RESEARCH CENTER
Grenoble - Rhône-Alpes

FIELD

Activity Report 2019

Section Dissemination

Edition: 2020-03-21

<p style="text-align:center"><strong style="color:red">ARIC Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

- Damien Stehlé organized a Winter School on the mathematical foundations of public-key cryptography, in Aussois (France), from March 17 to March 22.
- Bruno Salvy was a co-chair of AofA'2019 (Analysis of Algorithms), in Luminy, France.

10.1.2. Scientific Events: Selection

- Elena Kirshanova was in the program committee of Asiacrypt 2019.
- Benoît Libert was in the program committees of PKC 2019 and PKC 2020.
- Nathalie Revol is in the steering committee of the Arith conference series. She was in the program committee of Arith'26, of Correctness 2019 (workshop of SuperComputing) and of PPAM (Parallel Processing and Applied Mathematics) 2019.
- Bruno Salvy is in the steering committee of AofA. He was in the program committee for FPSAC 2019 and in the scientific committee of OPSFA 2019. He is in the program committee for AofA 2020.
- Damien Stehlé is in the steering committee of the PQCrypto conference series. He was in the program committee PQCrypto 2019 and is in the program committee of PQCrypto 2020. He was in the program committee of CRYPTO 2019.
- Gilles Villard was in the program committee of ISSAC 2019.

10.1.3. Journal

- Benoît Libert was a member of the editorial board of IET Information Security until July 31, 2019.
- Jean-Michel Muller is associate editor in chief of the IEEE Transactions on Emerging Topics in Computing.
- Nathalie Revol is a member of the editorial board of Reliable Computing.
- 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 of the journal *Annals of Combinatorics*.
- Damien Stehlé is a member of the editorial board of Journal of Cryptology.

10.1.4. Invited Talks

- Claude-Pierre Jeannerod gave an invited talk at the workshop *Structured Matrix Days* (Limoges, May 23–24, 2019).
- Benoît Libert gave an invited presentation during the "Workshop on Modern Trends in Cryptography" organized at Nanyang Technological University (Singapore) on June 13-14, 2019.
- Damien Stehlé gave lectures during the "Euclidean lattices: theory and applications" Summer school that was held in Kaliningrad (Russia), from July 15 to July 19.

10.1.5. Leadership within the Scientific Community

- Guillaume Hanrot was a member of selection committees for professors at Université de Lorraine (in CS) and at Université de Nouvelle-Calédonie (in Mathematics). He was also in the hiring committee of the computer science department of École polytechnique. He is a member of the working group on the revision of the CS curriculum in *Classes préparatoires aux grandes écoles*.

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

- Jean-Michel Muller is co-head of the GDR Informatique Mathématique of the CNRS. He is also a member of the Scientific Council of CERFACS (Toulouse).

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

- Nathalie Revol is a member of the steering committee of GDR Calcul; she was a member of the hiring committee (Comité de Sélection) for 2 positions at U. Nantes.

- Bruno Salvy is a member of the scientific councils of the CIRM, Luminy and of the GDR Informatique Mathématique of the CNRS.

10.1.6. Scientific Expertise

- Nathalie Revol has been an expert for the European H2020 program.

10.1.7. Research Administration

- Jean-Michel Muller is a member of the *Commission Administrative Paritaire* (CAP) *Directeurs de Recherches* of CNRS.

- 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: Guillaume Hanrot, Computer algebra, 10h, ENS de Lyon, France

- Master: Guillaume Hanrot, Cryptanalysis, 15h, ENS de Lyon, France

- Master: Claude-Pierre Jeannerod, Computer Algebra, 18h, M2Pro ISFA (Institut de Science Financière et d'Assurances), Université Claude Bernard Lyon 1, France

- Master (1&2): Fabien Laguillaumie, Cryptography, 160 h, ISFA, UCBL, France

- Master: Benoît Libert, Advanced Topics in Cryptography, 15h, ENS de Lyon, France

- Master: Nicolas Louvet, Compilers, 22h, M1, UCB Lyon 1, France

- Master: Alain Passelègue, Computer Algebra, 10h, M1, ENS de Lyon, France

- Master: Alain Passelègue, Advanced Topics in Cryptography, 30h, M2, ENS de Lyon, France

- Master: Nathalie Revol, Numerical Algorithms and Reliability, 12h, M2Pro ISFA (Institut de Science Financière et d'Assurances), Université Claude Bernard Lyon 1, France

- Master: Bruno Salvy, Computer Algebra, 6h, ENS de Lyon, France

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

- Master: Damien Stehlé, Cryptanalysis, 15h, ENS de Lyon, France

- Master : Gilles Villard, Computer Algebra, 8h, ENS de Lyon, France

- Bachelor: Guillaume Hanrot, Calculability and complexity, 32h, ENS de Lyon, France

- Bachelor: Nicolas Louvet, Computer Architecture, 27h, L1, UCB Lyon 1, France

- Bachelor: Nicolas Louvet, Operating Systems, 50h, L2, UCB Lyon 1, France

- Bachelor: Nicolas Louvet, Data Structures and Algorithms, 24h, L2, UCB Lyon 1, France

- Bachelor: Nicolas Louvet, Data Structures and Algorithms, 40h, L3, UCB Lyon 1, France
- Bachelor: Nicolas Louvet, Formal Languages, 15h, L3, UCB Lyon 1, France
- Bachelor: Nicolas Louvet, Classical Logic, 15h, L3, UCB Lyon 1, France
- Bachelor: Bruno Salvy, Design and Analysis of Algorithms, 20h, École polytechnique, France

10.2.2. Supervision

- PhD: Florent Bréhard, Certified Numerics in Function Spaces: Polynomial Approximations Meet Computer Algebra and Formal Proof, ENS de Lyon, July 12, Nicolas Brisebarre (co-supervision with Mioara Joldes, CNRS LAAS, and Damien Pous, LIP)
- PhD: Alice Pellet-Mary, On ideal lattices and the GGH13 multilinear map, ENS de Lyon, October 16, Damien Stehlé
- PhD: Chen Qian, Lossy Trapdoor Primitives, Zero-Knowledge Proofs and Applications, IRISA Rennes, October 4, Benoît Libert (co-supervision with Pierre-Alain Fouque, IRISA)
- PhD in progress: Miruna Rosca, The middle-product learning with errors problem, January 2017, Damien Stehlé
- PhD in progress: Huyen Nguyen, Cryptographic aspects of orthogonal lattices, September 2018, Damien Stehlé
- PhD in progress: Radu Titiu, Advanced cryptographic primitives based on standard assumptions, January 2017, Benoît Libert
- PhD in progress: Adel Hamdi, Functional Encryption, December 2017, Fabien Laguillaumie (co-supervised by Sébastien Canard, Orange)
- PhD in progress: Ida Tucker, Advanced cryptographic primitives from homomorphic encryption, October 2017, Fabien Laguillaumie (co-direction with Guilhem Castagnos, Université de Bordeaux)

10.2.3. Juries

- Damien Stehlé was a jury member for the PhD defences of Ilia Iliashenko (K.U. Leuven, Belgium) and Joost Rijneveld (Radboud U., the Netherlands) and for the habilitation defence of Omar Fawzi (ENS de Lyon). He was a reviewer and jury member of the PhD of Thomas Debris-Alazard (Sorbonne U.) and for the habilitation of Guilhem Castagnos (U. Bordeaux).
- Benoît Libert was a reviewer for the PhD theses of Romain Gay (ENS Paris), Jérémy Chotard (Univ. of Limoges). He was a PhD examiner for the thesis of Andrea Cerulli (University College London, United Kingdom). He also chaired the PhD committee of Anca Nitulescu (ENS Paris).
- Fabien Laguillaumie was reviewer and jury member of the PhD of Pauline Bert (Université de Rennes) and of the HDR of Olivier Blazy (Université de Limoges)
- Jean-Michel Muller was reviewer and jury member of the PhD of Clothilde Jeangoudoux (Sorbonne University, Paris)
- Gilles Villard was reviewer for the PhD thesis of Robin Larrieu (Université Paris-Saclay); examiner for the habilitation of Pascal Giorgi (Université de Montpellier) and the PhD thesis of Matías Bender (Sorbonne Université).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Nathalie Revol was in the scientific committee for the Journées Scientifiques Inria (Lyon, 5-7 June 2019).
- Nathalie Revol was a member of the editorial committee of interstices; she is the scientific editor of this Web magazine since September 2019.
- Nathalie Revol belonged to the steering committee of MMI (Maison des Mathématiques et de l'Informatique) until July 2019; she is now a member of its prospective committee.
- 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, launched in February 2019.

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.
- Nathalie Revol works with DANE (Délégation Académique au Numérique dans l'Éducation) of Rectorat de Lyon towards educating primary school teachers, by educating educators (e-RUN); she is a member of the Conseil Scientifique du Numérique.
- Nathalie Revol presented activities for teaching computer science at every school level, and in particular activities led by Inria, for a Taiwanese delegation (Grenoble, October 2019).

10.3.4. Interventions

- Nathalie Revol spent 2 days at école Guilloux, with 50 pupils aged 10 (level: CM2), to teach computer science without any computer (so-called "unplugged computer science"): data, algorithms, networks.
- For high-school pupils ($\simeq 150$ pupils): as an incentive, especially for girls, to choose scientific careers, Nathalie Revol gave talks at Mondial des Métiers (in February 2019), collège Jean Zay (Brignais, March 2019) and Girls Can Code (Lyon, August 2019). With Jérôme Germoni and Natacha Portier, she organized a day *Filles & Info* in November 2019, gathering about 70 high-school girls of 1e and Terminale.
- For a larger audience: she took part to Pop Science, doing magic tricks in the street at La Duchère, Lyon, May 2019; with Florent Masséglia, she introduced 5 important figures of computer science, chosen among the personalities of the "7 families of computer science" playcard, for L'Esprit Sorcier, for la Fête de la Science, Paris, October 2019, cf https://www.youtube.com/watch?v=ypnQe91Pztc
- Nathalie Revol took part to a day of teaching unplugged computer science for whoever was interested, at La Gaîté Lyrique, Paris, June 2019.

10.3.5. Creation of media or tools for science outreach

Nathalie Revol belongs to the working group "Informatique Sans Ordinateur", which creates unplugged activities to teach computer science; this group meets twice a year, usually in Lyon.

CASH Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. Member of the Organizing Committees

- Laure Gonnord animates the french compilation community since 2010 (http://compilfr.ens-lyon.fr.

9.1.2. Scientific Events: Selection

9.1.2.1. Chair of Conference Program Committees

- Laure Gonnord was PC chair and organizer of the 8th Numerical and Symbolic Abstract Domain (NSAD, satellites workshop of SAS 2019, FM2019, in Porto.)
- Ludovic Henrio was chair of the ICE'19 workshop.

9.1.2.2. Member of the Conference Program Committees

- Laure Gonnord is a PC member of **CAV** 2019 Conference on Computer-Aided Verification. She will be PC member of SBLP'20 (Brazilian Symposium on Programming Languages).
- Ludovic Henrio has been a PC member of FASE 2019, ACSD 2019, Coordination 2019, HLPP 2019, AGERE 2019, and iFM 2019
- Christophe Alias has been a PC member of COMPAS'19.

9.1.2.3. Reviewer

- Christophe Alias was reviewer for MCSoC'19.
- Matthieu Moy was reviewer for CAV'19, IFM'19, MCSOC'19

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

- Ludovic Henrio was reviewer for the HLPP'19 special issue in IJPP. He is also guest editor for the special issues associated to the ICE workshop of the last 4 years.
- Christophe Alias was reviewer for ACM TOPC.
- Matthieu Moy was reviewer for Journal of Electronics.

9.1.4. Invited Talks

- Matthieu Moy presented a talk "La génération de code temps réel sur architecture many-coeur" at the annual colloquium of GDR SOC2.

9.1.5. Research Administration

- Laure Gonnord is elected member of the LIP council and the Fédération d'Informatique de Lyon council.
- Laure Gonnord is elected member of the Inria National "Commission d'Evaluation" from september 2019.

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, TD+TP, 42h, L2, UCBL
- Laure Gonnord, Operating Systems, TD+TP, 26h, L2, UCBL
- Matthieu Moy, Concurrent Programming, CM+TD+TP, 57h, L3, UCBL.
- Matthieu Moy, Recursive Programming, TD+TP, 48h, L1, UCBL.
- Matthieu Moy, Git, CM+TP: 12h, L3, UCBL.
- Amaury Maillé, Concurrent Programming, 8h TD, 14 h 30 TP, L3, UCBL.
- Paul Iannetta, ACM, TD, 32h, L3, ENS de Lyon.
- Paul Iannetta, Projet 1, TD, 36h, L3, ENS de Lyon.
- Paul Iannetta, Colloquium L3, TD, 2h, L3, ENS de Lyon
- Paul Iannetta, Jury de stage, TD, 4h, L3, ENS de Lyon
- Julien Braine, ASR, TP et TD, 32h, L3, ENS de Lyon.

Master:

- Christophe Alias, Compiler optimizations for embedded applications, CM+TD, 27h, 4A, INSA Centre Val de Loire.
- Laure Gonnord, Compilation and Program Analysis, CM, 10h, TP 8h, 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, Distributed Systems, TD 9h, M1, UCBL.
- Laure Gonnord, Graphs, Complexity, Algorithmics, M1 MEEF (CAPES Maths, prepa), CM+TD+TP+oral training, 18h, UCBL.
- Laure Gonnord, Algorithmics, Systems M1 MEEF (CAPES NSI, prepa), CM+TD, 15h, UCBL.
- Laure Gonnord, Algorithmics, Architecture, Systems, DIU EIL, CM+TD+TP, 60h, UCBL.
- Matthieu Moy, Software Engineering, CM+TD+TP, 25h, M1, UCBL.
- Matthieu Moy, Compilation and Program Analysis, TP, 16h, M1, ENS de Lyon.
- Matthieu Moy, Compilation and program transformations, TD+TP, 25h, M1, UCBL.
- Ludovic Henrio, Compilation and Program Analysis, CM, 10h; TP, 6h, M1, ENS de Lyon.
- Ludovic Henrio, Distributed Systems: an algorithmic approach, CM+TD, 3h, M2 Specialite IFI (Ingénierie et Fondements de l'Informatique), parcours CSSR, and UBINET, Université de Nice Sophia-Antipolis.
- Amaury Maillé, Networks, 2h TD, M1, UCBL.
- Paul Iannetta, Projet Intégré, TD, 14h, M1, ENS de Lyon.
- Paul Iannetta, Jury de stage, TD, 4h, M1, ENS de Lyon
- Julien Braine, APPD, TP et TD, 28h, M1, ENS de Lyon.

9.2.2. Supervision

- 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: 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).

- PhD in progress: Amaury Maillé, "Programming model to assemble compute kernels safely and efficiently: Future- based synchronization for arrays and matrices", ENS Lyon, supervised by Matthieu Moy and Ludovic Henrio. Started in October 2019, supervised by Gaëtan Hains (Huawei), Wijnand Suijlen (Huawei), Françoise Baude (UNS./I3S), Ludovic Henrio (LIP).

9.2.3. Juries

- Laure Gonnord was external jury member for the PhD of Yohan Uguen, "High-level synthesis and arithmetic optimizations" (INSA de Lyon).

- Ludovic Henrio was part of the reading commitee of Keyvan Azadbakht (Universiteit Leiden).

- Christophe Alias was a reviewer and member of the PhD committee of Hang YU (Université Grenoble-Alpes).

- Christophe Alias was *correcteur* and jury member for *concours d'admission X/ENS*.

- Laure Gonnord was jury member for the *C*oncours d'admission de l'Agrégation de Sciences Industrielles, spécialité Informatique Industrielle, in June 2019.

- Matthieu Moy was reviewer for the Ph.D of Hamza Deroui, "Étude et implantation d'algorithmes pour l'ordonnancement d'applications dataflow" (INSA Rennes).

9.3. Popularization

9.3.1. Articles and contents

- "Pourquoi créer des nouveaux langages de programmation?" Ludovic Henrio. Interstices. Janvier 2019.

9.3.2. Education

- Laure Gonnord has participated to the construction of the diploma "teaching computer science in high schools" in Lyon, and also the new preparatory cursus for the "CAPES-NSI" at Lyon1 university.

9.3.3. Interventions

- Laure Gonnord was invited by the "Association des profs de Prepa" to give her expertise about teaching computer science in the first universitary cycle. The context is the creation of a new preparatory class with a computer science minor "MPI" (Maths, Physics, Computer Science).

- Matthieu Moy presented a talk "Se lancer dans le logiciel libre quand on est étudiant (ou pas)" at "Campus du libre", Lyon.

<div align="center">

CONVECS Project-Team

</div>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

- H. Garavel is a member of the model board [0] of MCC (*Model Checking Contest*). In 2019, 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'2019 have been published online [44].

- 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, among which 5 were deposited 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.

10.1.1.2. Member of the Organizing Committees

- L. Marsso and A. Muroor Nadumane were publicity chairs (also in charge of the conference Web site and social media feeds) for SEFM'2019 (*17th International Conference on Software Engineering and Formal Methods*), Oslo, Norway, September 16–20, 2019.

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

- G. Salaün was co-chair of SEFM'2019.

10.1.2.2. Member of the Conference Program Committees

- H. Garavel was program committee member of FMICS'2019 (*24rd International Conference on Formal Methods for Industrial Critical Systems*), Amsterdam, The Netherlands, August 30–31, 2019.

- R. Mateescu was program committee member of IFIP-ICTSS'2019 (*31st IFIP International Conference on Testing Software and Systems*), Paris, France, October 15–17, 2019.

- G. Salaün was program committee member of SAC-SVT'2019 (*34th ACM Symposium on Applied Computing - Software Verification and Testing Track*), Limassol, Cyprus, April 8–12, 2019.

- G. Salaün was program committee member of FSEN'2019 (*8th IPM International Conference on Fundamentals of Software Engineering*), Tehran, Iran, May 1–3, 2019.

- G. Salaün was program committee member of COORDINATION'2019 (*21st International Conference on Coordination Models and Languages*), Lyngby, Denmark, June 18–21, 2019.

- G. Salaün was program committee member of Microservices'2019, Dortmund, Germany, February 19–21, 2019.

---

[0]http://mcc.lip6.fr/models.php

[0]http://www.mars-workshop.org/

- G. Salaün was program committee member of COMPSAC-ITIP'2019 and COMPSAC-SETA'2019 (*IEEE International Conference on Computers, Software, and Applications – IT in Practice, and Software Engineering Technologies and Applications*), Wisconsin, USA, July 15–19, 2019.

- G. Salaün was program committee member of HPCS-4PAD'2019 and HPCS-SERCO'2019 (*6th International Symposium on Formal Approaches to Parallel and Distributed Systems, and 3rd Special Session on High Performance Services Computing and Internet Technologies*), Dublin, Ireland, July 15–19, 2019.

- G. Salaün was program committee member of FACS'2019 (*16th International Conference on Formal Aspects of Component Software*), Amsterdam, The Netherlands, October 23–25, 2019.

- G. Salaün was program committee member of FOCLASA'2019 (*17th International Workshop on Coordination and Self-Adaptativeness of Software Applications*), Oslo, Norway, September 17, 2019.

- G. Salaün was program committee member of DATAMOD'2019 (*8th International Symposium "From Data to Models and Back"*), Porto, Portugal, October 7–8, 2019.

10.1.2.3. Reviewer

- R. Mateescu was a reviewer for the Festschrift in honor of Stefania Gnesi.

- A. Muroor Nadumane was a reviewer for SAC-SVT'2020, FACS'2019, SEFM'2019, COMPSAC-SETA'2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

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

10.1.3.2. Reviewer - Reviewing Activities

- F. Lang and A. Muroor Nadumane were reviewers for STTT.

- R. Mateescu was a reviewer for ISSE (*Innovations in Systems and Software Engineering*), IST (*Information and Software Technology*), LMCS (*Logical Methods in Computer Science*), and SCP (*Science of Computer Programming*).

- G. Salaün was a reviewer for JISA (*Journal of Internet Services and Applications*), JLAMP (*Journal of Logical and Algebraic Methods in Programming*), JSME (*Journal of Software: Evolution and Process*), LMCS, and SCP.

10.1.4. Software Dissemination and Internet Visibility

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

In 2019, the main facts are the following:

- We prepared and distributed twelve successive versions (2019-a to 2019-l) of CADP.

- We were requested to grant CADP licenses for 340 different computers in the world.

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

By the end of December 2019, the CADP forum [0], opened in 2007 for discussions regarding the CADP toolbox, had over 435 registered users and over 1940 messages had been exchanged.

Also, for the 2019 edition of the Model Checking Contest, one family of models generated using CADP (totalling 16 Nested-Unit Petri Nets) was provided.

---

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

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 OCARINA Tool and its Extension AADL2LNT for Analysing AADL Descriptions [49]
- The LFD-MPI Tool for Lightweight Formal Development of MPI Applications [52], [53]
- The FTRES Tool for Rare Event Simulation in Dynamic Fault Trees [54]
- Formal Analysis of Security Guidelines for Program Certification [55]

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

- Applying Automata Learning to Embedded Control Software [50]
- Model Checking Based Approach for Compliance Checking [46]
- Finding Conservative Schema Evolutions by Analysing API Changes [51]
- Selection of Model Checking Strategies using Machine Learning [42]
- Verifying Complex Software Control Systems from Test Objectives [29]
- Designing Safe Synchronous Reactive Systems [30]

10.1.5. Invited Talks

- H. Garavel participated in the workshop "*Advancing Verification Competitions as a Scientific Method*" organized by the Lorentz Center (Leiden, The Netherlands) on February 18–22, 2019. He gave a lecture entitled "*Managing Large Collections of Benchmarks: An Experiment Report*".
- H. Garavel presented a retrospective of the Rewrite Engines Competitions at the TOOLympics event at ETAPS 2019, Prague, Czech Republic, April 6–7, 2019.
- H. Garavel was one of the six invited speakers at the panel discussion "*Moore's Law, and More?*" organized at the occasion of the 25th Anniversary of the TACAS conference, Prague, Czech Republic, April 7, 2019.
- H. Garavel gave a highlight talk entitled "*From Safe Petri Nets to NUPNs*" at the 8th IFIP WG 1.8 Workshop on Trends in Concurrency Theory, Amsterdam, The Netherlands, August 31, 2019.
- H. Garavel gave a seminar entitled "*Converting Safe Petri Nets to NUPNs*" at Saarland University, Germany, on September 26, 2019.
- R. Mateescu gave a talk entitled "*The MCL Language for Temporal and Probabilistic Analysis of Concurrent Systems*" at the Languages, Semantics, and Compilation seminar of the LIP laboratory, Lyon, September 19, 2019.
- R. Mateescu visited the Gran Sasso Science Institute (L'Aquila, Italy) on November 4–7, 2019. He gave a talk entitled "*An Action-based Model Checking Language for Concurrent Systems*".
- A. Muroor Nadumane gave a talk entitled "*Advanced Rule-based Composition and Deployment for Web of Things*" at the Inria-Nokia Bell Labs meeting held at Inria Rennes on June 11, 2019.

10.1.6. 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, and giving an advice on the recruitment of temporary engineers.
- 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 2019 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.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

CONVECS is a host team for the computer science master MOSIG (*Master of Science in Informatics at Grenoble*), common to Grenoble INP and Université Grenoble Alpes (UGA).

In 2019, we carried out the following teaching activities:

P. Bouvier supervised a group of seven two-person teams of 2nd year students in the context of the "*projet informatique*" (31 hours "*équivalent TD*", consisting of lab exercises and supervision) at PHELMA.

H. Garavel was a jury member for the MOSIG master defenses in June and September 2019.

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.

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.

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 250 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 (third year of university) at IUT1/UGA.

W. Serwe gave the part on "*Behavioural Testing*" (9 hours "*équivalent TD*") of the course "*Verification and Test Theories*" to second year students of the MOSIG.

W. Serwe supervised 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 2019.

10.2.2. Supervision

PhD: Lina Marsso, "*Formal Methods for Testing Networks of Controllers*", Université Grenoble Alpes, December 10, 2019, R. Mateescu, W. Serwe, and I. Parissis

PhD: Umar Ozeer, "*Autonomic Resilience of Applications in a Largely Distributed Cloud Environment*", Université Grenoble Alpes, December 11, 2019, L. Letondeur, G. Salaün, F.-G. Ottogalli, and J.-M. Vincent

PhD in progress: Pierre Bouvier, "*Implémentation et vérification des langages concurrents de nouvelle génération*", Université Grenoble Alpes, since October 2019, H. Garavel and R. Mateescu

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

10.2.3. Juries

- F. Lang was PhD committee member of Sander de Putter's PhD thesis, entitled "*Verification of Concurrent Systems in a Model-Driven Engineering Workflow*", defended at Technische Universiteit Eindhoven (The Netherlands) on January 28, 2019.

- R. Mateescu was reviewer of The Anh Pham's PhD thesis, entitled "*Efficient State-Space Exploration for Asynchronous Distributed Programs*", defended at ENS Rennes on December 6, 2019.

- G. Salaün was committee president of Xavier Etchevers's Habilitation thesis, entitled "*Evolution du déploiement automatisé d'applications : des infrastructures cloud aux enjeux de l'agilité et de l'intelligence ambiante*", defended at Université Grenoble Alpes on November 29, 2019.

- G. Salaün was PhD committee president of Raphaël Jackse's PhD thesis, entitled "*Interactive Runtime Verification*", defended at Université Grenoble Alpes on December 18, 2019.

10.3. Popularization

10.3.1. Interventions

- R. Mateescu has participated to the "*Journée Transfo : Plongez dans le monde du numérique*" organized at Inria Montbonnot on January 24, 2019.

- R. Mateescu has participated to the "*Fête de la Science*" organized at Inria Montbonnot on October 12, 2019.

CORSE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. Member of the Organizing Committees

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

9.1.2. Scientific Events: Selection

9.1.2.1. Member of the Conference Program Committees

- Frédéric Desprez: IPDPS, HPC, CCGRID, ParCo, ICA3PP, CloudCom
- François Broquedis: IPDPS, COMPAS
- Fabrice Rastello: ACM SIGPLAN/SIGBED LCTES 2019; IEEE/ACM SIGPLAN CGO 2020; IEEE/ACM SIGARCH PACT 2019; CADO 2019
- Yliès Falcone: AFADL'19, SHPCS'19, IFIP-ICTSS'19, RV'19, FDL'19, 4PAD'19, TASE'19, SAC-SVT'19
- Manuel Selva: ReCoSoC'19

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

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

9.1.3.2. Reviewer - Reviewing Activities

- Frédéric Desprez: ACM Transactions on Internet of Things, IEEE Access
- Fabrice Rastello: ACM TACO, ACM TOPLAS

9.1.4. 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

9.1.5. Scientific Expertise

- Frédéric Desprez: Genci: attribution heures de calcul CT6
- Frédéric Desprez: Groupe de travail "Cloud pour l'IA" d'Allistène
- Frédéric Desprez: Comité des sages IRIT
- Yliès Falcone: Review for ANR call for projects

9.1.6. Research Administration

- Frédéric Desprez: Deputy Scientific Director at INRIA
- Frédéric Desprez: Director of the GIS GRID5000
- Frédéric Desprez: Conseil Scientifique ESIEE Paris
- Frédéric Desprez: Groupe de travail "Infrastructures" Inria

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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

License 3: François Broquedis, Introduction to UNIX, 20 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, 30 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, Object-Oriented Programming, 20 hours, Grenoble Institute of Technology (Ensimag)

François Broquedis is in responsible of the first year of Ensimag

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

Licence: Florent Bouchez Tichadou, Algorithms languages and programming, 160 hours, L2 UGA

Licence: Florent Bouchez Tichadou was responsible of the second year (L2) of INF (informatique) and MIN (mathématiques et informatique) students at UGA from January to June, eq. 42 hours

Licence: Florent Bouchez Tichadou, Software Project, 10 hours, L3 UGA

Data Asperger, Florent Bouchez Tichadou, Formation d'autistes Asperger aux métiers du développement informatique et analyse des données. Bloc Algorithmique. 20 hours, GEM & Le Campus Numérique.

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, was co-responsible of the first year of the International Master of Computer Science (Univ. Grenoble Alpes and INP ENSIMAG) until August 2019.

License 3: Manuel Selva, Imperative programming using python, 60 hours, Grenoble Institute of Technology (Ensimag)

License 3: Manuel Selva, Introduction to UNIX, 15 hours, Grenoble Institute of Technology (Ensimag)

Master 1: Manuel Selva, Operating systems and concurrent programming, 15 hours, Grenoble Institute of Technology (Ensimag)

9.2.2. Supervision

PhD: Georgios Christodoulis, Adaptation of a heterogeneous run-time system to efficiently exploit FPGA, December 5, 2019, 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: Fabian Grüber, Performance Debugging Toolbox for Binaries: Sensitivity Analysis and Dependence Profiling, December 17 2019, advised by Fabrice Rastello

PhD: Raphaël Jakse, Interactive Runtime Verification, December 18 2019, advised by Jean-François Méhaut and Yliès Falcone.

PhD in progress: Auguste Olivry, Data Locality and Parallelism Optimization for Linear and Multilinear Algebra, September 2019, advised by Fabrice Rastello.

PhD in progress: Nicolas Tollenaere, Optimizing ML algorithms for MPPA Asics, April 2019, advised by Fabrice Rastello.

PhD in progress: Nicolas Derumigny, Automatic generation of performance models for heterogeneous architectures, September 2019, advised by Fabrice Rastello.

PhD in progress: Théo Barollet, Problem-based learning: automatic generation and recommendation of programming exercises, September 2019, advised by Florent Bouchez Tichadou and Fabrice Rastello.

9.2.3. Juries

9.2.3.1. Fabrice Rastello

Fabian Grüber, advisor, *Performance Debugging Toolbox for Binaries: Sensitivity Analysis and Dependence Profiling*, PhD, Université Grenoble Alpes, December 17 2019

Maxime Schmitt, reviewer, *Automatic Generation of Adaptative Codes*, PhD, Université de Strasbourg, September 30 2019

9.2.3.2. Frédéric Desprez

Michael Mercier, examiner, *Contribution to High Performance Computing and Big Data Infrastructure Convergence*, PhD, Université Grenoble Alpes, January 07 2019

Alexandre Veith, examiner, *Quality of Service Aware Mechanisms for (Re)Configuring Data Stream Processing Applications on Highly Distributed Infrastructure*, PhD, Lyon, September 23 2019

Nathanaël Cheriere, reviewer, *Towards Malleable Distributed Storage Systems From Models to Practice*, PhD, Ecole normale supérieure de Rennes, November 5 2019

Ayham Kassab, reviewer/president, *Optimisation de l'ordonnancement de calculs parallèles et de l'engagement de sources d'énergie renouvelable pour l'alimentation des centres de calcul*, PhD, Université de Bourgogne Franche Comté, November 14 2019

Georgios Christodoulis, advisor, *Adaptation of a heterogeneous run-time system to efficiently exploit FPGA*, PhD, Université Grenoble Alpes, December 5, 2019

9.2.3.3. François Broquedis

- Georgios Christodoulis, advisor, *Adaptation of a heterogeneous run-time system to efficiently exploit FPGA*, PhD, Université Grenoble Alpes, December 5, 2019

9.2.3.4. Yliès Falcone

- Raphaël Jakse, advisor, *Interactive Runtime Verification*, PhD, Université Grenoble Alpes, December 18 2019.

9.3. Popularization

9.3.1. Education

DIU EIL, Florent Bouchez Tichadou, Formation des enseignants des lycées suite à la réforme du Bac et l'introduction de l'option informatique en 1ère et Terminale (NSI). Bloc algorithmique par Apprentissage Par Problèmes (APP). Académie de Grenoble ainsi que les enseignants dans les lycées français à l'étranger.

DATASPHERE Team

9. Dissemination

9.1. 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.

9.1.1. Scientific Events: Selection

9.1.1.1. Member of the Conference Program Committees

Kavé Salamatian has been TPC member for the below conferences:
- Infocom 2020
- Infocom 2019
- Aintec 2019

9.1.2. Journal

9.1.2.1. Reviewer - Reviewing Activities

Kavé Salamatian has been reviewer for the below journals:
- IEEE/ACM Transactions on Networking
- IEEE Transactions on Communication
- IEEE Transactions on Networked Systems Management
- Computer Communications
- IEEE transactions on Information Theory

9.2. Teaching - Supervision - Juries

9.2.1. 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.

9.2.2. Supervision

PhD: Jingxiu Su, DNS data analysis, 2016-2019, directeur de thèse Kave Salamatian. Defense 30/12/2019

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, co-Directors: Frederick Douzet, Kavé Salamatian

Phd in progress: Xinyi Zhang, IA and cybersecurity, 2019-, Advisor: Kavé Salamatian

Phd in progress: Ali Marandi, Efficient diffusion in NDN, 2016-2020, Advisor: Kavé Salamatian

9.3. Popularization

Various publications have appeared in journals accessible to a larger audience. In particular, our research work has been featured in a full page of Le Monde newspaper in July 2019 (https://www.lemonde.fr/international/visuel/2018/07/23/cyberespace-la-guerre-mondiale-des-donnees_5334901_3210.html).

Kavé Salamatian did several radio intervention, in particular, he was invited in the "Methode Scientifique" broadcasting program in November 2019.

<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, 10/10/2018, Lyon, France.

Claude Castelluccia: *AI & Information Disorder* as part of the Global Forum on AI for Humanity forum, October 2019, Paris, France.

8.1.1.2. Member of the Organizing Committees

Antoine Boutet: Workshop on data transparency, 10/10/2019, Lyon, France.

Antoine Boutet: Winter School on Distributed Systems and Networks 2019, 4-8/02/2019, Sept Laux, France.

Antoine Boutet: SRDS 2019, 01-04/10/19 Lyon, France.

Daniel Le Métayer: Panel *Influence or manipulation? What protections in the digital world?*, CPDP 2019, 30/01/2019, Brussels, Belgium.

Claude Castelluccia, *Building trust in AI, building trust with AI*, Global Science Week, 01/06/2019, Grenoble, France.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

Antoine Boutet: Social Network Analysis and Mining 2019, Nature 2019, MDPI 2019, IEEE Transactions on Services Computing 2019, APVP 2019, Compas 2019, Location Privacy Workshop 2019.

Mathieu Cunche: ACM WiSec 2019, APVP 2019, AlgoTel 2019, IEEE WCNC 2019.

Claude Castelluccia: APF 2019.

Cédric Lauradoux: ACM CCSW 2019, Prix Gilles Kahn.

Daniel Le Métayer: XAI 2019, IWPE 2019, CPDP 2019, APF 2019.

Vincent Roca: SPACOMM 2019.

8.1.3. Invited Talks

Claude Castelluccia, *A Risk Analysis Framework for Facial Recognition Applications*, MIAI chair on AI&Ethics (T. Menissier), 04/12/2019, Grenoble, France.

Claude Castelluccia, *Cognitive security*, closing the regulatory gap for consumer neurotechnology" workshop, Brocher Fondation, 25-27/11/2019, Geneva, Switzerland.

Claude Castelluccia, *Influence or manipulation ? What protections in the digital world? (panel)*, CPDP 2019, 30/01/2019, Brussels, Belgium.

Cédric Lauradoux, *Subject Access Request and Proof of Ownership*, SoSySec Seminar, 25/10/2019, Rennes, France.

Cédric Lauradoux, *Influence or manipulation ? What protections in the digital world? (panel)*, CPDP 2019, 30/01/2019, Brussels, Belgium.

Cédric Lauradoux, *Y-aura-t-il un Cambridge Analytica de nos data santé ? (panel)*, FUTUR.E.S, 13/06/2019, Paris, France.

Cédric Lauradoux, *Pseudonymisation*, École de Cybersécurité de l'Université de Nice, 09/07/2019, Nice, France.

Cédric Lauradoux, *Subject Access Right*, Laboratoire d'Innovation Numérique de la CNIL, 12/07/2019, Paris, France.

Cédric Lauradoux, *Subject Access Request and Proof of Ownership*, CyberAlps Workshop on GDPR, 09/10/2019, Grenoble, France.

Daniel Le Métayer, *Inaugural session: How to promote a responsable design and usage of decision making systems ?* , Center for Internet and Society, 27/09/2019, Paris, France.

Daniel Le Métayer and Clément Hénin *Social Responsability of Algorithms*, SRA 2019, 12/12/2019, Paris, France.

Daniel Le Métayer, *HumanAI*, workshop on transparency and accountability for algorithmic decision systems, 11/09/2019, Montreal, Canada.

Mathieu Cunche, *Mécanismes anti-traçage dans les réseaux sans-fil*, journées nationales du GDR sécurité 2019, 12/06/19, Paris, France.

Vincent Roca, *Vers un habitat intelligent... mais fortement indiscret : la maison connectée sous l'angle de la vie privée*, Séminaire "Vie privée, mobile et sécurité", Festival des Libertés Numériques, 06/02/2019, Rennes, France.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : Antoine Boutet, *Security and Privacy*, 14h, INSA-Lyon, France.

Master : Antoine Boutet, *Security and Privacy 16h*, Polytech Annecy, France.

Undergraduate course: Antoine Boutet, *System and Network*, 160h, L3, INSA-Lyon, France.

Master: Antoine Boutet, *Network, 24h*, Polytech Annecy, 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 Métayer, *Privacy*, 12h, M2 MASH, Université Paris Dauphine, France.

