



RESEARCH CENTER
Paris - Rocquencourt

FIELD

Activity Report 2015

Section Dissemination

Edition: 2016-03-21

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ANTIQUE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of steering committees

Jérôme Feret is member of the Steering Committee of the international Workshop on Static Analysis and Systems Biology (SASB). Xavier Rival is member of the Steering Committee of the international workshop on Tools for Automatic Program Analysis (TAPAS).

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committees

Xavier Rival is Co-Chair of the Program Committee of the Workshop on State Of the Art Program Analysis (SOAP'16), to be held in Santa Barbara (USA), June 2016. Xavier Rival is the Chair of the Program Committee of the 23rd Static Analysis Symposium (SAS'16), to be held in Edinburgh (UK), September 8–10, 2016.

8.1.2.2. Member of the conference program committees

Jérôme Feret was member of the Program Committee of the 2nd workshop on Verification of Engineered Molecular Devices and Programs (VEMDP'15), of the Program Committee of the 7th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO'15), of the Program Committee of the 6th International Workshop on Static Analysis and Systems Biology (SASB'15), of the Program Committee of the 25th International Symposium on Logic-Based Program Synthesis and Transformation (LOPSTR'15), and of the Program Committee of the 11th International Workshop on Developments in Computational Models (DCM'15). Jérôme Feret is a member of the Program Committee of the 8th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO'16), of the Program Committee of the 23rd Static Analysis Symposium (SAS'16), and of the Program Committee of the 14th International Conference on Computational Methods in Systems Biology (CMSB'16).

Xavier Rival was member of the Extended Review Committee (ERC) of the 41st ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2015 PC), and of the Program Committee of the 13th Asian Programming Languages And Systems (APLAS'15), Pohang, Korea, November 30–December 2, 2015. Xavier Rival is a member of the Program Committee of the 1st International Conference on Functional Structures and Computational Deduction (FSCD'16), to be held in Porto, Portugal, June 2016, and of the Program Committee of the European Symposium On Programming (ESOP'17), 2017.

Cezara Drăgoi was a member of 15th International Conference on Application of Concurrency to System Design (ACSD'15), 41st International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM'15), and 17th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNACS'15).

Vincent Danos was a member of the Program Committee of workshop on Integrative Cell Models, Lorentz Workshop, Leiden, and of the 7th Conference on Reversible Computation (RC'15), Grenoble.

8.1.2.3. Reviewer

Jérôme Feret was a reviewer for the 41st ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2015), the 18th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS'15), POPL 2015, the 27th International Conference on Computer Aided Verification (CAV'15), for the 26th International Conference on Concurrency Theory (CONCUR 2015), the International Conference on Embedded Software (EMSOFT'15).

Cezara Drăgoi was a reviewer for 27th International Conference on Computer Aided Verification (CAV'15), 22nd International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'16), and 30th Annual ACM/IEEE Symposium on Logic In Computer Science (LICS'15).

8.1.3. Journal

8.1.3.1. Member of the editorial boards

Jérôme Feret is a member of the editorial board of the [Frontiers in Genetics](#) journal and the [Open Journal of Modeling and Simulation](#).

Vincent Danos is a member of the editorial board of [Mathematical Structures in Computer Science](#) journal (MSCS) and [Logical Methods in Computer Science](#) journal (LMCS).

8.1.3.2. Reviewer - Reviewing activities

Jérôme Feret was a reviewer for Information and Computation, Theoretical Computer Science, and Science of Computer Programming.

Xavier Rival was a reviewer for ACM TOPLAS (Transactions On Programming Languages and Systems).

8.1.4. Invited talks

Jérôme Feret was invited to give a talk on “the ANASTASEC project” at a joint meeting between Inria and CISCO, on “Model reduction of differential systems” at the working group “Model Reduction of Discrete models” (GDT BIOSS), at “La demi-heure de science” (Inria Paris-Rocquencourt), and at the Seminar of the Computer Science Department of the École normale supérieure, on “An algebraic approach for inferring and using symmetries in rule-based models” at the Seminar of the team PLUME (ENS Lyon).

Jérôme Feret was invited to give a speed talk on the ÁSTRÉE analyzer at the joint workshop between École normale supérieure and SAGEM, a speed talk on rule-based modeling in the international workshop on “Integrative Cell Models” (Leiden, Netherlands) and at the joint seminar between École normale supérieure and Pasteur Institute, and a speed talk on “An algebraic approach for inferring and using symmetries in rule-based models” at the first meeting of the Working group on Symbolic Systems Biology (GDT BIOSS).

Xavier Rival was invited to give a talk on “Modular design of static analyzers for program verification” at the KAIST Colloquium (KAIST, Daejeon, Korea), on May 4th, 2015.

Xavier Rival participated to the 56th Meeting of the IFIP Working Group 2.4 in Bopphard (Germany), and gave a talk on “Non contiguous array abstraction”.

Xavier Rival was invited to give a talk on “Construction of abstract domains for heterogeneous memory properties” in October 2015.

Cezara Drăgoi gave an invited talk on “PSync: A partially synchronous language for fault-tolerant distributed algorithms” at Dagstuhl Seminar 15191, “Compositional Verification Methods for Next-Generation Concurrency”, in May 2015, at LIAFA, University Paris 7 in the Verification seminar, and at the workshop on “The Chemistry of Concurrent and Distributed Programming II”, in June 2015.

