologies (INS2I).
- Luc Segoufin is a member of the CNHSCT of Inria.
- Pierre Senellart is a member of the board of section 6 of the National Committee for Scientific Research.
- Pierre Senellart is deputy director of the DI ENS laboratory, joint between ENS, CNRS, and Inria.
- Pierre Senellart is a member of the board of the DIM RFSI (Réseau Francilien en Sciences Informatiques).
- Pierre Senellart is a member of the scientific council of PGMO (Programme Gaspard Monge).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence: Pierre Senellart, *Databases*, 32 heqTD, L3, École normale supérieure

Licence: Pierre Senellart, *Algorithms*, 18 heqTD, L3, École normale supérieure

Licence: Michaël Thomazo, *Formal languages*, 22 heqTD, L3, Télécom ParisTech

Master: Serge Abiteboul & Pierre Senellart, *Web data management*, 36 heqTD, M2, MPRI

Pierre Senellart has various teaching responsibilities (L3 internships, M2 administration, tutoring, entrance competition) at ENS.

8.2.2. Supervision

PhD: Miyoung Han, *Reinforcement learning approaches in dynamic environments*, Télécom ParisTech, 19 July 2018, Pierre Senellart

PhD: Alexandre Vigny, *Query enumeration and nowhere dense graphs*, Université Paris-Diderot, 27 September 2018, Arnaud Durand & Luc Segoufin

PhD: Mikaël Monet, *Combined complexity of probabilistic query evaluation*, Université Paris-Saclay, 12 October 2018, Antoine Amarilli & Pierre Senellart

PhD: Quentin Lobbé, *Archives, fragments Web et diasporas. Pour une exploration désagrégée de corpus d'archives Web liées aux représentations en ligne des diasporas.* Université Paris-Saclay, 9 November 2018, Dana Diminescu & Pierre Senellart

PhD in progress: Julien Grange, *Graph properties: order and arithmetic in predicate logics*, started in September 2017, Luc Segoufin

PhD in progress: Karima Rafes, *Le Linked Data à l'université : la plateforme LinkedWiki*, defense planned in January 2019, Serge Abiteboul & Sarah Cohen-Boulakia

PhD in progress: Yann Ramusat, *Provenance-based routing in probabilistic graphs*, started in September 2018, Silviu Maniu & Pierre Senellart

PhD in progess: Yoan Russac, *Sequential methods for robust decision making*, started in December 2018, Olivier Cappé

8.2.3. Juries

- PhD Frederik Harwarth, June 2018, Humbold University, Luc Segoufin (reviewer)
- PhD Debabrota Basu, October 2018, National University of Singapore, Olivier Cappé (reviewer)
- PhD Govind, December 2018, Université Caen–Normandie, Pierre Senellart (president)
- PhD Ngurah Agus Sanjaya Er, December 2018, Télécom ParisTech, Pierre Senellart (president)

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

Serge Abiteboul is the president of the strategic committee of the Blaise Pascal foundation for scientific mediation.

8.3.2. Articles and contents

Serge Abiteboul published *Le bot qui murmurait à l'oreille de la vieille dame* at the *Le Pommier* éditions, a collection of short stories on the digital world, accompanied with scientific and technical discussions.

Serge Abiteboul writes regular columns on popularization of computer science in La Recherche and Le Monde (Économie).

8.3.3. Education

Pierre Senellart participated to a week-long meeting of teachers in *classes préparatoires* in Lumini in May 2018 to discuss the future of computer science education and to give an introduction to database research.

WILLOW Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- I. Laptev was program co-chair of IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018.

10.1.1.2. Member of the Organizing Committees

- G. Varol and Y. Hasson are co-organizers of "Women in Computer Vision Workshop" at European Conference on Computer Vision (ECCV), 2018.
- I. Laptev and J. Sivic were co-organizers of "Fine-grained instructional video understanding workshop" at IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Area chairs

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018 (J. Sivic).
- European Conference on Computer Vision (ECCV), 2018 (I. Laptev, J. Sivic).

10.1.2.2. Member of the Conference Program Committees / reviewer

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018 (J.-B. Alayrac, M. Oquab, R. Rezende, I. Rocco, G. Varol).
- European Conference on Computer Vision (ECCV), 2018 (A. Miech, G. Varol, I. Rocco, S. Zagaryuko).
- Neural Information Processing Systems (NIPS), 2018 (J. Sivic).
- Asian Conference on Computer Vision (ACCV), 2018 (G. Varol).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- International Journal of Computer Vision (I. Laptev, J. Ponce, J. Sivic).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (I. Laptev, J. Sivic).
- Foundations and Trends in Computer Graphics and Vision (J. Ponce).

10.1.3.2. Reviewer - Reviewing Activities

- International Journal of Computer Vision (G. Cheron, M. Trager, G. Varol).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (J.-B. Alayrac, G. Cheron, M. Trager, G. Varol).
- IEEE Transactions on Circuits and Systems for Video Technology (G. Varol).

10.1.4. Other

- J. Sivic is senior fellow of the Neural Computation and Adaptive Perception program of the Canadian Institute of Advanced Research.

10.1.5. Invited Talks

- I. Laptev, Keynote, ICCVG, Warsaw, September, 2018.