Master : Daniel Le Métayer, *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*, 3h, L-Pro, University of Grenoble Alpes, France.

Undergraduate course : Vincent Roca, *C-Language Programming*, 24h, L-Pro, University of Grenoble Alpes, France.

Master : Vincent Roca, *On Security and Privacy in smartphones*, 3h, M2, France.

8.2.2. E-learning

MOOC "Protection de la vie privée dans le monde numérique:"

Nataliia Bielova, Cédric Lauradoux, Vincent Roca, Session 3, (open during 2 months), FUN-MOOC, Inria, public targeted: around 30000 for the three sessions since 2018, https://www.fun-mooc.fr/courses/course-v1:inria+41015+session03/about.

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* , April 2017, Vincent Roca with Arnaud Legout (DIANA Inria team).

- 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 Métayer.

- PhD in progress: Théo Jourdan, *Privacy-preserving machine learning in medical domain, October 2018, Antoine Boutet.*

- *PhD in progress : Michale Toth,* Privacy protection of Web users and compliance with GDPR and ePrivacy Regulations *, December 2019, Natallia Bielova and Vincent Roca.*

- *Intern (M2): Michael Toth ,* Analyse et présentation accessible aux utilisateurs de Chartes de Vie Privée dans le contexte du RGPD, Vincent Roca.

- Intern (M2): Piyush Patil, *Privacy Leak Analysis in the Context of Smart Homes, Vincent Roca.*

- *Intern (M1): Jan Aalmoes - Understanding how location data influences personalized content in the mobile context, Antoine Boutet.*

- *Intern (M1): Vincent Prax - Privacy Analysis of Email Providers, Cédric Lauradoux.*

- *Intern (L3): Félix Fonteneau - Activity recognition using federated learning, Antoine Boutet.*

- *Intern (L3): Hilaire Bouaddi - Analysis of mobility traces, Antoine Boutet.*

- *Intern (L3): Amine Bahi - Privacy-preserving and scalable machine learning using homomorphic encryption, Antoine Boutet.*

8.2.4. Juries

HDR: Carole Frindel, *Approche computationnelle de l'imagerie médicale : application en neuro-sciences*, INSA Lyon, France, 13/12/2019, Claude Castelluccia.

PhD: Pieter Robyns, *Explicit and Implicit Information Leakage in Wireless Communication*, 11/12/19, Hasselt University, Belgium, Mathieu Cunche (reviewer).

PhD: Timothy CLAEYS, *Security for the Internet of Things: A bottom-up approach to the secure and standardized Internet of Things*, 19/12/19, Université de Grenoble Alpes, France, Mathieu Cunche (examiner).

PhD: Antoine Vastel, *Tracking versus security: investigating the two facets of browser fingerprinting*, Université de Lille, France, 23/10/2019, Daniel Le Métayer.

PhD: Julien Loudet, *Distributed and privacy-preserving personal queries on personal clouds*, Universitée Paris-Saclay, thèse préparée à Université de Versailles Saint-Quentin-en-Yvelines, 24/10/2019, France, Vincent Roca (reviewer).

8.3. Popularization

8.3.1. Hearings

- Claude Castelluccia: *audition at the Council of Europe on AI & Human Rights*, European Parliament, 05/2019, 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).
- Claude Castelluccia is a member of the Grenoble AI institute (MIAI)
- Daniel Le Métayer is a member of the European Commission Multistakeholder expert group to support the application of General Data Protection Regulation (GDPR).
- Daniel Le Métayer is Chair of the CNIL-Inria privacy award.
- Daniel Le Métayer is a member of the steering committee of APVP (Atelier Protection de la Vie Privée).
- Daniel Le Métayer is a member of the steering committee of the chair « Transformation de l'action publique » of Sciences Po Lyon.
- Antoine Boutet is the communication manager of CITI laboratory.
- Antoine Boutet is the manager the Cybersecurity and privacy option of the 5th year of computer science at INSA-Lyon.
- Cédric Lauradoux is a representative of Inria ethical committee COERLE at Inria Grenoble Rhone-Alpes.
- Cédric Lauradoux is a member of the scientific committee of the research action "Cyber-Physical System" of Labex Persyval (Grenoble).
- Cédric Lauradoux is a member of the ethics committee of ComUE Université Grenoble Alpes.
- Cédric Lauradoux is a member of Inria Grenoble Rhône-Alpes committee for technological development.
- Vincent Roca is the PRIVATICS Team Leader (since Nov. 2020).
- Vincent Roca is the co-chair of the NWCRG ("Coding for Efficient Network Communications" Research Group), Internet Research Task Force (IRTF) / IETF.
- Vincent Roca is the ANR 2017 DAPCODS/IOTics project leader.
- Vincent Roca is the chair of the CUMI ("Commision des Utilisateurs des Moyens Informatiques") of Inria Grenoble Rhone-Alpes.

- Vincent Roca is a member of Inria ethical committee COERLE.
- Vincent Roca is co-editor (with Ludovic Mé and Steve Kremer) of a series of articles dedicated to cybersecurity on the Blog Binaire, Le Monde.

8.3.3. Articles and contents

- Antoine Boutet et Mathieu Cunche: *Souriez, vous êtes géolocalisés !*, "Tout compte fait", 06/05/2019
- Antoine Boutet: *L'algorithme : cette formule arbitraire, miroir de l'intention humaine*, En Vue (INSA Lyon newsletter), 18/12/2019 .
- Claude Castelluccia: *Manipulation informationnelle et psychologique*, Le blog binaire du Monde, 05/2018.
- Mathieu Cunche: *Des chercheurs français découvrent des fuites d'informations sensibles sur les appareils Apple*, Science et Avenir.fr, 16/12/2019.
- Mathieu Cunche, *Vers une reconnaissance faciale généralisée*, Techniques de l'ingénieur, 05/12/2019.
- Cédric Lauradoux, *Bientot un identifiant numérique pour tous*, Les Echos, 07/05/2019.
- Cédric Lauradoux, *Facebook, mon fil d'actu, ma bataille*, Mediapart, 05/12/2019.
- Daniel Le Métayer and Claude Castelluccia: *Algorithmic decision making : risks and opportunities for society*, Inria Interview, 25/06/2019.
- Daniel Le Métayer: *Interview about algorithmic decision systems.*, Atlantico, 21/09/2019.
- Vincent Roca and Cédric Lauradoux: *Prêts à tout pour protéger leurs données*, 01NET, 02/10/2019.
- Vincent Roca: *Suite au Livre Blanc Inria sur la cybersécurité : L'ordinateur quantique est une menace pour une partie des techniques de chiffrement actuellement utilisée*, L'Hebdo, BFM Business, 09/02/2019.
- Vincent Roca: *Les objets connecteś nous espionnent-ils ?*, "Les Idées Claires", France Culture, 12/03/2019.
- Vincent Roca: *Rencontre Sciences et Politique : Cybersécurité*, Academ̈ie des sciences - Academ̈ie nationale de med̈ecine - Office parlementaire d'ev̈aluation des choix scientifiques et technologiques (OPECST), Sénat, 19/06/2019.
- Vincent Roca: *Objets connectés et vie privée*, Les Echos, 20/03/2019.
- Vincent Roca: *Nouvelles technologies : tous espionnés*, Journal de 20 Heures, France 2, 12/04/2019.
- Vincent Roca: *Vie privée et maison intelligente*, Café des Sciences, 14/05/2019, Grenoble, France.

8.3.4. Education

- Nataliia Bielova: *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, May-June 2019.
- Antoine Boutet: Contest of data anonymization between three different groups of INSA students (from Lyon and Bourges), 25-26/11/19.
- Cédric Lauradoux: *Action vie privée*, Maison pour la science, 14/02/2019, Grenoble, France.
- Cédric Lauradoux: *Protéger sa vie privée*, DIU EIL (enseignant d'informatique au lycée), 12/04/2019, Grenoble, France.
- Cédric Lauradoux: *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, May-June 2019.
- Vincent Roca: : *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, May-June 2019.

8.3.5. Interventions

- Mathieu Cunche: *Cybersécurité: Protéger ses objets physiques*, Pint of science, 22/05/2019, Lyon, France.
- Cédric Lauradoux: *Procès du robot 42*, Festival TRANSFO, 24/01/2019, Grenoble, France.
- Cédric Lauradoux: *Challenges de cryptologie*, Printemps du numérique, 08/04/19, Die, France.
- Cédric Lauradoux: *Challenges de cryptologie*, MathC2+ internship, 25/06/19, Grenoble, France.
- Cédric Lauradoux: *Atelier cryptographie*, Fête de la Science, 10/10/2019, Grenoble, France.
- Cédric Lauradoux: *Procès du robot 42*, Fête de la Science, 12/10/2019, Grenoble, France.
- Cédric Lauradoux: *Les données en question*, Festival Imaginascience, 16/10/2019, Annecy, France.
- Cédric Lauradoux: *Le Numérique nous menace-t-il ?*, Telecom Saint Etienne, 03/12/2019, Saint Etienne, France.
- Cédric Lauradoux: *Vie privée et Liberté dans le monde numérique*, Collège Les Dauphins, 03/12/2019, Saint Jean de Soudain, France.
- Cédric Lauradoux: *Challenges de cryptologie*, Cité scolaire Jean PREVOST, 12/12/2019, Villard de Lans, France.
- Cédric Lauradoux: *Avoir un usage Internet éclairé*, UIAD, 18/12/2019, Grenoble, France.
- Vincent Roca: *Maison intelligente : le point de vue du respect de la vie privée*, Café des Sciences, 14/05/2019, Grenoble, France.
- Vincent Roca: *Habitat intelligent, service de vélo partagé et vie privée*, Fête de la Science, 12/10/2019, Grenoble, France.

8.3.6. Internal action

- Cédric Lauradoux: *Formation Éthique*, Inria Paris, 26/01/2019, Paris, France.
- Cédric Lauradoux: *Formation Éthique*, Inria Saclay, 25/04/2019, Saclay, France.
- Cédric Lauradoux: *Formation Éthique*, Inria Grenoble - Rhône-Alpes, 13/05/2019, Lyon, France.
- Cédric Lauradoux: *Rules of Cyber Engagement*, Inria JSI, 07/06/2019, Lyon, France.
- Cédric Lauradoux: *Privacy: Understanding the GDPR*, Inria Grenoble - Rhône-Alpes, 15/10/2019, Grenoble, France.
- Vincent Roca: *Sécurité numérique : technique, éthique, juridique : qui s'y frotte s'y pique (moderator)*, Inria JSI, 07/06/2019, Lyon, France.

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

9. Dissemination

9.1. Environmental and societal responsibility

NB: We support the idea of an additional section in future Activity Reports that would be dedicated to actions in connection with our environmental and societal responsibility. We write below content that would fit into it for 2019.

- A discussion on computer ethics was scheduled at our last team seminar. There have been several meetings between permanent researchers to discuss how we can better align our research agenda with the current needs of our society. Our discussions cover aspects such as the environmental and societal impact of ICT (Information and Communication Technologies), and more broadly the role that ICT play in our lives, our role as researchers in computer science, etc. These discussions have led us to consider these issues as a research topic that we should investigate in the near future.

- Sophie Quinton and Jean-Bernard Stefani contributed to the so-called "MakeSEnS" working group appointed by the CEO of Inria to propose a list of concrete actions that the institute could take to tackle the current environmental crisis [24].

- Sophie Quinton has been mandated by Patrick Gros (Director of the Inria Grenoble – Rhône-Alpes research center) to organize discussions and actions regarding the environmental and societal impact of our research at Inria Grenoble Rhône-Alpes.

- Sophie Quinton is a member of the GDS EcoInfo (https://ecoinfo.cnrs.fr/). Her actions as member of EcoInfo include: leading a discussion group on the environmental impact of collaborative platforms as part of a two-day seminar organized at Mines ParisTech [0]; and contributing to a roadmap regarding the environmental and societal impact of ICT prepared by the Conseil National du Numérique (https://cnnumerique.fr/) at the government's request.

- Sophie Quinton co-chairs a working group of the GDR CIS associated with the Center for Internet and Society (http://cis.cnrs.fr/) focused on environmental issues.

- Sophie Quinton is part of the scientific committee of the upcoming "COP2 étudiante" (https://cop2etudiante.org/).

9.2. Promoting Scientific Activities

9.2.1. Scientific Events: Organisation

9.2.1.1. 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.

9.2.1.2. Member of the Organizing Committees

- Alain Girault was co-organizer of the Workshop on Synchronous Programming (SYNCHRON'19) http://synchron19.org.

---

[0] http://www.mines-paristech.fr/Actualites/Ingenieurs-et-transitions-environnementales/4116

- Gregor Gössler was co-organizer of a Shonan seminar on *Causal reasoning in systems* https://project.inria.fr/shonan139.

9.2.2. Scientific Events: Selection

9.2.2.1. Chair of Conference Program Committees

- Sophie Quinton was the program chair of 31st Euromicro Conference on Real-Time Systems (ECRTS'19) https://www.ecrts.org/archives/fileadmin/WebsitesArchiv/ecrts2019/index.html.

9.2.2.2. Member of the Conference Program Committees

- Alain Girault served in the program committees of the Forum on specification and Design Languages (FDL'19) and the Conference on Applications of Concurrency to System Design (ACSD'19).

- Gregor Gössler served in the program committees of the ACM/IEEE International Conference on Embedded Software (EMSOFT'19), the 26th SPIN Symposium on Model Checking of Software (SPIN'19), the 17th ACM-IEEE International Conference on Formal Methods and Models for System Design (MEMOCODE'19), and the 4th international Workshop on Formal Reasoning about Causation, Responsibility, and Explanations in Science and Technology (CREST'19).

9.2.2.3. Reviewer

- Alain Girault reviewed an article for the International Conference on Fundamental Approaches to Software Engineering (FASE'19).

- Sophie Quinton reviewed an article for the ACM International Conference on Embedded Software (EMSOFT'19).

- Pascal Fradet reviewed an article for the ACM International Conference on Embedded Software (EMSOFT'19).

9.2.3. Journal

9.2.3.1. Member of the Editorial Boards

- Alain Girault is a member of the editorial board of the Journal on Embedded Systems.

9.2.3.2. Reviewer - Reviewing Activities

- Alain Girault reviewed articles for IEEE Transactions on Service Computing (TSC) and for the International Journal on Software Tools for Technology Transfer (STTT).

- Gregor Gössler reviewed an article for IEEE Transactions on Automatic Control (TAC).

9.2.4. Leadership within the Scientific Community

- Sophie Quinton is a member of the ACM SIGBED Executive Committee and Associate Editor of the SIGBED Review.

9.2.5. 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 Deputy Scientific Director at Inria in charge of the domain "Algorithmics, Programming, Software and Architecture". He is also Scientific Manager of the Cyber-Physical Systems axis of the Persyval-Lab labex https://persyval-lab.org.

- 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.

9.3. Teaching - Supervision - Juries

9.3.1. 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, Analyse de Code pour la Sûreté et la Sécurité, 45 HeqTD, niveau M1, Grenoble INP (Ensimag), France

Licence : Xavier Nicollin, Théorie des Langages 1, 48 HeqTD, niveau L3. Grenoble INP (Ensimag), France

Licence : Xavier Nicollin, Théorie des Langages 2, 37,5 HeqTD, niveau L3, Grenoble INP (Ensimag), France

Licence : Xavier Nicollin, Bases de la Programmation Impérative, 30 HeqTD, niveau L3, Grenoble INP (Ensimag), France

Licence : Sophie Quinton, Théorie des Langages 2, 20 HeqTD, niveau L3, Grenoble INP (Ensimag), France

Master : Sophie Quinton, Performance and Quantitative Properties, 8 HeqTD, MOSIG, Univ. Grenoble Alpes, France

Master: Jean-Bernard Stefani, Formal Aspects of Component Software, 9h, MOSIG, Univ. Grenoble Alpes, France.

9.3.2. 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: Thomas Mari, "Construction of Safe Explainable Cyber-physical systems"; Grenoble INP; since October 2019; co-advised by Gregor Gössler and Thao Dang.

- PhD: Christophe Prévot, "Early Performance assessment for evolving and variable Cyber-Physical Systems", Univ. Grenoble Alpes; defended on November 15th, 2019; co-advised by Alain Girault and Sophie Quinton.

- PhD: Zain A. H. Hammadeh, "Deadline Miss Models for Temporarily Overloaded Systems", TU Braunschweig; defended on May 28th, 2019; co-advised by Rolf Ernst 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, "RDF: A reconfigurable dataflow MoC supporting dynamic topological transformations and static analyzability"; 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.

- Internships: Jonathan Julou and Martin Portalier, "Formal proofs for real-time systems analysis"; ENSIMAG; co-advised by Pascal Fradet, Xiaojie Guo, Maxime Lesourd and Sophie Quinton.

9.3.3. Juries

- Alain Girault was referee for the Habilitation thesis of Julien De Antoni (Université Côte d'Azur) and was member of the PhD thesis of Pierre Donat-Bouillud (Sorbonne Université). He was also vice-president of the Inria Starting Research Position (SRP) Advanced Research Position (ARP) jurys.

- Jean-Bernard Stefani was examiner for the Habilitation (HDR) jury of Thomas Ledoux (Université de Nantes).

- Sophie Quinton was a member of the PhD thesis committee of Hugo Daigmorte (Université de Toulouse).

9.4. Popularization

9.4.1. Articles and contents

Software is a fundamental pillar of modern scientific research, across all fields and disciplines. However, there is a lack of adequate means to cite and reference software due to the complexity of the problem in terms of authorship, roles and credits. This complexity is further increased when it is considered over the lifetime of a software that can span up to several decades. Building upon the internal experience of Inria, we have provided a contribution to the ongoing efforts in order to develop proper guidelines and recommendations for software citation and reference. Namely, we recommend: (1) a richer taxonomy for software contributions with a qualitative scale; (2) to put humans at the heart of the evaluation; and (3) to distinguish citation from reference [10]. This has been a joint work between Alain Girault and colleagues from Software Heritage (Roberto Di Cosmo), from Inria's Evaluation Committee (Pierre Alliez, Benjamin Guedj, Mohand-Saïd Hacid, Nicolas Rougier), and a specialist in reproducible research (Arnaud Legrand).

9.4.2. Interventions

Sophie Quinton played the role of one of the experts in the fictional trial of a robot during the Transfo Festival in Grenoble. She also gave a lecture on the design and verification of real-time systems as part of the ISN curriculum for high school teachers.

Alain Girault played the role of one of the experts in the fictional trial of a robot during the Fête de la Science in Grenoble.

9.4.3. Creation of media or tools for science outreach

All SPADES members have contributed to the scenario of an animated movie, commissioned by the communication service of Inria, in order to popularise the research activities of SPADES.

ELAN Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. General Chair, Scientific Chair

- Florence Bertails-Descoubes was co-founder and co-chair (together with Basile Audoly, École Polytechnique) of the new graphics-physics worskhop Graphyz, held at Inria in Montbonnot on October 24-25 2019. The ELAN team was the local organizer of the event.

9.1.1.2. Member of the Organizing Committees

- Florence Bertails-Descoubes, together with the help of Inria and of the ELAN team, has organized the new graphics-physics workshop Graphyz at Inria in Montbonnot. See above.

9.1.2. Scientific Events: Selection

9.1.2.1. Member of the Conference Program Committees

- Florence Bertails-Descoubes was member of the ACM SIGGRAPH Technical Program Committee in 2019, and of the Eurographics Technical Program Committee in 2019.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

- Florence Bertails-Descoubes was reviewer in 2019 for ACM Transaction on Graphics, ACM SIGGRAPH 2019, ACM SIggraph Asia 2019, ACM-EG Symposium on Computer Animation, UIST 2019, Nonlinear Dynamics, Computer Graphics Forum, SIAM Journal on Scientific Computing, Elsevier Computer Methods in Applied Mechanics and Engineering.
- Thibaut Metivet was reviewer in 2019 for Elsevier Computer Methods in Applied Mechanics and Engineering and Coupled Systems Mechanics.

9.1.4. Invited Talks

- Florence Bertails-Descoubes, Keynote speaker at Eurographics 2019, Genova, Italy, May 2019.
- Florence Bertails-Descoubes, invited talk at Matherials, a series of cross-disciplinary seminars jointly organized by Laboratoire Jean Kuntzmann, SIMAP and Institut Fourier, June 2019.
- Florence Bertails-Descoubes, Exposé invité aux Journées Françaises d'Informatique Graphique, Marseille, November 2019.
- Florence Bertails-Descoubes, invited talk at the HCERES evaluation of Laboratoire Jean Kuntzmann, Inria Montbonnot, December 2019.
- Thibaut Metivet, invited poster at RheoSuNN, a workshop on the numerical simulation of suspensions organised at Ecole Polytechnique in March 2019.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Raphaël Charrondière, TP Projet Logiciel, 13h éq TD, L2 STG Grenoble, Université Grenoble Alpes.

Licence : Florence Bertails-Descoubes, Méthodes Numériques, 18h éq TD, L3, ENSIMAG 1A, Grenoble INP.

License : Thibaut Metivet, Analyse, 33h éq TD, L3, ENSIMAG 1A, Grenoble INP.

Master : Raphaël Charrondière, Complexité Algorithmique Des Problèmes, 15h éq TD, M1, Université Grenoble Alpes.

Master : Florence Bertails-Descoubes, Special Course for M2 at École Normale Supérieure de Lyon, entitled "Numerical Mechanics: From Lagrangian mechanics to simulation tools for computer graphics", 19h éq TD.

Master : Mickaël Ly, Special Course for M2 at École Normale Supérieure de Lyon, entitled "Numerical Mechanics: From Lagrangian mechanics to simulation tools for computer graphics", 14h éq TD.

9.2.2. 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.

PhD in progress : François Der Hovsepian, Modélisation et simulation d'écoulement de cellules tumorales dans le sang et de l'adhésion aux parois, 19 October 2017, Christophe Prud'homme, Vincent Chabannes (Université de Strasbourg) and Thibaut Metivet.

9.2.3. Juries

Florence Bertails-Descoubes, member (Examinatrice) of Ph.D. Thesis committee of A. Sibellas (8 March 2019), INSA Lyon (directeur de thèse : E. Maire)

Florence Bertails-Descoubes, member (Présidente du jury) of Ph.D. Thesis committee of V. Leroy (17 October 2019), Inria Rhône-Alpes Montbonnot (directeur de thèse : E. Boyer, co-encadrant : J.-S. Franco).

Thibaut Metivet, member (Encadrant, invité) of Ph.D. Thesis committee of A. Sengers (19 July 2019), Université Grenoble-Alpes (directeur de thèse : E. Maitre).

9.3. Popularization

9.3.1. Articles and contents

- Focus on our cloth simulator Argus, on a video prepared by A. Aftalion and published in February 2019 in http://video.math.cnrs.fr.

MISTIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Stéphane Girard was chairman at the 2nd workshop on Multivariate Data and Software (Limassol, Cyprus) and at the International Workshop on Stress Test and Risk Management (Paris).

10.1.1.2. Member of the Organizing Committees

- Florence Forbes is a member of the scientific committees of the Bayes Comp 2020 conference in Gainesville, Florida, USA (January 2020) and of the Research school on Networks and molecular biology at CIRM in Marseille (March 2020).

- Sophie Achard was a member of the scientific committee of the Wavelet & Sparsity XVIII 2019 in San Diego and the organizer of a special session within this conference.

- Stéphane Girard and Julyan Arbel were members of the organizing committee of the 10th Statlearn international workshop "Challenging problems in Statistical Learning", Grenoble, http://statlearn. sfds.asso.fr. Stéphane Girard also co-organized (with D. Fraix-Burnet, IPAG) the 4th international school Stat4Astro "Variability and Time Series Analysis", Autrans, http://stat4astro2019. sciencesconf.org.

- Julyan Arbel was a member of the scientific committee of *Statistical Methods for Post Genomic Data analysis (SMPGD)*, link. Julyan Arbel organized the session entitled 'Bayesian Machine Learning' at the 12th International Conference of Computational and Methodological Statistics (CMStat), University of London, UK (14-16 December 2019).

Seminars organization

- MISTIS participates in the weekly statistical seminar of Grenoble. Several lecturers have been invited in this context.

- Julyan Arbel is organizing monthly reading group Bayes in Grenoble on Bayesian statistics.

10.1.2. Scientific Events Selection

10.1.2.1. Reviewer

- In 2019, Florence Forbes has been a reviewer for CAP 2019 in Toulouse and for ICDHT 2019 in Tunis.

- In 2019, Julyan Arbel has been a reviewer for the *Bayesian Young Statisticians Meeting proceedings* (BAYSM).

- In 2019, Florence Forbes and Julyan Arbel have been reviewers for the *Research School on Statistics and Data Science* (RSSDS2019).

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, Associate Editor of the *Journal of Multivariate Analysis* since 2016 and Associate Editor of *REVSTAT - Statistical Journal* since 2019. 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 *Bayesian Analysis* (BA) and of Statistics & Probability Letters (SPL) since 2019.
- Julyan Arbel and Florence Forbes are Associate Editors for the *Australian & New Zealand Journal of Statistics* (ANZJS), since 2018.
- Sophie Achard is Associate Editor of *Neural Processing Letters* and *Network Neuroscience* since 2016.

10.1.3.2. Reviewer - Reviewing Activities

- In 2019, Florence Forbes has been a reviewer for *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI), *Statistics and Computing* (STCO), and *Neural Processing Letters*.
- In 2019, Stéphane Girard has been a reviewer for *Journal of the American Statistical Association* (JASA), *Journal of Statistical Planning and Inference* (JSPI), *Communications in Statistics - Theory and Methods, Spatial Statistics.*
- In 2019, Jean-Baptiste Durand has been a reviewer for *Behavior Research Methods* (BRM) and *Statistics and Computing* (STCO).
- In 2019, Julyan Arbel has been a reviewer for: *Annals of Applied Statistics* (AOAS), *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques* (AIHP), *Bernoulli*, *Biometrika*, *Entropy*, *Journal of the American Statistical Association* (JASA), *Journal of Computational and Graphical Statistics* (JCGS), *Journal of Nonparametric Statistics* (JNS), *Sankhyā*, *Stats*, *Statistica Sinica*, *Statistics and Probability Letters* (SPL), *Stochastic Processes and their Applications* (SPA), *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI).

10.1.4. Invited Talks

Florence Forbes has been invited to give talks at the following seminars and conferences:

- Glasgow Statistics Department, March 2019
- Conference on Applied Inverse Problems, AIP 2019, July 2019 [34]
- 51ème Journées de la Statistique, Nancy, France, June 2019 [35]
- Workshop on Model-based clustering, Vienna, Austria, July 15-19, [32]
- Research School on Statistics and Data Science, Melbourne, Australia, July 24-26, [33]

Julyan Arbel has been invited to give talks at the following seminars and conferences:

- Applied Inverse Problems conference, Grenoble, France, July 8-12, 2019. Invited talk: Understanding Priors in Bayesian Neural Networks at the Unit Level.
- 11th Workshop on Bayesian Inference in Stochastic Processes (BISP), Madrid, Spain, June 12-14, 2019. Invited talk: Understanding Priors in Bayesian Neural Networks at the Unit Level.
- Workshop on Multivariate Data Analysis, Limassol, Cyprus, April 14-16, 2019. Invited talk: Some distributional properties of Bayesian neural networks.
- Seminar, Laboratoire d'Informatique de Grenoble, Grenoble, France, September 19, 2019. Invited talk: On some theory for Bayesian neural networks.
- Grenoble R User Group, Grenoble, France, April 11, 2019. Invited talk: R Markdown.

Sophie Achard has been invited to give talks at the following seminars and conferences:

- Workshop ATLAS, GDR MADICS, November 2019, Grenoble http://ama.liglab.fr/ATLAS/Wksp-22112019.html. Invited talks: Assessing reliability of resting-state fMRI graph analysis: challenges in measuring brain connectivity networks alterations for clinical applications.
- NeuroSTIC, GDR BioComp et ISIS, October 2019, Nice http://www.gdr-isis.fr/neurostic/?p=452. Invited talks: Brain connectivity for patients with consciousness disorders: statistical and clinical challenges

Stéphane Girard has been invited to give talks at the following seminars and conferences:

- 2nd workshop on Multivariate Data and Software (Limassol, Cyprus) [37],
- Workshop "Appréhender la grande dimension" (Paris) [36],
- Seminar, Nottingham University, UK "Estimation of extreme risk measures based on L_p- quantiles".

Antoine Usseglio-Carleve was invited to give a talk [38] at the 12th International Conference of Computational and Methodological Statistics, London, UK.

Marta Crispino was invited to give a talk [31] at the 12th International Conference of Computational and Methodological Statistics, London, UK.

10.1.5. Scientific Expertise

Florence Forbes is Scientific Advisor since March 2015 for the Pixyl company.

10.1.6. Research Administration

- Stéphane Girard is a member of the "Comité des Emplois Scientifiques" at Inria Grenoble Rhône-Alpes since 2015.
- Since 2015, Stéphane 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.
- 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 Ensimag Grenoble and at Ecole Centrale Lille in 2019.
- Florence Forbes is a member of the advisory committee of the Helmholtz AI Cooperation Unit https://helmholtz.ai/, since 2019.
- Sophie Achard is co-director of pôle MSTIC whithin Université Grenoble Alpes, since 2017.
- Julyan Arbel is a scientific committee member of the Data Science axis of Persyval Labex (Machine learning: fundamentals and applications, and Data linking, sharing and privacy), link, since 2019.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master : Stéphane Girard, *Statistique Inférentielle Avancée*, 18 ETD, M1 level, Ensimag. Grenoble-INP, France.
- PhD course: Julyan Arbel, *Bayesian nonparametrics*, Jyväskylä Summer School, Finland, August 2019, 25 ETD.
- 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 and PhD course: Julyan Arbel, *Bayesian machine learning*, Master Mathématiques Vision et Apprentissage Master MVA, École normale supérieure Paris-Saclay, 36 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.

- Sophie Achard M1 course Théorie des graphes et réseaux sociaux, M1 level, MIASHS, Université Grenoble Alpes (UGA), 14 ETD.

10.2.2. Supervision

- PhD defended: Karina Ashurbekova "*Robust Structure Learning*", December 2019, Sophie Achard and Florence Forbes, Université Grenoble Alpes.

- PhD defended: Brice Olivier "*Joint analysis of eye-movements and EEGs using coupled hidden Markov models*", June 2019, Jean-Baptiste Durand and Anne Guérin-Dugué, Université Grenoble Alpes.

- PhD defended: Chun-Chen Tu,"*Gaussian mixture sub-clustering/reduction refinement of Non-linear high-to-low dimensional mapping*", "Date", Florence Forbes and Naisyin Wang, University of Michigan, Ann Arbor.

- HDR: Julyan Arbel, Université Grenoble Alpes, "*Bayesian Statistical Learning and Applications*" [11], October 2019.

- 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: Mariia Vladimirova, "*Prior specification for Bayesian deep learning models and regularization implications*", started on October 2018, Julyan Arbel and Jakob Verbeek.

- PhD in progress: Aboubacrène Ag Ahmad "*A new location-scale model for heavy-tailed distributions*", started on September 2016, Stéphane 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, Stéphane 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, Stéphane Girard and Mathieu Fauvel (Université Grenoble Alpes).

- PhD in progress: Daria Bystrova, "*Joint Species Distribution Modeling: Dimension reduction using Bayesian nonparametric priors*", started on October 2019, Julyan Arbel and Wilfried Thuiller.

- PhD in progress: Giovanni Poggiatto , "*Scalable Approaches for Joint Species Distribution Modeling*", started on November 2019, Julyan Arbel and Wilfried Thuiller.

10.2.3. Juries

- Julyan Arbel has been reviewer for the PhD thesis of Romain Mismer, LPSM, Sorbonne Université, Paris.

- Stéphane Girard has been reviewer for the PhD thesis of Maxime Baelde, Université de Lille.

- Stéphane Girard has been the president of the HDR committee of Julie Carreau, Université de Montpellier, and an examinator for the HDR of Julyan Arbel.

- Stéphane Girard has been a member of the PhD committee of Abdul-Fattah Abu-Awwad, Université de Lyon.

- Florence Forbes has been reviewer for the PhD thesis of Lê-Huu D. Khuê, Université Paris Saclay, CentraleSupelec, Cedric Meurée, Université de Rennes, Bao Tuyen Huynh Université de Caen and for the HDR thesis of Christine Keribin, Université Paris Orsay.
- Florence Forbes has been a member of the PhD committee of Charlotte Maugard, Université Grenoble Alpes and Esteban Bautista, ENS Lyon.
- Sophie Achard has been reviewer for the HDR of Julien Modolo, Université Rennes 1.

10.3. Popularization

10.3.1. Interventions

- Sophie Achard has been invited to Festival des Nouvelles Explorations https://nouvellesexplorations.com/.
- Julyan Arbel gave a presentation for ISN conference, March 2019.

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

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events: Organisation

8.1.1.1. Member of the Organizing Committees

- Sergei Grudinin coorganized CECAM workshop simSAS 2019, April 8-11, 90 participants, at ILL Grenoble, with Jean-Louis Barrat (UGA), Anne Martel (ILL), Sylvain Prévost (ILL), https://workshops.ill. fr/event/143/overview.

8.1.2. Scientific Events: Selection

8.1.2.1. Member of the Conference Program Committees

International Conference on Bioinformatics and Computational Biology (Devaurs)

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Biophysical Reviews (Devaurs)
- Current Proteomics (Devaurs)

8.1.3.2. Reviewer - Reviewing Activities

- Applied Sciences (Devaurs)
- Autonomous Robots (Devaurs)
- Bioinformatics (Oxford Press) (Devaurs, Grudinin)
- Current Proteomics (Devaurs)
- IEEE Transactions on Automation Science and Engineering (Devaurs)
- Journal of Bioinformatics and Computational Biology (Devaurs)
- Sensors (Devaurs)
- PLOS Computational Biology (Grudinin)
- Journal of Computational Chemistry (Grudinin)
- BMC Bioinformatics (Grudinin)
- Computational and Structural Biotechnology Journal (Elsevier) (Grudinin)
- Accounts of Chemical Research (ACS) (Grudinin)
- Computational Biology and Chemistry (Grudinin)
- Journal of Chemical Information and Modeling (Grudinin)
- Journal of Computer-Aided Molecular Design (Grudinin)
- Nature (Grudinin)
- Proteins: Structure, Function, and Bioinformatics (Grudinin)

8.1.4. Invited Talks

- D. Devaurs. Efficient strategies to explore the conformational space of proteins and molecular complexes. Seminar of the Functionality and Protein Engineering Unit, University of Nantes, France, 09/2019

- D. Devaurs. Efficient strategies to explore the conformational space of proteins and molecular complexes. CAPSID Seminar, Loria (Inria, CNRS, University of Lorraine), Nancy, France, 09/2019

- D. Devaurs. Efficient strategies to explore the conformational space of proteins and molecular complexes. ABS Seminar, Inria Sophia Antipolis - Méditerranée, France, 11/2019

- S. Grudinin. What does deep learning see in 3d protein structures? In 5th Korean Polish Conference on Protein Folding, September 16-18, 2019, Seoul, 2019.

- S. Grudinin. What does artificial intelligence see in 3d protein structures? In Workshop on Artificial Intelligence Applied to Photon and Neutron Science, 12-14 November, Grenoble, France, https://workshops.ill.fr/event/209/, 2019.

- S. Grudinin. Symmetry in protein complexes. In 7th CAPRI evaluation meeting, EMBL-EBI, Hinxton, UK, April 3-5, 2019, 2019.

- S. Grudinin. SAXS/SANS-assisted flexible fitting and docking. In EMBO Practical course on small angle neutron and X-ray scattering from biomolecules in solution, http://meetings.embo.org/event/19-small-angle-scattering, 2019.

- S. Grudinin. The least constraint approach for automatic coarse-graining of macromolecules. In The First International Conference on Mathematical Multiscale Modeling in Biology, Guanacaste, October 21-25, Costa Rica, 2019.

- S. Grudinin. Deep learning and artificial intelligence applied to the prediction of protein structure and interactions. In Aviesan ITMO Molecular and Structural Basis of Life Sciences : Deciphering The Functional Mechanisms Of Biological Macromolecules: Upcoming Challenges In Bioinformatics, Modelling And Experimental Validations, October 7-8, Paris, France, 2019.

- S. Grudinin. Challenges of modern structural bioinformatics. At the biological department, MSU Minsk, December 26, Minsk, Belarus, 2019.

- S. Grudinin. Novel software tools for small angle scattering. Seminar at the Synrotron SOLEIL, 13th May, 2019.

- S. Grudinin. On the analysis of macromolecular flexibility. Seminar at STFC Rutherford Appleton Laboratory, UK, March 2019.

- S. Grudinin. Novel algorithms for rapid modeling and analysis of flexibility and symmetry in macromolecules. Seminar at Cambridge Institute for Medical Research, UK, April 2019.

- S. Grudinin. Modeling and analysis of flexibility and symmetry in macromolecules. Seminar at Computational Biophysics department, Nagoya University, Japan, March 2019.

- S. Grudinin. On the nonlinear normal mode analysis. Seminar at the department of Chemistry, University of Bergen, Norway, August 2019.

- S. Grudinin. Novel computational tools for biomolecular small-angle scattering. Seminar at the department of Chemistry, University of Oslo, Norway, August 2019.