Cezara Drăgoi gave an invited talk on “A Logic-based Framework for Verifying Consensus Algorithms” at Dagstuhl Seminar 15451 “Verification of Evolving Graph Structures”.

Cezara Drăgoi gave a tutorial on “Static analysis for data structures” at DACS in July 2015, and an invited talk at “La demi-heure de la science” on “Logic-based static analysis for the verification of programs with dynamically allocated data structures”.

Vincent Danos was invited to talk about “Computational Systems Biology” at Alan Turing Institute Scoping Workshop on networks, London, on Dec 14th, 2015.

Vincent Danos was invited to talk about “Design, optimization, and control in systems and synthetic biology” at Paris, ENS, on Nov 12th 2015.

Vincent Danos was invited to talk about "Models of growth" and the challenge of modelling processes which are embedded in a bigger adaptive system, keynote at the 16th International Workshop on Static Analysis and Systems Biology (SASB'15).

Vincent Danos was invited to talk about "Moment Semantics for Reversible Rule-Based Systems", keynote at 7th Conference on Reversible Computation (RC'15), Grenoble.

8.1.5. Leadership within the scientific community

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

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence:

- Jérôme Feret, and Cezara Drăgoi, Mathematics, 40h, L1, FDV Bachelor program (Frontiers in Life Sciences (FdV)), Université Paris-Descartes, France.
- Antoine Miné and Xavier Rival, Semantics and applications to verification, 48h ETD, L3, École Normale Supérieure, Paris, France.
- Xavier Rival, Introduction to static analysis, 8h, L3, École des Mines de Paris, Paris, France.
- Xavier Rival, Introduction to algorithmics, 40h ETD, L3, École Polytechnique, Palaiseau, France.

Master:

- Vincent Danos and Jérôme Feret (with Jean Krivine), Computational Biology, 24h, M1. Interdisciplinary Approaches to Life Science (AIV), Master Program, Université Paris-Descartes, France.
- Cezara Drăgoi, Jérôme Feret, Antoine Miné, and Xavier Rival, Abstract Interpretation: application to verification and static analysis, 72h ETD, M2. Parisian Master of Research in Computer Science (MPRI). École normale supérieure. France.
- Xavier Rival, Introduction to abstract interpretation, 8h, M1-M2, KAIST, Daejeon, Korea.
- Xavier Rival, Experimental Course on "Program Verification", 20h ETD, M1, École Polytechnique, Palaiseau, France.
- Xavier Rival, Protocol safety and verification 20h ETD, M2 program in Advanced Communications and Network (École Polytechnique and Telecom Paris), France.
- Jérôme Feret has been invited to give a session (2h) in the Master M2IF (ÉNS Lyon) in the context of Russ Harmer's course on Rule-based modelling.

8.2.2. Supervision

PhD:

- Arlen Cox, Parametric heap abstraction for dynamic languages libraries, École Normale Supérieure, 13th of April 2015, supervised jointly by Bor-Yuh Evan Chang (University of Colorado), Xavier Rival (Inria / École Normale Supérieure) and Sriram Sankaranarayanan (University of Colorado).
- Caterina Urban, Static analysis by abstract interpretation of functional temporal properties of programs, École Normale Supérieure, 29th of July 2015, supervised by Antoine Miné (CNRS / École Normale Supérieure) and Radhia Cousot (CNRS / École Normale Supérieure).
- Tie Cheng, Static analysis of spreadsheet applications, École Normale Supérieure, 23rd of September 2015, supervised by Xavier Rival (Inria / École Normale Supérieure).

PhD in progress:

- Mehdi Bouaziz, Static analysis of security properties by abstract interpretation, November 2011, Patrick Cousot and Jérôme Feret, École Normale Supérieure.
- Ferdinanda Camporesi, Abstraction of Quantitative Semantics of Rule-based models, January 2009, Radhia Cousot and Jérôme Feret (co-directed thesis with Maurizio Gabrielli, University of Bologna).
- Hugo Illous, Verification of memory properties by abstract interpretation, October 2015, Xavier Rival (co-directed thesis with Mathieu Lemerre, CEA Saclay).
- Huisong Li, Static Analysis of Data-Structures with Sharing, November 2014, Xavier Rival, École Normale Supérieure
- Jiangchao Liu, Verification of the memory safety of a micro-kernel, December 2013, Xavier Rival, École Normale Supérieure
- Antoine Toubhans, Combination of shape abstract domains, October 2011, Xavier Rival, École Doctorale de Paris Centre
- Thibault Suzanne, Thread-modular static analysis of concurrent programs in the presence of weak memory models, October 2014, Antoine Miné, École Normale Supérieure.
- Guillaume Terradot, "Modeles de croissance bacterienne/determinants de la taille", started in 2015, Vincent Danos, École Normale Supérieure.
- William Waites, "Strategie evolutionnaire dans des tissus avec interactions mecaniques" started in 2015, Vincent Danos, École Normale Supérieure.
- Andreea Beica, "Approximations max-paralleles de modeles stochastiques", started in 2015, Vincent Danos, École Normale Supérieure.

Internships:

- Eleonore Bellot did an internship at ENS with Vincent Danos on "Modeles energetiques de la cellule".
- Xavier Zaoui did an internship at ENS with Vincent Danos on "Croissance bacterienne et interferences entre antibiotiques".
- Danae David did an internship at ENS with Vincent Danos on "Representation des connaissances en biochimie des voies de signalisation".
- Ihab Boulas did an internship at ENS with Vincent Danos on "Modeles de transmission de plasmides "editeurs".