- I. Laptev, Invited talk, EPIC Workshop in conjunction with ECCV'18, Munich, September 2018.
- I. Laptev, Tutorial, BMVC'18, Newcastle, September 2018.
- I. Laptev, Invited talk, Workshop on Brave New Ideas for Video Understanding, in conjunction with CVPR'18, Salt Lake City, June 2018.
- I. Laptev, Invited talk, Journee AI, SAFRAN, Paris, June 2018.
- I. Laptev, Invited talk, Integrating Vision and Language, Tartu, March 2018.
- I. Laptev, Keynote, 36th Annual Swedish Symposium on Image Analysis, Stockholm, March 2018.
- A. Miech, Invited talk, LSCP-ENS seminar, Paris, March 2018.
- A. Miech, Invited talk, Google, Paris, July 2018.
- A. Miech, Invited talk, Google, Mountain View, July 2018.
- A. Miech, Invited talk, Paris ML Meetup, University of Bristol Computer Vision Seminar, Bristol, UK, November 2018.
- J. Ponce, Artificial Intelligence, French-American Joint Committee Meeting on Science and Technology, College de France, March 9, 2018.
- J. Ponce, Weakly supervised structure discovery in images and videos, Intelligent robots: autonomy and vision, NYU Abu Dhabi, March 13, 2018.
- J. Ponce, From vision and robotics to artificial intelligence, Robotics AI: Data science vs motion intelligence symposium co-organized by the French and German Academies of Sciences, Sep. 5, 2018.
- J. Ponce, Shape, contours, cameras and eyes, Workshop in honor of Jan Koenderink, UC Berkeley, UC berkeley, Oct. 24.
- J. Ponce, Weakly supervised structure discovery in images and videos, NYU Tandon School of Engineering, New York, Nov. 2, 2018.
- J. Ponce, Computer vision and visual recognition: historical perspective, new results and challenges, University of Zagreb, Zagreb, Croatia, Nov. 9, 2018.
- J. Sivic, Invited talk, Paris Sciences et Data, PSL, 02/2018.
- J. Sivic, Invited talk, AIME@CZ - Czech workshop on applied mathematics in engineering, Czech Technical University, 02/2018.
- J. Sivic, Invited talk, Deep Learning Workshop, CVPR 2018, Salt Lake City, June 2018.
- J. Sivic, Invited talk, Landmark Recognition Workshop, CVPR 2018, Salt Lake City, June 2018.
- J. Sivic, Seminar, UC Berkeley, June 2018.
- J. Sivic, Invited talk, Workshop on YouTube-8M Large-Scale Video Understanding, ECCV 2018, Munich, September 2018.
- J. Sivic, Invited talk, Prague Informatics Seminar, Charles University, Prague, April 2018.
- G. Varol, Invited talk, MPI for Informatics, Saarbrucken, Germany 11/2018.
- G. Varol, Invited talk, Istanbul Technical University, Istanbul, Turkey 10/2018.
- G. Varol, Invited talk, Deep Learning Meetup at Station F, Paris, France 09/2018.
- G. Varol, Invited talk, BNP Paribas - Prairie Summer School, Paris, France 08/2018.
- G. Varol, Invited talk, CTU Center for Machine Perception, Prague, Czech Republic 06/2018.
- G. Varol, Invited talk, MPI for Intelligent Systems, Tubingen, Germany 04/2018.

10.1.6. Leadership within the Scientific Community

- Member of the advisory board for the IBM Watson AI Xprize (J. Ponce).
- Member of the steering committee of France AI (J. Ponce).
- Member, advisory board, Computer Vision Foundation (J. Sivic).

10.1.7. Scientific Expertise

- J. Ponce, coordinator of the AI theme for the joint French-American Committee on Science and Technology, 2018-.

10.1.8. Research Administration

- Member, Bureau du comité des projets, Inria, Paris (J. Ponce)
- Member, Scientific academic council, PSL Research University (J. Ponce)
- Member, Research representative committee, PSL Research University (J. Ponce).
- Member of Inria Commission de developpement technologique (CDT), 2012-2018 (J. Sivic).
- Member of the Hiring Committe for the tenure track position at CentraleSupelec (I. Laptev).
- Member of the Hiring Committee for Professor of Computer Vision at CentraleSupelec (I. Laptev).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master : M. Aubry, K. Alahari, I. Laptev and J. Sivic "Introduction to computer vision", M1, Ecole normale superieure, 36h.
- Master : I. Laptev, J. Ponce and J. Sivic (together with C. Schmid, Inria Grenoble), "Object recognition and computer vision", M2, Ecole normale superieure, and MVA, Ecole normale superieure de Cachan, 36h.
- J. Ponce co-organized the PRAIRIE AI Summer School, Grenoble, 2018, which brought together 200 participants representing 44 different nationalities, and selected from 700 applications, with 60% students, 15% academics , and 25% industrials. 25% of these participants were women.

10.2.2. Supervision

PhD : Jean-Baptiste Alayrac, "Structured Learning from Videos and Language", graduated in September 2018, I. Laptev, J. Sivic and S. Lacoste-Julien (Inria SIERRA / U. Montreal).

PhD : Guilhem Cheron, "Structured modeling and recognition of human actions in video", graduated in Dec 2018, I. Laptev and C. Schmid.

PhD : Maxime Oquab, "Convolutional neural networks: towards less supervision for visual recognition", defended on 26 January 2018, L. Bottou (Facebook AI Research), I. Laptev and J. Sivic.

PhD : Matthew Trager, "Cameras, Shapes, and Contours: Geometric Models in Computer Vision", graduated in 2018, J. Ponce and M. Hebert (CMU).

PhD : Tuang Hung VU, "Learning visual models for person detection and action prediction", graduated in 2018 , I. Laptev.

PhD in progress : Vo Van Huy, started in Dec 2018, J. Ponce.

PhD in progress : Robin Strudel, "Learning and transferring complex robot skills from human demonstrations", started in Oct 2018, I. Laptev, C. Schmid and J. Sivic.

PhD in progress : Yann Labbe, "Generalizing robotic sensorimotor skills to new tasks and environments", started in Oct 2018, J. Sivic and I. Laptev.

PhD in progress : Thomas Eboli, started in Oct 2017, J. Ponce.

PhD in progress : Zongmian Li, "Learning to manipulate objects from instructional videos", started in Oct 2017, I. Laptev, J. Sivic and N. Mansard (LAAS/CNRS, Toulouse).

PhD in progress : Yana Hasson, started in Nov 2017, I. Laptev and C. Schmid.

PhD in progress : Dmitry Zhukov, "Learning from instruction videos for personal assistants", started in Oct 2017, I. Laptev and J. Sivic.

PhD in progress : Ignacio Rocco, "Estimating correspondence between images via convolutional neural networks", started in Jan 2017, J. Sivic, R. Arandjelovic (Google DeepMind).

PhD in progress : Antoine Miech, "Understanding long-term temporal structure of videos", started in Oct 2016, I. Laptev, J. Sivic, P. Bojanowski (Facebook AI Research).

PhD in progress : Gul Varol, "Deep learning methods for video interpretation", started in Oct 2015, I. Laptev, C. Schmid.

PhD in progress : Julia Peyre, "Learning to reason about scenes from images and language", started in Oct 2015, C. Schmid, I. Laptev, J. Sivic.

PhD in progress : Theophile Dalens, "Learning to analyze and reconstruct architectural scenes", starting in Jan 2015, M. Aubry and J. Sivic.