- S.Grudinin. Integrative Approaches for Current Problems in Structural Biology. Seminar at Laboratory of Theoretical Biochemistry, Institut de Biologie Physico-Chimie, Paris, 31 Jan 2019.

- S.Grudinin. New methods for protein-protein docking. Seminar at the bioinformatics unit, Kansas University, Lawrence, USA, October 2019.

8.1.5. Research Administration

- Sergei Grudinin is a member of IA working group at LINX, Lund Institute Of Advanced Neutron And X-Ray Science, Sweden.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Sergei Grudinin gave 2 public lecture and tutorials for Master and PhD level students on structural bioinformatics at the biology department of BSU Minsk, Belarus in December 2019.
- Sergei Grudinin prepared 2 tutorials for the EMBO school and CECAM workshop on small-angle scattering.

8.2.2. Supervision

PhD : Phd thesis defence of Guillaume Pagès, Université Grenoble Alpes, 12 septembre 2019
Title: Novel computational developments for protein structure analysis and prediction.
Thesis committee: Sergei Grudinin, Pablo Chacón, Česlovas Venclovas, Elodie Laine, Konrad Hinsen, Stéphane Redon, Arne Elofsson.
Summary: Proteins are ubiquitous for virtually all biological processes. Identifying their role helps to understand and potentially control these processes. However, even though protein sequence determination is now a routine procedure, it is often very difficult to use this information to extract relevant functional knowledge about system under study. Indeed, the function of a protein relies on a combination of its chemical and mechanical properties, which are defined by its structure. Thus, understanding, analysis and prediction of protein structure are the key challenges in molecular biology.

Prediction and analysis of individual protein folds is the central topic of this thesis. However, many proteins are organized in higher-level assemblies, which are symmetric in most of the cases, and also some proteins contain internal repetitions. In many cases, designing a fold with repetitions or designing a symmetric protein assembly is the simplest way for evolution to achieve a specific function. This is because the number of combinatorial possibilities in the interactions of designed folds reduces exponentially in the symmetric cases. This motivated us to develop specific methods for symmetric protein assemblies and also for individual proteins with internal repeats. Another motivation behind this thesis was to explore and advance the emerging deep neural network field in application to atomistic 3-dimensional (3D) data.

This thesis can be logically split into two parts. In the first part, we propose algorithms to analyse structures of protein assemblies, and more specifically putative structural symmetries. We start with a definition of a symmetry measure based on 3D Euclidean distance, and describe an algorithm to efficiently compute this measure, and to determine the axes of symmetry of protein assemblies. This algorithm is able to deal with all point groups, which include cyclic, dihedral, tetrahedral, octahedral and icosahedral symmetries, thanks to a robust heuristic that perceives correspondence between asymmetric subunits. We then extend the boundaries of the problem, and propose a method applicable to the atomistic structures without atom correspondence, internal symmetries, and repetitions in raw density maps. We tackle this problem using a deep neural network (DNN), and we propose a method that predicts the symmetry order and a 3D symmetry axis.

Then, we extend the DNN architecture to recognise folding quality of 3D protein models. We trained the DNN using as input the local geometry around each residue in a protein model represented as a density map, and we predicted the CAD-scores of these residues. The DNN was specifically conceived to be invariant with respect to the orientation of the input model. We also designed some parts of the network to automatically recognise atom properties and robustly select features. Finally, we provide an analysis of the features learned by the DNN. We show that our architecture correctly learns atomic, amino acid, and also higher-level molecular descriptors. Some of them are rather complex, but well understood from the biophysical point of view. These include atom partial charges, atom chemical elements, properties of amino acids, protein secondary structure and atom solvent exposure. We also demonstrate that our network learns novel structural features.

This study introduces novel tools for structural biology. Some of them are already used in the community, for example, by the PDBe database and CASP assessors. It also demonstrates the power of deep learning in the representation of protein structure and shows applicability of DNNs to computational tasks that involve 3D data.

PhD : Phd thesis defence of François Rousse, Université Grenoble Alpes, 2019

Title: Incremental Algorithm for Orbital-Free Density Functional Theory.

Thesis committee: Stéphane Redon, Jean Clérouin, Reinhold Schneider, Johannes Dieterich, Philippe Blaise, Florent Calvo, Xavier Bouju.

Summary: The ability to model molecular systems on a computer has become a crucial tool for chemists. Indeed molecular simulations have helped to understand and predict properties of nanoscopic world, and during the last decades have had large impact on domains like biology, electronic or materials development. Particle simulation is a classical method of molecular dynamic. In particle simulation, molecules are split into atoms, their inter-atomic interactions are computed, and their time trajectories are derived step by step. Unfortunately, inter-atomic interactions computation costs prevent large systems to be modeled in a reasonable time. In this context, our research team looks for new accurate and efficient molecular simulation models. One of our team's focus is the search and elimination of useless calculus in dynamical simulations. Hence has been proposed a new adaptively restrained dynamical model in which the slowest particles movement is frozen, computational time is saved if the interaction calculus method do not compute again interactions between static atoms. The team also developed several interaction models that benefit from a restrained dynamical model, they often updates interactions incrementally using the previous time step results and the knowledge of which particle have moved.

In the wake of our team's work, we propose in this thesis an incremental First-principles interaction models. Precisely, we have developed an incremental Orbital-Free Density Functional Theory method that benefits from an adaptively restrained dynamical model. The new OF-DFT model keeps computation in Real-Space, so can adaptively focus computations where they are necessary. The method is first proof-tested, then we show its ability to speed up computations when a majority of particle are static and with a restrained particle dynamic model. This work is a first step toward a combination of incremental First-principle interaction models and adaptively restrained particle dynamic models.

PhD in progress : Maria Kadukova, "Novel computational approaches for protein ligand interactions", Sep 2016-, supervisors: Sergei Grudinin (France) and Vladimir Chupin (MIPT, Russia).

8.2.3. *Juries*

Sergei Grudinin served as an opponent at the defence of David Menéndez Hurtado's PhD thesis entitled 'Structured Learning for Structural Bioinformatics'. The defence took place at the Department of Biochemistry and Biophysics, Stockholm University, Sweden on the 11th of October.

<p align="center" style="color:red">**NECS Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

- C. Canudas-de-Wit was the General Chair of IEEE Conference on Decision and Control 2019 (CDC) in Nice (11-13 Dec. 2019).

10.1.1.2. Member of the Organizing Committees

- Maria Laura Delle Monache organized the workshop on "Lagrangian Control for Traffic Flow Smoothing in Mixed Autonomy Settings ", CDC December 2019 (with Alexandre Bayen*, George J. Pappas, Benedetto Piccoli, Daniel B. Work, Jonathan Sprinkle, Maria Laura Delle Monache, Benjamin Seibold, Cathy Wu, Abdul Rahman Kreidieh, Eugene Vinitsky, Yashar Zeiynali Farid).

- Maria Laura Delle Monache organized a tutorial session on "Autonomous Vehicles and Traffic Control in Mixed Autonomy Environments" at CDC, December 2019 (with Jonathan Sprinkle, Ram Vasudevan, Dan Work).

- Team members organized the following invited sessions at the CDC 2019:

  • "Novel Approaches to Traffic Estimation and Control Using Automated Vehicles" (M.L. Delle Monache with R.Stern (University of Minnesota))
  • "Control for Large Scale Traffic Networks" (M.L. Delle Monache, C. Canudas de Wit with N. bekiaris-Liberis (Univeristy of Crete))
  • "Models and Control Methods Tor Traffic Networks" (M. L. Delle Monache with S. Siri and C. Pasquale (University of Genoa))
  • "Multi-Sensor Fusion Techniques for State Estimation in Navigation" (H. Fourati with A. Barrau (Safran), J. Farrell (University of California Riverside), M. Liu (Hong Kong University of Science) and Z. Zhou (University of Electronic Science and Technology of China).

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

- F. Garin is Associate Editor in the IEEE Control System Society Conference Editorial Board (this year, she served for CDC 2019, ACC 2020) and Associate Editor in the European Control Association (EUCA) Conference Editorial Board (this year, she served for ECC 2020).

- H. Fourati is member of (1) the International Program Committee (IPC) of international conferences STA'19, ICCAD'19, ISAECT'19 (2) the Technical Program Committee (TCP) for the International Conference on Indoor Positioning and Indoor Navigation (IPIN'19), Pisa (Italy), Sep. 2019 (3) Member of the publication chairs of the International Conference on Control, Automation and Diagnosis (ICCAD'19), Grenoble (France), Jul. 2019.

10.1.2.2. 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.

10.1.3. Journal

10.1.3.1. 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. He has also been lead guest editor of the special issue "Recent Advances on Data Fusion, Estimation in Navigation and Control" for Asian Journal of Control (AJC), 2019.

10.1.3.2. 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.

10.1.4. Invited Talks

P. Frasca gave the following talks:

• "The closed loop between opinion formation and personalised recommendations", Workshop "Network Dynamics in the Social, Economic, and Financial Sciences", Turin, Italy, November 5-8, 2019.

• "Non-smooth opinion dynamics", Workshop "European Network for Nonsmooth Dynamical Systems, Grenoble, September 18, 2019.

• "The closed loop between opinion formation and personalised recommendations", Workshop "Reti sociali e comportamenti emergenti", Napoli, February 4, 2019.

M.L. Delle Monache gave the following talks:

• Traffic flow implications of autonomous and partially autonomous vehicles, Workshop on "Connected and automated vehicles for energy efficient and environmental impact", IFPEN, Rueil-Malmaison, France, September 2019.

• Modeling autonomous vehicles in traffic flow, International Congress on Industrial and Applied Mathematics (ICIAM) 2019, Valencia, Spain, July 2019.

• Micro - macro models for traffic with autonomous vehicles, IPAM workshop on Autonomous vehicles, IPAM (UCLA), USA, February 2019.

• Traffic control and estimation with autonomous vehicles, Journée du groupe de travail en automatique et transports terrestres, Université Grenoble Alpes, France, January 2019.

• Traffic reconstruction using autonomous vehicles, Sixth Chilean Workskshop on Numerical Analysis of Partial Differential Equations (WONAPDE), Concepción, Chile, January 2019.

10.1.5. 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 (IFAC):

  • 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 Technical Committee 7.1 Automotive Control (C. Canudas-de-Wit);

  • IFAC Technical Committee 7.4 Transportation systems (C. Canudas-de-Wit);

  • IFAC Technical Committee 9.2 on Social Impact of Automation (P. Frasca);

- 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.

- A. Kibangou reviewed project proposals for NRF (South-African research agency)

10.1.6. Research Administration

- From July 2019, F. Garin is 'Présidente du CES du Centre (Comité des Emplois Scientifiques)'.

- In Nov. 2019, F. Garin has been elected as 'responsable du pôle Automatique et Diagnostic (PAD)' at GIPSA-Lab, a role to be started in Jan. 2020.

- Since Nov. 2019, F. Garin is co-head of the CSP (Cyber-Physical Systems) action of Persyval2.

- A. Kibangou has been elected member of the research department MSTIC (mathematics, information and communication sciences) of Univ. Grenoble Alpes.

- A. Kibangou is co-head of the PCS (Pervasive Computing Systems) action of Persyval-Lab (until November 2019).

- A. Kibangou is academic director (L2) IUT1 (GEII).

- A. Kibangou is 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)

- H. Fourati is member of CNU61 (Conseil national des universités, Génie informatique, Automatique et Traitement du Signal) since 2016.

- H. Fourati is in charge of communication mission and visits to high school within the Department of Electrical Engineering, IUT1 Grenoble, France (2017-present).

- M.L. Delle Monache is member of two local committees at Inria Rhône-Alpes: "Commission de développement technologique (research engineers) and Comité des Études Doctorales (PhD grants CORDI-S).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

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, 111h, L1, IUT 1 (GEII), Univ. Grenoble Alpes, France.

Licence: H. Fourati, Réseaux locaux industriels, 34h, L2, IUT1 (GEII), Univ. Grenoble Alpes, France.

Licence: H. Fourati, Automatique, 39h, L3, UFR physique, Univ. Grenoble Alpes, France.

Licence: H. Fourati, Automatique continue et discrete, 27h, L2, IUT1 (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.

10.2.2. Supervision

- PhD: 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: 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: Ujjwal Pratap, Resilient control in scale-free networks, from Feb. 2019, co-advised by C. Canudas-de-Wit, F. Garin, and H. Sandberg (KTH Stockholm).

10.2.3. Juries

- P. Frasca was committee member of the PhD defense of:

  • Wenjing Yang. Influence Maximization in Social Networks. Universit Aix-Marseille, France. PhD advisors: Alessandro Giua and Leonardo Brenner. November 2019.

  • Zhiyang Ju. Persistent Communication Connectivity of Multi-agent Systems. University of Melbourne, Australia. PhD advisors: Dragan Nesic and Iman Shames. February 2019.

- F. Garin was committee member of the PhD defence of Gustav Nilsson, Lund Univ., in Feb. 2019; Thesis: On robust distributed control of transportation networks, supervisor: Giacomo Como, co-supervisor: Anders Rantzer.

- F. Garin was committee member of the PhD defence of Han Zhang, KTH Stochkolm, in Feb. 2019; Thesis: Optimizing Networked Systems and Inverse Optimal Control, supervisor: Xiaoming Hu, co-supervisor: Elias Jarlebring.

- F. Garin was committee member of the PhD defence of Tommaso Borzone, Univ. Lorraine, Nancy, in Sept. 2019; Thesis: Decentralised control of multi-agent systems: a hybrid formalism, supervisor: Irinel-Constantin Morarescu, co-supervisor: Marc Jungers.

10.3. Popularization

10.3.1. Education

Maria Laura Delle Monache gave a talk to students of 8th grade (4ème) and 11th Grade (1ère) in the Cérémonie de remise de prix des Olympiades de Mathématiques, La mobilité et les vehicules autonomes, , Université Grenoble Alpes, France, May 2019.

TRIPOP 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

1. Vincent Acary is co-organisor (with O. Bruls and R. Leine) of the mini-symposium Nonsmooth Dynamics, 10th Nonlinear Dynamics Conference (ENOC 2020), Lyon, July 2020.

2. Vincent Acary was co-organisor (with O. Bruls and R. Leine) of the Eighth Symposium of the European Network for Nonsmooth Dynamics at Inria Grenoble Rhone–Alpes. 17–18 September 2019 http://ennsd.gforge.inria.fr/eighthsymposium.html

3. Bernard Brogliato is member of the National Organization Committee of the 10th Euromech Nonlinear Dynamics Conference (ENOC 2020), Lyon, 5-10 July 2020. https://enoc2020.sciencesconf.org/resource/page/id/3

4. Bernard Brogliato is co-organisor (with N. van de Wouw and A. Pavlov) of the mini-symposium Control and Synchronization in Nonlinear Systems, 10th Nonlinear Dynamics Conference (ENOC 2020), Lyon, July 2020. https://enoc2020.sciencesconf.org/resource/page/id/8

5. Bernard Brogliato was co-organisor (with M. Reichhartinger and A. Polyakov) of the invited session Approximation-Methods, Discrete-time Equivalents and Analysis of Sliding Mode Control Systems, conférence NOLCOS 2019, Wien.

9.1.1.2. Reviewer

1. Vincent Acary was reviewer for IFAC World Congress, American Control Conference.

2. Bernard Brogliato was reviewer for IFAC NOLCOS, IFAC World Congress, IEEE International Conference on Decision and Control.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

1. Bernard Brogliato was Associate Editor for ASME Journal of Nonlinear and Computational Dynamics (ending December 2019).

2. Bernard Brogliato was Associate Editor for Nonoinear Analysis: Hybrid Systems (ending December 2019).

9.1.2.2. Reviewer - Reviewing Activities

1. Vincent Acary was reviewer for IEEE Transactions on Automatic Control, Multibody Systems Dynamics, Applied Mathematics and Computation, ASME Journal of Nonlinear and Computational Dynamics, Nonlinear Dynamics, International Journal for Numerical Methods in Engineering, SIAM Journal on Control and Optimization.

2. Bernard Brogliato is a regular reviewer for Automatica, IEEE Transactions on Automatic Control, SIAM Journal on Control and Optimization, Multibody Systems Dynamics, European Journal of Mechanics A/Solids, Set-Valued and Variational Analysis, *etc*.

3. Franck Bourrier was reviewer for International Journal for Numerical and Analytical Methods in Geomechanics, International Journal of Solids and Structures, Computers and Geotechnics, Soils and Foundation, Rock Mechanics and Rock Engineering, European Journal of Environmental and Civil Engineering, Landslides.

4. Guillaume James was reviewer for Multibody System Dynamics, Communications in Mathematical Physics, Physica D.

9.1.3. Invited Talks

1. Vincent Acary gave a keynote lecture at Multibody Dynamics Workshop 2019 2nd International Multibody Summer School, 20-24 May 2019, Parma, Italy http://www.multibodysummerschool.eu/index.html

2. Bernard Brogliato gave a plenary talk at the workshop Control of State-Constrained Dynamical Systems in Valparaiso, September 2019 (http://coscds2019.mat.utfsm.cl/).

3. Guillaume James gave a talk at the conference Equadiff 2019, July 2019, Leiden, in the minisymposium *Coherent structures of nonlinear evolution and lattice equations*.

9.1.4. Leadership within the Scientific Community

- V. Acary is coordinator with R. Leine of the Europe Network for Nonsmooth Dynamics http://ennsd.gforge.inria.fr/.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : G. James, Introduction to Numerical Methods, 31 hETD, L3, Grenoble INP - Pagora (1st year).
- Licence : G. James, Normed Vector Spaces, 26 hETD, L2, Prépa INP, Grenoble.
- Master : G. James, Numerical Methods, 91 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 : Franck Bourrier, 5H éq TD Modélisation des chutes de blocs, Master GAIA, Université Savoie Mont-Blanc.

9.2.2. Supervision

- PhD in progress : Rami Sayoud, Analyse vibratoire des armoires électriques, January 2018, université Grenoble Alpes, Vincent Acary and Bernard Brogliato
- PhD in progress : Benoit Viano, Nonsmooth modelling of impacted elastoplastic beams, November 2019, université Grenoble Alpes, Vincent Acary and Franck Bourrier.
- PhD in progress : Charlélie Bertrand, September 2018, Mechanical model for cable vibrations, ENTPE, Claude Lamarque and Vincent Acary.
- PhD in progress : Christelle Kozaily. Structural analysis for multi-mode DAE systems, Octobre 2018, V. Acary and B. Caillaud.
- PhD in progress : Vivien Cros, Analyse de la réponse vibratoire d'arbres sous sollicitations dynamiques, November 2018, université Grenoble Alpes, Franck Bourrier.

9.2.3. Juries

1. Bernard Brogliato was referee for the Ph.D. thesis of Arindam Bhattacharjee (April 2019), IIT Kanpur, India, (supervisor Prof. Anindya Chaterjee, Mechanical Engineering Dept. IIT Kanpur), *New approximations in vibroimpact problems*.

AIRSEA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Member of the Editorial Boards

F. Lemarié is associate editor of the Journal of Advances in Modeling Earth Systems (JAMES)

9.1.1.2. Reviewer - Reviewing Activities

E. Blayo: reviewer for Ocean Modelling, Journal of Scientific Computing

F. Lemarié reviewed papers for Q. J. Roy. Meteorol. Soc. , Ocean Model. and J. Adv. Mod. Earth Sys.

9.1.2. Invited Talks

E. Blayo: Journées Tarantola : défis en géosciences, Paris, juin 2019

E. Blayo: Workshop Modélisation océan-atmosphère, Rennes, septembre 2019

F.-X. Le Dimet: The Mathematics of Climate and the Environment, IHP Paris 2019, Nov. 12-15

F. Lemarié has given an invited talk at the Banff International Research Station during the Physics-Dynamics Coupling in Earth System Models workshop [21]

9.1.3. Leadership within the Scientific Community

L. Debreu is the chair of the CNRS-INSU research program LEFE-MANU on mathematical and numerical methods for ocean and atmosphere https://insu.cnrs.fr/fr/methodes-mathematiques-et-numeriques-manu 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

9.1.4. Scientific Expertise

E. Blayo was the head of the HCERES evaluation committee for the Maison de la Simulation (Jan. 2019)

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.

9.1.5. Research Administration

E. Blayo is a deputy director of the Jean Kuntzmann Lab.

L. Debreu is a member of the scientific evaluation committee of the French Research Institute for Development (IRD).

E. Arnaud is in charge of the AMAC (Algorithmes, Modeles, Analyses, Calcul) department of the Jean Kuntzmann Lab.

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

Licence: E. Blayo, Mathematical analysis, 80h, L1, University Grenoble Alpes, France

License: E. Arnaud, Mathematics for engineer, 50h, L1, University Grenoble Alpes, France.

License: E. Arnaud, statisctics for biologists, 40h, L2, University Grenoble Alpes, France.

Licence: C.Kazantsev, Mathematical tools for scientists and engineers, 100h, L1, University Grenoble Alpes, France

Licence: C.Kazantsev, Mathematics for engineer, 60h, L2, University Grenoble Alpes, France

Master: E. Blayo, Partial Differential Equations, 45h, M1, University Grenoble Alpes, France

Master: E. Arnaud, A. Vidard: Inverse problem and data assimilation, 28h, M2, Univ. Grenoble-Alpes, France

Master: E. Arnaud: Advising students on apprenticeship, 28h, M2, University of Grenoble, France.

Doctorat: E. Blayo, A. Vidard, Introduction to Data Assimilation, 20h,University Grenoble Alpes, France

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 : Simon Clément, Study of discretized Schwarz waveform relaxation algorithms, M2R, applied mathematics, UGA, 6 months, E. Blayo and F. Lemarié

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: Victor Trappler, Parameter control in presence of uncertainties, October 2017, E. Arnaud, L. Debreu and A. Vidard.

PhD in progress : Rishabh Batth, Asynchronousparallel in time schemes for data assimilation, December 2019, L. Debreu and A. Vidard.

PhD in progress : Simon Clément, Numerical analysis for reconciling in space and time the air-sea exchanges and their parameterization. October 2019, E. Blayo and F. Lemarié.

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: Mohamed Reda El Amri, Analyse d'incertitudes et de robustesse pour les modèles à entrées et sorties fonctionnelles,[1], Univ.Grenoble Alpes, April, 29, 2019. Clémentine Prieur, Céline Helbert (Centrale Lyon), funded by IFPEN, in the OQUAIDO chair program.

Post Doc in progress : Anass El Aouni, Multi-resolution techniques for ocean data assimilation, October 2019, A. Vidard

9.2.3. Juries

Arthur Vidard

Feb. 2019: PhD thesis of Olivier Guillet, INPT Toulouse (reporter)

E. Blayo:

Feb. 12, 2019: PhD thesis of Benoît Pinier, University of Rennes (reporter)

Apr. 5, 2019: HDR thesis of Sophie Ricci, University of Toulouse (reporter)

Oct. 21, 2019: PhD thesis of Jai Chowdhry Beeman, University Grenoble Alpes (president)

Dec. 18, 2019: PhD thesis of Alexandre Devers, University Grenoble Alpes (president)

Arthur Vidard was part of Inria CRCN recruitment juries in Bordeaux–Sud-ouest and Lille-Nord Europe

E. Arnaud is in charge of ATER recruitment in computer sciences, University Grenoble Alpes

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

E.Kazantsev is a member of the Local Commission for Permanent Formation of Inria Grenoble - Rhône-Alpes.

9.3.2. Education

Ch. Kazantsev and E. Blayo are strongly involved in the creation and dissemination of pedagogic suitcases with mathematical activities designed for primary and secondary school (used by 10,000 – 12,000 pupils in 2018-2019). This is done in collaboration with the Rectorat de Grenoble.

E. Arnaud has animation of a "laboratoire des mathématiques", Pablo Neruda School, Saint Martin d'Hères

C. Kazantsev is a member of an IREM group for creation of scientific activities for professional development of secondary schools teachers.

C. Kazantsev is a member of an International Inter-IREM commission, which work on the multi-languages problem for children in the mathematical learning. Three meetings take place in Paris during the year, the first was on September 28.

C. Kazantsev participated to the collaboration program with the Ecole Normale Supérieure de Bamako, Mali. She spent ten days in Bamako to present the modelisation teaching and the purpose and activities of "La Grange des Maths" group. Bamako, ENSup, January, 13-25

C. Kazantsev participated to the "Colloque du cinquantenaire des IREM" with a presentation of the activities of "La Grange des Maths", Besançon, May, 9-11

9.3.3. Interventions

National events:

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 at the "Culture and mathematical games Salon", Place St Sulpice, Paris, 23-26 May.

Ch. Kazantsev and E. Blayo participated in the "Fête de la Science", October, 12.

E. Arnaud. gave a presentation "(Se) tromper avec les chiffres" at the conference "Sciences et esprit critique, interroger les certitudes", Maison pour la sciences, Acadèmie de Grenoble, 8 nov. 2018, Grenoble.

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, 10.

C.Kazantsev participated at the "Remue-méninges festival" with the presentation of the "Maths à modeler" activities. Echirolles, April, 11.

C.Kazantsev participated to the "Sou des écoles", with the presentation of the "La Grange des Maths" activities. Varces, June, 15.

C.Kazantsev participated at the "Raout de Domène" with the presentation of mathematical animations. Domene, September, 1.

In educational institutions

E. Blayo gave several outreach talks, in particular for middle school and high school students, and for more general audiences.

C.Kazantsev presented mathematical animations to pupils of the Jean Mermoz scholl in Poisat for about 80 children during 3 hours. Poisat, May, 29.

E. Arnaud gave a talk "(Se) tromper avec les chiffres" for pupils of secondary schools on the 8th of March 2019 and the 2nd of May 2019.

9.3.4. 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

BEAGLE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. General Chair, Scientific Chair

- Eric Tannier was the organizing committee chair of the Inria scientific days, July 2019.

9.1.1.2. Member of the Organizing Committees

- Guillaume Beslon and Anton Crombach, members of the organizing committee of MMEE 2019 (Mathematical Modeling in Ecology and Evolution, Lyon, July 2019)
- Guillaume Beslon : member of the organizing committee of the EvoLyon Day (Lyon, November 2019)
- Guillaume Beslon : member of the organizing committee of BDA 2019 (Bases de Données Avancées, Lyon, October 2019)
- Anton Crombach was part of the organizing and scientific committees of the winter course "Advanced Lectures in Computational Systems Biology" in Aussois.
- Hugues Berry was a member of the Local Organising Committee for conference MedInfo 2019 (https://www.medinfo-lyon.org/en/)
- Eric Tannier is a member of the organizing committee of "SEMOVI", séminaire de modélisation du vivant, a local scientifica animation in systems biology.

9.1.2. Scientific Events: Selection

9.1.2.1. Chair of Conference Program Committees

- Eric Tannier was the program committee chair of the Inria scientific days, July 2019.

9.1.2.2. Member of the Conference Program Committees

- Anton Crombach, involved in the selection of talks and posters for MMEE (Mathematical models in ecology and evolution, Lyon, July)
- Christophe Rigotti, member of the program committee of the 19th IEEE International Conference on Data Mining (ICDM).
- Christophe Rigotti, member of the program committee of the 34rd ACM Symposium On Applied Computing (SAC).
- Guillaume Beslon and Jonathan Rouzaud-Cornabas, members of the program committee of ALife 2019 (2019 Conference on Artificial Life. Newcastle. United Kingdom)
- Eric Tannier, member of the program committee of Jobim 2020
- Eric Tannier, member of the program committee of RECOMB Comparative Genomics 2019
- Eric Tannier, member of the program committee of ISBM/ECCB 2019

9.1.2.3. Reviewer

- Eric Tannier reviewed for RECOMB 2020

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Hugues Berry is Associate Editor for PLoS Computational Biology
- Eric Tannier is a guest editor for the epijournal DMTCS, and edited a special issue in 2019

- Eric Tannier is an editor of "Peer Community in Evolutionary Biology"
- Eric Tannier is a founding editor of "Peer Community in Mathematical and Computational Biology"

9.1.3.2. Reviewer - Reviewing Activities

- Bioinformatics, Journal of Experimental Zoology Part B...

9.1.4. Invited Talks

- Carole Knibbe, 2019 Gordon Conference on "Organismal, Cellular, Molecular and Theoretical Approaches to Understanding Evolution", Easton, MA, USA, June 9-14 2019.
- Anton Crombach, lab seminar at LBMC
- Anton Crombach, lab seminar at LBBE
- Anton Crombach, invited speaker at the EvoLyon conference in november 2019
- Hugues Berry, Artificial Intelligence and Health: the ambition of the French Plan, Aviesan Meeting, Brussels Belgium, Dec. 2019
- Hugues Berry, An introduction to the theoretical models for passive molecule movements in living cells, Action Nationale de Formation du CNRS, Measurement of Molecular Dynamics in Living Cells, Lille, France, Oct. 2019
- Hugues Berry, Searching for deterministic chaos in biological data,Dynamical Systems and Applications to Biology, CIMPA School, Dhaka, Bangladesh, June 2019
- Hugues Berry, Anomalous diffusion in living cells : bridging the gap between experiments and models through collaborative challenges, Random Walks and Intracellular Transport, School of Mathematics, University of Manchester, Manchester, UK, April 2019
- Hugues Berry, Investigating the effect of the nanoscale architecture of astrocytic processes on the propagation of calcium signals, Tampere University of Technology, Tampere, Finland, April 2019
- Hugues Berry, Inria research at the forefront of digital sciences for medicine, 2019 French-American Innovation Day (FAID2019), Houston, Texas, USA, march 2019
- Carole Knibbe, Eric Tannier, Which social and environmental responsibility for researchers, lab seminar at LBMC
- Eric Tannier, open science as an institutional response to the editorial crisis in research, "open science day" of the research biology federation, Lyon.
- Guillaume Beslon, invited talk at UGA (séminaire "Translation et Innovation en Médecine et Complexité") in November 2019
- Guillaume Beslon, invited talk at the I4ID 2019 conference (Immunotherapies & Innovations for Infectious Diseases Congress, Lyon, December 2019)

9.1.5. Leadership within the Scientific Community

- Anton Crombach is the lead editor of book "Evolutionary Systems Biology, 2nd edition" (ongoing work).
- Hugues Berry organised the 1st Singapore-France Joint Workshop on AI in Health, in association with the international conference MedInfo (https://medinfo-lyon.org/en/), Lyon, France, August 27-29, 2019.
- Hugues Berry co-organized the INSERM Workshop "Intracellular dynamics of molecules: analysis and models" (https://research.pasteur.fr/en/event/intracellular-dynamics-of-molecules-analysis-and-models/). The workshop combined a 3-day critical assessment phase (in Bordeaux, France, June 24-26 2019) and a 3-day technical worskshop (in Lyon, France, July 1-3 2019). This workshop addressed a biologist audience and covered the main experimental methods to quantify the mobility and trajectories of biomolecules in living cells, with an emphasis on the quantification methods for individual trajectories and the interest of computer simulations for analysis and interpretation.

- Carole Knibbe and Guillaume Beslon (together with Dusan Misevic from the Center for Research and Interdisciplinarity in Paris) edited a special issue of the Artificial Life journal (vol25 issue 4, nov 2019), with extended versions of the best papers of ECAL 2017. Link : https://www.mitpressjournals.org/doi/abs/10.1162/artl_a_00298?af=R

9.1.6. Scientific Expertise

- Hugues Berry, Reviewer for the Fond National de la Recherche Scientifique (FNRS, Belgium) for the call "FRQ-FNRS Québec - Communauté française de Belgique"

9.1.7. Research Administration

- Christophe Rigotti, elected member of Insa Scientific board (Conseil scientifique)
- Eric Tannier, elected member of the Inria Administration Council
- Eric Tannier, member of the open science committee of the French Ministry of research
- Eric Tannier, member of the ethics platform of the university of Lyon
- Eric Tannier, member of the "Sciences Environments Societies" workgroup of Inria
- Eric Tannier, member of the Environmental responsibility workgroup of LBBE
- Eric Tannier, scientific responsible of the "cours colloques" committee of Inria
- Eric Tannier, member of the scientific committee of the science shop, univ Lyon
- Hugues Berry, Deputy scientific director of Inria for digital biology and health
- Guillaume Beslon, member of the ANR CE45 committee (Mathématiques et sciences du numérique pour la biologie et la santé)
- Guillaume Beslon, member of the IRD CSS5 committee (Science des données et des modèles)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

License: Jonathan Rouzaud-Cornabas, Object-Oriented Programming, 120h, L3, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, System Programming, 60h, M1, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, Network Programming, 20h, M1, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, High Performance Computing, 60h, M2, Computer Science Department, INSA de Lyon

Master: Jonathan Rouzaud-Cornabas, High Performance Computing, 12h, M2, Bioinformatics and Modeling Department, INSA de Lyon

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

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, Comparative Genomics, 8h, M1, Bioinformatics and Modeling Department of INSA-Lyon.

Master: Eric Tannier, String algorithmics, 12h, M1, Bioinformatics and Modeling Department of INSA-Lyon.

Master: Eric Tannier, String algorithmics, 12h, M1, Bioinformatics UCBL.

Master: Eric Tannier, Research Ethics, 6h, M2, Bioinformatics UCBL

Doctorat: Eric Tannier, Environmental responsibility of research activities, NGS formation, Lyon

Doctorat: Eric Tannier, Research Ethics, 12h, all specialities, Université de Lyon

Doctorat: Eric Tannier, Research Ethics, 6h, Inria PhD students

Master: Audey Denizot, 64h de cours en enzymologie (M1, INSA Lyon) et biologie cellulaire (M2, ENS Lyon).

E-learning

> MOOC: Eric Tannier, Research Ethics, FUN, Ph-D candidates, 3000 registered participants

9.2.2. Supervision

PhD in progress: Julie Etienne, "Modélisation et simulation du flux de triglycérides alimentaires, de l'absorption entérocytaire à la sécrétion des chylomicrons", INSA-Lyon, co-supervised by Carole Knibbe and Marie-Caroline michalski (CarMeN laboratory), started in October 2019.

M2 : Julie Etienne, "Analysing and modelling the traffic of triglycerides through enterocytes", co-supervised by Carole Knibbe (80

M2 : Ella Beaumann, "Modélisation compartimentale de cinétiques postprandiales cliniques", co-supervised by Carole Knibbe (70

M2: Hugues Berry and Christophe Rigotti where co-supervisors of the M2 internship of Tymofii Prokopenko (co-supervision with Olivier Pascual of team SynatAc INSERM/CNRS) from 28/01/2019 to 14/06/2019. Title: "Classification and clustering of activity data of microglial cells".

M2 Sujin Hyun, 1 feb 2019 to 31 jul 2019 (6 months), title "Re-assessing the link between splicing and mRNA quality control" (supervised by A Crombach)

PhD: Audrey Denizot, "Simulation de la signalisation calcique dans les prolongements fins astrocytaires", INSA Lyon, 08 Nov. 2019 (co-supervision H. Soula and H. Berry)

PhD: Hugues Berry participated to the PhD Advisory Committee of Barbara Genocchi (BioMediTech, Tampere University of Technology, Finland)

PhD: Eric Tannier participated to the PhD Advisory Committee of Raphael Forquet (UCBLyon)

PhD in progress: Alexandre Laverré, "influence croisée de l'organisation spatiale et des mutations structurales dans les génomes", encadré par Anamaria Necsulea et Eric Tannier, début en septembre 2018

PhD in progress: Théo Tricou, "Détection d'espèces éteintes avec les transferts horizontaux", encadré par Damien de Vienne et Eric Tannier, début en septembre 2018

PhD in progress: Hugo Menet, "Phylogénie multi-échelles des holobiontes", encadré par Eric Tannier et Vincent Daubin, début en septembre 2019

M2: Hugo Menet, "Phylogénie multi-échelles des holobiontes", encadrée par Eric Tannier, 2019

9.2.3. *Juries*

- HDR: Jérémie Roux,"Integrative single-cell approaches to understanding cancer drug response heterogeneity in tumor cell dynamics" Université Côte d'Azur, Nice, France, September 2019 (Hugues Berry, reviewer)

- HDR: Jean-Baptiste Masson, "Probabilistic induction and physics modelling to probe biological decision making In situ", Sorbonne University, Paris, France, May 2019 (Hugues Berry, reviewer)

- HDR: Celine Scornavacca, "Phylogenetic reconciliations and networks", Univ Montpellier (Eric Tannier, examinateur)

- PhD: Audrey Denizot (Ph-D, INSA-Lyon, October 2019) (Guillaume Beslon was a member of the PhD Committee)

- PhD: Andreas Odorico (Ph-D, Gif-sur-Yvette, December 2019) Guillaume Beslon was reviewer

- PhD: Adrien Legrand (University of Picardie Jules Verne, Amiens, November 2019) Christophe Rigotti was reviewer

9.3. Popularization

9.3.1. *Articles and contents*

- Hugues Berry participated in popularization activities with the edition of a book, written in French, on the relationships between sex (i.e. a biology concept) and Gender (a sociology approach) (Abou, B. and Berry, H., eds., (2019). Sexe et Genre: de la Biologie a la Sociologie. Editions Materiologiques, Paris, https://materiologiques.com/sciences-philosophie-2275-9948/282-sexe-et-genre-de-la-biologie-a-la-sociologie.html) In recent years, debates about sex and gender concepts between biology and the humanities and social sciences have become more intense, both for scientific reasons and for their societal impacts. Many biologists reject the questioning made by researchers in humanities and social sciences, of what biology considers fundamental, such as sex binarity or sex differences. Humanities and social scientists, on the other hand, often see biology as an academic and institutional source of naturalistic arguments used to oppose gender studies. They denounce biases in the interpretation of biologists as resulting, precisely, from gender-related biases. However, scientific exchanges at the interface between biology and the humanities and social sciences are undoubtedly necessary to overcome these antagonisms. The objective of this book is to implement a dialogue between the two fields, trying to overcome misunderstandings and misconceptions that have gone on for long. The book consists in 12 chapters stemming from biologists and sociologists, organized so as to try and foster dialogue between both communities. The target readership of the book is composed of non specialist readers (in particular non biologists nor sociologists) with a pre-existing interest on gender issues and their relations to biology. That is why the book was written in French and includes chapters intended to newcomers in the field (e.g. "The determination of sex in the human species and the rest of life" or "Why Gender?") to more advanced viewpoints ("What we learn from transidentities"). The objective of the publisher was to publish a reference book in French on the relations between sex and gender.