8.2.3. Juries

Jérôme Feret was reviewer of the PhD thesis of Peter Kreyßig (Friedrich-Schiller-Universität Jena, Germany, March 2015).

Jérôme Feret was examiner of the PhD thesis of Mounir Assaf (Irisa, France, May 2015).

Vincent Danos was referee on the phd thesis of Erwan Bigan, Universite Paris-Diderot, and referee on the phd thesis of Vincent Picard, Universite de Rennes 2.

8.2.4. Selection committees

Jérôme Feret was a member of the recruiting jury for junior research scientists (CR2) at Inria Paris-Rocquencourt in 2015; Jérôme Feret is a member of the recruitment committee for an assistant professor in Paris-Diderot University 2016.

AOSTE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- Liliana Cucu: Dagstuhl seminar on Mixed Criticality Systems
- Robert Davis: Dagstuhl seminar on Mixed Criticality Systems

10.1.2. Scientific events selection

10.1.2.1. Chair of conference program committees

- Liliana Cucu: RTNS2015, WMC2015
- Robert Davis: RTAS2016, WMC2015

10.1.2.2. Member of the conference program committees

- Robert de Simone: EmSoft'2015, FDL'2015, Memocode'2015.
- Yves Sorel: RTNS 2015, DASIP 2015, EMSOFT 2015.
- Frédéric Mallet: DATE'2015, MoDELS'2015, MSR'2015, ESLsyn'2015, ICTERI'2015, FDL'2015
- Julien Deantoni: DAC'2015, MiSE'2015, GEMOC'2015
- Liliana Cucu: RTAS2015, ETFA2015, SIES2015, MISTA2015, DATE2015 and MAPSP2015
- Dumitru Potop Butucaru: RTNS 2015, LCTES 2015, ESLSyn 2015
- Adriana Gogonel: ACM RACS2015, RTNS2015 and WMC2015
- Dorin Maxim: DATE2015 and RTNS2015

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Yves Sorel: Traitement du Signal Journal, Real-Time System Journal

10.1.4. Invited talks

- Frédéric Mallet: International Summer School on Methods and Tools for the Design of Digital Systems, Bremen
- Liliana Cucu: VECOS2015

10.1.5. Scientific expertise

- Yves Sorel: Steering Committees of the System Design and Development Tools Group of Systematic Paris-Region Cluster, and of the Technologies and Tools Program of SystemX Institute for Technological Research
- Robert de Simone: Board of Administrators of CIM-France Design Platform.

10.1.6. Research administration

- Robert de Simone is member of the Board of the UNS Doctoral School EDSTIC.
- Liliana Cucu is member of Inria Evaluation Commission.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Robert de Simone, Models of Computation for Networks-on-Chips (MoCs for NoCs), 36h, M2 International, UNS.

Master: Robert de Simone, Functional and Temporal Correctness, 36h, M1 International, UNS.

Master: Optimization of distributed real-time embedded systems, 24H, M2, University of Paris Sud

Master: Distributed real-time systems, 26H, M2, University of Paris Est

Master: Specification and formal models for embedded systems, 28H, M2, ENSTA Engineering School Paris

Master: Correct by construction design of reactive systems, 18H, M2, ESIEE Engineering School, Noisy-Le-Grand

Master : Julien Deantoni, Systèmes embarqués et Ambient, 10h, M2, Polytech'Nice, France.

Master : Julien Deantoni, Langage C++, 88h, M1, Polytech'Nice, France.

Master : Julien Deantoni, Ingénierie Dirigée par les modèles par la pratique, 24h, M2, Polytech'Nice, France.

Master: Dumitru Potop Butucaru, Une approche synchrone des systèmes embarqués temps réel, 12h, M1, EPITA Paris

Master: Dumitru Potop Butucaru and Thomas Carle, L'approche synchrone de la construction des systèmes embarqués temps réel, 12h, M2, Polytech Paris UPMC.

Licence: Laurent George, Java and Shell programming 48h, L1, IUT RT UPEC, France

Master: Laurent George, Distributed Real-Time Systems, 24h, M2, UPEC, France

Licence : Marie-Agnes Peraldi-Frati, Algorithms and programming 60h, L1, UNS Institute of technology.

Licence : Marie-Agnes Peraldi-Frati, System and Networks administration 80h, L2, UNS Institute of technology .

Licence : Marie-Agnes Peraldi-Frati, Web Programming 50 h, L2, UNS Institute of technology.

Licence: Frédéric Mallet, Conception Orientée Objet, 45h, L3, UNS.

Licence: Frédéric Mallet, Programmation Orientée Objet, 45h, L3, UNS.

Master: Frédéric Mallet, Programmation Avancée et Design Patterns, 45h, M1, UNS.

Master: Frédéric Mallet, Vérification temporelle et fonctionnelle, 24h, M1, UNS.

Master: Frédéric Mallet, Model-Driven Engineering, 24h, M1, UNS.

Master: Liliana Cucu, Distributed Databases, 56h, U. Dunarea de Jos, Romania

Master: Dumitru Potop Butucaru, Une approche synchrone des systèmes embarqués temps réel, 12h, M1, EPITA Paris

10.2.2. Supervision

PhD: Mohamed Bergach, *Adaptation of the Fast Fourier Transform processing on hybrid integrated CPU/GPU architecture*, UNS, defended October 2015.