10.2.3. Juries

PhD thesis committee:

- Taylor MORDAN, Sorbonne Universite, France, 2018, (J. Sivic, rapporteur).
- Stephane LATHUILIERE, Universite Grenoble Alpes, France, 2018, (J. Sivic, rapporteur).
- Tuan-Hung VU, PSL University, France, 2018, (J. Sivic, examinateur).
- Siddhartha Chandra, CentraleSupelec, France, 2018, (I. Laptev examinateur).
- Sergey Zagoruyko, l?Universite Paris-Est, France, 2018, (I. Laptev examinateur).
- Joris Guerin, Arts et Metiers ParisTech, France, 2018, (I. Laptev examinateur).
- Guilhem Cheron, PSL, France, 2018, (J. Ponce examinateur).
- Pavel Tokmakov, Universite Grenoble Alpes, France, 2018, (J. Ponce examinateur).

10.3. Popularization

10.3.1. Articles and contents

- J. Ponce was the subject of an article in the photography magazine Polka. He was also interviewed by France Culture, Le Monde, Paris-Match, Québec Science, and Science et Vie.
- J. Ponce was interviewed by the Académie des Sciences working group on Artificial Intelligence on Oct. 2, 2018.

10.3.2. Interventions

- J. Ponce participated in round tables about AI at the France Culture Forum in Paris, March 1, 2018, at the BNP Parisbas summer school Aug. 23, 2018, at the French embassy in Berlin on Nov. 6, 2018, at the Erasme-Descartes conference in Paris on Nov. 15, 2018, and at the AI summit in New York City on Dec. 6, 2018.
- J. Ponce gave general audience lectures at the X-IA meeting in Palaiseau, Oct. 8, 2018 and at the Institut français de Croatie in Zagreb, Croatia, Nov. 9, 2018.

10.3.3. Creation of media or tools for science outreach

- I. Laptev, Y. Hasson, S. Allayen, T. Eboli, I. Kalyevath, Y. Labbe, R. Strudel, G. Varol, D. Zhukov, Presentation of computer vision for high-school students, Inria, December 2018.

WIMMICS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair
Elena Cabrio was:

- Co-chair of CLiC-it: Fifth Italian Conference on Computational Linguistics, Turin, December.
- Challenge co-chair of The Web Conference (WWW), Lyon, France, April 23-27.

Catherine Faron Zucker was Program Chair together with Chiara Gandini of the 21st International Conference on Knowledge Engineering (EKAW 2018), November, Nancy.

Fabien Gandon was general co-chair of The Web Conference in Lyon, April, 2018.

Serena Villata was:

- Program Chair together with Eduardo Ferme of the 17th edition of the International Workshop on Non-Monotonic Reasoning (NMR), Tempe (Arizona), October,
- Chair together with Filip Radlinski of the "Poster and Demo" session of the Web Conference (WWW), Lyon, France, April,
- Chair together with Harko Verhagen, Mehdi Dastani and Jurgen Dix of the Dagstuhl Seminar on Normative Multi-Agent Systems NorMAS, April [67]

10.1.1.2. Member of the Organizing Committees
Michel Buffa organized the *WebAudio Plugins* Workshop at the Web Audio conference, Berlin, September 19-21.

Fabien Gandon was co-organizer of the Joint Day Inria Ministry of Culture 22/11/2018.

Alain Giboin was member of the organization committee of HCSE.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees
Olivier Corby was co-chair of the poster and demo track at EKAW, together with Philipp Cimiano.

Isabelle Mirbel was co-chair of the Doctoral Consortium at IEEE International Conference on Research Challenges in Information Science (RCIS).

10.1.2.2. Member of the Conference Program Committees
Michel Buffa: WebAudio Conference, ISWC.

Elena Cabrio: Association for Computational Linguistics conference (ACL), EMNLP, Extended Semantic Web Conference (ESWC), International Semantic Web Conference (ISWC), AAAI Conference on Artificial Intelligence.

Olivier Corby: The Web Conference 2019, IC, Digital Health, EKAW, ICCS, ISWC, QuWeDa.

Catherine Faron Zucker: The Web Conference (WWW) 2019, ICCS, ISWC, Web Science, ESWC, IJCAI, Semantics, Web Audio Conference WAC, workshop WWW Educational Knowledge Management EKM, workshop WWW Reasoning on Data RoD, EGC 2019, EIAH, IC, CNIA.

Fabien Gandon: The Web Conference (WWW), IJCAI, ISWC (Blue Sky), EGC, SemWeb.Pro.

Alain Giboin: ISWC, VOILA Workshop (at ISWC), IC.

Isabelle Mirbel: International Conference on Advanced Information Systems Engineering (CAISE).

Oscar Rodríguez Rocha: KEOD, KSE, EKAW, IJCAI, ECAI, Semantics.

Andrea Tettamanzi: AAAI-19, AAMAS, ACM (SWA Track), EGC 2019, EKAW, PPSN, TheWebConf 2019, Web Intelligence, WILF, WIVACE. He was also senior PC Member of IJCAI/ECAI and got a mention as distinguished PC Member.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards
Catherine Faron Zucker: Revue d'Intelligence Artificielle.

Isabelle Mirbel: Ingénierie des Systèmes d'Information.

10.1.3.2. Reviewer - Reviewing Activities
Elena Cabrio: Journal Argument and Computation.

Catherine Faron Zucker: The Journal of Web Science, Journal of Web Semantics (JWS), International Journal on Semantic Web and Information Systems (IJSWIS), IEEE Transactions on Computational Social Systems (TCSS), IEEE's Transactions on Learning Technologies (TLT), Multimodal Technologies and Interaction (MTI), Ingénierie des systèmes d'information (ISI).

Andrea Tettamanzi: Semantic Web Journal, IEEE Transactions on Evolutionary Computation.

Serena Villata: Journal of Logic and Computation, Argument & Computation, Artificial Intelligence.

10.1.4. Invited Talks

Michel Buffa: Presentation of the ANR WASABI project and of WebAudio technologies at the "Journée Ministère de la Culture - Inria" on 22/11 as part of the agreement between these two institutions, at the BnF.

Presentation of the WebAudio, WebMidi and WebAssembly W3C standards. Developer's Day of the TPAC conference in Lyon, October, Lyon, France.

AZKAR Project, post-mortem presentation *Remote museum visits by an intelligent mobile robot*, during Mobility session: Autonomous and Connected Vehicle and Smart Cities, RoboPACA conference, Sophia Antipolis, France.

Elena Cabrio: *Argument Mining for Machine Translation*, 13th Machine Translation Marathon, Prague, September 6th.