- "Le mouvement est devenu massif", an interview of Hugues Berry to the French journal L'Usine Nouvelle, Special Edition "A year of simulation", number 3608, April 25, 2019. https://www.usinenouvelle.com/editorial/le-mouvement-est-devenu-massif.N834680

- Eric Tannier is a co-author of "Quand les branches de l'arbre du vivant s'entremêlent", in *Pour la science*, 2019.

9.3.2. *Education*

- We have an ongoing collaboration with the Grenoble Rectorat. The aim is to use our computational models to train school professor to evolutionary concepts.

9.3.3. Interventions

- Audrey Denizot participated to activities in the mediation association DéMesures:
    - "Cosmograff" project. This project aims to present the solar system and its scales to the general public, in collaboration with the Musée des Confluences and the collective of street artists Superposition https://bit.ly/35gtYpI. Creation of audio guides in French and English for reuse at the 2019 EWASS international astronomy conference. https://bit.ly/2rQlB5y
    - "ArtScience" project, which aims to present the work of scientists to artists. This project culminated in an artistic exhibition at the ENS Lyon, from April to July 2019, in collaboration with the Taverne Gutenberg https://bit.ly/2OldNR3. Creation of a series of photographs presenting the links between science and art that emerged from this project https://bit.ly/2XqjaCz.
- Eric Tannier co-organized a citizen science event at the Théâtre Nouvelle Génération, Vaise, december 2019
- Eric Tannier organizes a workshop on environmental responibility of researchers in january 2020
- Eric Tannier participated to a "pint of science" evening on the social and environmental responsibility of researchers, May 20, 2019

9.3.4. Internal action

- Eric Tannier and Carole Knibbe gave a lecture on environmental responsibility at the Inria Bio days, 2019
- Eric Tannier gave a training to PhD students on research ethics, 6h, Inria Grenoble Rhône-Alpes, January 2019

9.3.5. Creation of media or tools for science outreach

- We developed the GreenMice game, a small video-game designed to teach the basis of evolutionary biology to young children

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 2019, Lyon, http://www.ens-lyon. fr/evenement/recherche/icsb-2018-19th-international-conference-systems-biology

7.1.1.2. Member of the organizing Committees

- Laurent Pujo-Menjouet, The Society for Mathematical Biology, Annual Meeting and Conference, Montreal, Canada, mini-symposium co-organizer, 21-26 July 2019

7.1.2. Journal

7.1.2.1. Member of the Editorial Boards

- Mostafa Adimy, Journal of Nonlinear Systems and Applications
- Olivier Gandrillon, Associate editor for BMC research notes
- Vincent Calvez, Journal of Mathematical Biology; SIAM Journal of Mathematical Analysis
- Laurent Pujo-Menjouet, Associate editor of PLOS ONE; Journal of Thoerical Biology; Mathematical modelling of natural phenomena

7.1.2.2. Reviewer - Reviewing Activities

- Mostafa Adimy, Canadian Journal of Mathematics; PLOS Neglected Tropical Diseases; Journal of Mathematical Modeling of Natural Phenomena
- Olivier Gandrillon, Plos Computational Biology; Progress in Biophysics and Molecular Biology; Journal of the Royal Society Interface; Journal of theoretical biology; Systems Biology and Applications; Genes
- Vincent Calvez, Inventiones Mathematicae; Duke Math Journal; Journal of the EMS; Nature Physics; Ecology Letters
- Laurent Pujo-Menjouet, Journal of Theoretical Biology; Plos One, Plos Computational Biology; Journal of Mathematical Modeling of Natural Phenomena; Journal of Mathematical Biology; Bulletin of Mathematical Biology; Computational and applied mathematics; Mathematical Biosciences and Engineering

7.1.3. Invited Talks

- Mostafa Adimy, International Conference on Mathematical Modelling in Biomedicine, Moscow - Russia, 30 Septembre - 04 Octobre, 2019, http://eng.rudn.ru/science/conferences/9370
- Mostafa Adimy, 9ème colloque, Tendances dans les Applications Mathématiques (TAMTAM), Tlemcen - Algeria, 24 - 27 February 2019, https://tamtam2019-univ-tlemcen.weebly.com/accueil. html
- Vincent Calvez, BIOMAT Granada, Patterns in Life and Social Sciences, Granada - Spain, June 17-19, http://www.ugr.es/~kinetic/biomat/
- Vincent Calvez, Colloque d'ouverture 50 ans du Laboratoire J.L. Lions, Roscoff - France, 4-8 mars 2019 https://ljll-roscoff.sciencesconf.org
- Vincent Calvez, Journées Aussois Chaire MMB, Aussois - France, 19 - 23 May http://www.cmap. polytechnique.fr/chaire-mmb/Aussois2019.html

- Vincent Calvez, LMS Research School, PDEs in Mathematical Biology: Modelling and Analysis, ICMS, Edinburgh - UK, 29 April – 3 May 2019, https://www.icms.org.uk/LMS_PDEsmathbio.php
- Laurent Pujo-Menjouet, Mathe´matiques e´tonnantes, SMF conference, Lyon, 9 December, https://smf.emath.fr/conference-coeur

7.1.4. Leadership within the Scientific Community

- Olivier Gandrillon, Director of BioSyL, the Federative Research Structure for Systems Biology attached to University of Lyon, http://www.biosyl.org
- Thomas Lepoutre, Head of the Groupe de Recherches CNRS MAMOVI on applied mathematical modelling in Life Sciences

7.1.5. Research Administration

- Léon Tine, Membre conseil du département de Mathématiques, UCBL 1
- Léon Tine, Co-responsable de l'enseignement TMB (Techniques Mathématiques de Base) du portail PCSI, UCBL 1
- Mostafa Adimy, Comité scientifique (COS) du centre Inria Rhône-Alpes
- Mostafa Adimy, Comité scientifique (CS) de l'Institut Camille Jordan, UCBL 1
- Mostafa Adimy, Comité des thèses de l'Institut Camille Jordan, UCBL 1
- Laurent Pujo-Menjouet, Responsable de la filière mathématiques pour la biologie et la médecine pour le master M2 Maths en Actions à l'UCBL 1
- Laurent Pujo-Menjouet, Correspondant mobilité international pour le département de mathématiques à l'UCBL 1
- Laurent Pujo-Menjouet, Directeur du portail mathématiques et informatique à l'UCBL 1
- Thomas Lepoutre member of the CORDI-S commission of Inria.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

- Licence: Laurent Pujo-Menjouet, Fondamentaux des mathématiques, 138h EQTD, L1, UCBL 1
- Licence: Laurent Pujo-Menjouet, 3ème année biosciences BIM, Systèmes Dynamiques et EDP, 45h EQTD, INSA Lyon
- Licence : Léon Tine, Techniques mathématiques de base, 53h (EqTD), niveau L0, UCBL 1
- Licence : Léon Tine, Techniques mathématiques de base, 62h (EqTD), niveau L1, UCBL 1
- Licence : Léon Tine, Initiation LaTex+ stage, 12h (EqTD), niveau L3, UCBL 1
- Licence : Vincent Calvez, Cours de math pour étudiants médecins, cursus Médecine-Sciences (2e année fac de médecine), 40h, Lyon Est/Sud
- Master : Samuel Bernard, Population Dynamics, 36h ETD, M2, UCBL 1
- Master : Mostafa Adimy, Population Dynamics, 9h ETD, M2, UCBL, UCBL 1
- Master : Mostafa Adimy, Epidemiology, 21h ETD, M2, UCBL, UCBL 1
- Master: Thomas Lepoutre, préparation à l'option pour l'agrégation, 45 h eq TD, M2 UCBL 1
- Master: Laurent Pujo-Menjouet, Systèmes Dynamiques, 72 h EQTD, M1, UCBL1
- Master: Laurent Pujo-Menjouet, Systèmes complexes: modelling biology and medicine, M2, 9h EQTD, ENS-Lyon
- Master: Laurent Pujo-Menjouet, 4ème année biosciences BIM: ED-EDP, 24h EQTD, INSA Lyon
- Master: Léon Tine, Maths en action, Remise à niveau analyse, 12h (EqTD), niveau M2, UCBL 1
- Master: Léon Tine, Maths en action, épidémiologie, 18h (EqTD), niveau M2, UCBL 1

- Master: Vincent Calvez, Modèles mathématiques et analyse pour Ecologie et Evolution, 24h, niveau M2 avancé, ENS-Lyon
- Master: Olivier Gandrillon, Systems Biology, 8h, niveau M2 Génpopath, UCBL 1

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, supervisors: 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, since 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, Décembre 2019, 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 in progress: Léonard Dekens, "Adaptation d'une population avec une reproduction sexuée à un environnement hétérogène : modélisation mathématique et analyse asymptotique dans un régime de petite variance", Université Lyon 1, since September 2019, supervisor: Vincent Calvez.
- PhD in progress: Mete Demircigil, "Etude du mouvement collectif chez Dictyostelium Discoideum et autres espèces. Modélisation, Analyse et Simulation", ENS-Lyon, since September 2019, supervisor: Vincent Calvez.
- PhD in progress: Ghada Abi Younes, "Modélisation mathématique des maladies inflammatoires", Université Lyon, since November 2019, supervisor: Vitaly Volpert.
- PhD in progress: Elias Ventre, "Paysage et trajectoire - des réseaux de régulation génique aux trajectoires cellulaires", ENS - Lyon, since October 2019, supervisors: Olivier Gandrillons and Thibault Espinasse.
- PhD in progress: Cheikh Gueye, "Problèmes inverses pour l'estimation de paramètre de modèles mathématiques", Université Lyon, since October 2019, supervisors: Laurent Pujo-Menjouet and Léon Tine.

7.2.3. Juries

- Laurent Pujo-Menjoeu: PhD of Hugo Martin, Étude de données et analyse de modèles intégro-différentiels en biologie cellulaire, Laboratoire Jacques-Louis Lions - Sorbonne Université, examiner.
- Vincent Calvez: PhD of Pierre Roux, Équations aux dérivées partielles de type Keller-Segel en dynamique des populations et de type Fokker-Planck en neurosciences, Laboratoire de mathématiques d'Orsay - Université Paris-Sud, reviewer
- Vincent Calvez: PhD of Xiaoming Fu, Reaction-diffusion Equations with Nonlinear and Nonlocal Advection Applied to Cell Co-culture, Institut de Mathématiques de Bordeaux, Université de Bordeaux, examiner
- Olivier Gandrillon: PhD of Ronan Duchesne, Erythroid differentiation in vitro under the lens of mathematical modelling, ENS-Lyon, examiner.

7.3. Popularization

7.3.1. Articles and contents

- Laurent Pujo-Menjouet : Radio (France Inter), la tête au carré, https://www.franceinter.fr/emissions/la-tete-au-carre/la-tete-au-carre-10-mai-2019

- Laurent Pujo-Menjouet : Radio (Europe 1), Wendy Bouchard, https://www.europe1.fr/emissions/on-fait-le-tour-de-la-question-avec-wendy-bouchard/wendy-bouchard-aujourdhui-alchimie-equation-formule-magique-lamour-est-il-le-fruit-du-hasard-3905606

- Laurent Pujo-Menjouet : Radio (Québec), https://www.qub.radio/balado?id=6bb8beb9-9bb3-493f-abe3-aa7100f60a73&episode=3f6e7a5c-b11a-45ff-aa28-aa96015f517b&fbclid=IwAR2DUNgo-QvKh3z9oGeslTJOnCa3f5GzTYWlIGrYSe5hrm7ydSgc1gW6Z5g

- Laurent Pujo-Menjouet : Radio Canada, https://ici.radio-canada.ca/premiere/emissions/region-zero-8/episodes/439145/audio-fil-du-vendredi-26-juillet-2019/10

- Laurent Pujo-Menjouet : Presse écrite (L'Express), https://www.lexpress.fr/actualite/sciences/le-livre-qui-veut-modeliser-l-amour-par-les-mathematiques_2075520.html

- Laurent Pujo-Menjouet : Presse écrite (Le Figaro), http://www.lefigaro.fr/sciences/le-bonheur-conjugal-c-est-simple-comme-une-equation-differentielle-20190506

- Laurent Pujo-Menjouet : Presse écrite (Slate), http://www.slate.fr/story/178140/maths-livre-jeu-amour-hasard-laurent-pujo-menjouet

- Laurent Pujo-Menjouet : Presse écrite (Le Parisien), http://www.leparisien.fr/societe/et-si-l-amour-n-etait-pas-le-fruit-du-hasard-10-06-2019-8090055.php

- Laurent Pujo-Menjouet : Presse écrite (Montreal Gazette), https://montrealgazette.com/news/local-news/equations-can-predict-the-success-of-relationships-mathematician-says

- Laurent Pujo-Menjouet : Presse écrite (Society), http://math.univ-lyon1.fr/~pujo/Society.pdf

- Laurent Pujo-Menjouet : Presse écrite (Le matin dimanche, Suisse), https://twitter.com/lpmenjouet/status/1130474006312890373/photo/1

- Laurent Pujo-Menjouet : Presse écrite (Le journal de Montréal), https://www.journaldemontreal.com/2019/07/30/et-si-lamour-se-maintenait-avec-des-equations-mathematiques

7.3.2. Interventions

- Thomas Lepoutre: Visite de l'inria pour les stagiaires de 3e de l'ICJ (plusieurs fois dans l'année, une matinée en général).

- Thomas Lepoutre participation to MathaLyon intervention

- Laurent Pujo-Menjouet participation to "Math en Jeans", Collège-Lycée Lacassagne, Lyon and Collège Gratte-Ciel, Villeurbanne

- Laurent Pujo-Menjouet participation to "Mathématiques étonnantes, SMF conférence", Lyon

- Laurent Pujo-Menjouet participation to TEDx, Montrouge https://www.youtube.com/watch?v=xJ8wE_wmtUY

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 of 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

- Leen Stougie was co-organiser of MAPSP 2019, Jun 2019, Hotel Zeeuwse Stromen, Renesse; and of the Networks Workshop on Random graphs, counting and sampling, Sep 2019, CWI, Amsterdam.

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 *APF*, *ATMOS*, and *CIAC*.

- Arnaud Mary was a member of the Program Committee of *MFCS*, and *WEPA*.

- Nadia Pisanti was a member of the Program Committee of *BIOINFORMATICS*, *CPM*, *ICCS*, *ISBRA*, *IWOCA*, and *WABI*.

- Marie-France Sagot was a member of the Program Committee of *BIBM*, *CIAC*, *CPM*, *PSC*, *RecombCG*, d an*WABI*.

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

- 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*.
- Vincent Lacroix is recommender for *Peer Community in Genomics*, see https://genomics.peercommunityin.org/.
- 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: invited talk on "2-Connectivity on Directed Graphs", 14th Computer Science Symposium in Russia (CSR 2019), Novosibirsk, Russia.
- Nadia Pisanti: Invited talk on "Mapping Reads on a Pan-Genome: Pattern Matching on Degenerate Texts", 1st Workshop on Computational Pan-Genomics, Bielefeld, Germany; Invited talk on "On-line (approximate) Pattern Matching on Degenerate Texts and Applications", 14th Workshop on Compression, Text and Algorithms (WCTA), Segovia, Spain.
- Solon Pissis: Invited talk on "Even Faster Elastic-Degenerate String Matching via Fast Matrix Multiplication", Algorithms Group Seminar Series, 24 Oct 2019, University of Warsaw, Warsaw, Poland; Invited talk on "When linear space is impractical: computing absent words in output-sensitive space", Bonsai Bioinformatics Seminar Series, 11 Jun 2019, Université de Lille, Lille, France; Invited talk on "Elastic-degenerate strings: a new representation for pattern matching in a collection of similar texts", Computer Science Seminar Series, Feb 12 2019, University of Pisa, Pisa, Italy.
- Leen Stougie: Invited talk on "Fixed-Order Scheduling on parallel machines", Workshop on Combinatorial Optimization, 26-27 September 2019, TU Berlin, Germany.
- Cristina Vieira: Invited talk on "Contribution of Transposable element to gene expression in Drosophila (and other)", XI Symposium of Ecology, Genetic and Drosophila Evolution, November 2019, Pelotas, Brazil.

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.

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. He is member of the General Board of the Dutch Network on the Mathematics of Operations Research (Landelijk Netwerk Mathematische Besliskunde (LNMB)), and member of the Management Team of the Gravity project Networks.

Alain Viari 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 CoNRS8.

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 the M1 master in bioinformatics (https://www.bioinfo-lyon.fr/) and of the following courses (L3: Advanced Bioinformatics, M1: Methods for Data Analysis in Genomics, M1: Methods for Data Analysis in Transcriptomics, M1: Bioinformatics Project, M2: Ethics). He taught 96 hours in 2018-2019 and 192 hours in 2019-2020. Arnaud Mary is responsible for three courses of the Bioinformatics Curriculum at the University (L2: Introduction to Bioinformatics and Biostatistics, M1: Object Oriented Programming, M2: new course on Advanced Algorithms for Bioinformatics) and one at Insa (Discrete Mathematics). He taught 198 hours in 2019. Blerina Sinaimeri taught 36 hours in 2019 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 and Audric Cologne were instructors in the NGS data analysis training for the CNRS Formation, a course coordinated by Annabelle Haudry, LBBE (https://cnrsformation.cnrs.fr/stage-19026-Bioinformatique-pour-le-traitement-de-donnees-de-sequencage-%28NGS%29—Lyon.html).

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 60 and 100 hours per year, again at the undergraduate and Master levels, in applied mathematics (*e.g.* Operational Research, Advanced Linear Programming), machine learning (Deep Learning) and computational biology (*e.g.* Biological Network Analysis, Algorithms for Genomics).

9.2.2. Supervision

The following PhDs were defended in ERABLE in 2019:

- Jasmijn Baaijens, CWI (supervisor: Alexander Schönhuth), Sep 2019
- Annelieke Baller, Vrije Universiteit Amsterdam (co-supervisor: Leen Stougie), Nov 2019
- Thomas Bosman, Vrije Universiteit Amsterdam (co-supervisor: Leen Stougie), Nov 2019
- Audric Cologne, University of Lyon 1 (funded by Inserm and Inria, co-supervisors: Patrick Edery – Federation of Health Research of Lyon-Est, Vincent Lacroix), Oct 2019
- 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), Apr 2019
- Nikos Parotsidis, University of Rome Tor Vergata, supervisor: Giuseppe Italiano, Mar 2019
- 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), Feb 2019

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)
- Nicolas Homberg, Inra, Inria & University of Lyon 1 (funded by Inra & Inria, co-supervisors: Christine Gaspin at Inra; 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)
- Camille Sessegolo, University of Lyon 1 (funded by ANR Aster; co-supervisors: Vincent Lacroix, Arnaud Mary)
- Michelle Sweering, CWI (co-supervisors: Solon Pissis and Leen Stougie)
- 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)

9.2.3. Juries

The following are the PhD or HDR juries to which members of ERABLE participated in 2019.

- Vincent Lacroix: External reviewer of the PhD of Patricia Sieber, supervised by Stefan Schuster at Friedrich-Schiller University of Jena, Germany; external reviewer of the PhD of Luca Denti, supervised by Paola Bonizzoni at University Bicocca of Milano, Italy.
- Arnaud Mary: External reviewer of the PhD of Karima Ennaoui, supervised by Lhouari Nourine at University of Clermont-Ferrand, France.
- Marie-France Sagot: External Reviewer of the PhD of Pierre Marijon, University of Lille, France, Dec 2019.

- Leen Stougie: Reading Committee of the PhD of Teun Janssen, TU Delft, Mar 2019; Chair Reading Committee of the PhD of Pieter Kleer, Vrije Universiteit Amsterdam, Sep 2019; Reading Committee of the PhD of Peter van der Gulik, Univ. of Amsterdam, Sep 2019; Chair Reading Committee of the PhD of Maaike Hoogeboom, Vrije Universiteit Amsterdam, Dec 2019.

- Cristina Vieira: Member of the PhD Committee of Olivier Tabone, Faculté de Médecine Rockfeller, Jan 2019; Member of the PhD Committee of Sébastien Lemaire, ENS Lyon, Mar 2019; External Reviewer of the PhD of Natalia Martinez, Université Paris Sud, Oct 2019.

9.3. Popularization

9.3.1. Interventions

Carol Moraga Quinteros participated in the contest "DESCRYPThèse" of the doctoral school E2M2 of the University of Lyon 1, winning a prize for one of the best presentations in April 2019. The title of the talk was "BrumiR: un algorithme *de novo* pour prédire les petits ARNs sans génome de référence".

IBIS Project-Team

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
Aline Marguet	Biohasard: Stochastic models for biology, Grenoble	Jun 2020
Delphine Ropers	Séminaire de Modélisation du Vivant (SeMoVi), Lyon and Grenoble	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 and 2020)	Associate editor

8.1.2.2. Member of conference program committees

IBIS member	Conference, workshop, program
Eugenio Cinquemani	ECC 2019 and 2020, CMSB 2018 and 2019, HSB 2019 and 2020, SASB 2019, IEEE CIBCB 2019
Hidde de Jong	CMSB 2019, FOSBE 2019, HSB 2019 and 2020
Delphine Ropers	CSBio 2019

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
Hidde de Jong	International Human Frontier Science Program (HFSP)	Member grant selection committee
Delphine Ropers	INRA-Inria	Member selection committee PhD grants
Delphine Ropers	Elixir	Member of Microbial Biotechnology Community

8.1.5. Invited talks and other presentations

Eugenio Cinquemani

Title	Event and location	Date
Estimation and control of microbial dynamics: From single-cell to microbial communities	Presentation at Inria-KAIST workshop on Applied mathematics, Paris	Mar 2019
Optimal control of bacterial growth for metabolite production: The role of timing and costs of control	Presentation at ECC 2019, Naples (Italy)	Jun 2019
Enhanced production of heterologous proteins by a synthetic microbial consortium: Conditions and tradeoffs	Invited talk at Workshop Advanced Physics for Medicine, CNR, Rome (Italy)	Sep 2019

Hidde de Jong

Title	Event and location	Date
Integrated models of the cell: metabolism, gene expression, signalling	Tutorial at CompSysBio: Advanced Lecture Course on Computational Systems Biology, Aussois	Apr 2019
Optimal control of bacterial growth: biotechnological applications	Invited talk at Workshop New Vistas in Computational Systems and Synthetic Biology, Vigo (Spain)	May 2019
Optimal control of microbial growth and bioproduction	Invited talk at SYMER workshop, Global Challenge Week, Univ Grenoble Alpes, Grenoble	Jun 2019
Reengineering bacterial metabolism using synthetic biology and optimal control theory	Invited talk in special session on Predictive approaches for biological systems engineering, JOBIM 2019, Nantes	Jul 2019
Production of heterologous proteins by a synthetic microbial consortium: conditions and tradeoffs	Invited talk at Biocore seminar, Peyresq	Sep 2019

Stéphan Lacour

Title	Event and location	Date
New insights into the regulation of curli production by E. coli	BactoGre workshop, Grenoble	Avr 2019

Aline Marguet

Title	Event and location	Date
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Invited talk at École de printemps de la chaire MMB, Aussois	May 2019
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Presentation at ISMB/ECCB conference, Basel (Switzerland)	Jul 2019
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Invited talk at Biohasard 2019 workshop, Rennes	Aug 2019
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Presentation at Journée Inria-Bio, Lyon	Oct 2019
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Seminar Master Mathématiques pour les Sciences du Vivant, Ecole Polytechnique, Palaiseau	Oct 2019
Modelling and statistics of branching processes	Workshop on Growth and division in mathematics and medicine, London (UK)	Nov 2019
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Seminar équipe-projet DRACULA, Lyon	Nov 2019
Inheritance and variability of kinetic gene expression parameters in microbial cells: Modelling and inference from lineage tree data	Seminar unité MaIage, Jouy-en-Josas	Dec 2019
Long time behavior of a general class of branching Markov processes	Seminar Institut Fourier, Grenoble	Dec 2019

Marco Mauri

Title	Event and location	Date

Thibault Etienne

Title	Event and location	Date
Regulatory mechanisms underlying coordination of mRNA degradation and cell physiology in Escherichia coli	Seminar during Journée annuelle du LIPhy, Grenoble	Jun 2019
Large scale modelling of mRNA decay in Escherichia coli	Seminar during Journée InriaBio, ENS de Lyon	Oct 2019

Antrea Pavlou

Title	Event and location	Date
Experimental and computational analysis of bacterial self-replicators	Poster at CompSysBio: Advanced Lecture Course on Computational Systems Biology, Aussois	Apr 2019
Experimental and computational analysis of bacterial self-replicators	Seminar for GdT MathBio, Grenoble	Nov 2019

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 Grenoble - Rhône-Alpes	Référente chercheurs
Delphine Ropers	Inria Grenoble - Rhône-Alpes	Co-coordinator of mentoring program

8.1.7. Recruitment committees

IBIS member	Organism	Recruitment
Johannes Geiselmann	University of Barcelona	Assistant professor
Delphine Ropers	Inria Bordeaux Sud-Ouest	Chargés de recherche (jury d'admissibilité)
Delphine Ropers	Inria national	Chargés de recherche (jury d'admissibilité)
Delphine Ropers	Univ de Rennes	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 (4 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)

Aline Marguet

 Practicals: Biostatistics, M2, Univ Grenoble Alpes (24 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)

Thibault Etienne

Course: Construction et analyse de plasmides in silico, M1, Master ingéniérie de la santé, Univ Grenoble Alpes (4 h)

Antrea Pavlou

Practicals: Cellular biology, L1, Chemistry and biochemistry, Univ Grenoble Alpes (28 h)

8.2.2. *Supervision*

HdR: **Eugenio Cinquemani**, Identification, estimation and control of gene expression and metabolic network dynamics [14], Univ Grenoble Alpes, Nov 2019

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

PhD in progress: **Maaike Sangster**, Development, characterization and control of E. coli communities on an automated experimental platform. Supervisors: Eugenio Cinquemani and Johannes Geiselmann

8.2.3. *Juries*

PhD thesis committees

IBIS member	Role	PhD student	University	Date
Johannes Geiselmann	Président	Vanni Petrolli	Univ Grenoble Alpes	Nov 2019
Hidde de Jong	Rapporteur	Pauline Trébulle	AgroParisTech	Oct 2019
Hidde de Jong	Rapporteur	Firas Hammami	Univ d'Aix-Marseille	Dec 2019
Delphine Ropers	Examinateur	Marianyela Petrizzelli	Univ Paris Sud	Jul 2019
Delphine Ropers	Examinateur	Ronan Duchesne	Univ de Lyon	Dec 2019

Habilitation (HDR) committees

IBIS member	Role	HDR candidate	University	Date
Johannes Geiselmann	Président	Marianne Weidenhaupt	Univ Grenoble Alpes	Jan 2019
Hidde de Jong	Président	Arnaud Tonnelier	Univ Grenoble Alpes	Jun 2019
Hidde de Jong	Rapporteur	Stefan Müller	University of Vienna	Sep 2019
Hidde de Jong	Examinateur	Eugenio Cinquemani	Univ Grenoble Alpes	Nov 2019

PhD advisory committees

IBIS member	PhD student	University
Eugenio Cinquemani	Arthur Carcano	Institut Pasteur/Inria
Eugenio Cinquemani	Alexey Koshkin	ENS de Lyon
Johannes Geiselmann	Alain Lombard	Univ Grenoble Alpes
Johannes Geiselmann	Shiny Martis	INSA de Lyon
Hidde de Jong	Charlotte Coton	INRA Moulon
Hidde de Jong	Kapil Newar	Univ Grenoble Alpes
Hidde de Jong	Agustín Yabo	Univ Nice–Sophia-Antipolis
Stéphan Lacour	Julien Trouillon	CEA Grenoble
Stéphan Lacour	Camille Brunet	CHU Grenoble
Stéphan Lacour	Raphael Fourquet	INSA de Lyon/Univ de Lyon
Stéphan Lacour	Kevin Pick	Univ de Lyon
Delphine Ropers	Manon Barthe	Univ Paul Sabatier, Toulouse
Delphine Ropers	Charlotte Roux	Univ Paul Sabatier, 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. Interventions

Delphine Ropers participated in the colloquium FIGAS 2019 - Un rêve pour les filles et les garçons : la Science (Nov 2019). She was moderator of the session "Stéréotypes dans le numérique", and co-presented with Thierry Vieville "Mais comment éduquer les garçons à l'équité des genres au niveau informatique et numérique ?".

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

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events: Organisation

8.1.1.1. Member of the Organizing Committees

- Romain Azaïs was a member of the organizing committee of the Journées de Statistique 2019 in Nancy.
- Romain Azaïs organized with Hélène Leman (NUMED) the second InriaBio@Lyon day, which gathered 6 teams of the Inria center interested in biological questions.

8.1.2. Scientific Events: Selection

8.1.2.1. Reviewer

- Romain Azaïs: NeurIPS 2019.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Christophe Godin:
  - Asssociate editor in Plant biophysics and modeling of the journal Frontiers in Plant Sciences.
  - Member of the Editorial Advisory Board of the journal in silico Plants.
  - Member of the board of the functional-structural plant modeling (FSPM) series of conferences (next to come at fall 2020).

8.1.3.2. Reviewer - Reviewing Activities

- Olivier Ali: Frontiers in plant sciences.
- Romain Azaïs: Stochastic Processes and their Applications, Journal of Statistical Theory and Practice, Bernoulli.
- Christophe Godin: Frontiers in plant sciences, Annals of Botany, Bulletin of mathematical Biology (co-coordination of a special issue).
- Bruno Leggio: Physical Review Letters, Physical Review A, Physical Review B, Physical Review E, Frontiers in Plant Science, Entropy, Symmetry, Energies.

8.1.4. Invited Talks

- Oliver Ali was invited to give a seminar at the UPSC Lab in Umea (Sweden) in December 2019.
- Romain Azaïs was invited to give a presentation at the UTC in Compiègne, at the Laboratoire Paul Painlevé in Lille, and at the Laboratoire de Biométrie et Biologie Evolutive in Lyon.
- Christophe Godin was invited to give presentations at the research unit IGFL (Lyon), University of Calgary (Canada), University of Heidelberg (Germany) and ENS de Lyon.

8.1.5. Scientific Expertise

- Christophe 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).

8.1.6. Research Administration

- Christophe 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.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Olivier Ali:
  - Jury for the evaluation of a practical course on computational modeling for developmental biology (Licence 3 Biology ENS Lyon).
  - Course (3h) and practical course (3h) about mechanical modeling of plant morphogenesis (Master plant biology for sustainable production, Umea university and Swedish University of Agricultural Science, Sweden).
- Romain Azaïs:
  - Colles de mathématiques, CPGE PCSI, Lycée Jean Perrin, Lyon
  - Cours de Master 2 Apprentissage à partir de données arborescentes, Master Maths en Action, Université Lyon 1
- Christophe Godin:
  - Cours Les plantes dans tous leurs états pour non-specialistes, ENS de Lyon: *Phyllotaxis.* (2h).
  - Cours Master Sysbio, U. de Lyon: *A journey in Phyllotaxis.* (2h).
  - Master Stem Cells and Development ENS de Lyon (3h): *Introduction to Phyllotaxis.*
- Florian Ingels:
  - Séances de TP Probabilités-Statistiques, Licence Mathématiques et Economie, Université Lyon 1
  - Séances de TP Statistiques pour l'informatique, Licence Informatique, Université Lyon 1

8.2.2. Supervision

PhD (2016 – 2019): Florine Greciet (IECL, Université de Lorraine and Safran). Régression polynomiale par morceaux pour la propagation de fissures. Supervisors: Anne Gégout-Petit (Inria team BIGS, IECL, Université de Lorraine) and Romain Azaïs.

PhD in progress (2019 - 2022): Florian Ingels (MOSAIC, Université de Lyon). Supervisors: Romain Azaïs, Christophe Godin.

Hadrien Oliveri PhD (2015-2019) Montpellier University, co-supervision Christophe Godin, Jan Traas,

Katia Mirande PhD (2018-2021) Strasbourg University, co-supervision Franck Hetroy, Christophe Godin

Anne Schneider PhD (2016-2020) Angers University, co-supervision Jesssica Bertheloot, Christophe Godin

Manuel Petit PhD (2019-2022), ENS de Lyon, co-supervision Christophe Godin, Grégoire Malandain.

Master 2 (6 months): Florian Ingels. Statistical learning from trees: toward the definition of an optimal kernel for tree data. Supervisor: Romain Azaïs.

Master 2 (6 months): Florent Papini. Tracking cells in confocal images of meristems. Supervisor: Christophe Godin.

8.2.3. *Juries*

Christophe Godin was a member (as a supervisor) of the PhD defense of Hadrien Oliveri - University of Montpellier (May 2019).

Christophe Godin was the President of the PhD defense of Valeria Hernandez at ENS de Lyon (December 2019).

8.3. Popularization

- Olivier Ali:
  - Participated to the Declic initiative: Discussions about of scientific research to high school students (3h, Lycée Jean Perrin, Lyon).
  - Invited conference about mechanical modeling of plant morphogenesis for the Université Ouverte in Lyon.
- Christophe Godin participated to the Declic initiative: Introductory talk and discussions about scientific research to high school students (3h, Lycée Frédéric Fays, Villeurbanne).

8.3.1. *Interventions*

- Christophe Godin gave:
  - a lecture at Inria Grenoble in the context of a training program for Informatique et Sciences du Numérique dedicated to Math and Physics highschool teachers. see video (1h30)
  - a visio-seminar to highschool students of the French Lycée in Laos (1h30)

NUMED Project-Team

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific Events: Organisation

6.1.1.1. General Chair, Scientific Chair

- E. Grenier: member of the Scientific Board of the CLARA (Regional Cancer organization)
- H. Leman: Inria Bio (october 2019)
- H. Leman: "mating preferencies" symposium in the international conference MMEE (june 2019)
- P. Vigneaux: Scientific co-head of the national CNRS research group GdR EGRIN (with Emmanuel Audusse).

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

- E. Grenier: L3 (integration theory), M1 (PDEs) and "agregation" (modeling).
- Paul Vigneaux: "agregation" (modeling), "computational sciences, an introduction to modelling" (for L3 - M2 students from physics, computer science and biology)
- Paul Vigneaux: Member of the Board of MILYON, the Laboratory of Excellence (Labex) in Mathematics of Lyon (Since September 2011). This Labex aims at federating international research, higher education and society activities. In charge of evaluation and grant attribution for foreign students for M1, M2 and PhD in Lyon, since 2011.

6.3. Popularization

Emmanuel Grenier: "Mathematics and vaccines" (Université de Chambéry, for first year students).

6.3.1. Interventions

- H. Leman: Mentoring of two high school students
- D. Coulette: Scientific speed dating at "Musée des Confluences" (Lyon) for the "Fête de la Science" and $80th$ birthday of CNRS.

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

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Selection

Jean-Yves Courtonne co-organized a special session entitled *Advances in understanding the physical structures of economies: Materials, energy, and the services they provide* at the 13th International Conference of the European Society for Ecological Economics, Turku, Finland, June 2019. https://esee2019turku.fi/specialsessions

9.1.1.1. Member of Conference Program Committees

- Peter Sturm, ORASIS 2019 (Journées francophones des jeunes chercheurs en vision par ordinateur), Saint-Dié-des-Vosges, France, https://orasis2019.sciencesconf.org
- Peter Sturm: Inria Science Days (Journées Scientifiques Inria), Lyon, France.

9.1.2. Invited Talks

- Jean-Yves Courtonne and Guillaume Mandil: *Durabilité forte : état des lieux et programme de recherche pour l'évaluation d'alternatives socio-techniques*, Colloque Soutenabilité des systèmes socio-techniques, Université Technologique de Troyes, France.
- Pierre-Yves Longaretti, *Global environmental collapse risks: is digital technology a problem or a solution?*, Keynote speech at LIG, Grenoble, France, June 2019.

9.1.3. Scientific Expertise

Jean-Yves Courtonne and Guillaume Mandil participate in the Steering Committe (COPIL) of the CODEC (Contrat d'Objectifs Déchets et Économie Circulaire) of Grenoble Alpes Métropole (Grenoble Metropolitan Area, https://www.lametro.fr/).