PhD in progress: Matias Vara-Larsen, *Toward a formal and hierarchical timed model for concurrent heterogeneous model*, UNS, started November 2012, supervised by Frédéric Mallet, co-supervised by Julien Deantoni.

PhD in progress: Ameni Khecharem, *High-Level modeling of hierarchical power management policies in SoCs*, UNS, started October 2012, supervised by Robert de Simone.

PhD in progress: Emilien Kofman, *Conception Haut Niveau Low Power d'objets mobiles communicants*, UNS, started Oct 2013, supervised by Robert de Simone, co-supervised by François Verdier (UMR CNRS/UNS LEAT).

PhD in progress: Amin Oueslati, *Modélisation conjointe d'applications et d'architectures parallèles embarqués en pratique*, UNS, started Jan 2014, supervised by Robert de Simone

PhD in progress: Yuanrui Zhang, ECNU-SEI/China, started Sep 2015, co-supervised by Frederic Mallet (joint supervision with Pr. Chen Yixiang(ECNU).

PhD in progress: Cristian Maxim, *End to end constraints using probabilistic approaches*, UPMC, started on March 2014, supervised by Liliana Cucu

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

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

PhD in progress: Keryan Didier, *Formal certification of real-time implementations*, Université Pierre et Marie Curie/EDITE, started November 2015, supervised by Dumitru Potop Butucaru.

10.2.3. Juries

Robert de Simone: reviewer of Adrien Guatto (ENS Ulm), examiner of Andrea Enrici (Mines-Telecom Paris).

Frederic Mallet: reviewer of Judith Peters (U. Bremen, Germany), examiner (president) of Damian Vicino (Carleton University/U. Nice Sophia Antipolis).

Julien Deantoni: reviewer of Erwan Bousse (IRISA, University of Rennes)

Liliana Cucu: reviewer of Antoine Bertout (LIFL, November 2015)

Dumitru Potop Butucaru: examiner of José Echeveste (Université Pierre et Marie Curie/EDITE).

CASCADE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Organisation of Events

- a weekly seminar is organized: <http://www.di.ens.fr/CryptoSeminaire.html>
- monthly working group on lattices, joint with ENS Lyon
- Organization of the *Summer School on Mathematical and Practical Aspects of Fully Homomorphic Encryption and Multi-Linear Maps* at IHP, Paris, in October 2015 (supported by CryptoAction, SAFEcrypto, CryptoCloud, and aSCEND)

8.1.1.2. Steering Committees of International Conferences

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

8.1.1.3. Other Steering Committees

- steering committee of the Coding and Cryptography working group (GT-C2 - <https://crypto.di.ens.fr/c2:main>) of the *Groupe de Recherche Informatique Mathématique* (GDR-IM): Damien Vergnaud serves on the committee and has even been elected as the Head of this steering committee

8.1.1.4. Board of International Organisations

- Board of the *International Association for Cryptologic Research* (IACR): Michel Abdalla (2013 – 2018), David Pointcheval (2008–2016)

8.1.2. Scientific Events Selection

8.1.2.1. Program Committee Member

- PKC 2015 – March 30 - April 1 (Maryland, USA): Michel Abdalla
- CT-RSA – 20-25 April (San Francisco, California, USA): David Pointcheval
- Eurocrypt – 26-30 April (Sofia, Bulgaria): David Pointcheval
- ACNS – 2-5 June (New-York, USA): David Pointcheval
- CRYPTO – 16-20 Aug (Santa Barbara, California, USA): Michel Abdalla
- LATINCRYPT – 23-26 Aug (Guadalajara, Mexico): Michel Abdalla
- IWSEC – 26-28 Aug (Nara, Japan): Damien Vergnaud
- FOCS – 18-20 Oct (Berkeley, California, USA): Hoeteck Wee
- ProvSec – 24-26 Nov (Kanazawa, Japan): Michel Abdalla, Damien Vergnaud

8.1.2.2. Funding Panel and Committee Member

- ANR – Scientific Evaluation Panel « Global Security and Cybersecurity »: Damien Vergnaud

8.1.3. Editorial Boards of Journals

Editor-in-Chief

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

Associate Editor

- of *Security and Communication Networks*: David Naccache (editor)
- of *Journal of Cryptographic Engineering*: David Naccache (editor)
- of *Computers & Security* – Elsevier: David Naccache
- of *IEEE Transactions on Information Forensics and Security*: Michel Abdalla
- of *IET Information Security*: Michel Abdalla
- of *ETRI Journal*: Michel Abdalla

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master: David Pointcheval, Jacques Stern, Damien Vergnaud, Introduction to Cryptology, M1, ENS
- Master: Michel Abdalla, David Pointcheval, Vadim Lyubashevsky, Cryptography, M2, MPRI
- Master: Damien Vergnaud, Advanced Algebra and Applications to Cryptography, Ecole Centrale Paris
- Master: David Pointcheval, Cryptography, M2, ESIEA