From Linguistics to Computation across the Mountains to the Sea, FBK PhD Day, February 2nd, Trento (Italy).

Olivier Corby: *LDScript : a Linked Data Script Language*, Inria Montpellier, March 21st.

Semantic Web of Linked Data, Inria Rennes, April 5th.

Fabien Gandon: *Web Science, Artificial Intelligence and Intelligence Augmentation*, Invited Talk at Dagstuhl Perspectives Workshop 18262 - 10 Years of Web Science: Closing The Loop, 27/06/2018.

The revolutions of the Web planet, Invited talks I3S General Assembly, Nice, 5/07/2018.

Adding Missing Links to bridge Natural and Artificial Intelligence on the Web, Invited talks at University of Queensland, Brisbane, 08/08/2018.

A Web linking all kinds of intelligence, Invited talks at « Przemiany Festival », Copernicus Science Centre, French Embassy in Warsaw, 15/09/2018.

Towards a Web linking all kinds of intelligence, Invited Talk at SophI.A Summit, 07/11/2018.

Andrea Tettamanzi: Invited talk on *Guess What You Don't Know: Towards an Evolutionary Epistemology of Ontology Learning* at the 21st International Conference on Knowledge Engineering and Knowledge Management, Nancy, France, November 14th.

Conference on *Unsupervised Learning* at Amadeus, Sophia Antipolis, March 26th.

Tutorial talk on *Uncertainty in the Semantic Web: The case of axiom scoring* at the 12th International Conference on Scalable Uncertainty Management, Milan, Italy, October 3rd.

Conference on *Unsupervised Learning* at Amadeus, Sophia Antipolis, October 19th.

Serena Villata has been invited to deliver an Early Career Spotlight Talk at the main conference in Artificial Intelligence (IJCAI), namely the 27th International Joint Conference on Artificial Intelligence [0], in July in Stockholm (Sweden). The topic of this invited Early Career Spotlight Talk, *Artificial Argumentation for Humans* is detailed in the related publication [62].

10.1.5. Leadership within the Scientific Community

Fabien Gandon is:

- member of IW3C2 steering committee for The Web Conference (WWW series).
- member of SWSA steering committee for the ISWC conference (as general chair of ISWC 2019).
- member of ESWC conference steering committee.
- member of Web Science Trust Network

10.1.6. Scientific Expertise

Olivier Corby was reviewer for two project submissions at Université Gaston Berger, Senegal.
Catherine Faron Zucker:

- is the scientific referent of the Inria Learning Lab,
- was reviewer for the LabCom V3 2018 of the French Agence Nationale de la Recherche (ANR),
- was reviewer for the ARC6 call for projects of Auvergne Rhône Alpes region,
- was reviewer for the RIN call for projects of Normandie region.

Alain Giboin was reviewer for the Generic Call for Projects of the French Agence Nationale de la Recherche (ANR).

10.1.7. Research Administration

Olivier Corby is member of the scientific board of Université Côte d'Azur RISE academy (Network, Information, Digital Society) and member of the Scientific and Pedagogical committee of the Digital Systems for Humans, DS4H, graduate school at UCA.

Catherine Faron Zucker:

- is General Treasurer of the French Society for Artificial Intelligence (AFIA).
- was leading the steering committee of the AFIA college on Knowledge Engineering until June 2018.
- was member of the 2018 recruitment committee for young graduate scientists (CRCN) at Inria Lille.
- is member of the permanent commission of human resources (CPRH) of Université Nice Sophia Antipolis, section CNU 27

Fabien Gandon is:

- Vice-head of science for Inria Sophia Antipolis - Méditerranée (Délégué Scientifique Adjoint, DSA)
- Advisory Committee representative of Inria at the World-Wide Web Consortium (W3C)
- Director of the joint research Laboratory Qwant-Inria
- Representative of Inria in the Web Science Trust Network
- Leader of the research convention with the French Ministry of Culture-Inria

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[0]https://www.ijcai-18.org/early-career-talks/

Alain Giboin:

- was member of the scientific committee of the IDEX Jedi Academy 5 "Homme, Idées et Milieux".
- was co-facilitator of the Idex Jedi Academy 5 initiative "Humanités numériques" (with Arnaud Zucker, CEPAM).
- is member of the scientific committee of MSHS Axis 2 "TIC, Usages et Communautés".
- is co-facilitator of the initiative "Artefacts et Coordination" of MSHS Axis 2.
- served as scientific correspondent for Inria Sophia Antipolis of COERLE (Inria Comité Opérationnel d'Evaluation des Risques Légaux et Ethiques), in tandem with the legal correspondent Nadège Camelio-Laurent.

Isabelle Mirbel was Vice-dean of the Science Faculty at University Nice-Sophia Antipolis until July 2018.

"Les lundis de l'ergonomie" is a cycle of seminars on Human Computer Interaction (HCI) and UX Design. Organized by Emilie Palagi and Louise Chaussade, this multidisciplinary series of talks attract academic and professional profiles but also anyone interested in social science's approach to digital matters. This year, presentations took place with Naji Bouchiba, Guillene Ribière, Alessandro Trezzi, Manuel Boutet, Marc Relieu. The slides and some video records are available online [0].

10.1.8. Editorial Activities

Catherine Faron Zucker is among the scientific editors of the proceedings of the 21st International Conference on Knowledge Engineering and Knowledge Management, Nov 2018, Nancy, France. Lecture Notes in Computer Science 11313, Springer [65].

Serena Villata is among the authors of two editorial activities:

- Qingliang Chen, Paolo Torroni, Serena Villata: Preface. Fundam. Inform. 158(1-3): v-vii [13],
- Ugo Pagallo, Monica Palmirani, Pompeu Casanovas, Giovanni Sartor, Serena Villata: AI Approaches to the Complexity of Legal Systems - AICOL International Workshops 2015-2017: AICOL-VI@JURIX 2015, AICOL-VII@EKAW 2016, AICOL-VIII@JURIX 2016, AICOL-IX@ICAIL 2017, and AICOL-X@JURIX 2017, Revised Selected Papers. Lecture Notes in Computer Science 10791, Springer [66].

10.1.9. Standardization

- Michel Buffa is member of the WebAudio W3C working group and is Academic Representative of Université Côte d'Azur at W3C (AC Rep).
- Fabien Gandon is Advisory Committee representative of Inria at the World-Wide Web Consortium (W3C)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Michel Buffa is director of MIAGE Nice-Sophia Antipolis: Licence, Master 1 and four Master 2 degrees, about 350 students [0].