Team members intervened in training programs dedicated to IT professionals and teachers organized by EcoInfo [0], a French network dedicated to eco-responsible digital sciences and technologies:

- Guillaume Mandil provided a training session on Life Cycle Analysis for EcoInfo members, Grenoble, May 2019.
- Pierre-Yves Longaretti, Guillaume Mandil, and Peter Sturm gave lectures/training sessions at the week-long training seminar *Impact Environnemental du Numérique – Comprendre et Agir*, Autrans, France, September 2019.

9.1.4. Research Administration

- Emmanuel Prados and Guillaume Mandil are members of the Grenoble section of the *Labos 1.5* initiative: an international, cross-disciplinary collective of academic researchers who share a common goal: to better understand and reduce the environmental impact of research, especially on the Earth's climate, https://labos1point5.org/en/home/
- Emmanuel Prados is member of the working group on sustainable development of the LJK lab, whose goal is to define and environmental charter and an environmental scientific policy for the lab.
- Peter Sturm is Deputy Scientific Director of Inria, in charge of the domain Perception–Cognition–Interaction.

---

[0] https://ecoinfo.cnrs.fr

- Peter Sturm co-founded and co-animated (with Céline Serrano) a national working group at Inria whose goal was to provide suggestions for the institute concerning environmental issues, in particular: (i) research to address the increasing environmental challenges (including directions of research and administrative aspects), (ii) how to reduce the ecological impact of the institute, and, more generally, (iii) ways of fostering responsible science ("sciences impliquées"). The working group produced a report [9] and several of its recommendations have already been taken up by Inria.

- Peter Sturm is member (representative of personnel) of the CLHSCT of Inria Grenoble Rhône-Alpes (Local Committee for Hygiene, Security and Working Conditions).

- Peter Sturm is member of the CLDD of Inria Grenoble Rhône-Alpes (Local Sustainable Development Commission).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Jean-Yves Courtonne, Serge Fenet, Fausto Lo Feudo, Pierre-Yves Longaretti, Guillaume Mandil, Régis Perrier, Emmanuel Prados, Peter Sturm, and Françoise Berthoud (CNRS): _Les véritables enjeux environnementaux – compréhension, modélisations et outils quantitatifs_, 18 hours, graduate course, Université Grenoble Alpes, https://team.inria.fr/steep/seminars/cours-ed-2019/

Jean-Yves Courtonne: _Méthodes d'évaluation environnementale_, 1h30, Ensimag (Grenoble INP)

Jean-Yves Courtonne: _Méthodes d'évaluation environnementale_, 2h, Programme IDEX Green University, Université Grenoble Alpes

Pierre-Yves Longaretti: _Global changes, planetary limits and collapse risks_, 3h, Evry ENSIIE engineering school, May 2019.

Pierre-Yves Longaretti: _Global changes, planetary limits and collapse risks_, 3h, Grenoble ENSIMAG engineering school, October 2019.

Serge Fenet, Guillaume Mandil and Régis Perrier have regular teaching duties at the universities employing them.

9.2.2. Supervision

PhD in progress: Michela Bevione, _Enjeux socio-écologiques, métabolisme territorial, création de richesse : application à la vallée de la Maurienne_, started in October 2016, supervised by Pierre-Yves Longaretti and Nicolas Buclet (PACTE laboratory)

PhD in progress: François-Rémi Mazy, _Vers une théorie et une implémentation algorithmique cohérentes des modèles statistiques de changement d'usage des sols_, started in October 2019, supervised by Pierre-Yves Longaretti

PhD in progress: Mathilde Jochaud du Plessix, _Robustesse et validité des modèles dynamiques de risques systémiques globaux_, supervised by Serge Fenet and Pierre-Yves Longaretti

9.2.3. Juries

- Pierre-Yves Longaretti was external expert of Grégoire Chambaz masters' thesis (UNIL, Lausanne): _The Evolutionary Dynamics of Societies Critical Synthesis of the Work of J.A. Tainter_ et al. _on Sustainability, Collapse, Resilience and Energy Transitions._

- Peter Sturm was reviewer of the Habilitation thesis of Gilles Simon (Université de Lorraine) and of the PhD thesis of Yilin Zhou (Université Paris-Est) and chaired the PhD thesis committee of Julien Salotti (Université de Lyon).

9.3. Popularization

9.3.1. Education

- Guillaume Mandil gave a half-day training course to a group of high school teachers (Lycée Mounier - CLEPT), July 2019.
- Peter Sturm gave a lecture on the environmental impact of ICT, during a training week of high school teachers of the Hauts-de-France Region, Lille, France, June 2019.

9.3.2. Conference-debate series and YouTube-channel "Understanding and Acting"

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 2019 the YouTube channel has about 5,400 subscribers and reached a total of about 425,000 viewings.

The conference-debates of 2019:

- Olivier Vidal, Université Grenoble Alpes: Resources and energy at the global scale in the context of the energy transition (*Matières premières et énergie à l'échelle mondiale dans le contexte de la transition énergétique*)
- Grégoire Chambaz, Lausanne: How real is the risk of a blackout? (*Le risque de blackout est-il réel ?*)
- Christophe Bonneuil, CNRS and École des hautes études en sciences sociales: When the whites intended to preserve the planet – A history of geo-power, 1865-1914 (*Quand les blancs voulurent conserver la planète. Une histoire du géopouvoir, 1865-1914*)
- Peter Sturm, STEEP: Environmental challenges and what is blocking acting on them (*Enjeux environnementaux et blocages à l'action*)
- Sophie Wahnich, CNRS and Institut interdisciplinaire d'anthropologie du contemporain: Why was King Louis XVI destituted in 1792? Social imaginaries from 1770 to 1792 (*Pourquoi le roi Louis XVI a t-il été destitué en 1792 ? Imaginaires sociaux de 1770 à 1792*)
- Denis Dupré, STEEP: Collapses and finance (part I) – Is Finance a collapse pyromaniac? (*Effondrements et finance (partie I) – La Finance : pyromane des effondrements ?*)

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

9.3.3. Interventions

Guillaume Mandil participated in the preparation of an exposition at Cité des Sciences (Paris).

Team members gave the following general audience talks:

- Serge Fenet: Talk *Design et anthropocène : business as unusual – Une cartographie des risques par le prisme de la systémique* at the *Biennale Internationale du Design*, St-Étienne, France, May 2019.

- Serge Fenet: *Effondrements et anthropocène à la lumière de la dynamique des systèmes* at ESC Clermont-Ferrand, France, May 2019.

- Serge Fenet: *Technologies numériques et catastrophe environnementale : des liens complexes* at École Centrale de Lyon, for a general audience of master students.

- Pierre-Yves Longaretti: Seminar *Voluntary minimal consumption: stakes, obstacles, levers*. EcoInfo thematic school, November 2019.

- Pierre-Yves Longaretti: Seminar *Climate Change and strategic surprise*, Swiss military history and prospective center, December 2019.

- Pierre-Yves Longaretti: Round table discussion, *Will we all be farmers tomorrow? (Demain, tous paysans ?)*, Transition Towns biennial meeting, Grenoble, March 2019.

- Pierre-Yves Longaretti: Round table discussion, *Agriculture: global and local stakes (Agriculture : enjeux locaux et globaux)*, Forum citoyen alimentation & santé : La transition agro-alimentaire dans nos assiettes, Grenoble, November 2019.

- Emmanuel Prados: Institutional Conference *Veille techno à Polytech*, Grenoble, France, December 9-16, 2019. Organized by the MSTII Graduate School of Université Grenoble Alpes (Bernard Tourancheau).

- Emmanuel Prados: Institutional Conference organized by UniLaSalle (Hervé Leyrit), Beauvais, France, October 17, 2019.

- Emmanuel Prados: Conference at the back-to-school day of EPITA LYON (computer intelligence engineering school), Lyon, France, September 10, 2019. Organizer: Epita (Lamia Derrode).

- Emmanuel Prados: Conference on environmental transition for elected politicians of the Grésivaudan community of communes, open to the general public, Le Versoud, France, June 3rd, 2019. Organizer: Le Versoud City Hall (Claire Desmaris).

- Emmanuel Prados: General public conference, Crolles, France, June 22 , 2019. Organizer: Association *Ecocitoyens*.

- Emmanuel Prados: Conference at the *CitizenCampus* entitled *Transition, démocratie, effondrement : la quadrature du cercle ?*, Grenoble, France, March 29, 2019. Organizer: Université Grenoble Alpes. https://twitter.com/YannToma/status/1112094922499330049

- Emmanuel Prados: Conference/debate *Quelles transitions dans un contexte d'effondrement ?*, Palais des Sports de Grenoble, France, March 13, 2019. Organizer: Ville de Grenoble. http://villesentransition.grenoble.fr/events/quelles-transitions-dans-un-contexte-deffondrement/

- Emmanuel Prados: Conference within the ISN cycle, *Le numérique face aux enjeux environnementaux et sociétaux*, Grenoble, France, April 10, 2019. Organizer: Inria. https://www.canal-u.tv/video/inria/le_numerique_face_aux_enjeux_environnementaux_et_societaux.50079

- Emmanuel Prados: Invited conference at the Loria colloquium, *Le numérique face à la catastrophe environnementale et sociétale*, Nancy, France, February 8, 2019. Organizer: Loria (http://www.loria.fr/). https://www.loria.fr/fr/communication/colloquium-loria-exposes-et-videos/

- Peter Sturm made a "Tour de France" by bicycle, to raise awareness on environmental issues. During this trip (May 15 to July 4), he visited all Inria centers and gave a talk on *Environmental challenges and what is blocking acting on them* in ten locations (Sophia Antipolis, Montpellier, Bordeaux, Rennes, Saclay, Rocquencourt, Paris, Nancy, Lyon, Grenoble). His visits were accompanied by various events, including seminars by local researchers, meetings with sustainable development commissions, social gatherings, etc. This initiative is described at https://project.inria.fr/inriavelo/fr/, see also the daily blog https://www.polarsteps.com/PeterSturm3/1692663-inri-a-velo.

<p align="center">**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

- Oana Iova was the scientific chair of the first Low Power and Wide Area Networks Days (GDR RSD), 11-12 July 2019, Lyon.
- Oana Iova was co-chair of NewNets 2019 - The 1st Workshop on Emerging Technologies and Trends in Engineering Low-Power Networks (collocated with IEEE WF-IoT), April 15, 2019, Limerick, Ireland.
- Razvan Stanica co-organized a workshop on New Architectures and Services for Autonomous and Flexible Cellular Networks, within the Jacques Cartier Meetings organised in November in Montreal (Canada).

10.1.1.2. Member of the Organizing Committees

- Oana Iova was on the Organizing Committee of the first Low Power and Wide Area Networks Days (GDR RSD), 11-12 July 2019, Lyon.
- Hervé Rivano was on the Organizing Committee of the first Low Power and Wide Area Networks Days (GDR RSD), 11-12 July 2019, Lyon.
- Fabrice Valois was on the Organizing Committee of the first Low Power and Wide Area Networks Days (GDR RSD), 11-12 July 2019, Lyon.

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

- Oana Iova was program co-chair of CoRes 2019: 4ème Rencontre Francophone sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication, June 3-4, 2019, Toulouse (France).

10.1.2.2. Member of the Conference Program Committees

- Oana Iova was in the TPC of the following conferences: IAUV, UrbCom, IoT-HPC, ACM SIG-COMM AINTEC, AdHoc-Now, EWSN, IEEE DIPI.
- Razvan Stanica was in the TPC of the following conferences: IEEE ICC, IEEE GlobeCom, IEEE CCNC, IEEE WCNC, IEEE PIMRC, IFIP WD, ICIN, ISNCC, GIoT.
- Fabrice Valois was in the TPC of the following conferences: IEEE Globecom, IEEE ICC, IEEE ICT, IEEE WCNC, WiSARN.

10.1.2.3. Reviewer

- Oana Iova was a reviewer for the following conference: IEEE INFOCOM 2019 (demo and posters).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Fabrice Valois is associated editor for Annals of Telecommunications (IF: 1.412).

10.1.3.2. Reviewer - Reviewing Activities

- Walid Bechkit was reviewer for the following journals: Elsevier Ad hoc Networks.

- Oana Iova was reviewer for the following journals: IEEE Transactions on Mobile Computing, Elsevier Sustainable Computing, Informatics and Systems.
- Razvan Stanica was a reviewer for the following journals: IEEE Transactions on Mobile Computing, IEEE Communication Letters, Computer Networks, Ad-Hoc Networks, Wireless Networks, IEEE Transactions on Network and Service Management, IEEE Access, Mobile Information Systems.

10.1.4. Invited Talks

- Hervé Rivano was invited speaker IMERIR, Perpignan, France.
- Hervé Rivano was invited speaker Forum Numerica - Learning Center, Campus SophiaTech, France.
- Hervé Rivano was invited speaker Institut d'Automne en Intelligence Artificielle, GDR IA, Lyon, France.
- Hervé Rivano was invited speaker Les Entretiens Jacques Cartier, Montréal, Canada.
- Hervé Rivano was invited speaker IEEE Societal Automation, Krakow, Poland.
- Hervé Rivano was chair of the panelist A l'école de l'anthropocène, Lyon, France.
- Fabrice Valois was invited speaker IEEE Canada Distinguished Lecture, University of Waterloo, Canada.
- Fabrice Valois was invited speaker Les Entretiens Jacques Cartier, Montréal, Canada.
- Fabrice Valois was invited speaker Mois des Cultures Numériques, Institut Français, Sfax, Tunisie.

10.1.5. Leadership within the Scientific Community

- Walid Bechkit is a nominated member in the scientific committee of the Fédération d'Informatique de Lyon (FR 2000 CNRS).
- Oana Iova is the scientific leader of the steering committee of the LPWAN Days (GDR RSD).
- Hervé Rivano is member of the steering committee of the ResCom axis of the RSD CNRS GdR.
- Hervé Rivano is member ot the steering committee of Ecole Urbaine de Lyon (PIA Institut Convergence), in charge of Smart and Learning Cities.
- Hervé Rivano was co-representative of the Labex IMU at the Smart City Expo World Congres (Barcelona).
- 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).

10.1.6. Scientific Expertise

- Hervé Rivano is member of the Scientific Committee of the Digital League Regional Cluster.
- Fabrice Valois was a member in the recruitment committee of an Associate Professor in Computer Science at Université de Clermont Auvergne.
- Fabrice Valois was a member in two recruitment committees of Associate Professors in Computer Science at Université de Cergy-Pontoise.

10.1.7. 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 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: Fabrice Valois, IP Networks, 36h, L3, Telecom. Dpt. INSA Lyon.

Licence: Fabrice Valois, Medium Access Control, 54h, L3, Telecom. Dpt. INSA Lyon.

Licence: Fabrice Valois, Basic networking, 20h, L3, IST / Telecom. Dpt. INSA Lyon (lectures given in english).

Licence: Oana Iova, Network and System Programming, 108h, L3, Telecom. Dpt. INSA Lyon.

Licence: Oana Iova, Introduction to research, 20h, L3, Telecom. Dpt. INSA Lyon.

Licence: Oana Iova, Smart city: networking challenges, 8h, L3, Smart Program, INSA Lyon (lectures given in english).

Licence: Oana Iova, Internet of connected things, 3h, L3, Innov Program, INSA Lyon (lectures given in english).

Licence: Hervé Rivano, Algorithms and programming, 165h, L1 - L2, INSA Lyon.

Licence: Hervé Rivano, Sensors data engineering project, 34h, L2, INSA Lyon.

Licence: Hervé Rivano, Programming robot control, 20h, L2, INSA Lyon.

Licence: 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, 66h, M1, Telecom. Dpt. INSA Lyon.

Master: Oana Iova, Long Range Networks, 10h , M2, Telecom. Dpt. INSA Lyon.

Master: Oana Iova, IoT technical project, 8h, M2, Telecom. Dpt. INSA Lyon.

Master: Hervé Rivano, Smart Cities and IoT, 44h, M2, Telecom. Dpt. INSA Lyon.

Master: Hervé Rivano, Smart Cities, Master Cities, Environment and Urbanism, University of Lyon.

Master: Razvan Stanica, Mobile Networks, 30h, M1, Telecom. Dpt. INSA Lyon.

Master: Razvan Stanica, Network Science, 10h, M2, 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.

Hervé Rivano is responsible of the Smart program (international teaching program with Tohoku University and Tokyo University) about Smart Cities.

Hervé Rivano is responsible of the IoT specialization of the Innov program (INSA Lyon and US students).

Hervé 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 : 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: Kawtar Lasri, Data collection and distributed spatial coordination in LPWAN networks, since 01/2019. Advisors: Oana Iova, Fabrice Valois.

PhD in progress: Ichrak Mokhtari, Spatio-temporal analysis of pollution data from low cost sensors, since 11/2019. 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 committees:
  - G. Bu, Fiabilité, sécurité et vie privée dans les WBAN, LIP6, Sorbonne Université
  - B. Grozev, Conférences vidéos WebRTC à routage optimisé, Icube, Université de Strasbourg
- Hervé Rivano was a member in the following PhD defense committees:
  - M. Smache, La sécurité des réseaux déterministe de l'Internet industriel des objets (IIoT), CEA Leti, Mines Saint Etienne
  - H. Mazouzi, Algorithmes pour le déchargement de tâches sur serveurs de périphérie mobile, L2TI, Université de Paris Nord
- Razvan Stanica was a member in the following PhD defense committee:
  - M. M. Merah, Conception et réalisation d'un lien Light-Fidelity multi-utilisateur en intérieur, LISV, Université de Versailles Saint Quentin en Yvelines
- Fabrice Valois was a reviewer in the following PhD defense committee:
  - H. Mroue, Développement de réseaux radio d'objets connectés pour les Villes Intelligentes : améioration de la Qualité de Service du réseau LoRa, IETR, Université de Nantes
- Fabrice Valois was a member in the following PhD defense committees:

– R. T. Hermeto, Standard Improvements and Predictable Performance for Industrial Internet of Things in Indoor Deployments, ICube, Université de Strasbourg

– H. Chour, Full-Duplex Device-to-Device Communication for 5G Network, IETR, Centrale Supélec

10.3. Popularization

- Hervé Rivano, Atelier de recherche participative sur la mesure de la qualité de l'air, Ecole Urbaine de Lyon, France.

- Hervé Rivano, Développement et expérimentation du kit pédagogique *Ca va chauffer*, Ecole Jules Guesde, Villeurbanne, France.

- Hervé Rivano, Aterlier autour du kit pédagogique *Ca va chauffer*, Super Demain, Métropole de Lyon.

10.3.1. Articles and contents

- Hervé Rivano is co-author of the blog post *Représenter l'intangible : les défis de la visualisation des données numériques environnementales. Montrer la pollution de l'air, le cas d'Air To Go*https://medium.com/anthropocene2050/

- Hervé Rivano is organizer and moderator of the podcast *Quelle ville intelligente est possible ?*, https://www.sondekla.com/user/event/10011

- Hervé Rivano is moderator of the podcast *Anthropocène et outils numériques*, https://www.sondekla.com/user/event/9805

10.3.2. Interventions

- Walid Bechkit was invited speaker about *3M'Air Mesures citoyennes Mobiles et Modélisation: qualité de l'air et îlots de chaleur à Lyon*, Colloque National Capteurs et Sciences Participatives, Paris, 2019.

- Oana Iova, Hervé Rivano and Fabrice Valois was involved in *Les rêveries lumineuses de Léonard*, https://popsciences.universite-lyon.fr/agenda/les-reveries-lumineuses-de-leonard-fete-des-lumieres-2019/, contribution de l'Ecole Urbaine de Lyon pour l'Université de Lyon, Fête des Lumières, 2019.

<h1 style="text-align:center;color:red">AVALON Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. General Chair, Scientific Chair

Eddy Caron

- served as Co-Chair of SPCLOUD 2019, July 15-19, 2019 Dublin, Ireland.
- served as Local Organizing Committee of SRDS 2019, October 1-4, 2019 Lyon. France.

Laurent Lefèvre was :

- Co-organizer of colloquium : "Atteindre les ODD en combinant leviers technologiques et computationnels, économie circulaire et transdisciplinarité. Mission impossible ?", with Centre Jacques Cartier, UQAM, Inria, GDS CNRS EcoInfo, UQAM, Montreal, Canada, November 4-5, 2019
- Co Special Session Organizer of Special Session on High Performance Computing Benchmarking and Optimization (HPBench 2019), during HPCS conference, Dublin, Ireland, July 15-19, 2019
- Co-organizer of GreenDays@Anglet : How people and machines can reduce their environmental impacts ?, Anglet, France, June 24-25, 2019

Christian Perez served as Awards Co-Chair of HPCS 2019, July 15-19, 2019 Dublin, Ireland.

9.1.1.2. Member of the Organizing Committees

Laurent Lefevre was member of the Organizing Committee of the TILECS Workshop (Grenoble, 3-4 Jul 2019).

Christian Perez was member of the Organizing Committee of the French Journées Calcul Données (Toulouse, 9-11 Oct 2019), and the TILECS Workshop (Grenoble, 3-4 Jul 2019).

9.1.2. Scientific Events: Selection

9.1.2.1. Member of the Conference Program Committees

E. Caron was member of the program committees of CLOSER'2019, Compas'19

C. Perez was member of the program committees of CCGRID'19, HPCS'19, ICPP'10, ParCo'19, SC'19, and Compas'19.

F. Suter served in the program committees of ICPP, CCGrid, e-science, ICA3PP, WORKS, and HeteroPar.

M. Dias de Assuncao was member of the program committees of CCGrid'19, UCC'19, and CloudCom'19.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

E. Caron reviewed an article for IEEE Transactions on Sustainable Computing (TSUSC) and an article for IEEE Transactions on Parallel and Distributed Systems (TPDS)

C. Perez reviewed an article for Future Generation Computer Systems.

F. Suter reviewed articles for Future Generation Computer Systems.

M. Dias de Assuncao reviewed articles for Future Generation Computer Systems, IEEE Transactions on Parallel and Distributed Systems, Cluster Computing and Journal of Network and Computer Applications.

9.1.4. Invited Talks

- Laurent Lefèvre gave the following invited talks in 2019 :
    - "Impacts environnementaux du numérique: rien de bon pour la planète ! Comment aller vers plus d'efficacité et de sobriété dans la phase d'usage ?", Entretiens Jacques Cartier, Montreal, Canada, November 4, 2019
    - "Impacts énergétiques et environnementaux du numérique dans les environnements urbains",Journée scientifique sur L'énergie dans les environnements urbains, Montpellier, France, October 10, 2019
    - "Une brève histoire du Green IT (informatique verte) : espoirs, challenges, risques", Café Gourmand du LIP, ENS Lyon, France, October 8, 2019
    - "L'usage des TICs - Consommation, efficacité et proportionnalité des TICs : focus sur usages DCs/Net et quelques propositions venant de la recherche", ENSIMAG, Grenoble, October 4, 2019
    - "Le numérique et ses impacts: C'est bon pour la planète ?", Meetup IBM Ecologie du numérique: facture énergétique de l'IA, Lyon, France, October 1, 2019
    - "Impact du numérique: focus sur les consommations en phase d'usage - Faire plus avec moins: à la recherche de proportionnalité et d'efficacité énergétique en phase d'usage", ANF 2019 EcoInfo, Autrans, France, September 25, 2019
    - "Mesures et efficacité énergétique sur plate-forme expérimentale - The G5K Green Tour", TGIR Visit, Lyon, France, July 5, 2019
    - "Mesures et efficacité énergétique sur plate-forme expérimentale - The G5K Green Tour", with Georges Da Costa, TILECS Workshop, Grenoble, France, July 4, 2019
    - "Eco-design or data centres collapse : - environmental impact of digital - 3 scenarii - GreenIT challenges and role", Colloque "Les limites de la croissance de la smart city:espaces et énergies des infrastructures numériques", Ecole d'architecture de la ville et des territoires, Marne la Vallée, France, June 5, 2019
    - "Numérique et ses impacts: C'est bon pour la planète ? de la grenouille au colibri...", Lycée St Charles, Rillieux la Pape, France, April 5, 2019
    - "Faire plus avec moins: à la recherche de proportionnalité et d'efficacité énergétique en phase d'usage", Séminaire du Département Informatique de l'ENS de Lyon (SIESTE), Lyon, France, March 12, 2019
    - "Les impacts environnementaux du numérique/EcoInfo/Réflexions Grenobloises/EcoInfo++", with Sophie Quinton, Comité des Projets Inria Rhone-Alpes, Montbonnot, February 12, 2019

9.1.5. Scientific Expertise

C. Perez reviewed two projects for PHC programmes.

Olivier Glück is member of the CNU (Conseil National des Universités) section 27 (Computer Science). He participated to the 2019 "Qualifications" session and "Suivi de carriere" session.

9.1.6. Research Administration

Eddy Caron is Deputy Director in charge of call for projects, research transfert and international affairs since September 2017 for the LIP. He is co-leader of the Distributed system and HPC team of the FIL (Fédération Informatique de Lyon).

Olivier Glück is member of the "Conseil Académique" of Lyon 1 University and Lyon University.

Laurent Lefevre is a member of the executive board and the sites committee of the Grid'5000 Scientific Interest Group. He is the scientific leader of the Grid'5000 Lyon site. He is animator and co-chair of the transversal action on "Energy" of the French GDR RSD ("Réseaux et Systèmes Distribués"). He is member of the scientifc advisory board of the Digital League cluster (Région Rhone Alpes). He is elected member in the LIP laboratory council (ENS Lyon).

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.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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.

Licence: Yves Caniou, Algorithmique programmation impérative initiation, 48h, niveau L1, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Pratique d'Unix, 4h, niveau L1, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Programmation Concurrente, 35h and Responsible of UE, niveau L3, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Projet Informatique, 6h, niveau L3, Université Claude Bernard Lyon 1, France.

Licence: Yves Caniou, Réseaux, 36h, niveau L3, Université Claude Bernard Lyon 1, France.

Licence, Yves Caniou, Responsable mission pédagogique particulière, 3h, 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 Master SRIV (Systèmes, Réseaux et Infrastructures Virtuelles), 30h, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Projet Bibliographie et Certifications, 1.5h and Responsible of UE, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Gestion et supervision d'un parc, 4.5h and Responsible of UE, niveau M2, Université Claude Bernard Lyon 1, France.

Master: Yves Caniou, Sécurité, 27h and Responsible of UE, niveau M2, Université Claude Bernard Lyon 1, France.

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.

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, 42h, niveau M1, Université Claude Bernard Lyon 1, France.

Master: Laurent Lefèvre, Parallélisme, 12h, niveau M1, Université Lyon 1, France.

Master: Laurent Lefèvre, Réseaux avancés, 24h, niveau M2, IGA Casablanca, Morocco.

Licence: Olivier Glück, Licence pedagogical advisor, 30h, niveaux L1, L2, L3, Université Lyon 1, France.

Licence: Olivier Glück, Introduction Réseaux et Web, 54h, niveau L1, Université Lyon 1, France.

Licence: Olivier Glück, Bases de l'architecture pour la programmation, 23h, niveau L1, Université Lyon 1, France.

Licence: Olivier Glück, Algorithmique programmation impérative initiation, 56h, niveau L1, Université Lyon 1, France.

Licence: Olivier Glück, Réseaux, 2x70h, niveau L3, Université Lyon 1, France.

Master: Olivier Glück, Réseaux par la pratique, 10h, 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: Olivier Glück, DIU Enseigner l'Informatique au Lycée, 50h, Formation continue, Université Lyon 1, France.

Licence : Frédéric Suter, Programmation Concurrente, 50.66, L3, Université Claude Bernard Lyon 1, France

Master : Frédéric Suter, DIU Enseigner l'Informatique au Lycée, 30, M2, Université Claude Bernard Lyon 1, France

9.2.2. Supervision

PhD: Alexandre Da Silva Veith: *Quality of Service Aware Mechanisms for (Re)Configuring Data Stream Processing Applications on Highly Distributed Infrastructure*, 23 sept. 2019, Labex MiLyon, Laurent Lefèvre (dir), Marcos Dias de Assunção (co-dir) (2016-2019).

PhD: Jad Darrous, *Geo-distributed storage for distributed Cloud*, 17 dec. 2019, Inria, Gilles Fedak (dir) until Aug. 2017 then Christian Perez (dir), Shadi Ibrahim (co-dir).

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: 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: 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: 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) (since september 2016).

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) (since October 2017).

PhD in progress: Laurent Turpin,*Mastering Code Variation and Architecture Evolution for HPC application*, October 2019, Christian Perez (Inria, AVALON team, dir), Jonathan Rouzaud-Cornabas (INSA, Beagle team, co-dir) and Thierry Gautier (Inria, AVALON team, co-dir).

PhD in progress: Idriss Daoudi,*Simulating OpenMP program*, October 2018, Olivier Aumage (Inria, Storm team, Bordeaux, dir) and Thierry Gautier (Inria, AVALON team, co-dir).

PhD in progress: Vo Quoc Bao Bui, *Extended Para-Virtualization*, 2017, Alain Tchana (dir), Daniel Hagimont (INPT, co-dir)

PhD in progress: Barbe Thystere Mvondo Djob, *Improvement of the privileged domain in virtualized systems*, 1 fev 2018, Alain Tchana (dir), Noel De Palma (UGA, co-dir)

PhD in progress: Celestine Stella Ndonga Bitchebe, *Hardware features for virtualization*, 1 mars 2019, Alain Tchana (dir).

PhD in progress: Patrick Lavoisier Wapet, *Illegitimate app detection in mobile phones* , 1 oct. 2017, Alain Tchana (dir), Daniel Hagimont (INPT, co-dir).

9.2.3. Juries

Thierry Gautier was examiner of the PhD defense committee of Andrés Antón Rey Villaverde, Universidad Complutense de Madrid, Spain (November 22, 2019).

Laurent Lefèvre was

- examiner of the PhD defense of Fatma Ezzahra SALEM : "Management of Advanced Sleep Modes for Energy-Efficient 5G Networks", Institut Polytechnique de Paris, Telecom Paris Sud, December 20, 2019

- reviewer of the PhD of Maroua Haddad : "Sizing and management of a hybrid renewable energy system for data centers supply", University of Franche-Comté, November 28, 2019

- examiner of the PhD defense of Léo Grange : "Datacenter Management for on-site Intermittent and Uncertain Renewable Energy Sources", IRIT, Toulouse, October 3, 2019

- president of the PhD defense committee and examiner of of the PhD defense of Silvina Caino Lores : "On the Convergence of Big Data Analytics and High-Performance Computing: A Novel Approach for Runtime Interoperability", Universidad Carlos III de Madrid, Spain, July 8, 2019

- examiner of the PhD defense of Chaopeng Guo : "Energy-efficient Resource Provisioning for Cloud Database", IRIT, Toulouse, June 14, 2019

- reviewer of the PhD of Christian Heinrich : "Modeling, Prediction and Optimization of Energy Consumption of MPI Applications using SimGrid", Laboratoire Informatique de Grenoble, May 21, 2019

Christian Perez was

- president of the HdR defense committee of Alexandru Costan, ENS Rennes, France, March 14th, 2019.

- reviewer and member of the HdR defense committee of Xavier Etchevers, Université Grenoble Alpes, France, Nov 29th, 2019.

- reviewer and member of the HdR defense committee of Guillaume Mercier, Université de Bordeaux, France, Dec 4th, 2019.

- reviewer and member of the PhD defense committee of Ksander Ejjaaouani, Université de Strasbourg, France, Oct 25th, 2019.

- reviewer and member of the PhD defense committee of Georgios Christodoulis, Université Grenoble Alpes, France, Dec 5th, 2019.

- member of the PhD defense committee of Michael Mercier, Université Grenoble Alpes, France, July 1st, 2019.

- member of the PhD defense committee of Mohammad Mahdi Bazm, Université de Nantes, France, July 8th, 2019.
- member of the PhD defense committee of Cedric Deffo Sikounmo, Université Grenoble Alpes, France, Dec 18th, 2019.
- member of the final PhD committee for 7 PhD students of the University of Pisa (Italy), March 8th, 2019: Giovanna Broccia, Giulio Masetti, Luca Pedrelli, Giulio Ermanno Pibiri, Marco Ponza, Manuele Sabbadin, and Massimo Torquati,

Frédéric Suter was president of the PhD defense committee of Michael Mercier, Université Grenoble Alpes, France, July 1st, 2019.

9.3. Popularization

Yves Caniou est co-fondateur et co-organisateur du Campus du Libre, un événement autour du Libre dont l'objectif est de partager différents aspects du libre et des communs, allant par exemple du logiciel libre (Linux, Firefox, *etc.*) aux espaces communs gérés collaborativement (Wikipedia, OpenStreetMap).
La 2e édition s'est déroulée la journée du samedi 23 novembre 2019.

9.3.1. Articles and contents

- Interviews in order to popularize
  - Laurent Lefèvre was interviewed for the following dissemination media:
    * "En 2025, le numérique pourrait polluer autant que l'automobile", Le guide MAG2lyon du Développement Durable, December 2019
    * Radio show "Le numérique et ses impacts", Radio Fréquence Paris Plurielle, December 20, 2019
    * "L'insoutenable croissance du numérique", Alternatives Economiques, December 19, 2019
    * "Le streaming en expansion, son empreinte écologique aussi", Agence France Presse Dossier, October 28, 2019 - Reprint in Le Soleil, La Presse and le Quotidien (Canada, 28/10/2019), L'écho (France, 28/10/2019), Sciences et Avenir (France, 28/10/2019), L'OBS (France, 28/10/2019), Ouest France (France, 28/10/2019), Le Progrès (France 18/11/2019), DerStandard (Germany, 1/11/2019, "Gratis und ohne Anmeldung: Videostreaming-Dienst Apple TV+ gestartet"), Tierwelt (Germany, 3/11/2019, "STREAMING UND CO2 - Serienjunkies als Klimasunder")
    * "Mail, streaming, cloud... 20 gestes pour réduire sa pollution numérique", Business Insider France, October 29, 2019
    * Radio show "Le téléphone sonne", France Inter, August 16, 2019
    * "Guide Consommation Responsable - 3 gestes pour adopter une consommation numérique responsable", Institut National de la Consommation (INC), May 29, 2019
    * "Stocker trop de photos et de mails crée aussi de la pollution", Journal de Saone et Loire, after the Festival sans Decoder of Dompierre les Ormes, May 21, 2019
    * "Pollution numérique : comment réduire ses effets au quotidien ?", TV5 Monde, January 18, 2019

9.3.2. 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.

- Olivier Glück was in charge of one course in DIU Enseigner l'Informatique au Lycée, 50h, Formation continue, Université Lyon 1, France.

9.3.3. Panels

- Laurent Lefèvre was invited in the following panels in 2019 :
    – The "Empreinte écologique du numérique - Ecological footprint of digital world", Festival sans Decoder, Dompierre les Ormes, May 19, 2019
    – The "Energie numérique: ennemie ou alliée de l'écologie", Ateliers Sciences et Citoyens, Les rencontres du CNRS, Poitiers, April 2, 2019

<p align="center" style="color:red">CTRL-A Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

Eric Rutten is co-chairing, with Bogdan Robu (Gipsa-lab), the program of the 40th Summer School of Automatic Control, Grenoble, September 2019, on the special topic of Control for Computing Systems.

http://www.gipsa-lab.fr/summerschool/auto2019

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

Eric Rutten is co-chairing, with Françoise Baude, Antonio Fileri, and Nicola Capodieci, the 5th International Workshop on Autonomic High Performance Computing (AHPC 2019), http://hpcs2019.cisedu.info/2-conference/workshops/workshop09-ahpc

as part of The 17th International Conference on High Performance Computing & Simulation (HPCS 2019), July 15 – 19, 2019 Dublin, Ireland, http://hpcs2019.cisedu.info/

10.1.2.2. Member of the Conference Program Committees

Eric Rutten is PC member for :

- international conferences
    - ICAC 2019 (16th IEEE International Conference on Autonomic Computing), Umeøa, Sweden, June 16-20, 2 019 (http://icac2019.cs.umu.se)
    - 17th High Performance Computing & Simulation Conference (HPCS 2019). July 15 – 19, 2019 Dublin, Ireland (http://hpcs2019.cisedu.info/)
    - 15th Workshop on Discrete Event Systems, WODES'20, Rio de Janeiro, May, 13th-15th, 2020. (https://wodes2020.eventos.ufrj.br)
    - CPS&IoT'2020 - the 8th International Conference on Cyber-Physical Systems and Internet-of-Things, Budva, Montenegro, June 8-11, 2020 (http://embeddedcomputing.me/en/cps-iot-2020)
    - (Associate Editor) 4th IEEE Conference on Control Technology and Applications, CCTA 2020, Montreal, August, 2020 (http://ccta2020.ieeecss.org/)
    - 7th International Conference on Control, Decision and Information Technologies, CoDIT'20, June 29 - July 02, 2020, Prague, Czech Republic (https://codit2020.com/)
    - MSR 19, Modélisation des Systèmes Réactifs 2019 LARIS Université d'Angers, France, du 13 au 15 novembre 2019 (http://msr2019.laris.univ-angers.fr/)

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

Eric Rutten is reviewer for

- Science of Computer Programming
- journal of Discrete Event Dynamic System (jDEDS)

10.1.4. Invited Talks

Eric Rutten was invited to give a talk at :

- Workshop on Integrating HPC and FPGAs, December 11, 2018 in Okinawa, Japan ; co-held with the International Workshop on FPGA for HPC (IWFH), the Joint Laboratory on Extreme Scale Computing (JLESC), and the Field-Programmable Technology (FPT'18).

  http://www.fpt18.sakura.ne.jp/workshop.html

  https://collab.cels.anl.gov/display/HPCFPGA/HPC-FPGA

- 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
- Languages, Compilation, and Semantics LIP Seminar, 10th Edition, Lyon, 2019, March 21

  http://perso.ens-lyon.fr/christian.perez/journeelangages

- 15th Cloud Control Workshop, Sandhamn, Sweden June 11–13, 2019

  http://cloudresearch.org/workshops/15th/

10.1.5. 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).