8.2.2. Supervision

- PhD: Sylvain Ruhault, Security Analysis of Pseudo Random Generators, ENS, June 30th, 2015, David Pointcheval & Damien Vergnaud
- PhD: Olivier Sanders, Conception et Optimisation de Mécanismes Cryptographiques Anonymes, ENS, September 24th, 2015, David Pointcheval
- PhD: Sonia Belaïd, Security of Cryptosystems Against Power-Analysis Attacks, ENS, October 22nd, 2015, Michel Abdalla
- PhD: Thomas Prest, Gaussian Sampling in Lattice-Based Cryptography, ENS, December 8th, 2015, Vadim Lyubashevsky
- PhD: Diana Maimut*, Authentication and Encryption Protocols: Design, Attacks and Algorithmic Improvements, ENS, December 11th, 2015, David Naccache
- PhD in progress: Fabrice Ben Hamouda, Leakage of information in cryptography, from 2012, Michel Abdalla & David Pointcheval
- PhD in progress: Jérémie Clément*, Lightweight cryptography, from 2013, David Naccache
- PhD in progress: Simon Cogliani*, Authenticated Encryption, from 2013, David Naccache
- PhD in progress: Mario Cornejo, Security for the cloud, from 2013, Michel Abdalla
- PhD in progress: Houda Ferradi*, Biometric protocols and mobile security, from 2013, David Naccache
- PhD in progress: Alain Passelègue, Security against related-key attacks, from 2013, Michel Abdalla
- PhD in progress: Adrian Thillard, Counter-measures against side-channel attacks and secure multi-party computation, from 2013, Damien Vergnaud
- PhD in progress: Raphael Bost, Symmetric Searchable Encryption, from 2014, David Pointcheval
- PhD in progress: Florian Bourse, Encryption Schemes for the Cloud, from 2014, Michel Abdalla & David Pointcheval
- PhD in progress: Geoffroy Couteau, Efficient secure two-party computation for the Cloud, from 2014, David Pointcheval & Hoeteck Wee

- PhD in progress: Rafael Del Pino, Lattice-Based Cryptography – Complexity and Ideal-Lattices, from 2014, Vadim Lyubashevsky
- PhD in progress: Rémi Géraud*, Provable security in public-key cryptography, from 2014, David Naccache
- PhD in progress: Pierrick Meaux, Lattice-Based Cryptography – Advanced Features, from 2014, Vadim Lyubashevsky
- PhD in progress: Thierry Mefenza Nountu, Number-Theoretic Study of Pseudorandom Cryptographic Primitives, from 2014, Damien Vergnaud
- PhD in progress: Pierre-Alain Dupont, Secure Communications, from 2015, David Pointcheval
- PhD in progress: Romain Gay, Functional Encryption, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Dahmun Gourdazi, Secure and Fast Cryptographic Implementation for Embedded Devices, from 2015, Damien Vergnaud
- PhD in progress: Louiza Khati, Disk Encryption Modes, from 2015, Damien Vergnaud
- PhD in progress: Michele Minelli, Increased efficiency and functionality through lattice-based cryptography, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Anca Nitulescu, Verifiable Outsourced Computations, from 2015, David Pointcheval
- PhD in progress: Razvan Rosie, Practical Functional Encryption Schemes For the Cloud, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Quentin Santos, Advanced Cryptography from a Blockchain, from 2015, David Pointcheval

* Since David Naccache left the team, these students also moved in his new Security team.

8.2.3. *Juries*

- HdR Benoît Libert. *Applications of Structure-Preserving Cryptography and Pairing-Based NIZK Proofs* – ENS Lyon – France, April 29th, 2015: David Pointcheval (reviewer)
- PhD Sylvain Ruhault. *Security Analysis of Pseudo Random Generators* – ENS – France, June 30th, 2015: David Pointcheval & Damien Vergnaud (supervisors)
- PhD Olivier Sanders. *Conception et Optimisation de Mécanismes Cryptographiques Anonymes* – ENS – France, September 24th, 2015: David Pointcheval (supervisor), Michel Abdalla
- PhD Sonia Belaïd. *Security of Cryptosystems Against Power-Analysis Attacks* – ENS – France, October 22nd, 2015: Michel Abdalla (supervisor)
- PhD Thomas Prest. *Gaussian Sampling in Lattice-Based Cryptography* – ENS – France, December 8th, 2015: Vadim Lyubashevsky (supervisor), David Pointcheval
- PhD Diana Maimut. *Authentication and Encryption Protocols: Design, Attacks and Algorithmic Improvements* – ENS – France, December 11th, 2015: David Naccache (supervisor), David Pointcheval
- PhD Bastien Vialla. *Contributions to Exact Linear Algebra over Finite Fields and Homomorphic Encryption* – Montpellier – France, December 14th, 2015: Damien Vergnaud (reviewer)

CRYPT Team

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific events selection

6.1.1.1. Reviewer

The members of the team reviewed numerous papers for numerous international conferences.

6.1.2. Journal

6.1.2.1. Member of the editorial boards

- Advances in Mathematics of Communications: Xiaoyun Wang
- Journal of Cryptology: Phong Nguyen and Xiaoyun Wang
- Journal of Mathematical Cryptology: Phong Nguyen
- Natural Science Review: Xiaoyun Wang

6.1.2.2. Reviewer - Reviewing activities

The members of the team reviewed numerous papers for numerous journals.

6.1.3. Invited talks

Phong Nguyen gave several invited talks:

- [13] at the Workshop on the Mathematics of Lattices and Cybersecurity, at ICERM in the USA.
- at the Workshop on cryptography based on elliptic curves and lattices, organized by Beijing University in China.

6.1.4. Research administration

Phong Nguyen was the European director of LIAMA until Oct. 2015, and is now the French director of JFLI (Japanese-French Laboratory for Informatics).

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

PhD: Phong Nguyen, Advanced Lattice Algorithms, 12h, CAS, China.