Elena Cabrio is responsible of the internship program, 40 hours, (L3 and M2 MIAGE), University of Nice-Sophia Antipolis (UNS), France.

Catherine Faron Zucker is responsible of the Web option of the 5th year of Polytech Nice Sophia engineering school (Master degree) and is in charge of continuous training for the computer science department of Polytech Nice Sophia Antipolis.

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[0] https://lundisergo.hypotheses.org/
[0] http://miage.unice.fr

Andrea Tettamanzi has managed the 3nd year of the *Licence* (Bachelor of Science) in Business Informatics (MIAGE) at the UFR Science of the University of Nice-Sophia Antipolis (UNS),

License: Elena Cabrio, Web Server Programming, 45 hours, (L1 INFO), UNS, France.

License: Elena Cabrio, Introduction to the Web, 40 hours, (L2MASS), UNS, France.

Licence: Michel Buffa, JavaScript: L3 Miage (40h)

License: Elena Cabrio, Internship supervision, 18 hours, (L3MIAGE), UNS, France.

Licence: Isabelle Mirbel, Web programming (Persistency), 36h, L3, UNS, France.

Licence: Andrea Tettamanzi, Algorithmics – Object Oriented Programmaing – Python, 50 h, L2, UNS, France.

Licence: Andrea Tettamanzi, Advanced client side Web Programming, 39 h, L2, UNS, France.

Licence: Andrea Tettamanzi, Web, 30 h, L3, UNS, France.

Master: Elena Cabrio, WebScience, 10 hours, (M2IFI), UNS, France.

Master: Elena Cabrio, Computational Linguistics, 30 hours, (Lettres), UNS, France.

Master: Elena Cabrio, Natural Language Processing for AI, 24 hours, (M1 INFO), UNS, France.

Master: Olivier Corby, Catherine Faron Zucker, Oscar Rodríguez Rocha, Semantic Web of Data, 65h, M2, UNS, France.

Master: Olivier Corby, Semantic Web, 3H, M2, University of Montpellier, France.

Master: Catherine Faron Zucker, Oscar Rodríguez Rocha, Andrea Tettamanzi, Knowledge Engineering, 35h, M2, UNS, France.

Master: Catherine Faron Zucker, Oscar Rodríguez Rocha, Web Languages, 35h, M1, UNS, France.

Master: Fabien Gandon, Web Science, 3 h, M1, UNS, France.

Master: Fabien Gandon, Integrating Semantic Web technologies in Data Science developments, 2*28 h, M2, DSTI, France.

Master/PhD: Semantic Web and Linked Data Graphs, 3 h, Winter School on Complex Networks 2018 (5th edition), France.

Master: Alain Giboin, Human-Computer-Interaction Design and Evaluation, 21h, M2, UNS.

Master: Alain Giboin, Human-Computer-Interaction Adaptation of User Interfaces, 4h, M2, UNS.

Master: Alain Giboin, Task and Activity Analysis for HCI design and evaluation, 6h, M2 Sociology and Ergonomics of Digital Technologies, UNS.

Master: Alain Giboin, HCI Design and Evaluation, 10h, M2 Sociology and Ergonomics of Digital Technologies, UNS.

Master: Alain Giboin, Digital Strategy (formerly: Economics and ICT) : Ergonomics, 13h, M2 Economics and ICT, ISEM, UNS.

Master: Isabelle Mirbel, Project Management, 24h, M2, UNS, France.

Master: Isabelle Mirbel, Requirement Engineering, 36h, M1, UNS, France.

Master: Andrea Tettamanzi, Logic for AI, 30 h, M1, UNS, France.

Master: Andrea Tettamanzi, Parallelism, 18 h, M1, UNS, France.

Master: Andrea Tettamanzi, Web Science, 5 h, M1, UNS, France.

Master: Andrea Tettamanzi, Data analysis in distributed environment, 18 h, M2, UNS, France.

E-learning

Michel Buffa, MOOC *JavaScript Intro* EDx platform.

Michel Buffa, MOOC *HTML5 Coding Essentials and Best Practices*, Edx platform.

Michel Buffa, MOOC *HTML5 Apps and Games*, also on EDx platform.

Fabien Gandon, Catherine Faron Zucker, Olivier Corby, MOOC *Web sémantique*, FUN.

Fabien Gandon, Catherine Faron Zucker, Olivier Corby, MOOC *Web of Data*, FUN.

Fabien Gandon, Catherine Faron Zucker, Olivier Corby, MOOC *Web of Data*, Coursera [0], to be run in 2019.

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[0]https://www.coursera.org/learn/web-data/

10.2.2. Supervision

HdR: **Michel Buffa**, *Des wikis aux simulations d'amplificateurs de guitare à lampes, le Web plateforme universelle*, UNS, December 12th, President : Fabien Gandon.

HdR: **Serena Villata**, *Explainable, Trustable and Emphatic Artificial Intelligence: from Formal Argumentation Theory to Argumentation for Humans*, UNS, July 4th, President : Fabien Gandon.

PhD: **Duc Minh Tran**, *Learning Ontologies from Linked Open Data*, Andrea Tettamanzi, UNS and Nguyen Thanh Binh, University of Danang, July [12].

PhD: **Emilie Palagi**, *Design of a Model-based Method for Evaluating Exploratory Search Systems*, UNS, Labex UCN@Sophia, Alain Giboin, Fabien Gandon with Raphaël Troncy (Eurecom), November 23rd.

PhD in progress: **Molka Dhouib**, *Modeling of a social network of service providers and companies and recommendation of service providers by reasoning on the social network*, UNS, Catherine Faron Zucker with Andrea Tettamanzi.

PhD in progress: **Ahmed El Amine Djebri**, *Distributed Artificial Intelligence for Linked Reviewable Data Management on the Semantic Web*, UNS, Andrea Tettamanzi, Fabien Gandon.

PhD in progress: **Michael Fell**, *Natural Language Processing of Song Lyrics*, UNS, Elena Cabrio, Fabien Gandon.

PhD in progress: **Raphaël Gazzotti**, *Modeling and Classification of Descriptions to Assist Decision Making*, UNS & SynchroNext, Catherine Faron Zucker, Fabien Gandon.

PhD in progress: **Tobias Mayer**, *Argument Mining for Clinical Trials*, UNS, Johan Montagnat (CNRS, I3S), Serena Villata and Céline Poudat (UNS).