10.1.6. Scientific Expertise

Eric Rutten was reviewer for the ANR : *Appel à projets Générique* 2019, PRCI international

10.1.7. 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.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : R. Bleuse, C language, 12h lab, L2, Univ. Grenoble Alpes

Licence : R. Bleuse, methodology of software development, 30h, L2, Univ. 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

10.2.2. Supervision

- HdR : Stéphane Mocanu ; Cyberdéfense des infrastructures critiques ; COMMUNAUTÉ UNIVERSITÉ GRENOBLE ALPES ; January 2019.
- PhD : Chabha Hireche ; Etude et implémentation d'une approche probabiliste de contrôle de mission de drone autonome ; Université de Bretagne Occidentale ; nov. 2019 ; 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).

10.2.3. Juries

Stéphane Mocanu was member of the jury of the PhD defense of Chabha Hireche, Université de Bretagne Occidentale, nov. 2019 (examinator).

Eric Rutten was member of the following juries :

- habilitation (HdR) defense, Stéphane Mocanu, UNIVERSITÉ GRENOBLE ALPES, 16 jan. 2019 (examinator)
- PhD defense of Anis Mezni, INSA Lyon, 13 may 2019 (reviewer)
- PhD defense of Mete Özbaltan, U. Liverpool, 10 dec 2019 (reviewer)
- PhD of Romolo Marotta, Uni. Roma Sapienza, dec 2019 (reviewer)

10.3. Popularization

10.3.1. Interventions

- National events:

  During the 2019 edition of Fête de la Science, Raphaël Bleuse co-hosted with Clément Mommessin (DataMove team) six one-hour popularization sessions. These sessions introduce the concept of infinity, and detail key milestones towards its construction in the modern mathematics for high-school students.

<h1 style="text-align:center; color:red;">DANTE Project-Team</h1>

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'19 Conference in September 2019 in Singapore
- Márton Karsai was in the organizing team (general chair) of the Machine Learning and Network Science Satellite of the NetSci'19 Conference in June 2019 in Burlington (VT)

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

- Thomas Begin was co-Chair for the National Conference Algotel 2019.

10.1.2.2. Member of the Conference Program Committees

- Thomas Begin has been member of the PC for the conference IEEE LCN 2019
- Isabelle Guérin Lassous has been a member of the PC for the following conferences in 2019: ACM MSWiM, Mascots, IEEE ICC, IEEE Globecom, IEEE WCNC.
- Márton Karsai has been the member of the PC of the conferences: NetSci, CompleNet, IC2S2, Algotel, NetSciX, CSSCCS, MLNS, Complex Networks, CCS, IC2S2
- Anthony Busson has been member of the PC for Algotel 2019, FNC 2019.
- Christophe Crespelle

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 is member of the editorial boards of PLoS ONE
- Philippe Nain is a member of the Advisor Board of Performance Evaluation (Elsevier).

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).

- Thomas Begin was a reviewer for IEEE Transactions on Network and Service Management, IEEE Transactions on Parallel and Distributed Systems, and Performance Evaluation.
- Anthony Busson was a reviewer for Computer communication, Sensors, IEEE wireless communications letters.

10.1.4. Invited Talks

- Thomas Begin gave the following invited talk:

    Contributions to the Performance Modeling of Computer Networks - CITI lab (Avril 2019, Lyon, France)

- Isabelle Guérin-Lassous gave the following invited talks:

    UAVs and cellular networks: which usage, which constraints, which performance? - Entretiens Jacques Cartier (November 2019, Montreal, Canada)

    How to improve the performance of a Wi-Fi network without changing the Wi-Fi technologie? - Séminaire ENS Rennes (September 2019, Rennes, France)

- Márton Karsai gave the following invited talks:

    Lecture in the Business Analytics and Data Mining MSc program - Bocconi University (7 March 2019, Milano, Italy)

    Complex System Academy - Université de Côte d'Azure (25 March 2019, Nice, France)

    YEP XV - Information Diffusion on Random Networks - TU/e, EUROSTAT (27 April 2019, Eindhoven, The Netherlands)

    Lectures about Artificial Intelligence - EM Lyon Business School - AIM Institute (4 April 2019, Lyon, France)

    MOTIF Conference on Human Dynamics - Universidade Federal de Minas Gerais (10 April 2019, Belo Horizonte, Brazil)

    UNICEF Innovation seminar - UNICEF Innovation Office - United Nations (4 June 2019, New York, NY, USA)

    MédiaLab seminar - SciencePo Paris (25 June 2019, Paris, France)

    AGRANDA Simposio Argentino de Ciencia de Datos Grandes Datos - 48 JAIIO (17 Septemner 2019, Salta, Argentina)

    Kickoff meeting of the DYNASNET Synergy ERC project - Central European University (23 September 2019, Budapest, Hungary)

    Dondena Seminar Series- Bocconi University (14 October 2019, Milano, Italy)

    Agglomeration and Social Networks Seminar - MTA Center for Economic and Regional Studies (8 November 2019, Budapest, Hungary)

    BigData and Mobility Workshop - University of Havana (25-26 November, Havana, Cuba)

10.1.5. Scientific Expertise

- Isabelle Guérin Lassous

    has been a member of the strategic consulting of the Fondation Blaise Pascal since September 2019.

    has been a member of the scientific council of the Société Informatique de France since November 2019

- 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).

is a member of the international evaluation board of the doctoral program *Filosofia da Ciencia, Tecnologia, Arte e Sociedade* of the University of Lisbon.

is the manager of the RAIL (Réseau de l'Atelier Internet Lyonnais), founded in 2017 and supported by IXXI and Enssib.

10.1.6. Research Administration

- Paulo Gonçalves

  is scientific liaison officer for international relations in Inria Research Centre of Rhône-Alpes.

  is a member of the executive committee of the Milyon labex and referent for its valorisation committee.

  is correspondant for the theme "Big Data" of the *Fédération d'Informatique de Lyon*.

  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.

- Anthony Busson

  is member of the Thesis Commission at LIP.

  is head of the computer science department at IUT (Institut Universitaire de Technologie) - Université Lyon Claude Bernard Lyon 1.

- Thomas Begin

  is an elected member of the Council of the LIP laboratory.

  is an elected member of the department council of the Computer Science department of Université Lyon 1.

- Márton Karsai

  is the co-responsible for the M2 master program in Modelling of Complex Systems at ENS Lyon

  is the elected council member of the Complex System Society (2015-)

  is the elected member of executive committee of the Complex System Society (2018-)

  is the elected member of the steering committee of the IXXI Complex System Institute (2017-)

  is the member of the computational infrastructure board of LIP

  is the member of the communication board of LIP

- Éric Guichard is a member of the steering committee of the IXXI Complex System Institute

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

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.

Responsabilités

Thomas Begin : Head of the Master 2 speciality SRIV (Systèmes, Réseaux et Infrastructures Virtuelles) at UCBL - http://master-info.univ-lyon1.fr/SRIV

Isabelle Guérin Lassous has been appointed as the president of the CAPES NSI (Numérique et Science Informatique) committee since November 2019. This committee will be in charge of the recruitment of the computer science teachers in high schools.

Anthony Busson is head of the computer science department at IUT Lyon 1 Doua.

10.2.2. Supervision

PhD defense: Esteban BAUTISTA RUIZ, "Laplacian Powers for Graph-Based Semi-Supervised Learning", November 27, 2019. P. Gonçalves (Dir.).

PhD defense: Marija STOJANOVA, "Performance Modelling of IEEE 802.11 networks" ,December 16, 2019. T. Begin (Dir.)

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, M. Karsai director

PhD in progress: Jacobo Levy ABITBOL, Information diffusion and language evolution on dynamical social networks, Oct 2016, M. Karsai director and E. Fleury

PhD in progress: Sicheng DAI, Dynamic Multilayer Network Modelling, M. Karsai director. Started October 1st, 2017.

PhD in progress: Gaetan FRUSQUE, *Modal Decompositions of Dynamic Graphs : Application in Neurosciences*, P. Gonçalves (Dir. and 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 (Dir. with M. Sebban and P. Borgnat, co-advisors). 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 reviewer of the Ph.D thesis examination board of Xiaoyi MAI, Centrale Supelec, October 2019.

Paulo Gonçalves was member of the Ph.D thesis examination boards of Karina Ashurbekova (Université Grenoble Alpes, December 2019).

Isabelle Guérin Lassous was a reviewer of the Ph.D thesis examination boards of Fannia Pacheco (UPPA, November 2019) and Pierre Brunisholz (Université Grenoble Alpes, May 2019).

Isabelle Guérin Lassous was a reviewer of the HDR examination board of Géraldine Texier (IMT-Atlantique, December 2019).

Isabelle Guérin Lassous was the president of the Ph.D thesis examination boards of Marc Heinrich (Université de Lyon, July 2019) and Thierry Arrabal (Université Franche-Comté, November 2019).

Isabelle Guérin Lassous was the president of the HDR examination boards of Christophe Alias (ENS de Lyon, May 2019), Marton Karsai (ENS de Lyon, April 2019) and Razvan Stanica (INSA de Lyon, November 2019).

Isabelle Guérin Lassous was a member of the Ph.D thesis examination board of Jalal Rachad (Telecom Paris, December 2019).

Isabelle Guérin Lassous was a member of the HDR examination board of Katia Jaffres-Runser (INP Toulouse, July 2019).

Thomas Begin was a reviewer of the Ph.D. thesis examination board of Amira KAMLI, Télécom-ParisSud, October 2019.

Márton Karsai was the member of the Prix de Thèse Systm`es Complexes - Complex System Institute, July 2019

Márton Karsai was the member of the PhD jury of Jordam Cambe (ENS Lyon), October 2019

Anthony Busson was a reviewer of the Ph.D thesis examination board of Jalal Rachad (Telecom Paris, December 2019).

Anthony Busson was a reviewer of the Ph.D thesis examination board of Henri-Joseph Audeoud (Université Grenoble Alpes, December 2019).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Isabelle Guérin Lassous has been the managing director of the Foundation Blaise Pascal until the end of June 2019. 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. Interventions

Isabelle Guérin Lassous participated to the project Science XX Elles organized by the association Femmes & Sciences, CNRS and Ecole Normale Supérieure de Lyon. A portrait has been realized and has been exhibited in from of the Musée des Confluences during La Fête de la Science in October 2019 (http://www.femmesetsciences.fr/lascience-taillexxelles/lyon/isabelle-guerin-lassous/. She also participated to a speed meeting with families visiting the Musée des Confluences during which she has promoting her research activity.

Isabelle Guérin Lassous spent one day in high school (lycée St Just in Lyon) to promote computer science and to present female computer scientists in from of terminal classes.

Isabelle Guérin Lassous participated to the Challenge Innovatech organized by the association Elles Bougent. She was a member of the selection committe who selected a scientific project designed by a group of young girls (in high school).

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

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. 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 HeteroPar.

10.1.1.2. Member of the Organizing Committees

- Member of Organizing committee of HPML Workshop, co-located with CCGRID 2019
- Member of organization committee of Conv'2019

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

- Vice-Chair of Algorithms track of IPDPS 2019
- Workshop Chair at Hetero-Par 2019
- Member of the steering committee of Euro-Par 2019
- Program co-chair of ISAV 2019 (workshop of SC)
- Member of steering committee of EGPV 2019

10.1.2.2. Member of the Conference Program Committees

- CCGrid 2019 (19th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing), May, Larcana, Cyprus.
- PARCO 2019 (International Conference on Parallel Computing), September, Prague, Czech Republic.
- PPAM 2019 (13th International Conference on Parallel Processing and Applied Mathematics), September, Bialystok, Poland.
- STACS 2019 (36th International Symposium on Theoretical Aspects of Computer Science), March, Berlin, Germany.
- Euro-Par 2019, August, Göttingen, Germany.
- IESM, September, Shanghai, China.
- ISAV 2019 (In Situ Infrastructures for Enabling Extreme-scale Analysis and Visualization), November, Denver, US.
- SBAC-PAD 2019 (International Symposium on Computer Architecture and High Performance Computing), October, Campo Grande, Brazil.
- HiPC 2019 (26th IEEE International Conference on High Performance Computing, Data, and Analytics), December, Hyderabad, India.
- ALGOCLOUD 2019 (5th International Symposium on Algorithmic Aspects of Cloud Computing), September, Munich, Germany.

10.1.3. Journal

10.1.3.1. 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.

10.1.4. Research Administration

- Director of Pôle MSTIC of COMUE Univ. Grenoble-Alpes.

10.2. Teaching - Supervision - Juries

10.2.1. 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. 90 hours per year. Combinatorial scientific computing in Master at ENS Lyon, Algorithmic in Licence at Grenoble INP and Algorithmic at Univ. Grenoble-Alpes.
- 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. 237 hours per year. Master (M1/2nd year and M2/3rd year) at Engineering school ENSIMAG, Grenoble-INP, Univ Grenoble Alpes.
- 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).

10.2.2. Supervision

- PhD: Danilo Carastan Dos Santos, Apprentissage sur heuristiques simples pour l'ordonnancement online de tâches parallèles, Univ Grenoble Alpes and Federal University of ABC, Brazil (co-tutelle), November, 27th 2019. Advisers: Denis Trystram and Raphael Yokoingawa De Camargo.
- PhD: Michael Mercier, Resource Management and Job Scheduling in HPC–Cloud environments towards the Big Data era, Univ. Grenoble Alpes. Started October 2016. July, 1st 2019. Advisers: Olivier Richard and Bruno Raffin.
- 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, Olivier Richard
- 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, Arnaud Legrand.

- PhD in progress: Sebastian Friedemann, Large Scale Data Assimilation, Adviser: Bruno Raffin.
- PhD in progress: Vincent Fagnon, Analyse de politique d'ordonnancement dynamique pour objets mobiles , Adviser: Denis Trystram
- PhD in progress: Angan Mitra, Theoretical and implementation challenges in Lifelong Learning and Edge Computing , Adviser: Denis Trystram
- PhD in progress: Paul Youssef, Coresets Analysis , Adviser: Denis Trystram
- PhD in progress: Ioannis Panagiotas, High performance algorithms for big data graph and hyper-graph problems, Advisers: Bora Uçar (LIP) and Fanny Dufossé

10.2.3. *Juries*

- PhD Defense of Malin Rau, *Useful structures and how to find them*. Kiel (Allemagne). May, 24th, 2019. Referee.
- PhD Defense of Mohamad El Sayah, Random Generation for the Performance Evaluation of Scheduling Algorithms, November 20th 2019, Université de Bourgogne Franche-Comté. Member.
- PhD Defense of David Deibe, Geospatial Processing and Visualization of Point Clouds: from GPUs to Big Data Technologies, Univ. of A Coruna, December 2019. Referee
- PhD Defense of Charles Gueunet, Calcul Haute Performance pour l'Analyse Topologique de Données par Ensembles de Niveaux, Feburary 15th 2019, Sorbonne Université
- PhD Defense of Jorge Veiga Fachal, Evaluation and Optimization of Big Data Processing on High Performance Computing Systems, Univ. of A Coruna, Fev 2019. Jury.

10.3. Popularization

10.3.1. *Internal or external Inria responsibilities*

- Commission des emplois scientifiques du centre GRA

10.3.2. *Interventions*

- Fête de la Science, Grenoble
- CS unplugged for schoolchildren, Inria RA

<h1 style="text-align:center; color:red">MARACAS Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

- Interview to Samir M. Perlaza "A view of the Internet of Things", Cognitive Networks Technical Committee Newsletter, IEEE Communications Society, vol. 5, No. 1, May 2019

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

- Samir Perlaza: Chair of two special sessions: "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. "Data Analytics for Power Systems" hosted at the 2019 IEEE Data Science Workshop, June 2-5, 2019, Minneapolis, MN, USA.
- Samir Perlaza: Chair of three international Workshops: "Mathematical Tools for IoT Networks Modeling (MOTION)" hosted at the IEEE Wireless Communications and Networking Conference (WCNC). April, 15-18 2019, Marrakech, Morocco. "Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET)", June 19, 2020, Volvos, Greece. Workshop on Information and Decision Making. A satellite event of the IEEE International Symposium on Information Theory (ISIT), Institut Henri Poincaré, Paris, France, July 10, 2019.
- Samir Perlaza: Publication Chair of the International Symposium on Information Theory (ISIT), July, 2018, Paris, France. (Main conference of the IEEE Information Theory Society)

10.1.1.2. Member of the Organizing Committees

- Leonardo S. Cardoso: Organization and Scientific Commitee of the European GNU Radio Days 2019, June, 2019, Besançon, France.

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

1. Leonardo S. Cardoso
   - IEEE International Conference on Communications (ICC). 7-11 June, 2020, Dublin, Ireland. Member of the Technical Program Committee of the Wireless Communications Symposium.
   - IEEE WCNC 2019, 2020
   - EuCNC 2019, 2020
2. Malcolm Egan
   - IEEE Global Communications Conference (GLOBECOM) 2019, 2020
   - IEEE International Conference on Communications (ICC). 7-11 June, 2020, Dublin, Ireland. Member of the Technical Program Committee of the Wireless Communications Symposium.
   - ACM NanoCommunications Conference (NanCom) 2019, 2020
   - International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS) 2019
3. Jean-Marie Gorce
   - APCC 2019, 2020
   - WF-5G 2019, 2020

- PIMRC 2019

4. Claire GOURSAUD
   - IEEE ICASSP 2019

5. Samir Perlaza
   - IEEE International Conference on Communications (ICC). 7-11 June, 2020, Dublin, Ireland. Member of the Technical Program Committee of the Wireless Communications Symposium.
   - IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2020) 31 August – 3 September, 2020, London, UK. Member of the Technical Program Committee, Track 3: Mobile and Wireless Networks.
   - International Conference on Computing, Networking and Communications (ICNC). 18-21 February, 2019, Honolulu, Hawaii, USA. Member of the Technical Program Committee.
   - IEEE International Conference on Communications (ICC). 20-24 May 2019, Shanghai, China. Member of the Technical Program Committee of the Wireless Communications Symposium.
   - IEEE Global Communications Conference (Globecom). 9-13 December 2018, Abu Dhabi, UAE. Member of the Technical Program Committee of Workshop on Green and Sustainable 5G Wireless Networks.
   - IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC 2018) 9-12 September 2018, Bologna, Italy. Member of the Technical Program Committee, Track 3: Mobile and Wireless Networks.

10.1.2.2. Reviewer

1. Malcolm Egan
   - IEEE ISIT 2019

2. Samir Perlaza
   - ISIT, ITW, Eusipco, VTC, Rawnet, WiOpt, GameComm, Globecom, Colcom, PIMRC, Crowncom, WCMC, W-GREEN, ICT, IWCMC, ICC, Infocom, among others.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

1. Malcolm Egan
   - Associate Editor IEEE Communications Letters
   - Guest Editor IEEE Access Special Section on Molecular Communication Networks

2. Jean-Marie Gorce
   - Associate Editor Springer Journal of Wireless Communications and Networking (JWCN)

3. Claire GOURSAUD
   - Associate Editor of European Transactions on Telecommunications (ETT)
   - Associate Editor of Internet Technologies Letters (ITL)

4. Samir Perlaza
   - 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. (One of the main journals of the IEEE Communication Society)
   - Associate Editor of the IET Smart Grid for the term 2018-2021.
   - Guest Editor of the IEEE Internet of Things Journal, Special Issue on Artificial Intelligence Powered Edge Computing for Internet of Things. Publication date: 2020.

10.1.3.2. Reviewer - Reviewing Activities

1. Malcolm Egan
   – IEEE Transactions on Information Theory
   – IEEE Transactions on Signal Processing
   – IEEE Transactions on Wireless Communications
   – IEEE Transactions on Communications
   – IEEE Transactions on NanoBioscience
   – IEEE Transactions on Molecular, Biological, and Multi-Scale Communications

2. Jean-Marie Gorce
   – IEEE Transactions on Wireless Communications

3. Claire Goursaud
   – IEEE Sensors
   – IEEE Transactions on Communications
   – IEEE Wireless Communication Letters
   – IEEE Internet of Things Journal

4. Samir Perlaza
   – IEEE Journal on Selected Areas in Communications, IEEE Journal on Selected Topics in Signal Processing, IEEE Trans. on Wireless Communications, IEEE Trans. on Communications, IEEE Trans on Vehicular Technologies, IEEE Communications Letters, IEEE Trans. on Mobile Computing, EURASIP Journal on Advances in Signal Processing, EURASIP Journal on Wireless Communications and Networking.

10.1.4. Invited Talks

1. Leonardo S. Cardoso
   – "Transmitter Classification with Supervised Deep Learning". Invited talk at CTTC, June 29, 2019, Barcelona, Spain.
   – "Exploring the Radio Spectrum with GNU Radio". Invited tutorial at European GNU Radio Days , June 19, 2019, Besançon, France..

2. Malcolm Egan
   – Invited Lecture, European School on Information Theory, April 15-19, Nice, 2019.
   – Invited Lecture, International Workshop on Mathematical Tools and Technologies for IoT and mMTC Networks Modeling, 15-18 April, Morocco, 2019.
   – Invited Paper, Third International Balkan Conference on Communications and Networking 2019, 10-12 June, North Macedonia, 2019.

3. Jean-Marie Gorce
   – Invited Paper, International Workshop on Mathematical Tools and Technologies for IoT and mMTC Networks Modeling, 15-18 April, Morocco, 2019.
   – Invited Paper, Special Session on Ultra-Reliable Low-Latency Communicationsgo to top at the 20th international workshop on signal processing advances in wireless communications, 2-5 July, France, 2019.
   – Invited talk entitled *Etat de l'art, focus sur la mobilité et prospectives des communications pour l'IoT*; lors de l'atelier IdéO *Quelles infrastructures numériques et quel IoT pour une mobilité intelligente ?* , organisé par les pôles de compétitivité Systematic and Moveo (regional poles), Paris, Jeudi 26 Sept 2019.

4. Samir Perlaza

- "Transforming Broadcast Codes to Perform Covert Communications". Invited talk at Department of Automatic Control and Systems Engineering, University of Sheffield, November 26, 2019, Sheffield, UK.

- "Transforming Broadcast Codes to Perform Covert Communications". Invited talk at Centre d'Enseignement et de Recherche en Informatique (CERI) Université d'Avignon, November 14, 2019, Avignon, France.

- "Simultaneous Information and Energy Transmission in Decentralized Networks". Invited talk at Inria, Centre de Recherche Sophia Antipolis Méditerranée, September 24, 2019, Sophia Antipolis, France.

- "Simultaneous Information and Energy Transmission Systems". Invited talk at Eurecom, September 26 2019, Sophia Antipolis, France.

- "On Ultra-Reliable and Low Latency Simultaneous Information and Energy Transmission Systems". Invited talk at Lappeenranta University of Technology, Finland. School of Energy Systems. April 08 2019. Lappeenranta, Finland

- "Information-Theoretic Security in the Smart Grid". Invited talk at Lappeenranta University of Technology, Finland. School of Energy Systems. April 07, 2019, Lappeenranta, Finland.

- "Simultaneous Wireless Information and Energy Transmission". Invited talk at Université de Lille. Institut d'électronique de microélectronique et de nanotechnologie (IEMN), October 4, 2018, Lille, France.

10.1.5. Scientific Expertise

- Jean-Marie Gorce
  - Chair of the evaluation committee for ETIS lab (Cergy) for HCERES.
  - Evaluator of research projects for Region Picardie.
  - Jury member of the senior researchers recruitment competition, Inria.

10.1.6. Research Administration

- Jean-Marie Gorce was:
  - Vice-head for research for the Grenoble Rhone-Alpes research centre.
  - Member (representative for Inria) of the Groupe Academique for University of Lyon.
  - Member of the national evaluation committee, Inria.
- Claire Goursaud was:
  - elected as a CNU member in the 61th section for 2019-2024
- Samir Perlaza was:
  - Member of the On-Line Committee of the IEEE Information Theory Society.
  - Membre du Conseil du Laboratoire CITI à l'INSA de Lyon. Term 2015 - 2019.
  - Committé du Prix Paul CASEAU for the 2017 edition of the thesis award.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : JM Gorce, M Egan, L Chetot Advanced Digital Communications, 40h eq TD, M1, Telecommunications dept, INSA Lyon, France.

Master : JM Gorce, M Egan, D Duchemin Radio Access Networs, 32h eqTD, M1, Telecommunications dept, INSA Lyon, France.

Master : S Perlaza, JM Gorce, Selected Topics in Information Theory, 32h eqTD, M2, Compute sciences dept, ENS Lyon, France.

Master : L Cardoso, C Morin, Software Radio, 32h eqTD, M2, Telecommunications dept, INSA Lyon, France.

Licence : L Cardoso, C Goursaud, Digital Communications, 80h eqTD, L3, Telecommunications dept, INSA Lyon, France.

Licence : L Cardoso, C Goursaud, Research projetcs, 32h eqTD, L3, Telecommunications dept, INSA Lyon, France.

Master : C Goursaud, Communications Systems, 32h eqTD, M1, Telecommunications dept, INSA Lyon, France.

License : L Cardoso, Electromagnetism and Wave Physics, 104 eqTD, L2, First Cycle Dept, INSA Lyon, France.

License : L Cardoso, Mathematics for Engineering, 60h eqTD, L1, First Cycle Dept, INSA Lyon, France.

10.2.2. Supervision

PhD : David Kibloff, Contributions Théoriques sur les Communications Furtives, INSA Lyon, 17 sept 2019, Samir Perlaza and Guillaume Villemaud.

PhD: Trang Mai, Advanced Technologies in Molecular and Wireless Communication Networks: Analysis, Design and Optimization, Queen's University Belfast, 30 Dec 2019, Trung Duong, Malcolm Egan, and Hien Quoc Ngo.

PhD in progress : Dadja Toussaint Anade-Akpo, Non-asymptotic fundamental limits of impulsive radio communications, 01 oct 2017, Philippe Mary and Jean-Marie Gorce.

PhD in progress : Lélio Chetot, From finite blocklength information theory to multi-user M2M communication protocols, 01 oct 2018, Malcolm Egan and Jean-Marie Gorce.

PhD in progress : Diane Duchemin, Distributed coding for dense IoT networks, October 2016, Claire Goursaud and Jean-Marie Gorce

PhD in progress : Mathieu Goutay, Prédistortion digitale profonde, 01 Feb 2019, Jakob Hoydis and Jean-Marie Gorce.

PhD in progress : Hassan Kallam, Topology aided Multi-User Interference Management in Wireless Networks, 01 Feb 2017, Loonardo S. Cardoso and Jean-Marie Gorce.

PhD in progress : José Rugelles, Deep Learning for Security in GSM Based IoT Systems, 01 Jan 2017, Loonardo S. Cardoso and Edward Guillén.

PhD in progress : Nizar Khalfet, Study of stochastique energy sources to power communication system, 07 nov 2016, Samir Perlaza and Jean-Marie Gorce.

PhD in progress : Cyrille Morin, Deep learning for next generation communication systems, 20 Feb 2018, Leonardo S. Cardoso and Jean-Marie Gorce.

PhD in progress : Ce Zheng, Statistical models for IoT interference, Commenced Oct 2018, Malcolm Egan and Laurent Clavier.

Xiuzhen Ye - Academic Period: 2019 - 2022 – University of Sheffield, Department of Automatic Control and Systems Engineering, Sheffield, UK. Taux d'encadrement : Iñaki Esnaola (University of Sheffield, UK) 50%; and Rob Harrisson (University of Sheffield, UK) 25% and Samir Perlaza (external advisor) 25% Publications: Several under preparation. Thesis Title: Data Injection Attacks in Power Systems

Michalis Eliodorous – PhD Student at University of Cyprus (on-going collaboration during during his PhD)

10.2.3. Juries

1. Leonardo Cardoso
   – Examiner; Thesis Jury for Sumit Kumar supervised by Florian Kaltenberger in Institut Eurecom (Telecom Paristech), Sophia Antipolis, 12 March 2019.
   – Examiner; Thesis Jury for Nicolas Araújo supervised by Laurent Clavier in the University de Lille, Lille, 11 July 2019.

2. Malcolm Egan
   – Examiner; Thesis Jury for Pierre Escamilla supervised by Michele Wigger and Abdellatif Zaidi in Telecom ParisTech
   – Invited; Thesis Jury for Yasser Mestrah supervised by Laurent Clavier in the University of Reims Champagne-Ardenne and IMT Lille Douai

3. Jean-Marie Gorce
   – Reviewer; Thesis jury for Gourab Ghatak supervised by Antonio De Domenico (CEA) and Marceau Coupechoux, Telecoms Paris, IMT. 24 janv 2019.
   – Chair; Thesis jury for Alexandre Marcastel, supervised by Veronica Belmega ,Panayotis Mertikopoulos and Inbar Fijalkow, ETIS, Cergy. 21 Feb 2019.
   – Reviewer; HdR jury for Veronica Belmega , ETIS, Cergy. 29 March 2019.
   – Reviewer; HdR jury for Thomas Watteyne, Inria, Sorbonne University. 7 May 2019.
   – Examiner; Thesis jury for Abir Ben Hadj Fredj, supervised by Jean-Claude Belfiore and Ghaya Rekaya-Ben Othman, Telecoms Paris, IMT. 28 June 2019.
   – Examiner; Thesis jury for David Kibloff, supervised by Samir Perlaza and Guillaume Villemaud, INSA Lyon. 17 Sept 2019.
   – Reviewer; HdR jury for Marios Kountouris, Telecoms Paris, IMT. 17 Oct 2019.
   – Reviewer; Thesis jury for Selma Zamoum, supervised by Marie-Laure Boucheret and Jérôme Lacan, Université de Toulouse. 28 Nov 2019.
   – Reviewer; Thesis jury for Kaoutar Abdelalim supervised by Karine Amis and Getachew Redieteab, IMT Atlantique. 9 Dec 2019.
   – Reviewer; Thesis jury for Ibrahim Fawaz, supervised by Philippe Ciblat and Mireille Sarkiss, Telecoms Paris, IMT. 9 Dec 2019.
   – Reviewer; Thesis jury for Marc Kacou, supervised by Valery Guillet, Gheorghe Zaharia, and Ghais El Zein, INSA Rennes. 12 Dec 2019.
   – Reviewer; Thesis jury for Xiaojun Xi supervised by Marco Di Renzo, Supelec, Université Paris Saclay. 19 Dec 2019.
   – Examiner; Thesis jury for Jian Song supervised by Marco Di Renzo, Supelec, Université Paris Saclay. 19 Dec 2019.

4. Claire Goursaud
   – Reviewer for Alex The Phuong Nguyen supervised by Frederic Guilloud and Raphaêl Le Bidan, IMT Atlantique

5. Samir Perlaza
   – Miguel Arrieta, Phd Thesis "Universal Privacy Guarantees for Smart Meters" at the Department of Automatic Control and Systems Engineering, University of Sheffield, November 29 2019, Sheffield, UK.
   – Ms. Nihan Cicek, Mphil Thesis "Probabilistic Energy Management Systems in PV-Rich Communities" Electrical & Electronic Engineering, The University of Melbourne, Australia

<p align="center" style="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

- P. Mertikopoulos was a technical program co-chair of the 10th International Conference on NETwork Games, COntrol and OPtimisation (NetGCoop 2020).
- B. Pradelski was a technical program co-chair of the 14th Workshop on the Economics of Networks, Systems and Computation (NetEcon), colocated with ACM SIGMETRICS and EC.

10.1.1.2. Member of the Organizing Committees

- B.Gaujal organized a special day on Potential games at Gamenets (Paris)
- P. Mertikopoulos co-organized the workshop "20PoA: Twenty years of the Price of Anarchy" (Chania, Greece, July 2019).

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

- B. Gaujal: WiOpt, NeuIPS
- J. Anselmi: Valuetools, ASMTA
- P. Mertikopoulos: The 2020 French Days on Optimization and Decision Science (SMAI MODE 2020)
- A. Legrand: ISC HIGH PERFORMANCE
- N. Gast: SIGMETRICS, NeurIPS, ValueTools
- J-M. Vincent: Epew, Valuetools, Simultech
- P. Loiseau: NeurIPS, ICML, SIGMETRICS, PETS, NetEcon
- P. Mertikopoulos: ICML, NeurIPS (area chair).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- P. Mertikopoulos serves as an associate editor for JDG (Journal of Dynamics and Games) and MCAP (Methodology and Computing in Applied Probability).
- N. Gast serves as an associate editor for Performance Evaluation and Stochastic Models.
- P. Loiseau is an associate editor for ACM Transactions on Internet Technology and IEEE Transactions on Big Data.

10.1.3.2. Reviewer - Reviewing Activities

All members of the team are active reviewers for several international journals and conferences.

10.1.4. Invited Talks

- B. Gaujal:
    - 23/01: ENS Lyon seminars (Le Pleynet) "Evolutionary games and bounded rationality"
    - 7/02: Eva Tardos seminar (Grenoble): "price of anarchy in routing games"
    - 3/05: Workshop for Eitan Altman's 60th Birthday (Avignon) "Sturmian words at work in optimal routing"
- P. Mertikopoulos:
    - Invited instructor at the CONNECT Summer School on Machine Learning for Communications "Online learning and optimization for wireless systems", Trinity College, Dublin
    - Invited talk at ICCOPT 2019 (2019 International Conference on Continuous Optimization), Berlin, August 2019
    - Invited talk at NPCG 2019 (Workshop on Network, Population and Congestion Games), Paris, April 2019
    - Invited talk at GDO 2019 (Workshop on Games, Dynamics and Optimization), Cluj-Napoca, April 2019
    - Invited talk at OSL 2019 (Workshop on Optimization and Statistical Learning), Les Houches, March 2019
    - Invited talk at EPFL Machine Learning Seminar, March 2019
    - Invited talk at the Criteo AI Lab, February 2019
- A. Legrand:
    - Simulation of HPC applications and predictions, Scheduling workshop, Bordeaux (27/6/19)
    - Series of talks about reproducible research: TILECS workshop, Grenoble (3/7/19); UFRGS keynote, Porto Alegre (9/10/19); SBAC-PAD conference, Campo Grande (17/10/19); Formidex, UGA (6/11/19); Doctoral school, Neuchatel (7/11/19); Inria Alumni, Paris (12/11/19)
- Nicolas Gast was invited to give a tutorial about "Mean field and refined mean field approximation" at the conference ITC.

10.1.5. Research Administration

- B. Gaujal is a member of the scientific committee of GDR-IM and a member of the council of 'pole MSTIC' Grenoble
- P. Mertikopoulos is a member of the steering committee (comité de liaison) of the optimization and decision theory group of the French Society for Industrial and Applied Mathematics (SMAI)
- P. Mertikopoulos is the working group coordinator, core group member and management committee (MC) representative for France in the European Network for Game Theory (GAMENET).
- P. Loiseau is the chair of the steering committee of NetEcon.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

We only list the master level teaching.

- B. Gaujal was involved in multiple courses:
    - M2 course in ENS Lyon with Panayotis Mertikopoulos : Online Optimization
    - M2 course in MPRI (Paris) with Ana Busic: performance evaluation in communication networks

- M2 course (Ensimag) on network performance models
- M1 exercice session (Ensimag) applied probability
- P. Mertikopoulos gave an invited PhD level course at EPFL on "Min-max optimization and variational inequalities".
- V. Danjean was involved in INFO3 and INFO4 at Polytech Grenoble (System Architecture, Internship supervising, ...) and in M1 Info (Operationg systems and Parallel Programming course, Operating System project)
- A. Legrand was involved in multiple courses:
  - Scientific Methodology and Performance Evaluation (M2 MOSIG, UGA)
  - Scientific Methodology and Performance Evaluation (M2 Univ. Federale do Rio Grande do Sul, Porto Alegre)
  - Parallel Systems (M2 MOSIG, UGA)
  - Probability and Simulation (M1, Polytech/UGA)
  - Performance Evaluation (M1, Polytech/UGA)
  - Reproducible Research (Doctoral School MSTII, UGA)
- J. Anselmi taught in the course Probability and Simulation (M1, Polytech/UGA).
- P. Loiseau taught in the courses Probability and Simulation (M1, Polytech/UGA) and "Algorithms for data processing" (M1 INFO, UGA).
- N. Gast is responsible of the master course "Optimization under Uncertainties" (Master 2 ORCO in Grenoble).
- J.-M. Vincent teaches Probability for Informatics and Performance Evaluation at Ensimag, and Mathematics for Computer Science (1st year) and Scientific Methodology and Performance Evaluation (2nd year) at the Master of Computer Science.
- G. Huard taught the course Object Oriented Design class for the M1 INFO, UGA.