6.2.2. Supervision

PhD: Jiangwei Li, Several Computational Problems in Lattice Theory, Tsinghua, June 2015, Xiaoyun Wang

PhD: Dan Ding, y -Sparse Representations of Short Lattice Vectors and Algorithms for the Shortest Vector Problem (SVP) in Lattices, Tsinghua, June 2015, Xiaoyun Wang

PhD: Gengran Hu, On Lattice Theory and Complexity of SVP, CAS, Summer 2015, Yanbin Pan

PhD: Chang Lv, Primality tests, ring class fields and Diophantine equations, CAS, Summer 2015, Yingpu Deng

PhD: Dandan Huang, primality tests for numbers and ideals, CAS, Summer 2015, Yingpu Deng

6.2.3. Juries

PhD: Rina Zeitoun, Algebraic Methods for the Security Analysis of Cryptographic Algorithms Implementations, University Paris 6 (UPMC), July 2015, Phong Nguyen (Jury member)

DEDUCTEAM Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Chair of conference program committees

Gilles Dowek was PC chair of TLCA-RTA.

9.1.1.2. Member of the conference program committees

Gilles Dowek was PC member of CADE, ICTAC and eMoocs.

Guillaume Burel was PC member of PxTP'15 and IWIL'15.

9.1.1.3. Reviewer

Frédéric Blanqui has reviewed papers for TYPES'14 post-proceedings and LICS'15.

Guillaume Burel has reviewed a paper for Tableaux'15.

Olivier Hermant has reviewed papers for Tableaux'15 and CADE-25, a project for ANR (second phase) and pre-projects for ANR (first phase).

9.1.2. Journal

9.1.2.1. Member of the editorial boards

Gilles Dowek is an editor of TCS.

9.1.2.2. Reviewer - Reviewing activities

Frédéric Blanqui reviewed a paper for TCS.

Guillaume Burek reviewed a paper for Formal Aspects of Computing.

Olivier Hermant reviewed a paper for TCS.

9.1.3. Invited talks

Gilles Dowek was invited to DCM and Tools for teaching logic.

9.1.4. Scientific expertise

Gilles Dowek has been a consultant for the Conseil Scientifique des Programmes.

Gilles Dowek is the President of the Scientific board of the Société Informatique de France.

Gilles Dowek is a member of the Commission de réflexion sur l'éthique de la recherche en sciences et technologies du numérique d'Allistène (CERNA).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Pierre Halmagrand, Initiation à la Méthode B, 54 HETD, M2, CNAM.

License: Frédéric Gilbert, Les principes des langages de programmation, 40, L3, Ecole Polytechnique.

License: Raphaël Cauderlier, Introduction aux Bases de Données Relationnelles, 21, L2, UPMC.

License: Raphaël Cauderlier, Projet (Application) : Android, 42, L2, UPMC.

License: Raphaël Cauderlier, Eléments de programmation 1, 58, L1, UPMC.

Licence: Guillaume Burel, Programmation avancée, 25.5 HETD, L3, ENSIIE.

Licence: Guillaume Burel, Logique, 10.5 HETD, L3, ENSIIE.

Licence: Guillaume Burel, Projet informatique, 22.75 HETD, L3, ENSIIE.

Master: Guillaume Burel, Systèmes et langages formels, 8.75 HETD, M1, ENSIIE.

Master: Guillaume Burel, Compilation, 24.5 HETD, M1, ENSIIE.

Master: Guillaume Burel, Preuve, Analyse statique, Vérification run-time, 13 HETD, M2 CILS, Paris-Saclay.

Licence: Guillaume Burel is in charge of the 4th and 5th semesters of the engineering degree at ENSIIE, and was responsible for the final engineer internship until September, 2015.

Gilles Dowek has given a course at the MPRI.

Gilles Dowek has been teaching at ENS-Cachan.

Gilles Dowek has given various talks about teaching informatics in primary and secondary education.

Gilles Dowek has participated to several training sessions for high school teachers with La Main à la Pâte.

Licence: Olivier Hermant, Introduction to Programming in Python, 100 HETD, L1-L3, Wesleyan University, USA.

9.2.2. Supervision

PhD: Simon Cruanes, Extending Superposition with Integer Arithmetic, Structural Induction, and Beyond [13], defended at École polytechnique on September the 10th, supervised by Guillaume Burel and Gilles Dowek.

PhD: Bruno Bernardo, An implicit Calculus of Constructions with dependent sums and decidable type inference [12], defended at École polytechnique on September the 18th, supervised by Bruno Barras and Gilles Dowek.

PhD: Ali Assaf, A framework for defining computational higher-order logics [11], defended at École polytechnique on September 28, 2015, supervised by Gilles Dowek and Guillaume Burel.

PhD: Kailiang Ji, Model Checking and Theorem Proving [14], defended at Paris Diderot on September 25, 2015, supervised by Gilles Dowek.

PhD: Ronan Saillard, Typechecking in the $\lambda\Pi$ -Calculus Modulo: Theory and Practice [55], defended at MINES ParisTech on September 25, 2015, supervised by Olivier Hermant and Pierre Jouvelot.

PhD in progress: Guillaume Bury, Deduction Modulo Theory, started October 1st, 2015, supervised by David Delahaye and Gilles Dowek.

PhD in progress: Raphaël Cauderlier, Object-oriented mechanisms for interoperability of proof systems, started September 1st, 2013, supervised by Catherine Dubois.