PhD in progress: **Thu Huong Nguyen**, *Mining the Semantic Web for OWL Axioms*, Andrea Tettamanzi, UNS.

PhD in progress: **Mahamadou Toure**, *Mobile Access for the Web of Data*, Fabien Gandon, Pascal Molli and Moussa Lo, UGB, UNS.

PhD in progress: **Vorakit Vorakitphan**, *Argumentation and Emotions Emotion Detection with Adaptive Sentiment Analysis*, Elena Cabrio, Serena Villata, UCA.

Tobias Mayer attended:

- Advanced Course on Data Science & Machine Learning [0] (Siena, July 18-24)
- 3rd Summer School on Argumentation, [0] (Warsaw, September 06-10)

10.2.3. Juries

Catherine Faron Zucker was reviewer of the PhD thesis of

- Joe Raad, *Identity Management in Knowledge Graphs*, Université Paris Saclay, defended on 30/11/2018;

- Valentina Beretta, *Data veracity assessment: enhancing Truth Discovery using a priori knowledge*, Ecole des Mines Télécom IMT Mines Alès, defended on 30/10/2018;

- Landy Rajaonarivo, *Approche co-évolutive humain-système pour l'exploration de bases de données*, Ecole Nationale d'Ingénieurs de Brest (ENIB), defended on 29/06/2018;

- Manel Achichi, *Linking Heterogeneous Open Data – Application to the Musical Domain*, Université de Montpellier, defended on 15/02/2018.

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[0]https://acdl2018.icas.xyz/
[0]http://waw2018.argdiap.pl/summer-school/

Fabien Gandon was

- Jury Member for HDR Frédérique Segond, *Transformer les Données afin d'Etancher la Soif de l'Ere de la Connaissance*, University Grenoble Alpes, defended 17/01/2018

- Opponent for PhD Valentina Ivanova, *Fostering User Involvement in Ontology Alignment and Alignment Evaluation*, Linköping University Department of Computer and Information Science Division of Database and Information Techniques, defended 26/01/2018

- President for HDR Serena Villata, *Explainable, Trustable And Emphatic Artificial Intelligence From Formal Argumentation Theory To Argumentation For Humans*, University Côte d'Azur, defended 04/07/2018

- Reviewer for PhD Jörg Waitelonis, *Linked Data Supported Information Retrieval*, Karlsruher Institut für Technologie (KIT), defended 09/07/2018

- Reviewer for PhD Thesis Silvio Cardoso, *MAISA- Maintenance of Semantic Annotations*, Université Paris-Sud, LRI, and LIST Luxembourg, defended 30/11/2018

- President for HDR Michel Buffa, *Des wikis aux simulations d'amplificateurs de guitare à lampes, le Web plateforme universelle...*, University Côte d'Azur, defended 12/12/2018

- External Reviewer for PhD Thesis Luigi Asprino, *Engineering Background Knowledge for Social Robots*, University of Bologna, report sent the 15/12/2018

- Jury member for Tenure Track position for a Researcher in the field of Knowledge-based Systems in Healthcare at Bruno Kessler Foundation (FBK), 2018

Andrea Tettamanzi was:

- Jury member of the HDR theses of Giovanni Fusco, *Ville, Complexité, Incertitude. Enjeux de connaissance pour le géographe et l'urbaniste*, Université Côte d'Azur, February 5th;

- Jury member of the HDR theses of Chan Le Duc, *Raisonnement et révision pour des ontologies en logique de description*, Université Paris 8, November 29th.

- Chairman of the Jury for the PhD thesis of Abdoul Macina, UNS, December 17th on *SPARQL Distributed Query Processing over Linked Data*.

- Reviewer for the thesis of Victor Eduardo Fuentes, *Méta alignement méta heuristique*, whose defense was not authorized by Université du Québec, Montréal.

10.3. Popularization

10.3.1. Interventions

- Michel Buffa presented the WASABI ANR project during *La fête de la Science* in *L'esprit Sorcier* TV program [0].

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[0]https://youtu.be/-iExdePDsPA

ZENITH Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- P. Valduriez: general chair of the VLDB Latin America Data Science Workshop (LaDAS@VLDB 2018)
- P. Valduriez: scientific chair, First Data Science School, IMSP, Django, Bénin

10.1.1.2. Member of the Organizing Committees

- A. Joly: organizing committee of the international conference CLEF 2018 and the chair of the LifeCLEF track, Avignon, sept. 2018 (http://clef2018.clef-initiative.eu/)
- A. Joly: organizing committee of the Floris'tic national workshop held in Montpellier, nov. 2018 (http://floristic.org/journeefloristic/)
- A. Liutkus: organizer of the 2018 Signal Separation Evaluation Campaign (https://sisec18.unmix.app/)
- F. Masseglia: finance chair of IEEE ICDE 2018 (https://icde2018.org)
- F. Masseglia: organization commitee of the Inria Science Days 2018 (https://www.inria.fr/en/news/news-from-inria/inria-science-days-2018)
- P. Valduriez: sponsor co-chair of IEEE ICDE 2018 (https://icde2018.org)
- P. Valduriez: sponsor co-chair of VLDB 2018 (https://vldb2018.lncc.br)

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- A. Joly: area chair of ACM Multimedia 2018 (http://www.acmmm.org/2018)
- E. Pacitti: PC chair of the VLDB workshop on Big Social Data and Urban Computing (BiDU@VLDB 2018)

10.1.2.2. Member of the Conference Program Committees

- ACM/SIGAPP Symposium On Applied Computing (ACM SAC) Data Mining track, 2018: F. Masseglia
- IEEE International Conference on Data Mining (IEEE ICDM), 2018: F. Masseglia
- International Joint Conference on Artificial Intelligence (IJCAI), "Sister Conference Best Paper Track", 2018: F. Masseglia
- International Symposium on Methodologies for Intelligent Systems (ISMIS), 2018: F. Masseglia
- Pacific-Asia Conference on Advances in Knowledge Discovery and Data Mining (PAKDD), 2018: F. Masseglia
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (PKDD), 2018: F. Masseglia
- IEEE Artificial Intelligence and Knowledge Engineering (IEEE AIKE), 2018: F. Masseglia
- International Conference on Information Management and Big Data (SIMBig), 2018: F. Masseglia
- International Conference on Data Science, Technology and Applications (DATA), 2018: F. Masseglia