10.2.2. Supervision

Supervision of PhD students and postdocs:
- B. Jonglez (Bruno Gaujal and Martin Heusse)
- S. Plassart (Bruno Gaujal and Alain Girault)
- K. Khun (Bruno Gaujal and Nicolas Gast)
- C. Yan (Bruno Gaujal and Nicolas Gast)
- K. Antonakopoulos (P. Mertikopoulos and E. V. Belmega, ETIS/ENSEA)
- B. Roussillon (P. Mertikopoulos and P. Loiseau)
- B. Donassolo (P. Mertikopoulos and A. Legrand):
- P. Rocha Bruel (A. Legrand and Alfredo Goldman)
- T. Cornebize (A. Legrand)
- C. Heinrich (A. Legrand)
- S. Zrigui (A. Legrand and D. Trystram)
- A. Janon (G. Huard and A. Legrand)
- V. Emelianov (N. Gast and P. Loiseau)
- T. Barzolla (N. Gast with Vincent Jost and Van-Dat Cung from G-SCOP laboratory)
- M. Mendil (N. Gast)
- T. Kennouche (N. Gast)
- U. Ozeer (J-M. Vincent)
- Dong Quan Vu (P. Loiseau)
- Vera Sosnovik (O. Goga and P. Loiseau)
- Eleni Gkiouzepi (P. Loiseau)
- Lucas Leandro Nesi (A. Legrand and Lucas Mello Schnorr)
- Dimitrios Moustakas (B. Pradelski and P. Loiseau, with H. Nax from UZH)
- Simon Jantscheg (B. Pradelski and P. Loiseau, with H. Nax from UZH)

Supervision of M2 Students:

- Manal Benaissa (V. Danjean)
- Leo Gayral (Bruno Gaujal and Federica Garin)
- Kimang Khun (Bruno Gaujal and Nicolas Gast)
- Nicolas Rocher (Patrick Loiseau and Panayotis Mertikopoulos)
- Chen Yan (Nicolas Gast)
- Dimitrios Moustakas (B. Pradelski)

10.2.3. Juries

- B. Gaujal was a reviewer of the PhD Thesis of Paulin Jacquot (Ecole Polytechnique).
- V. Danjean was involved in several teaching jurys: INFO3 at Polytech Grenoble, L3 M&I, M1 Info, DU ISN and DIU EIL at UGA.
- A. Legrand was a reviewer of the PhD Thesis of Mohamad El Sayah (Univ. Franche Comté, Besançon)
- N. Gast was member of the PhD Jury of Celine Comte and Eyal Castiel.

10.3. Popularization

Patrick Loiseau wrote with Oana Goga an article "Publicité en Ligne : reprenons la main !", that was co-published co-published by the blog Binaire (Le Monde) and The Conversation France, June 3, 2019.

10.3.1. Internal or external Inria responsibilities

- B. Gaujal is a member of the CR2 hiring committee in Grenoble.
- J.-M. Vincent is in charge of the relation Rectorat / Inria-Grenoble for the organization of scientific events (Festival of Science, Schools Visits, organization of Conference Cycles on research in CS and Applied Mathematics for teachers in Colleges)
- J.-M. Vincent is
  - Member of the national coordination of the Diplôme Inter-Universitaire "Enseigner l'Informatique au Lycée" (50 universities involved).
  - Local Head of DIU EIL ine Academy of Grenoble
  - Member of the organization of the teaching sessions for all the teachers in CS coming from abroad
  - Member of the national Commission Inter-Irem in Informatics
  - Member of the first national jury for the competitive recruitment of teachers in computer science (Capes NSI 2019-20)

10.3.2. Articles and contents

Arnaud Legrand participated in the writing of a book [39] on Reproducible Research, which aims at helping students and engineers and researchers to find efficient and accessible ways leading them to improve their reproducible research practices.

10.3.3. Education

- V. Danjean is the head of the DU ISN formation (Diplôme Universitaire Informatique et Sciences du Numérique)

- V. Danjean co-organized the new DIU EIL formation (Diplôme Inter-Universitaire Enseigner l'Informatique au Lycée). He is involved both at the national level (for the coordination and the definition of the content of this formation provided in more than 30 universities in France), and at the local level (coordination of the local teams, courses scheduling, conference organization, ...)

10.3.4. Interventions

- V. Danjean participated in "La Fête de la Science", animating several sessions of "unplugged computer science"

- P. Loiseau co-rganized and animated a workshop "IA, éthique et société", Forum Ecobiz Grenoble, October 2019.

- P. Loiseau participated in a debate "Ethique et numérique : quels enjeux sociétaux ?". Festival Transfo, Grenoble, France, January 2019.

<p align="center">**ROMA 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

- Anne Benoit is the chair of HPC Algorithms Track of ISC 2020.
- Bora Uçar was the chair of the Algorithms Track of HiPC 2019; he has organized a mini-symposium at ICIAM 2019 on combinatorial scientific computing (12 talks) with Aydin Buluc and Alex Pothen.
- Frédéric Vivien was Global Chair of Topic 10 (Theory and Algorithms for Parallel Computation and Networking) of Euro-Par 2019, Göttingen, Germany, August 26-30 2019.

10.1.1.2. Member of the Conference Program Committees

- Anne Benoit was a member of the program committees of **IPDPS'20**, **IPDPS'19**, **SC'19**, **ESA'19**, and **Compas'19**.
- Loris Marchal was/is a member of the program committees of **HiPC 2019**, **HPCS 2019**, **ICPP 2019** and **ICPP 2020**.
- Grégoire Pichon was a member of the program committee of **Compas'19**.
- Yves Robert was a member of the program committee of **FTXS'19**, **Scala'19**, **PMBS'19** workshops co-located with SC'19 in Denver CO, and of the new conference with proceedings inside **SiamPP'20**.
- Bora Uçar was a member of the program committee of **PPAM 2019**, **ISC**, **ICPP**, **IPDPS 2020 Workshops**.
- Frédéric Vivien was a member of the program committees of **IPDPS'20**, **PDP 2020**, and **PDP 2019**.

10.1.1.3. Reviewer

- Loris Marchal has reviewed paper for the following conferences: **SPAA 2019**, **SC 2019**, **PODC 2019**,

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Yves Robert is Associate Editor of JPDC (Elsevier Journal of Parallel and Distributed Computing), TOPC (ACM Trans. On Parallel Computing), IJHPCA (Int. J. High Performance Computing and Applications) and JOCS (J. Computational Science).
- Bora Uçar is a member of the editorial board of Parallel Computing, SIAM Journal on Matrix Analysis and Applications, SIAM Journal on Scientific Computing, and IEEE Transactions on Parallel and Distributed Computing.
- Frédéric Vivien is a member of the editorial board of the Journal of Parallel and Distributed Computing.

10.1.2.2. Reviewer - Reviewing Activities

- Loris Marchal has reviewed papers for the journal CCPE (Concurrency and Computation: Practice and Experience).
- Yves Robert reviewed papers for journals IEEE TC, IEEE TPDS, JPDC, ACM TOPC, IEEE Trans. Cloud Computing.

- Bora Uçar has reviewed papers for journals IEEE TPDS, ACM TOMS, SIAM SISC, Frontiers of Information Technology & Electronic Engineering.

10.1.3. Invited Talks

- Yves Robert delivered a keynote presentation at HPCS'2019 in Dublin (Int. Conf. on High Performance Computing & Simulation)

10.1.4. Leadership within the Scientific Community

- Anne Benoit is a member of the Steering Committee of IPDPS and HCW (Heterogeneity in Computing Workshop, co-located with IPDPS).
- Yves Robert is a member of the Steering Committee of IPDPS and HCW .
- Bora Uçar has participated in the steering committees of IPDPS, CSC, and HiPC; he has also served as vice-chair of IEEE Technical Committee on Parallel Processing.

10.1.5. Scientific Expertise

- Frédéric Vivien was re-elected to the scientific council of the École normale supérieure de Lyon. He is also a member of the scientific council of the IRMIA labex http://labex-irmia.u-strasbg.fr/.
- Yves Robert is an expert for the Horizon 2020 program of the European Commission and has reviewed two projects in 2019.
- Yves Robert chaired the HCERES evaluation committee for the Skoltech PhD program in Computational and Data-Intensive Science and Engineering, in Moscow, Russia.

10.1.6. Research Administration

- Frédéric Vivien is the vice-head of the LIP laboratory since September 2017.

10.2. Teaching - Supervision - Juries

- Yves Robert was a Committee member for the HDR of Bora Uçar. .

10.2.1. Teaching

Licence: Anne Benoit, Responsible of the L3 students at ENS Lyon, France

Master: Yves Robert, Responsible of Master Informatique Fondamentale, ENS Lyon, France

Licence: Anne Benoit, Algorithmique avancée, 48, L3, ENS Lyon, France

Licence: Yves Robert, Algorithmique, 48, L3, ENS Lyon, France

Licence: Yves Robert, Proababilités, 48, L3, ENS Lyon, France

Licence: Grégoire Pichon, Réseaux, 34, L3, Univ. Lyon 1, France

Licence: Loris Marchal, Compilation (practicals), 14, L3, Univ. Lyon 1, France

Licence: Loris Marchal, Operating systems (practicals), 12, L2, Univ. Lyon 1, 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 : Loris Marchal, Data-Aware Algorithms, 30, M2 Informatique Fondamentale, ENS Lyon 1, France.

10.2.2. Supervision

PhD in progress: Yishu Du, "Resilience for numerical methods", started in December 2019, funding: China Scholarship Council and Inria, advisors: Yves Robert and Loris Marchal.

PhD in progress: Yiqin Gao, "Replication Algorithms for Real-time Tasks with Precedence Constraints", started in October 2018, funding: 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, funding: China Scholarship Council 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 in progress: Ioannis Panagiotas, "High performance algorithms for big data graph and hypergraph problems", started in October 2017, funding: Inria, advisor: 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).

10.2.3. Juries

- Loris Marchal is a responsible of the competitive selection of ENS Lyon students for Computer Science, and is thus a member of the jury of this competitive exam.

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

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events: Organisation

Tanguy Risset and Leonardo Cardoso have been at the origin ot the First French GNU Radio days in 2018: https://gnuradio-fr-18.sciencesconf.org/. This is a very visible result of the activity on CorteXlab. The second version of the workshop (called now *european GNU Radio days*) has almost double its number of participants in 2019: https://gnuradio-fr-19.sciencesconf.org/. Next year session is planned in June in Poitier.

Kevin Marquet has organized the conference "Vous avez dit sobriété (numérique) ?" within the Ecoinfo CNRS GDS (https://ecoinfo.cnrs.fr/2019/07/11/projets-ecoinfo-en-cours/).

8.1.1.1. Member of the Organizing Committees

- Tanguy Risset is member of the organizing committee of the second European GNU Radio days.

8.1.1.2. Chair of Conference Program Committees

Florin Hutu was session chair during the IEEE International Symposium on Signals Circuits and Systems, 11-12 July 2019, Iasi, Romania.

8.1.1.3. Member of the Conference Program Committees

Tanguy Risset was a member of the following technical program committees:

- IEEE Computer Society Annual Symposium on VLSI (ISVLSI) 2019
- Design Automation and Test in Europe (DATE) 2019
- International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM) 2019

Florent de Dinechin was a member of the following technical program committees:

- IEEE Symposium on Computer Arithmetic (ARITH)
- IEEE International Symposium on Field-Programmable Custom Computing Machines (FCCM)
- Conférence d'informatique en Parallélisme, Architecture et Système (COMPAS)

Guillaume Villemaud was a member of the following technical program committee:

- EUCAP 2019,
- EuCNC 2019

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

Guillaume Villemaud is an associate editor of Annals of Telecommunications (Springer).

Florent de Dinechin was Guest Editor for a special issue of IEEE Transactions on Computers dedicated to computer arithmetic [4].

8.1.2.2. Reviewer - Reviewing Activities

Florin Hutu reviewed articles for the following conferences: 2019 International Conference on Advanced Technologies for Communications (ATC), 2019 IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC),

Florin Hutu Florin HUTU reviewed articles for the following journals: IEEE Transactions on Communications, IEEE Communications Letters, IEEE Journal of Radio Frequency Identification, Elsevier Advances in Space Research, MDPI Sensors, MDPI Applied Sciences.

8.1.3. Invited Talks

Florent de Dinechin gave a talk at the PAW workshop (Programmable Audio Workshop) organised by GRAME in Lyon on 14 dec. 2019. the title was: "FPGAs for low latency audio applications?" (https://faust.grame.fr/paw/#fpga)

Florent de Dinechin gave an invited lecture at ICTP (the International Center for Theoretical Physics) for the May 2019 edition of the Advanced Workshop on FPGA-based Systems-On-Chip for Scientific Instrumentation and Reconfigurable Computing.

Tanguy Risset gave a tutorial untitled "Writing a custom GNU Radio processing block"at the second edition of the *european GNU Radio days*, organized in besançon in June 2019 (https://gnuradio-fr-19.sciencesconf.org/resource/page/id/2).

Gero Müller gave an invited talk untitled "Intermittent power and high precision high speed power measurements" at Riot Summit 2019 (https://summit.riot-os.org/2019/blog/speakers/gero-muller/)

8.1.4. Leadership within the Scientific Community

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.

8.1.5. 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).

8.1.6. Research Administration

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.

Kevin Marquet is associate director of the CNRS GDS ECO-info (http://ecoinfo.cnrs.fr/)

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Tanguy Risset is professor at the Telecommunications Department of Insa Lyon.
- Florent de Dinechin is a professor at the Computer Science Department of Insa Lyon. He also teaches computer architecture at ENS-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.

8.2.2. Supervision

PhD in progress : **Gautier Berthou** : *Operating system for transiently powered systems*, Inria, (IPL ZEP) since 01/2018.

PhD in progress : **Andrea Bocco** : *Proposition d'une unité de caclul UNUM pour le calcul scientifique*, ANR Metalibm grant, since 12/2016.

PhD in progress : **Luc Forget** : *Algèbre linéaire calculant au plus juste*, ANR Imprenum, since 10/2018.

PhD in progress :**Yanni Zhou** : *Full Duplex and spatial modulation* since 10/2018

PhD in progress : **Tarik Lassouaoui** : *Tag 2 Tag communication* since 10/2018

PhD in progress : **Regis Rousseau** : *Wireless Power Transfer* since 10/2018

PhD starting : **Maxime Christ** : *Learning in Very Low Precision* since 10/2018

PhD defended : **Yohan Uguen** : *High-level synthesis and arithmetic optimizations*, École Doctorale MathInfo,Nov. 2019.

PhD defended : **Tristan Delizy** : *Gestion de la mémoire dynamique pour les systèmes embarqués avec mémoire hétérogène*, École Doctorale MathInfo, Dec. 2019.

8.2.3. Juries

- Tanguy Risset was a member of the jury of the these following theses:
  - Arthur Hugeat (U. Bourgogne Franche-comté)
  - Tristan Delizy (U. Lyon)
- Tanguy Risset was a member of the jury of the HDR of Matthieu Gautier (U. Rennes)
- Florent de Dinechin was a reviewer for
  - the PhD of Geneviève Ndour (U. Rennes 1)
  - the PhD of Yohan Chatelain (U. Paris Saclay)

8.3. Popularization

8.3.1. Education

Florent de Dinechin gave a lecture in Grenoble for high-school teachers, in the framework of the ISN convention between Académie de Grenoble and Inria.

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 General Co-Chair of IEEE/RSJ IROS [0] 2019 (Macau, Nov 2019).
- C. Laugier co-organized in the scope of IEEE/RSJ IROS 2019 and of the IEEE RAS Technical Committee IGV-ITS, the 11th Workshop of the series PPNIV (Planning, Perception and Navigation for Intelligent Vehicles) having attracted about 300 people (see http://project.inria.fr/ppniv19 for more details).
- C. Laugier co-organized at IEEE/RSJ IROS 2019 a Cutting Edge Forum on "Robotics, AI and ITS for Autonomous Driving" having attracted about 150 people (see https://project.inria.fr/ad19/ for more details).
- O. Simonin was General Co-Chair and Co-Organizer with F. Charpillet (Inria Nancy) of the JNRR 2019 conference, the bi-annual conference gathering the French Robotic community, in Vittel ($\sim$ 200 pers.) October 15-17 2019. https://jnrr2019.loria.fr/
- O. Simonin was General and Scientific Chair of JFSMA 2019 (*27emes Journées Francophones sur les Systèmes Multi-Agents*), in Toulouse, as part of PFIA 2019 (Plate-forme IA), July 1-5 2019. https://www.irit.fr/pfia2019/jfsma/

10.1.1.2. Member of the Organizing Committees

- Agostino Martinelli was in the organizing committee of the workshop on "visual-inertial navigation: challenges and applications", held during IROS 2019 in Macau, China.
- C. Laugier was Member of the Organizing Committee of the conference IEEE CIS-RAM 2019 (Bangkok, Nov 2019).
- J. S. Dibangoye and O. Simonin were Members of the Organizing Committee of IA^2 – Institut d'Autonomne en Intelligence Artificielle, Lyon 2019.

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

- O. Simonin was Chair of JFSMA Program Committee (27emes journées francophones sur les systèmes multi-agents), Toulouse, France, July 3-5, 2019. He co-edited with S. Combettes (IRIT/Toulouse) the JFSMA 2019 Proceedings, Cépaduès 2019, ISBN 9782364937192.

10.1.2.2. Member of the Conference Program Committees

- C. Laugier served as Associate Editor for the conference IEEE ICRA 2019 (Montreal, May 2019) and also for IEEE ICRA 2020 (Paris, May 2020).
- C. Laugier served as member of the Senior Program Committee of IEEE/RSJ IROS 2019 (Macau, Nov 2019).
- A. Martinelli was Associate Editor for IEEE ICRA 2020.
- A. Spalanzani was PC member of the ECAI 2019 conference.
- J. S. Dibangoye was Senior PC member of the ECAI 2019 conference.
- J. S. Dibangoye was PC member of the IJCAI 2019 conference.

---

[0]IEEE/RSJ International Conference on Intelligent Robots and Systems

- J. S. Dibangoye was PC member of the AAAI 2020 conference.
- J. S. Dibangoye was PC member of the NeurIPS 2019 conference (selected as one of the best reviewers).
- J. S. Dibangoye was PC member of the PKDD-ECML 2019 conference.
- J. S. Dibangoye was PC member of the JFPDA 2019 conference.
- O. Simonin was Senior PC member of the ECAI 2019 conference.
- O. Simonin was PC member of the IJCAI 2019 conference.
- O. Simonin was PC member of the AAAI 2020 conference.
- O. Simonin was PC member of the ICAPS 2019 conference - Robotics Track (29th International Conference on Automated Planning and Scheduling).
- O. Simonin was PC member of the ECMR 2019 conference (European Conference on Mobile Robots).

10.1.2.3. Reviewer

- A. Martinelli served, in quality of reviewer, for the following conferences: ICRA.
- O. Simonin served, in quality of reviewer, for the following conferences: IROS, ICRA.
- J. S. Dibangoye served, in quality of reviewer, for the following conferences: CDC, ACC, AAMAS, JFPDA.

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 Senior Editor of the journal IEEE Transaction on Intelligent Vehicles
- C. Laugier is member of the Editorial Board of the journal IEEE ROBOMECH.
- O. Simonin was member of the Editorial Board of RIA revue (*Revue d'Intelligence Artificielle*), from 1/1/2018 to 1/06/2019. He is now member of the Editorial Board of the new revue ROIA (*Revue Ouverte d'Intelligence Artificielle*).

10.1.3.2. Reviewer - Reviewing Activities

- Agostino Martinelli served, in quality of reviewer, for the following journals: Transaction on Automatic Control, Automatica, Journal of Robust Control, Transaction on Robotics.
- O. Simonin was reviewer for SMCA journal (Systems, Man and Cybernetics: System).
- O. Simonin was reviewer for RIA revue (Revue d'Intelligence Artificielle).
- J. S. Dibangoye was reviewer for AIJ (Artificial Intelligence Journal).
- J. S. Dibangoye was reviewer for JAIR (Journal of Artificial Intelligence Research).
- J. S. Dibangoye was reviewer for JMLR (Journal of Machine Learning Research).
- J. S. Dibangoye was reviewer for TAC (IEEE Transaction on Automatic Control).

10.1.4. Invited Talks

- J. S. Dibangoye gave an invited talk at the Czech technical University in Prague, Czech Republic, in July 2019.
- J. S. Dibangoye gave an invited talk at the MAFTEC working group of GdR IA, in Caen, France, in February 2019.
- C. Laugier gave an invited talk at the conference IS Auto Europe 2019, Berlin, April 2019. Title: Embedded Sensor Fusion and Perception for Autonomous Vehicles.

- C. Laugier gave an invited talk at the conference IS Auto Europe 2019, Berlin, April 2019. Title: Embedded Sensor Fusion and Perception for Autonomous Vehicles.
- C. Laugier gave an invited talk at the Technological Conference Minalogic B2B 2019, Grenoble, May 2019. Title: Mixing Bayesian and AI approaches for Autonomous Driving.
- C. Laugier gave an invited keynote talk at the conference IEEE World Robotics Conference WRC 2019, Beijing, August 2019. Title: Impact of AI on Autonomous Driving.
- C. Laugier gave an invited Pioneer's talk at the conference IEEE/RSJ IROS 2019, Macau, November 2019. Title: A Journey in the history of Automated Driving.
- C. Laugier gave an invited keynote talk at the Cutting Edge Forum "Robotics, AI and ITS for Autonomous Driving", Conference IEEE/RSJ IROS 2019, Macau, November 2019. Title: Situation Awareness and Decision-making for Autonomous Driving.
- A. Martinelli gave the invited talk "Nonlinear Unknown Input Observability: the General Analytic Solution" on behalf of the Automatic Control Laboratory and the Institute for Dynamic Systems and Control at the ETHZ of Zurich, May, 6, 2019
- A. Martinelli gave invited talk "Nonlinear Unknown Input Observability: the General Analytic Solution" at La Sapienza University, Control lab, Rome, November, 29, 2019
- A. Spalanzani gave a talk that the "Journées Nationales de la Recherche en Robotique" (JNRR) in October 2019.
- O. Simonin gave an invited talk at the GdR Robotics Winter School: Robotica Principia "Decision making in robotics", Centre de recherche Inria Sophia Antipolis – Méditérranée, France. January 21-25, 2019, [55].
- O. Simonin gave an invited talk at the GdR IA2 Autumn School: "Introduction à la coordination multi-agent", CITI Lab/INSA Lyon.

10.1.5. Leadership within the Scientific Community

- C. Laugier is co-chair with Philippe Martinet, Marcelo Ang and Denis Wolf of the IEEE RAS Technical Committee on "Autonomous Ground Vehicles and Intelligent Transportation Systems (AGV-ITS)". He founded this IEEE RAS TC about 15 years ago, as a bridge between the RAS and ITS societies of IEEE.
- C. Laugier is member of the Steering Committee of IEEE/RSJ IROS.
- C. Laugier is member of the Scientific Committee of the French GDR Robotique.
- C. Laugier is member of several International Award Committees for IEEE RAS (Chapter Award Committee) and for IEEE/RSJ IROS.
- O. Simonin is member of the Board of AFIA "*Association Française pour l'Intelligence Artificielle*" (https://afia.asso.fr/).

10.1.6. Scientific Expertise

- O. Simonin was member of the HCERES committee of LIG lab.
- 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 China.

10.1.7. Research Administration

- C. Laugier is a member of several Ministerial and Regional French Committees on Robotics and Autonomous Cars.
- A. Spalanzani was a member of the committee of the ANR project selection in Mobilité et systèmes urbains durables.
- A. Spalanzani was a member of the GDR best Robotics PhD thesis committee.

- O. Simonin is member of the Auvergne-Rhone-Alpes Robotics cluster (Coboteam), for Inria and INSA Lyon entities.
- O. Simonin is member of the Scientific Council of the Digital League (Auvergne-Rhone-Alpes).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

INSA Lyon 5th year : O. Simonin, Resp. of the Robotics option (25 students): AI for Robotics, Multi-Robot Systems, 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 3rd year : Jilles S. Dibangoye, Algorithmics, 24h, L3, Dept. Telecom INSA Lyon, France.

INSA Lyon 3rd year : Jilles S. Dibangoye, WEB, 42h, L3, Dept. Telecom INSA Lyon, France.

INSA Lyon 3rd year : Jilles S. Dibangoye, Operating Systems, 56h, L3, Dept. Telecom INSA Lyon, France.

INSA Lyon 4rd year : Jilles S. Dibangoye, Operating Systems, 16h, Master, Dept. Telecom INSA Lyon, France.

INSA Lyon 5th year : Jilles S. Dibangoye, the Robotics option : AI for Robotics, Robotics projects, 8h, M2, Dept. Telecom INSA Lyon, France.

M2R MoSIG: A. Martinelli, Autonomous Robotics, 12h, ENSIMAG Grenoble.

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.

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)

10.2.2. Supervision

PhD: David Sierra Gonzalez, Towards Human-Like Prediction and Decision-Making for Automated Vehicles in Highway Scenarios, Université Grenoble Alpes, Defended April 1st 2019, C. Laugier, J. Dibangoye, E. Mazer (Inria Pervasive Interaction).

PhD: Pavan Vasishta, Building and Leveraging Prior Knowledge for Predicting Pedestrian Behaviour Around Autonomous Vehicles in Urban Environments, Université Grenoble Alpes, Defended September 30th 2019, A. Spalanzani and D. Vaufreydaz (Inria Pervasive Interaction).

PhD: Mathieu Barbier, Decision making for Intelligent Vehicles, Defended December 11st 2019, C. Laugier, O. Simonin and E. Mazer (Inria Pervasive Interaction).

PhD in progress: Mihai Popescu, Robot fleet mobility under communication constraints, O. Simonin, A. Spalanzani, F. Valois (CITI/Inria Agora).

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.

PhD in progress: Maria Kabtoul, Proactive Navigation in dense crowds, A. Spalanzani and P. Martinet (Inria Chorale).

PhD in progress: Benoit Renault, Navigation coopérative et sociale de robots mobiles en environnement modifiable, O. Simonin and J. Saraydaryan.

PhD in progress: Edward Beeching, Large-scale automatic learning of autonomous agent behavior with structured deep reinforcement learning, C. Wolf, O. Simonin and J. Dibangoye.

PhD in progress: Manon Prédhumeau, Crowd simulation and autonomous vehicle, A. Spalanzani and J. Dugdale (LIG).

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: Alexandre Bonnefond, Large-scale automatic learning of autonomous agent behavior with structured deep reinforcement learning, O. Simonin and I. Guerrin-Lassous (Inria Dante).

Starting PhD: Estéban Carvalho, Safe and aggressive piloting of UAVs, 2019, Ahmad Hably (Gipsa-Lab), Nicolas Marchand (Gipsa-Lab), Jilles S. Dibangoye.

10.2.3. *Juries*

HDR :

O. Simonin was reviewer and member of the defense committee of the HDR of Charles Lesire (ONERA-ISAE), INP Toulouse, "Architectures délibératives pour la robotique autonome, des algorithmes au logiciel embarqué", March 5th, 2019.

O. Simonin was reviewer and member of the defense committee of the HDR of Abbas-Turki Abdeljalil (UTBM), Université de Haute-Alsace, "Méthodes, modèles et outils pour la régulation coopérative : Application aux véhicules autonomes et connectés", December 10th, 2019.

PhD thesis :

A. Spalanzani was reviewer and member of the defense committee of the PhD thesis of José Mendes Filho, école nationale supérieure de techniques avancées, December 19th, 2019.

O. Simonin was reviewer and member of the defense committee of the PhD thesis of Nicolas Cambier, Université de Technologie de Compiègne (UTC), October 23th, 2019.

O. Simonin was reviewer and member of the defense committee of the PhD thesis of Christophe Reymann, INSA Toulouse, July 8th, 2019.

O. Simonin was member of the defense committee of the PhD thesis of Rustem Abdrakhmanov, Université Clermont Auvergne, June 27th, 2019.

O. Simonin was member of the defense committee of the PhD thesis of Bilel Chenchana, Université de Limoges, March 22th, 2019.

Jilles S. Dibangoye was member of the defense committee of the PhD thesis of Jonathan Cohen, Univ. Caen, June 13th 2019.

C. Laugier and J. Dibangoye were members of the defense committee and co-supervisor of the PhD thesis of David Sierra Gonzalez, UGA Grenoble, April 1st 2019.

C. Laugier and O. Simonin were members of the defense committee and co-supervisor of the PhD thesis of Mathieu Barbier, UGA Grenoble, December 11th 2019.

10.3. Popularization

A. Spalanzani made a cross interview on women in robotics (https://www.inria.fr/centre/nancy/actualites/une-carriere-en-robotique-regards-croises-sur-des-parcours-d-exception)

10.3.1. *Articles and contents*

O. Simonin gave an interview to Le Monde Informatique - IT Tour à Lyon "*La voiture autonome : mythe ou réalité ?*" (https://www.lemondeinformatique.fr/actualites/lire-interview-video-olivier-simonin-professeur-inria-insa-lyonetgrenoble-77605.html) (26/09/19)

10.3.2. *Education*

A. Spalanzani made a seminar on "social autonomous vehicle navigation" in the scope of "cycle de conférences ISN".

IMAGINE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

Rémi Ronfard is a member of the selection committee for Inria-MCC (Ministry of Culture and Communication) activities; and a member of the steering committee for the Eurographics workshop on intelligent cinematography and editing (WICED).

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

Remi Ronfard and Julie Valéro (Litt & Arts, Univ. Grenoble Alpes) are chairing the first national meeting on computer theater (Journées d'Informatique Théâtrale), which will take place in Grenoble in February 2020.

Stefanie Hahmann was conference general co-chair for the ACM Symposium on Solid and Physical Modeling (SPM), Vancouver 2019.

10.1.1.2. Member of the Organizing Committees

Stefanie Hahmann was member of the organization committee of the SIAM Conference on Geometric Design, Vancouver 2019.

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

Mélina Skouras was a member of the Program Committees for ACM Siggraph Asia 2019 and Eurographics 2019.

Stefanie Hahmann was a member of the Program Committees for Symposium on Geometry Processing (SGP) 2019.

Rémi Ronfard was a member of the Program Committees for Motion, Interaction and Games (MIG) 2019, Intelligent Cinematography and Editing (WICED) 2019, and EXPRESSIVE 2019.

10.1.2.2. Reviewer

Rémi Ronfard was a reviewer for Siggraph 2019 and Siggraph Asia 2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Stefanie Hahmann is an Associate Editor of CAG (Computers & Graphics, Elsevier) and CAD (Computer Aided Design, Elsevier).

10.1.3.2. Reviewer - Reviewing Activities

Mélina Skouras was a reviewer for ACM Siggraph 2019, ACM Transactions on Graphics (TOG) and the International Journal for Numerical Methods in Engineering.

Stefanie Hahmann was a reviewer for Graphical Models (GMOD), Computers & Graphics (CAG) and Computer Aided Design (CAD).

Rémi Ronfard was a reviewer for ACM transactions on Graphics (TOG).

10.1.4. Invited Talks

Mélina Skouras gave an invited talk at the ACM/Eurographics Symposium on Computer Animation in July 2019.

Stefanie Hahmann gave an invited talk at the ARCADES workshop (Algebraic Representations in Computer-Aided Design for complEx Shapes) in Vienna, Austria, in November 2019.

10.1.5. Leadership within the Scientific Community

Remi Ronfard and Julie Valéro (Litt & Arts, Univ. Grenoble Alpes) are animating 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.

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.

10.1.6. Scientific Expertise

Stefanie Hahmann was a member af the Advisory Board of the European ITN-ETN Marie-Curie Training Network ARCADES on Algebraic Representations for Computer-Aided Design of Complex Shapes from 2015 until 2019.

Stefanie Hahmann was a member of the selection committees for the SMA Young Investigator Award, Solid Modeling Association.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Bachelor : Stefanie Hahmann, Numerical Methods, 42 HETD, 240 students, L3, Ensimag-Grenoble INP.

Master : Stefanie Hahmann, Geometric Modeling, 47 HETD, 60 students, M1, Ensimag-Grenoble INP.

Master : Stefanie Hahmann, Surface Modeling, 37 HETD, 30 students, M2, Ensimag-Grenoble INP.

Master: Mélina Skouras, Surface modeling, 14.5 HETD, M2, Ensimag, Grenoble, France

Master: Mélina Skouras, Numerical Mechanics, 8 HETD, M2, ENS de Lyon, France

Master: Rémi Ronfard teaches computer animation to MOSIG M2 students, 18 HETD, Grenoble INP, Univ. Grenoble Alpes.

PhD: Rémi Ronfard is an associate researcher in the Spatial Media team at ENSADLAB, where he teaches computer graphics to doctoral art students in the SACRE doctoral school, 60 HETD, Univ. Paris Sciences et Lettres (PSL).

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 20 Masters (PFE) thesis defences in 2019.

10.2.2. Supervision

PhD: Geoffrey Guingo, Synthesis of animated textures, supervised by Marie-Paule Cani, Jean-Michel Dischler and Basile Sauvage, was defended on December 3, 2019.

PhD: Amélie Fondevilla, Modélisation et animation de surfaces développables, supervised by Stefanie Hahmann and Damien Rohmer, was defended on Decembre 18, 2019.

PhD: Maxime Garcia, Animation transfer: character animation by playing and acting, since October 2016, supervised by Rémi Ronfard, was defended on December 19, 2019.

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 : 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 : Nachwa Aboubakr, Observation and modeling of human activities, since October 2016, supervised by James Crowley and Rémi Ronfard.

PhD in progress: David Jourdan, Design of free-from surfaces using self-actuated materials, 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: Mélanie Carrière, 3D Design of Ancient Garments, June 2019, supervised by Mélina Skouras and Stefanie Hahmann.

Master's thesis: Shalu Dwivedi, Simulation of Laser-Cut Metamaterials, August 2019, supervised by Mélina Skouras.

Master thesis: Paul-Elian Tabarant, student at Telecom ParisTech, 3D sketching in virtual reality, July 2019, subervised by Stefanie Hahmann and Georges-Pierre Bonneau.

M1 Internship: Marion Taconné, Extensions to the aeroMorph Project, September 2019, supervised by Mélina Skouras.

M1 IRL: Manon Valle, Study of different norms for modeling inverse problems, May 2019, supervised by Mélina Skouras.

M1 IRL: Nathan Shourick, Existence of solutions to design inverse problems, May 2019, supervised by Mélina Skouras, Florence Bertails-Descoubes and Mickaël Ly.

10.2.3. Juries

Stefanie Hahmann was part of the jury CRCN 2019 at Inria Rennes, April 2019.

Stefanie Hahmann was member of the HDR committee a reviewer of the HDR Thesis of Alexandra Bac at Univ. Aix-Marseille.

Stefanie Hahmann also was a reviewer of 2 PhD theses, Université de Strasbourg (Cedric Bobenrieth) and Université de Bourgogne (Lucas Morlet) in 2019.

Stefanie Hahmann was an external reviewer of the PhD thesis of Alessandro Marro at University of Kaiserslautern, Germany.

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

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events: Selection

8.1.1.1. Member of the Conference Program Committees

- Romain Vergne: AFIG 2019
- Romain Vergne: SIBGRAPI 2019
- Joëlle Thollot: *Expressive* 2019.
- Nicolas Holzschuch: Eurographics 2020, Sibgrapi 2019, Eurographics Symposium on Rendering Steering Committee

8.1.2. Journal

All members of the Maverick team work as reviewers for the most prestigious journals, including ACM TOG, IEEE TVCG, CGF, etc.

8.1.3. Invited Talks

- Fabrice Neyret presented a 1 hour invited talk "Managing Ultra-high Complexity in Real-time Graphics: Some Hints and Ingredients" at HPG'2019 (ACM-SIGGRAPH-Eurographics Symposium on High-Performance Graphics) [9].
- Fabrice Neyret presented a 1 hour opening invited talk "Graphics vs Physics: the light and dark sides of the Force" [8] in pair with Emmanuel Delangre (Ladhyx - Ecole Polytechnique) at GraPhyz'2019, a new international workshop bridging Physics and Computer Graphics communities.
- Romain Vergne presented a 1 hour invited talk "ensuring congruency between shape and light" at IRIT: Institut de Recherche en Informatique de Toulouse.

8.1.4. 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 Rendering Working Group of the French Association ofr Computer Graphics (AFIG).
- Romain Vergne is co-responsible of the PhD students of the Laboratoire Jean Kuntzmann.
- Nicolas Holzschuch is an elected member of CNESER (National Council for Higher Education and Research), 2019 — 2023.
- 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.
- Nicolas Holzschuch is co-head of the Inria International Laboratory "Inria - EPFL".
- Nicolas Holzschuch is an elected member of Conseil Académique of the COMUE Université Grenoble-Alpes

8.2. Teaching - Supervision - Juries

8.2.1. 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. Joëlle Thollot is in charge of the MMIS ENSIMAG cursus (master level) with Stefanie Hahmann. Nicolas Holzschuch teaches advanced courses in computer graphics at the master level.

Licence: Joëlle Thollot, Théorie des langages, 45h, L3, ENSIMAG, France

Licence: Joëlle Thollot, Séminaire d'innovation, 10h, L3, ENSE3, France

Licence: Joëlle Thollot, MAP, 10h, L3, ENSIMAG, France

Master : Joelle Thollot, TD de créativité, 7h, M1, ENSIMAG, France.

Master : Joelle Thollot, English courses using theater, 18h, M1, ENSIMAG, France.

Licence : Romain Vergne, Introduction to algorithms, 64h, L1, UGA, France.