9.2.3. Juries

Gilles Dowek is a member of the prix Le Monde de la Recherche Universitaire.

9.3. Popularization

Gilles Dowek has given various popular science talks.

Gilles Dowek writes a monthly chronicle in Pour la Science.

Gilles Dowek is a member of the Scientific board of La Main à la Pâte.

GALLIUM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of organizing committees

Didier Rémy is a member of the steering committees of the OCaml workshop and the ML Family workshop.

10.1.2. Scientific events selection

10.1.2.1. Chair of conference program committees

Arthur Charguéraud served as program committee chair for for the second International Workshop on Coq for Programming Languages (CoqPL 2016).

Damien Doligez served as program committee chair for the OCaml Users and Developers workshop (OUD 2015).

10.1.2.2. Member of conference program committees

Umut Acar was a member of the program committees of the 30th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2016) and of the workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR 2016). He was also a member of the External Review Committee of the 43rd ACM Symposium on Principles of Programming Languages (POPL 2016).

Xavier Leroy was a member of the program committees of the 1st Summit on Advances in Programming Languages (SNAPL 2015) and of the Compiler Construction conference (CC 2016).

Xavier Leroy was a member of the award committee for the 2015 ACM SIGPLAN Software System award.

Mike Rainey was a member of the program committee of the International Conference on Functional Programming (ICFP 2015).

Arthur Charguéraud and Didier Rémy were members of the program committee of the European Symposium on Programming Languages (ESOP 2016).

10.1.2.3. Reviewer

In 2015, the members of Gallium reviewed at least 80 conference submissions.

10.1.3. Journal

10.1.3.1. Member of editorial boards

Xavier Leroy is area editor (programming languages) for the Journal of the ACM. He is on the editorial board for the Research Highlights column of Communications of the ACM. He is a member of the editorial board of the Journal of Automated Reasoning.

François Pottier is a member of the editorial board of the Journal of Functional Programming.

10.1.3.2. Reviewer

In 2015, the members of Gallium reviewed at least 4 journal submissions and 10 grant proposals.

10.1.4. Leadership within the scientific community

Pierre Courtieu and Xavier Leroy are members of the Coq steering committee.

10.1.5. Research administration

Xavier Leroy is *délégué scientifique adjoint* of Inria Paris-Rocquencourt and an appointed member of Inria's *Commission d'Évaluation*. In 2015, he participated in the following Inria hiring and promotion committees: *jury d'admissibilité CR2 Paris-Rocquencourt* (vice-chair); *jury d'admissibilité CR2 Nancy*; and *promotions CRI*. He was a member of the hiring committee for a professor position at ENS Rennes.

Luc Maranget is an elected member of the *Comité Technique Inria*.

Luc Maranget chairs the *Commission des utilisateurs des moyens informatiques – Recherche* of Inria Paris-Rocquencourt.

François Pottier is a member of the *Commission de Développement Technologique* and (as of January 2016) chairs the *Comité de Suivi Doctoral* of Inria Paris.

Didier Rémy represents Inria in the *commission des études* of the MPRI master, co-organized by U. Paris Diderot, ENS Cachan, ENS Paris, and École Polytechnique.

Didier Rémy is Inria's *Deputy Scientific Director* (ADS) in charge of *Algorithmics, Programming, Software and Architecture*.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Xavier Leroy and Didier Rémy, “Functional programming languages”, 45h, M2 (MPRI), Université Paris Diderot, France.

Master: Luc Maranget, “Semantics, languages and algorithms for multi-core programming”, 13.5h, M2 (MPRI), Université Paris Diderot, France.

Licence: François Pottier, “Programmation avancée” (INF441), 20h, L3, École Polytechnique, France.

Master: François Pottier, “Compilation” (INF564), 20h, M1, École Polytechnique, France.

Master: François Pottier, “Programming with permissions in Mezzo”, 4.5h, M2, 15th SFM summer school, Bertinoro, Italy.

Licence: Mike Rainey and Umut Acar, “Theory and practice of parallel computing” (part of a longer course entitled 15-210, “Parallel and Sequential Data Structures and Algorithms”), 9h, L3, Carnegie Mellon University, USA.

10.2.2. Supervision

M2 (Master Pro): Keryan Didier, Université Denis Diderot, supervised by Luc Maranget.

M2 (MPRI): Benjamin Farinier, Université Paris Diderot, supervised by François Pottier.

M2 (MPRI): Armaël Guéneau, ENS Lyon, supervised by Arthur Charguéraud and François Pottier.

PhD in progress: Vitalii Aksenov, “Parallel Dynamic Algorithms”, Université Paris Diderot, since September 2015, supervised by Umut Acar (co-advised with Anatoly Shalyto, ITMO University of Saint Petersburg, Russia).

PhD in progress: Jacques-Henri Jourdan, “Verasco: a formally verified C static analyzer”, Université Paris Diderot, since September 2012, supervised by Xavier Leroy.

PhD in progress: Gabriel Scherer, “Which types have a unique inhabitant?”, Université Paris Diderot, since October 2011, supervised by Didier Rémy.

PhD in progress: Thomas Williams, “Putting Ornaments into practice”, Université Paris Diderot, since September 2014, supervised by Didier Rémy.

10.2.3. Juries

Pierre Courtieu was a member of the Ph.D. jury of Sylvain Dailier, Université d'Orléans, December 2015.