- International Conference on Very Large Data Bases (VLDB), 2018: R. Akbarinia
- International Workshop on Big Data Management in Cloud Systems, 2018: R. Akbarinia
- Int. Conf. on Extending DataBase Technologies (EDBT), 2019: E. Pacitti
- Int. Conf. on Multimedia Retrieval (ICMR), 2018: A. Joly
- Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP), 2018: A. Joly
- Int. Conf. on Computer Vision (CVPR), 2018: A. Joly
- Int. Conf. and Labs of the Evaluation Forum (CLEF), 2018: A. Joly
- European. Conf. on Information Retrieval (ECIR), 2019: A. Joly
- Conférence sur la Gestion de Données – Principes, Technologies et Applications (BDA 2018): F. Masseglia, E. Pacitti

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- VLDB Journal: P. Valduriez.
- Journal of Transactions on Large Scale Data and Knowledge Centered Systems: R. Akbarinia.
- Distributed and Parallel Databases, Kluwer Academic Publishers: E. Pacitti, P. Valduriez.
- Book series "Data Centric Systems and Applications" (Springer): P. Valduriez.
- Multimedia Tools and Applications: A. Joly.
- Plant Methods: C. Pradal.

10.1.3.2. Reviewer - Reviewing Activities

Reviewing in international journals :

- Distributed and Parallel Databases (DAPD): R. Akbarinia, E. Pacitti, P. Valduriez
- IEEE Transactions on Knowledge and Data Engineering (TKDE): R. Akbarinia, F. Masseglia
- VLDB Journal: R. Akbarinia
- ACM Transactions on Database Systems (TODS): A. Joly
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI): A. Joly
- Information Sciences: A. Joly
- Ecological Informatics: A. Joly
- Multimedia Tools and Applications Journal (MTAP): A. Joly
- Multimedia Systems: A. Joly
- Transactions on Information Forensics & Security: A. Joly
- International Journal of Computer Vision: A. Joly
- Transactions on Image Processing: A. Joly
- ACM Trans. on Database Systems: E. Pacitti
- Knowledge and Information Systems (KAIS): F. Masseglia
- IEEE Transaction on Signal Processing (TSP): A. Liutkus
- IEEE Transactions on Audio Speech and Language Processing (TASLP): A. Liutkus
- IEEE Signal Processing Magazine: A. Liutkus
- Frontiers in Plant Science: C. Pradal

10.1.4. Invited Talks

- A. Joly: keynote talk on "Towards The Recognition of the World's Flora: When HPC Meets Deep Learning" at Digital Infrastructures 2018 on Oct. 10
- A. Joly: keynote talk on "The Recognition of the World's Flora" at Terratec 2018
- A. Liutkus: tutorial on music source separation at the International Symposium on Music Information Retrieval (ISMIR 2018).
- F. Masseglia: talk on "Massively Distributed Data Analytics", IRISA (Lacodam team), April 2018
- F. Masseglia: talk on "Massively Distributed Time Series Indexing and Querying", LIMOS, December 2018
- P. Valduriez: keynote talk on "Blockchain 2.0: opportunities and risks" on 29 may at Africatek 2018, Cotonou, Bénin, on 25 october at BDA 2018, Bucharest, Romania, and on 19 december at Colloquim COPPE/UFRJ, Rio de Janeiro
- C. Pradal: keynote talk on "OpenAlea : an open source project for plant modelling at different scales", August 2018, Crops in Silico Symposium, NCSA, Univ. Illinois, USA.
- C. Pradal: keynote talk on "OpenAlea : a modular platform for multiscale plant modelling", April 2018, EGU 2018, Vienna, Austria.

10.1.5. Leadership within the Scientific Community

- A. Joly: scientific manager of the LifeCLEF and Pl@ntNet research platforms
- A. Liutkus: elected member of the IEEE Technical Committee on Audio and Acoustic Signal Processing
- F. Masseglia: "Chargé de mission pour la médiation scientifique Inria" and head of Inria's national network of colleagues involved in science popularization
- E. Pacitti: head of Polytech' Montpellier's Direction of Foreign Relationships
- P. Valduriez: scientific manager for the Latin America zone at Inria's Direction of Foreign Relationships (DPEI)
- P. Valduriez: President of the Steering Committee of the BDA conference

10.1.6. Scientific Expertise

- R. Akbarinia, F. Masseglia: reviewer for international programs (STIC AmSud, ECOS SUD).
- R. Akbarinia: expert for the French National Research Agency (ANR).
- A: Joly: reviewer for STIC AmSud international program
- F. Masseglia: scientific referent for Inria on the frame agreement with SAFRAN about "System Monitoring and Data Analytics"
- E. Pacitti: reviewer for STIC AmSud international program
- P. Valduriez: reviewer for STIC AmSud international program
- P. Valduriez: reviewer for NSERC (Canada)
- C. Pradal: reviewer for STIC AmSud international program
- C. Pradal: member of CSS EGBIP (Commissions Scientifiques Spécialisées) INRA

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Most permanent members of Zenith teach at the Licence and Master degree levels at UM2.

Esther Pacitti:

>IG3: Database design, physical organization, 54h, level L3, Polytech'Montpellier, UM2

>IG4: Networks, 42h, level M1, Polytech' Montpellier, UM2

>IG4: Object-relational databases, 32h, level M1, Polytech' Montpellier, UM2

>IG5: Distributed systems, virtualization, 27h, level M2, Polytech' Montpellier, UM2

>Industry internship committee, 50h, level M2, Polytech' Montpellier

Patrick Valduriez:

>Professional: Distributed Information Systems, Big Data Architectures, 75h, level M2, Capgemini Institut

Alexis Joly:

>University of Montpellier: Machine Learning, 15h, level M2

>Polytech' Montpellier: Content-Based Image Retrieval, 4.5h, level M1

>AgroParisTech: Convolutional Neural Networks in Ecology and Agronomy, 2h, level M1

10.2.2. Supervision

PhD & HdR:

>PhD : Vitor Silva, Analysis of raw data from multiple data sources during the execution of computational simulations, started 2014, UFRJ, Brazil, June 2018. Advisors: Marta Mattoso (UFRJ), Daniel Oliveira (UFF), Patrick Valduriez

>PhD : Sakina Mahboubi, Privacy Preserving Top-k Query Processing over Outsourced Data, Univ. Montpellier, Nov. 21, 2018. Advisors: Reza Akbarinia, Patrick Valduriez.