Licence : Romain Vergne, WebGL, 29h, L3, IUT2 Grenoble, France.

Licence : Romain Vergne, Programmation, 68h. L1, UGA, France.

Master : Romain Vergne, Image synthesis, 27h, M1, UGA, 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.

8.2.2. Supervision

PhD: Alban Fichet, Efficient representation for measured reflectance, UGA, 13/12/2019, 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

PhD in progress: Nolan Mestre, Rendering of panorama maps, 1/10/2019, Joëlle Thollot, Romain Vergne.

8.2.3. Juries

Romain Vergne, member of the jury, PhD of Julien Fayer, University of Toulouse, 19/04/2019.

Joëlle Thollot, president of the jury, PhD of Geoffrey Guingo, Université Grenoble-Alpes, 3/12/2019

Joëlle Thollot, president of the jury, PhD of Maxime Garcia, Université Grenoble-Alpes, 19/12/2019

Georges-Pierre Bonneau, reviewer, PhD of Yohann Bearzi, Université Claude Bernard Lyon 1, 8/11/2019

Georges-Pierre Bonneau, reviewer, PhD of Maxime Soler, Sorbonne Universités, 20/06/19

8.3. Popularization

8.3.1. Articles and contents

- Fabrice Neyret maintains the blog shadertoy-Unofficial and various shaders examples on Shadertoy site to popularize GPU technologies as well as disseminates academic models within computer graphics, computer science, applied math and physics fields. About 26k pages viewed and 12k unique visitors (87% out of France) in 2019.

- in 2019, Fabrice Neyret launched the blog desmosGraph-Unofficial to popularize the use of interactive grapher DesmosGraph for research, communication and pedagogy. For this year, about 1k pages viewed and 800 unique visitors (95% out of France).

8.3.2. Interventions

In the scope of MathC2+ (partnership with French ministry of Education and "Fondation Sciences mathématiques de Paris") Inria Rhône-Alpes hosted in June, 2019 a selection of about 30 motivated high-school students (level "second") for a day of presentations, demos and discussions. Fabrice Neyret did a 1h presentation on "Math and Physics in special effects and video games" plus discussions about his curriculum and questions.

<p align="center" style="color:red">MOEX Project-Team</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events: Organisation

8.1.1.1. Member of the Organizing Committees

- Jérôme Euzenat was organiser of the 2nd Workshop on Interaction-Based Knowledge Sharing (WINKS) of the 5th Joint Ontology Workshop (JOWO), Graz (AT), 2019 (with Adrian Kemo, Dagmar Gromann, Ernesto Jiménez Ruiz, Marco Schorlemmer and Valentina Tamma) [10]
- Jérôme Euzenat had been organiser of the 14th Ontology matching workshop of the 19th ISWC, Auckland (NZ), 2019 (with Pavel Shvaiko, Ernesto Jiménez Ruiz, Cássia Trojahn dos Santos and Oktie Hassanzadeh)

8.1.2. Scientific Events: Selection

8.1.2.1. Member of the Conference Program Committees

- Manuel Atencia, Jérôme David and Jérôme Euzenat have been programme committee members of the "International Joint Conference on Artificial Intelligence (IJCAI)".
- Manuel Atencia, Jérôme David and Jérôme Euzenat have been programme committee member of the "Web Conference (WWW)".
- Manuel Atencia, Jérôme David and Jérôme Euzenat have been programme committee members of the "International semantic web conference (ISWC)".
- Jérôme Euzenat has been programme committee member of the "International Conference on Conceptual Structures (ICCS)".
- Jérôme Euzenat has been programme committee member of the "International conference on semantic systems (Semantics)".
- Jérôme Euzenat has been programme committee member of the "Journées Françaises d'intelligence artificielle fondamentale (JIAF)".
- Manuel Atencia and Jérôme David have been programme committee members of the "Extraction et Gestion des connaissances (EGC)".

8.1.3. Journal

8.1.3.1. 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*.

8.1.3.2. Reviewer - Reviewing Activities

- Manuel Atencia had been reviewer for *Journal of web semantics*.
- Jérôme David had been reviewer for *Journal of web semantics*.
- Jérôme Euzenat had been reviewer for *Knowledge engineering reviews*.

8.1.4. Invited Talks

- "For knowledge", ISWC keynote speech, Auckland (NZ), 2019-10-29 (Jérôme Euzenat)

8.1.5. Leadership within the Scientific Community

- Jérôme Euzenat is member of the scientific council of the CNRS GDR on Formal and Algorithmic Aspects of Artificial intelligence.
- Jérôme Euzenat is EurAI fellow.
- Jérôme David is member of the board of the Extraction and gestion des connaissances (Knowledge extraction and management) conference series.

8.1.6. Scientific Expertise

- Jérôme Euzenat had been member of the HCERES visiting committee for the CRIL research laboratory.
- Jérôme Euzenat had been member of the recruitment committee of Université Grenoble Alpes for the associate professor position 27MCF330, 2019.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

8.2.1.1. Responsibilities

- 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 2nd year of Master "Mathematiques et informatiques appliquées aux sciences humaines et sociales" (Univ. Grenoble Alpes);
- Manuel Atencia is coordinator of the "Web, Informatique et Connaissance" option of the master M2 "Mathematicques et informatiques appliquées aux sciences humaines et sociales" (Univ. Grenoble Alpes);

8.2.1.2. Lectures

- Licence: Jérôme David, Algorithmique et programmation par objets, 70h/y, L2 MIASHS, UGA, France
- Licence: Jérôme David, Système, L3 MIASHS, 18h/y, UGA, France
- Licence: Manuel Atencia, Introduction aux technologies du Web, 60h/y, L3 MIASHS, UGA, France
- Master: Jérôme David, Programmation Java 2, 30h/y, M1 MIASHS, UGA, France
- Master: Jérôme David, JavaEE, 30h/y, M2 MIASHS, UGA, France
- Master: Jérôme David, Développement Web Mobile, 30h/y, M2 MIASHS, UGA, France
- Master: Jérôme David, Web sémantique, 3h/y, M2 MIASHS, UGA, France
- Master: Manuel Atencia, Formats de données du web, 30h/y, M1 MIASHS, UGA, France
- Master: Manuel Atencia, Introduction à la programmation web, 30h/y, M1 MIASHS, UGA, France
- Master: Manuel Atencia, Intelligence artificielle, 7.5h/y, M1 MIASHS, UGA, France
- Master: Manuel Atencia, Web sémantique, 27h/y, M2 MIASHS, UGA, France
- Master: Manuel Atencia, Semantic web: from XML to OWL, 22.5h/y, M2R MoSIG, UGA, France
- Master: Jérôme David, Stage de programmation, 10h/y, M2 MIASHS, UGA, France

8.2.2. Supervision

- Nacira Abbas, "Link key extraction and relational concept analysis", in progress since 2018-10-01 (Jérôme David and Amedeo Napoli)
- Khadija Jradeh, "Reasoning with link keys", in progress since 2018-10-01 (Manuel Atencia and Chan Le Duc)
- Line van den Berg, "Knowledge Evolution in Agent Populations", in progress since 2018-10-01 (Manuel Atencia and Jérôme Euzenat)

- Yasser Bourahla, "Evolving ontologies through communication", in progress since 2019-10-01 (Manuel Atencia and Jérôme Euzenat)

8.2.3. Juries

- Jérôme Euzenat had been reviewer and panel chair of the computer science PhD of Élodie Thiéblin (Université Toulouse 3 Paul Sabatier) "Automatic generation of complex ontology alignments" supervised by Ollivier Haemmerlé and Cássia Trojahn, 2019

- Jérôme Euzenat had been member of the computer science habilitation (HDR) panel of Cássia Trojahn (Université Toulouse 2 Jean Jaurès) "Towards ontology matching maturity: contributions to complex, holistic and foundational ontology matching", 2019

8.3. Popularization

8.3.1. Interventions

- Présentation "L'intelligence artificielle en perspective", Université Inter-Âges du Dauphiné (UIAD), Grenoble (FR), 2019-03-06 (Jérôme Euzenat)

- Introduction of the *Class?* game to a fourth graders (CM1-CM2) class, Montbonnot (FR), 2019-06-25 (Line van den Berg and Jérôme Euzenat)

- Introduction of the *Class?* game to a tenth graders (2nd MathC2+) group, Montbonnot (FR), 2019-06-25 (Line van den Berg and Jérôme Euzenat)

- Introduction of the *Class?* game to seventh and eighth graders (5e et 4e) classes within the Fête de la science (Science fair), Montbonnot (FR), 2019-10-10 (Line van den Berg and Jérôme Euzenat)

- Introduction of the *Class?* game to general public within the Fête de la science (Science fair), Montbonnot (FR), 2019-10-12 (Line van den Berg and Jérôme Euzenat)

- Presentation of the *Class?* game to the meeting of the Société Francophone de Classification, Nancy (FR), 2019-09-03–04 (Jérôme Euzenat)

8.3.2. Creation of media or tools for science outreach

Class? We are developing mediation material for explaining to the general public what knowledge representation is and how it may evolve. Its main goal is to show children that the same individuals may be classified in different and evolving ways and that it is possible to communicate such classifications without expressing them. For that purpose, we have designed a card game called *Class?*[0] which allows players to guess the hidden ontology of another player. It has been presented to school classes from year 5 of primary school (fourth graders) to year 11 (tenth graders), albeit shows features of interest for a wider audience.

---

[0] https://moex.inria.fr/mediation/class/

MORPHEO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Selection

10.1.1.1. Chair of Conference Program Committees

- Stefanie Wuhrer was program co-chair of 3DV 2019, held in Québec City, Canada

10.1.1.2. Member of the Conference Program Committees

- Edmond Boyer was area chair for BMVC and ICCV 2019.

10.1.1.3. Reviewer

- Stefanie Wuhrer reviewed for CVPR, ICCV, and SIGGRAPH
- Jean-Sébastien Franco reviewed for CVPR, ICCV, and 3DV
- Edmond Boyer reviewed for CVPR.

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 (IJCV, Springer).

10.1.2.2. Reviewer - Reviewing Activities

- Edmond Boyer reviewed for IJCV and PAMI.
- Jean-Sébastien Franco reviewed for IJCV and Computer & Graphics.

10.1.3. Invited Talks

- Stefanie Wuhrer was invited to present at Dagstuhl seminar 19102
- Edmond Boyer gave invited talks at: ETH Zurich (February), Prague university (April), Naverlabs Grenoble (May), Lille University (June), Microsoft Zurich (October).

10.1.4. Scientific Expertise

- Jean-Sebastien Franco was a member of the Ensimag Engineering school - Grenoble INP steering commitee (Conseil d'École) in 2019.
- Jean-Sebastien Franco was a member of the recruiting commitee of Ensimag - Grenoble INP Engineering school for temporary research and teaching associates (ATER) in 2019.

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 : Sergi Pujades, Algorithmique et programmation fonctionnelle, 41H équivalent TD, L1, Université Grenoble Alpes, France.

Licence : Sergi Pujades, Modélisation des structures informatiques: aspects formels, 45H équivalent TD, L1, Université Grenoble Alpes, France.

Master : Sergi Pujades, Numerical Geometry, 15H équivalent TD, M1, Université Grenoble Alpes, France

Licence: Jean-Sébastien Franco, Introduction to Imperative Programming, 57h, Ensimag 1st year, Grenoble INP.

Licence: Jean-Sébastien Franco, C Programming project, 20h, 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, 45h, 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), 11h, Ensimag 3rd year, Grenoble INP.

Master: Edmond Boyer, 3D Modeling, 23h, M2R Mosig GVR, Grenoble INP.

Master: Edmond Boyer, Introduction to Visual Computing, 42h, M1 MoSig, Université Grenoble Alpes.

Master: Stefanie Wuhrer, 3D Graphics, 13.5h, M1 MoSig and MSIAM, Université Grenoble Alpes.

10.2.2. Supervision

PhD: Jinlong Yang, Learning shape space of dressed human in motion, Université Grenoble Alpes (France), March 2019, Franck Hétroy-Wheeler and Stefanie Wuhrer.

PhD: Vincent Leroy, 4D shape reconstruction from photoconsistency cues, Université Grenoble Alpes, October 2019, supervised by Edmond Boyer and Jean-Sébastien Franco.

PhD in progress : Sanae Dariouche, Anatomic Statistical Models of adipose, bone and muscle tissue, 01/11/2019, Sergi Pujades and Edmond Boyer

PhD in progress : Marilyn Keller, Ribs motion models for personalized 3D printed implants, 23/09/2019, Sergi Pujades and Michael Black

PhD in progress : Di Meng, , 23/09/2019, Edmond Boyer and Sergi Pujades

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: Boyao Zhou, Augmenting User Self-Representation in VR Environments, Université Grenoble Alpes (France), started 01/02/2019, supervised by Edmond Boyer and Jean-Sébastien Franco.

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: Pierre Zins, Learning to infer human motion, Université Grenoble Alpes (France), started 01/10/2019, supervised by Edmond Boyer, Tony Tung (Facebook) and Stefanie Wuhrer.

PhD in progress: Mathieu Marsot, Generative modeling of 3D human motion, Université Grenoble Alpes (France), started 01/11/2019, supervised by Jean-Sébastien Franco and Stefanie Wuhrer.

10.2.3. Juries

- Stefanie Wuhrer was jury member for the PhD defense of Alban Fichet, Université Grenoble Alpes, December 2019.

- Edmond Boyer was president of the PhD jury of Romain Rombourg, Université Grenoble Alpes, December 2019.

- Edmond Boyer was jury member for the PhD defense of Arthur Crenn, Université de Lyon, December 2019.

10.3. Popularization

10.3.1. Articles and contents

- Edmond Boyer was interviewed by the journal *Vivre à Grenoble* en février 2019. An article mentioning his work with the Kinovis platform was published in april 2019.

PERCEPTION Project-Team

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

- 10th International Workshop on Human Behavior Understanding, in conjunction with the 2019 International Conference on Computer Vision (ICCV).
- 1st Workshop on Fairness, Accountability and Transparency in Multimedia, in conjunction with the 2019 ACM International Conference on Multimedia (ACM MM).
- 3rd Workshop on Understanding Subjective Properties of Data, Focus on Fashion and Subjective Search, in conjunction with the 2019 International Conference on Computer Vision and Pattern Recognition (CVPR).

8.1.2. Scientific Events: Selection

8.1.2.1. Member of the Conference Program Committees

- Area Chair of the 2019 ACM International Conference on Multimedia (ACM MM).
- Area Chair of the 2019 International Conference on Image Analysis and Processing (ICIAP).

8.1.2.2. Reviewer

Xavier Alameda-Pineda: CVPR 2019, NeurIPS 2019, ICCV 2019, ACII 2019, ICLR 2019, ICML 2019, ICIP 2019.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

Xavier Alameda-Pineda is Associated Editor of the ACM Transactions on Multimedia Computing Communications and Applications

8.1.3.2. Reviewer - Reviewing Activities

Xavier Alameda-Pineda: TPAMI, TASLP, TMM.

8.1.4. Invited Talks

Xavier Alameda-Pineda:

- Significancy & Robustness in Deep Regression (July 2019) at University of Trento
- Probabilistic and deep methods for human behavior understanding (July 2019) at Media Integration and Communication Center

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : Xavier Alameda-Pineda, Fundamentals of Probabilistic Data Mining, 18h, M2, UGA, France.

Master : Xavier Alameda-Pineda, Category Learning and Object Recognition, 11h, M2, UGA, France.

Master : Xavier Alameda-Pineda, Advanced Learning Models, 13.5h, M2, UGA, France.

8.2.2. Supervision

PhD: Yutong Ban, Audio-visual multiple-speaker tracking for robot perception [36], Université Grenoble Alpes, May 2019, Xavier Alameda-Pineda and Radu Horaud,

PhD in progress: Guillaume Delorme, Deep Person Re-identification, October 2017, Xavier Alameda-Pineda and Radu Horaud,

PhD in progress: Yihong Xu, Deep Multiple-person Tracking, October 2018, Xavier Alameda-Pineda and Radu Horaud,

PhD in progress: Wen Guo, Deep Human Pose, October 2019, Xavier Alameda-Pineda and Radu Horaud,

PhD in progress: Anand Ballou, Deep Reinforcement Learning for Robot Control, November 2019, Xavier Alameda-Pineda and Radu Horaud,

PhD in progress: Louis Airale, Data Generation for Deep Multimodal Interaction Algorithms, October 2019, Xavier Alameda-Pineda and Dominique Vaufreydaz,

PhD in progress: Xiaoyu Bie, Deep Generative Methods for Audio and Vision, December 2019, Xavier Alameda-Pineda and Laurent Girin.

8.2.3. Juries

Xavier Alameda-Pineda belonged to the following PhD Juries as "examinateur":

- Yutong Ban (University Grenoble-Alpes)
- Irtiza Hasan (University of Verona)
- Theodoros Tsesmelis (University of Verona)

PERVASIVE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. Member of the Organizing Committees

Eric Castelli Co-organised the workshop BREVES (Vietnam, France Belgique), in Hanoi the 5 and 6 november 2019

Sabine Coquilart served as co-chair of the Paper Award committee for IEEE VR 2019 - IEEE Virtual Reality Conference

Sabine Coquilart served as co-chair of the Paper Award committee for SUI 2019 - ACM Spatial User Interaction

James Crowley served as Chairman of the Awards committee for ACM ICMI 2019 - International Conference on Multimodal Interaction.

Eric Castelli served as "board member" of the international conference series SLTU'xx (Spoken Language Technologies for Under-resourced languages)

9.1.1.2. Member of the Conference Program Committees

Sabine Coquilart served on the conference program committee for

- AIVR 2019 - International Conference on Artificial Intelligence and Virtual Reality
- CENTRIC 2019 - The Twelfth International Conference on Advances in Human-oriented and Personalized Mechanisms, Technologies, and Services
- GRAPP 2019 - International Conference on Computer Graphics Theory and Applications
- ICGI 2019 - International Conference on Graphics and Interaction
- ISVC 2019 - International Symposium on Visual Computing
- VRST 2019 - ACM Symposium on Virtual Reality Software and Technology
- WSCG 2019 - International Conferences in Central Europe on Computer Graphics, Visualization and Computer Vision

9.1.2. Scientific Events: Selection

9.1.2.1. Chair of Conference Program Committees

Sabine Coquilart served as co-chair for the paper selection panel for IEEE VR 2019

Sabine Coquilart served as co-chair for the paper selection panel for SUI 2019

9.1.2.2. Reviewer

Sabine Coquilart reviewed papers IEEE World Haptics 2019

Thierry Fraichard reviewed papers IEEE ICRA 2019

James Crowley served as a reviewer for

- ICCV 2019 - International Conference on Computer Vision
- CVPR 2019 - IEEE Conference on Computer Vision and Pattern Recognition
- AAAI 2020 - Association for the Advancement of Artificial Intelligence
- iCMI 2019 - International Conference on Multimodal Interaction.
- IHM 2019 - Interaction Homme Machine

Eric Castelli served as a reviewer for
- SigTelCom 2019 (Hanoi, Vietnam)
- ICVES 2019 (Cairo, Egypt)
- ISEE2019 (Ho Chi Minh City, Vietnam)
- SPECOM 2019 (Istanbul, Turkey)
- SCS'19 (Kingdom of Bahrain)
- ATC2019 (Hanoi, Vietnam)
- ICMSAO2019 (Bahrain)
- IALP2019 (Taipei, Taiwan)
- SoICT 2019 (Hanoi & HaLong Bay, Vietnam)
- 3ICT'19 (Kingdom of Bahrain)
- NICS 2019 (Hanoi, Vietnam)
- FLAIRS'33 2020 (North Miami Beach, USA)
- ICWMC 2020 (Athens, Greece)
- LREC 2020 (Marseille, France)
- MAPR 2020 (Hanoi, Vietnam)

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Patrick Reignier is a member of the editorial board of the Modeling and Using Context Journal.
Sabine Coquilart is a member of the Scientific Committee of the Journal of Virtual Reality and Broadcasting.

9.1.3.2. Reviewer - Reviewing Activities

Sabine Coquilart reviewed papers for IEEE Transactions on Haptics
Thierry Fraichard reviewed papers for IEEE Trans. Robotics and Automation (TRO)
James Crowley reviewed papers for Communications of the ACM

9.1.4. Invited Talks

James Crowley gave the following invited talks:
- **Artificial Intelligence: a Rupture Technology for Innovation**, invited lecture at Club des DIS, Dirigeants Innovation et Stratégie, Montbonnot, 14 March 2019.
- **Collaborative Intelligent Systems**, invited lecture at Simula Research Institute, Oslo Norway, Montbonnot, 27 September 2019.
- **Artificial Intelligence: a Rupture Technology for Innovation**, AI4EU Web Cafe (webinar), 13 November 2019
- **Artificial Intelligence for Human Computer Interaction**, Keynote lecture at IHM 2019, Grenoble 12 Dec 2019.

Eric Castelli gave the invited talk
- **Multimodal perception and Pervasive spaces for Sociable interaction** International workshop BREVES, USTH, Hanoi, Vietnam, 5 and 6 November 2019.

9.1.5. Leadership within the Scientific Community

Sabine Coquilart is elected member of the EUROGRAPHICS Executive Committee.
Sabine Coquilart is co-chair of the EUROGRAPHICS Working Group and Workshop board.
Sabine Coquilart is co-chair of the Steering Committee for EGVE - Eurographics Working Group on Virtual Environments
James Crowley is a member of the Steering Committee for ICMI - International Conference on Multimodal Interaction.

9.1.6. Scientific Expertise

Patrick Reignier is a member of the Scientific Council of the Amiqual4Home EquipEx.

Thierry Fraichard served as an expert reviewer for the European Commission, the IDEX of Aix-Marseille Université, and the IDEX of Université Grenoble Alpes

9.1.7. Research Administration

Thierry Fraichard is a member of the following Inria committees:

- Research Center Committee (CC), IT Service Committee (CUMI), and Technological Development Committee (CDT).

James Crowley is an elected member of the Conseil d'Administration of the Comue Univ Grenoble Alpes

James Crowley Served on the Bureau (executive committee) of the laboratoire LIG

Patrick Reignier is head of the engineering support group of the Laboratoire d'Informatique de Grenoble (13 members).

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)

9.2. Teaching - Supervision - Juries

Patrick Reignier teaches

- elected member of the Conseil des Etudes et de la Vie Universitaire of Grenoble INP

- nominated as a member of the Conseil de la Formation Continue de Grenoble INP

- co-director of the "formation en apprentissage" of Ensimag (3 years program : 1 year for the Licence and 2 years for the Master)

- Supervises the industrial part of the "formation en apprentissage" of the Ensimag engineering school.

James Crowley and **Dominique Vaufreydaz** co-direct the Graphics - Vision - Robotics Specialisation of the MoSIG M2 Masters.

9.2.1. Teaching

James Crowley teaches

- M2 MoSIG Computer Vision

- ENSIMAG 3 Machine Learning.

- M1 MoSIG Intelligent Systems.

- ENSIMAG 2 Intelligent Systems.

Patrick Reignier teaches

- Projet Genie Logiciel, 55h eqTD, M1, Ensimag/Grenoble INP, France.

- Développement d'applications communicantes, 18h eqTD, M2, Ensimag/Grenoble-INP, France

- Introduction aux applications reparties, 18h eqTD, M2, Ensimag/Grenoble- INP, France

- Applications Web et Mobiles , 27h eqTD, M1, Ensimag/Grenoble-INP, France

- Projet Systeme, 12h eq TD, M1, Ensimag/Grenoble-INP, France

- Projet C, 20h eqTD, L3, Ensimag/Grenoble-INP, France.

Thierry Fraichard, taught Autonomous Robotics, 22.5h eqTD, M2 MOSIG, Univ. Grenoble Alpes.

9.2.2. Supervision

Thierry Fraichard directed the following Doctoral students

- Jose Grimaldo Da Silva Filho, "Human-Robot Motion, a Shared Effort Approach", Octobre 2015, Thierry Fraichard and James Crowley.

- Matteo Ciocca, "Safe Robot Motion", Octobre 2016, Thierry Fraichard and Pierre-Brice Wieber.

James Crowley directed the following Doctoral students

- Nachwa Abou Bakr, "Recognition, Modeling and Description of Manipulation actions "
- Thomas Guntz, "Estimating Expertise from Eye Gaze and Emotions", co-directed with Dominique Vaufreydaz

9.2.3. Juries

Patrick Reignier served as a president of the Doctoral Jury for

- Van Bao Nguyen
- Alessandro Fenicio

James Crowley served as a president of the Doctoral Jury for

- Mathieu Barbier
- David Sierre Gonzalez

9.3. Interventions

Thierry Fraichard participated to the event "A robot on trial", mock trial of a futuristic robot as part of the Transfo digital festival, Jan. 19. This successful event attracted around 200 participants

<h1 style="text-align:center; color:red;">THOTH Project-Team</h1>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

- C. Schmid is a general chair for ECCV 2020, ICCV 2023.

10.1.1.2. Member of the Organizing Committees

- K. Alahari and J. Mairal co-organized the international summer school PAISS 2019.
- J. Mairal is a member of the organizing committee for the international conference SIAM Imaging Science 2020.
- J. Mairal is a co-organizer of the workshop OSL'19 at Les Houches.
- J. Mairal co-organized a discussion session at the Ellis/Dali workshop, San Sebastian, 2019.

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

- K. Alahari: area chair for CVPR 2020, ICCV 2019.
- K. Alahari: senior program committee member for AAAI 2020, IJCAI 2019, IJCAI 2020.
- K. Alahari: doctoral consortium chair for ICCV 2023.
- J. Mairal: area chair for NeurIPS 2019, AISTATS 2020 and ECCV 2020.
- J. Mairal: tutorial chair for CVPR 2022.
- C. Schmid: area chair for ICCV 2019.
- C. Schmid: senior area chair for NeurIPS 2019.
- J. Verbeek: area chair for ICCV 2019.

10.1.2.2. Reviewer

The permanent members, postdocs and senior PhD students of the team reviewed numerous papers for international conferences in artificial intelligence, computer vision and machine learning, including AAAI, AISTATS, CVPR, ICCV, ICML, ICLR, NeurIPS in 2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- K. Alahari: Associate editor of the International Journal of Computer Vision, since 2019.
- K. Alahari: Associate editor for Computer Vision and Image Understanding journal, since 2018.
- J. Mairal: Associate editor of the Journal of Machine Learning Research (JMLR), since 2019.
- 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.
- J. Verbeek: Associate editor International Journal on Computer Vision, 2014-2019.
- J. Verbeek: Associate editor IEEE Transactions Pattern Analysis and Machine Intelligence, since 2018.

10.1.3.2. Reviewer - Reviewing Activities

The permanent members, postdocs and senior PhD students of the team reviewed numerous papers for international journals in computer vision (IJCV, PAMI, CVIU), machine learning (JMLR, Machine Learning). Some of them also review for other reputed journals such as PLOS ONE, SIAM Journal on Optimization, SIAM Imaging Science.

10.1.4. Invited Talks

- K. Alahari: Speaker on the Panel on AI and Mathematics, Knowledge Summit, Lyon, France, 2019.
- K. Alahari: Invited talk, LIAMA workshop, Paris, France, 2019.
- A. Bietti: Invited talk, GIPSA Lab, Grenoble, 2019.
- A. Bietti: Invited talk, UC Berkeley, 2019.
- A. Bietti: Seminar, Microsoft Research AI, Redmond, 2019.
- A. Bietti: Seminar, TTI-Chicago, 2019.
- D. Chen: Machine Learning in Computational Biology (MLCB) workshop on recurrent kernel networks, Vancouver, 2019.
- J. Mairal: Invited talk at the YES workshop, Eindhoven, 2019.
- J. Mairal: Talk in mini-symposium, ICCOPT, Berlin, 2019.
- J. Mairal: Invited talk at the Imaging and Machine Learning conference, IHP, Paris, 2019.
- J. Mairal: Seminar. Centrale Lille, 2019.
- R. Klokov: Invited talk at Christmas Colloquium on Computer Vision, Yandex, Moscow, 2019.
- C. Schmid: Invited speaker at BMVA symposium in Video Understanding, London, September 2019.
- C. Schmid: Keynote speaker at BMVC, Cardiff, UK, September 2019.
- C. Schmid: Keynote speaker at SIGIR, Paris, July 2019.
- C. Schmid: Invited speaker at Computer Vision after 5 Years, in conjunction with CVPR, June 2019.
- C. Schmid: Invited speaker at Tutorial on Unifying Human Activity Understanding, in conjunction with CVPR, June 2019.
- C. Schmid: Invited speaker at Facebook AI Video Summit, June 2019.
- C. Schmid: Keynote speaker at AI Experts Workshop in conjunction with the AI for Good Global Summit, Geneva, May 2019.
- C. Schmid: Invited speaker at Women in Data Science Conference, Zürich, April 2019.
- C. Schmid: Invited speaker at Collège de France seminar (chair of Stephane Mallat), February 2019.
- C. Schmid: Talk at Google EMEA research days, Zurich, December 2019.
- C. Schmid: Talk at Workshop on AI for Robotics, Naver, Grenoble, November 2019.
- C. Schmid: Talk at Workshop, Robotics: A Challenge for the Artificial Intelligence, Toulouse, October 2019.
- C. Schmid: Presentation at PRAIRIE inauguration, Paris, October 2019.
- C. Schmid: Seminar at DeepMind, London, September 2019.
- C. Schmid: Seminar at Intel Network on Intelligent Systems, Munich, September 2019.
- C. Schmid: Seminar at Ellis workshop, September 2019.
- C. Schmid: Seminar at MPI Tübingen, July 2019.
- C. Schmid: Seminar at WILLOW/SIERRA retreat, Marseille, June 2019.
- C. Schmid: Dinner speaker at the workshop "Women in Computer Vision", in conjunction with CVPR'19.
- C. Schmid: Seminar at Google MTV, April 2019.
- C. Schmid: Seminar at ETH Zürich, March 2019.
- J. Verbeek: Invited talk at Breaking the Surface Workshop on maritime robotics and its applications, Biograd na Moru, Croatia, Oct 2019.

- J. Verbeek: Invited talk at Dagstuhl Workshop on Joint Processing of Language and Visual Data for Better Automated Understanding, Germany, Jan 2019.
- D. Wynen: SMILE Reading Group Paris, 2019.

10.1.5. Leadership within the Scientific Community

- J. Mairal, J. Verbeek and C. Schmid became Ellis fellows.
- C. Schmid: Participation in a round table on AI, a technology for innovation, forum 5i, Grenoble, May 2019.
- C. Schmid: Animating several mentorship sessions at Women in Data Science Conference, Zürich, April 2019.
- C. Schmid: Mentor at the Doctoral Consortium, in conjunction with ICCV'19, CVPR'19.
- C. Schmid: Mentor for female PhD students at the workshop "Women in Computer Vision", CVPR'19.

10.1.6. Scientific Expertise

- J. Mairal: Judge for the IBM Watson AI Xprize.
- J. Mairal: Expert for ANR.

10.1.7. Research Administration

- K. Alahari: One of the two referents for Human Resources - Excellence in Research (HRS4R) at Inria Grenoble.
- J. Mairal: Jury member for the Inria starting and advanced research positions.
- C. Schmid: Member of Scientific Advisory Committee of the Helmholtz AI Cooperation Unit, 2020—
- C. Schmid: Member of scientific advisory board for the German Competence Centers for AI Research, 2019—
- J. Verbeek: Member steering committee MinaLogic, innovation cluster for digital technologies based in France's Auvergne-Rhône-Alpes region, 2018-2019.
- J. Verbeek: Scientific correspondent national project calls, Inria Grenoble, 2017-2019.
- J. Verbeek: Member Scientific council Advanced Data Mining axis of Persyval Laboratory of Excellence, Grenoble, 2015-2019.
- J. Verbeek: Member Inria Grenoble working group on HPC - Big Data - Machine learning, 2018-2019.
- J. Verbeek: Member of Inria Commission Administrative Paritaire (advises on matters about individual careers: such as promotions, temporary outsourcing, etc.), 2016-2019.

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: J. Mairal, Large-Scale Optimization for Machine Learning, 9h eqTD, Lecture at OBA summer school, Veroli, 2019.
- Doctorat: J. Mairal, Large-Scale Optimization for Machine Learning, 4.5h eqTD. Invited Tutorial at IEEE Data Science Workshop on Minneapolis, 2019.
- Doctorat: J. Mairal, Large-Scale Optimization for Machine Learning, 4.5h eqTD. Invited Tutorial at the Quantitative BioImaging Conference, Rennes, 2019.

- Doctorat: C. Schmid, Course on action recognition at Data Science Summer School, Paris, June 2019.
- Doctorat: C. Schmid, Course on action recognition at Prairie artificial intelligence summer school (PAISS), 2.25h eqTD, Paris, October 2019.
- Master: K. Alahari, C. Schmid, Object recognition, Master-2 Computer Science, Grenoble University, 15.75h eqTD together, 2019.
- 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: J. Mairal, Advanced Learning Models, 13.5h eqTD, M2, UGA, Grenoble.
- Master: C. Schmid, Object recognition and computer vision, Master-2 MVA, ENS, 9h eqTD, 2019.
- Master: A. Sablayrolles, Fundamentals of Machine Learning, African Masters of Machine Intelligence, Kigali, Rwanda.

10.2.2. Supervision

HDR: Karteek Alahari, Human, Motion and Other Priors for Partially-Supervised Recognition, Univ. Grenoble Alpes, 28/1/2019.

PhD: Alberto Bietti, Foundations of deep convolutional models through kernel methods, Univ. Grenoble Alpes, 27/11/2019, director: Julien Mairal.

PhD: Nikita Dvornik, Learning with Limited Annotated Data for Visual Understanding, Univ. Grenoble Alpes, 26/11/2019, thesis directors: Cordelia Schmid and Julien Mairal.

PhD: Konstantin Shmelkov, Approaches for incremental learning and image generation, Univ. Grenoble Alpes, 29/3/2019, thesis directors: Karteek Alahari and Cordelia Schmid.

10.2.3. Juries

- K. Alahari: External examiner for the PhD thesis of Alessandro di Martino, University of Bath, UK.
- K. Alahari: Examiner for the PhD thesis of Thomas Robert, Sorbonne Université, Paris, France.
- K. Alahari: Examiner for the PhD thesis of D. Khuê Lê-Huu, Université Paris-Saclay, France.
- K. Alahari: Member of comité de suivi for the PhD thesis of Miguel Angel Solinas, Univ. Grenoble-Alpes, France.
- J. Mairal: Reviewer for the PhD thesis of Zhenyu Liao, Université Paris-Saclay.
- J. Mairal: Reviewer for the PhD thesis of Belhal Karimi, Université Paris-Saclay
- J. Mairal: Reviewer for the PhD thesis of Martin Bompaire, Université Paris-Saclay
- J. Mairal: Reviewer for the PhD thesis of Yassine Yaakoubi, Polytechnique Montréal.
- J. Mairal: Examinateur for the PhD thesis of Mathurin Massias, Université Paris-Saclay.
- J. Mairal: Member of comité de suivi for the PhD thesis of Olga Permiakova, Univ. Grenoble Alpes.
- J. Verbeek: Member supervisory commitee for PhD of Riccardo Del Chiaro, 2018-2020, Univ. Florence, Italy.
- J. Verbeek: Member supervisory commitee for PhD of Fabien Baradel, 2017-2019, INSA Lyon, France.
- J. Verbeek: External reviewer for Shell Xu Hu, 2019, Ecole des Ponts, Paris Tech, Univ. Paris Est, Paris, France.
- J. Verbeek: Rapporteur for Hedi Ben Younes, 2019, Sorbonne University, Paris, France.

<p align="center">**TYREX Project-Team**</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events: Organisation

8.1.1.1. General Chair, Scientific Chair

- Angela Bonifati is program chair of EDBT 2020, and co-chair of the Workshops of SIGMOD 2019.

8.1.1.2. 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), and co-chair and organizer of the EDBT 2019 summer school.

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 IJCAI'19, AAAI'20, IJCAI-PRICAI'20.
- A. Bonifati has been program committee member of VLDB 2019, PODS 2019, AAAI 2019, ICDE 2019, EDBT 2019, SIGMOD 2019, DEBS 2019, ICDT 2020.

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.

8.1.4. Scientific Expertise

- P. Genevès has been a scientific expert at ANRT for the CIFRE funding process.

8.1.5. Research Administration

- P. Genevès is responsible for the Computer Science Specialty at the Doctoral School MSTII (ED 217)
- C. Roisin is a member of the CNU (Conseil National des Universités).
- C. Roisin is a member of the Inria Grenoble Inria-Hub committee.
- C. Roisin has been president of a Committee of Selection for an assistant position at university Grenoble-Alpes.
- 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-Rhône-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
- Master : N. Gesbert, 'Principes des systèmes de gestion de bases de données', 42 h eq TD, M1, 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
- Master : N. Gesbert, 'Introduction to lambda-calculus', 5 h eq TD, M2, UGA-Grenoble INP (MOSIG)
- 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 M2-level course 'Semantic Web: from XML to OWL' of the MOSIG program at UGA (36h)
- P. Genevès is responsible and teacher in 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 in progress: Muideen Lawal, Cost models for optimizing compilers based on mu-terms, PhD started in October 2017, co-supervised by Pierre Genevès and Nabil Layaïda.
- 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.