>PhD : Djamel-Edine Yagoubi, Massive distribution for indexing and mining time series, Univ. Montpellier, March 12, 2018. Advisors: Reza Akbarinia, Florent Masseglia, Themis Palpanas (Univ Paris Descartes).

>PhD : Mehdi Zitouni, Parallel Itemsets Mining in Massively Distributed Environments, Univ. Tunis, Dec. 5, 2018. Advisors: Reza Akbarinia, Florent Masseglia, Sadok Ben Yahia (Univ Tunis).

>PhD in progress: Gaetan Heidsieck, Distributed Management of Scientific Workflows for High-Throughput Plant Phenotyping, started Oct 2017, Univ. Montpellier. Advisors: Esther Pacitti, Christophe Pradal, François Tardieu (INRA).

>PhD in progress: Christophe Botella, Large-scale Species Distribution Modelling based on crowd-srouced image streams, started Oct 2016, Univ. Montpellier. Advisors: Alexis Joly, François Munoz (IRD), Pascal Monestiez (INRA).

>PhD in progress: Titouan Lorieul, Pro-active Crowdsourcing, started Oct 2016, Univ. Montpellier. Advisor: Alexis Joly.

>PhD in progress: Khadidja Meguelati, Massively Distributed Clustering, started Oct 2016, Univ. Montpellier. Advisors: Nadine Hilgert (INRA), Florent Masseglia.

>PhD in progress: Renan Souza, Massively Distributed Clustering, started 2015, UFRJ, Brazil. Advisors: Marta Mattoso (UFRJ), Daniel Oliveira (UFF), Patrick Valduriez.

>PhD in progress: Mathieu Fontaine, Alpha-stable models for signal processing, started 2016, IAEM, Nancy, France. Advisors: Roland Badeau (Telecom ParisTech), Antoine Liutkus.

10.2.3. Juries

Members of the team participated to the following PhD or HDR committees:

- R. Akbarinia: Sakina Mahboubi (Univ. Montpellier, advisor), Djamel-Edine Yagoubi (Univ. Montpellier, advisor)
- A. Joly: Lee Sue Han (Univ. of Malaya)
- F. Masseglia: Yann Dauxais (Univ. Rennes), Steeve Vanel-Siyou (Univ. Clermont-Ferrand, reviewer), Marc Plantevit (HDR, Univ. Lyon, reviewer), Djamel-Edine Yagoubi (Univ. Montpellier, advisor)
- E. Pacitti: Abdoul Macine (Univ. Nice, reviewer)
- P. Valduriez: Louis Jachiet (Univ. Grenoble), Ovidiu-Cristian Marcu (Univ. Rennes 1, reviewer), Vitor Silva (UFRJ, Rio de Janeiro, advisor), Sakina Mahboubi (Univ. Montpellier, advisor), Yania Molina Souto (LNCC, Rio de Janeiro, reviewer)

Members of the team participated to the following hiring committees:

- A. Joly: associate professor position, Univ. Toulon
- F. Masseglia: Inria ARP/SRP; full professor position, INSA, Lyon

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

F. Masseglia is "Chargé de mission auprès de la DGD-S Inria pour la médiation scientifique" (50% of his time) and heads Inria's national network of colleagues involved in science popularization (https://www.inria.fr/recherches/mediation-scientifique/actions-de-mediation-scientifique/presentation)

10.3.2. Articles and contents

Alexis Joly participated to the realization of a report on "Deep Learning and Agriculture" edited by the AgroTIC chair (https://www.agrotic.org/). He co-authored on article on data collection in citizen science projects [37].

10.3.3. Education

Teaching code is now officially in the school programs in France. Class'Code is a PIA project that aims at training the needed 300,000 teachers and professionals of education France. The project is a hybrid MOOC (both online courses and physical meetings). Florent Masseglia is co-author of the first course and scientific referent of the other courses.

Along with Class'Code, the association "La main à la pâte" has coordinated the writing of a school book on the teaching of computer science teaching, with Inria (Gilles Dowek, Pierre-Yves Oudeyer, Florent Masseglia and Didier Roy), France-IOI and the University of Lorraine. The book has been requested by and distributed to 15,000 readers in less than one month. The extension of this book for the French "Collège" has been released in 2017 with new activities and new scientific content.

F. Masseglia is giving a doctoral training at different doctoral schools in Montpellier, in order to train facilitators for helping teachers and people of the education world to better understand the "computational thinking". So far, 14 people have been trained.

P. Valduriez gave an invited talk on "Succeed in your Ph.D. Thesis: good practices and return of experience" at the Ph.D. meeting at LIRIS, Lyon, on December 11.

F. Masseglia is member of the pedagogic committee of "Edu'up", a project from France-IOI on learning code and computational thinking.

F. Masseglia gave a one day training session to school teachers in Créteil, on October 3.

Alexis Joly gave about 15 hours of professional training in the use of digital tools for environmental education (Pl@ntNet, ThePlantGame and Smart'Flore).

10.3.4. Interventions

Zenith participated to the following events:

- F. Masseglia co-organized the regional Code-Week events with the local network of media-library ("réseau des médiathèques de Montpellier Méditerranée Métropole").

- F. Masseglia is member of the project selection committee for "La fête de la science" in Montpellier.

- F. Masseglia animated a stand at the "semaine de la mémoire" event organized by Genopolys (September 20&21).

- F. Masseglia participated in a class visit, at Saussan, with Charles Torossian (co-author of the "Vallani-Torossian" report) and the rectrice, about code teaching.

10.3.5. Internal action

F. Masseglia organized, and participated to, a 2 days training session on the Poppy Ergo Jr robot (June 25&26).

10.3.6. Creation of media or tools for science outreach

In the context of the Floris'tic project, A. Joly participates regularly to popularization, educational and citizen science actions in France (with schools, cities, parks, associations, etc.). The softwares developed within the project (Pl@ntNet, Smart'Flore and ThePlantGame) are used in a growing number of formal educational programs and informal educational actions of individual teachers. For instance, Smart'Flore is used by the French National Education in a program for reducing early school leaving. Pl@ntNet app is used in the Reunion island in an educational action called Vegetal riddle organized by the Center for cooperation at school. It is also used in a large-scale program in Czech republic and Slovakia (with a total of 100 classrooms involved in the program). An impact study of the Pl@ntNet application did show that 6% of the respondents use it for educational purposes in the context of their professional activity.

F. Masseglia participated in the work group on "Jeu des 7 familles de l'informatique". This card game, to be announced officially in January 2019, provides support for education to computer science from the history point of view.