Xavier Leroy was a member of the PhD juries of Tie Cheng, ENS Paris, September 2015; Vincent Laporte, Université Rennes 1, November 2015; and Robbert Krebbers, Radboud University, December 2015.

François Pottier was president of the Ph.D. jury of Bruno Bernardo, École Polytechnique, September 2015.

10.3. Popularization

Jacques-Henri Jourdan is involved in the organization of the Junior Seminar of Inria Paris-Rocquencourt.

Jacques-Henri Jourdan and Fabrice Le Fessant manned a stand at “Salon Culture & Jeux Mathématiques” in Paris.

Fabrice Le Fessant is one of the main organizers of the OCaml Meetup in Paris.

Xavier Leroy gave a popularization talk on critical software and its formal verification at the computer science colloquium of University Pierre et Marie Curie.

Since 2012, the Gallium team has published a research blog at <http://gallium.inria.fr/blog/>, edited by Gabriel Scherer. This blog continued its activity in 2015, with 10 posts from 8 different authors.

MUTANT Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

MuTant team organized the **First Antescofo user Symposium** during **Ircam Forum Workshops** in November 2015 with 6 contributions and over 30 participants.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

Florent Jacquemard has participated in the program committee of the first International Conference on Technologies for Music Notation and Representation (TENOR 2015).

Jean-Louis Giavitto has participated in the program committee of the 41st International Computer Music Conference (ICMC), the ninth IEEE International Conference on Self-Adaptive and Self-Organizing Systems (SASO), the International Workshop on Nature Inspired Cooperative Strategies for Optimization (NICSO), the 13th European Conference on Artificial Life (ECAL), the Digital Entertainment Technologies and Arts (DETA track at GECCO 2015, 10th International Conference on Information Processing in Cells and Tissues IPCAT, and TENOR 2015. He organized jointly with Gérard Berry the Réunion de l'inter-section des applications des sciences on "Informatique et Musique".

9.1.2.2. Reviewer

The members of the team participated as reviewers for IEEE ICASSP, ACM Multimedia Conferences, Sound and Music Computing, International Computer Music Conference (ICMC), Digital Audio Effects Conference (DAFx), IEEE Symposium on Logic In Computer Science (LICS), International Conference on Automated Deduction (CADE), Conference on Concurrency Theory (Concur), Computer Science Logic (CSL), Conference on Rewriting Techniques and Applications (RTA). and more.

9.1.3. Journal

9.1.3.1. Member of the editorial boards

Jean-Louis Giavitto is the redactor-in-chief of TSI (Technique et Science Informatiques) published by Lavoisier. He has coorganizd with Antoine Spicher (Univ. Paris Est), Stefan Dulman (Univ. Twente) and Mirko Viroli (Univ. of Milano) a special issue of *The Knowledge Engineering Review* on Spatial Computing. This issue is finalized and will be printed in 2016.

9.1.3.2. Reviewer - Reviewing activities

The of the team participated as reviewers for the journal Information and Computation, ACM TOPLAS, IEEE Transactions on Multimedia, IEEE Transactions on Audio and Speech Signal Processing, and ACM Transactions on Intelligent Systems.

9.1.4. Invited talks

Jean-Louis Giavitto was invited to give the annual seminar of the Decanat des Science, Université de Namur (mai 2015) as well as at the International workshop *Mathemusical Conversations: mathematics and computation in performance and composition* jointly hosted by the Yong Siew Toh Conservatory of Music and the Institute for Mathematical Sciences in Singapore, in collaboration with the Center for Digital Music, Queen Mary University of London

9.1.5. Leadership within the scientific community

Arshia Cont is an elected board member of **International Computer Music Association (ICMA)** in charge of organizing the annual ICMC Conference and promoting research in the field.

9.1.6. Scientific expertise

Jean-Louis Giavitto is in the management team of the GDR GPL (Genie de la programmation et du logiciel), responsible with Etienne Moreau of the “Languages and Verification” pole of the GDR. He is also an expert for the ANR DEFI program and a reviewer for FET projects for the UC.

9.2. Teaching - Supervision - Juries

9.2.1. Supervision

- PhD defended: José Echeveste, *Accorder le temps de la machine et celui du musicien*, started in october 2011, supervisor: Arshia Cont and Jean-Louis Giavitto.
- PhD in progress: Clément Poncelet, *Formal methods for analyzing human-machine interaction in complex timed scenario*. Started in october 2013, supervisor: Florent Jacquemard.
- PhD in progress: Philippe Cuvillier, *Probabilistic Decoding of strongly-timed events in realtime*, supervisor: Arshia Cont.
- PhD in progress: Julia Blondeau, *Espaces compositionnels et temps multiples : de la relation forme/matériauq (thèse en art)*, supervisor: Jean-Louis Giavitto, co-director Dominique Pradelle (Philosophy, Sorbonne), Started October 2015.
- PhD in progress: Maxim Sirbu, *Online Interaction via Machine Listening*. Supervisors: Arshia Cont (MuTant) and Mathieu Lagrange (IrCyNN), Started October 2015.

9.2.2. Juries

Jean-Louis Giavitto was reviewer of the Habilitation of René Douence (Ecole des Mines de nantes, *Composition non modulaire modulaire*). He was examiners of the PhD thesis of Sergiu Ivanov (University of Paris Est, *Étude de la puissance d’expression et de l’universalité des modèles de calcul inspirés par la biologie*), and the PhD of Simon Martiel (University of Nice, *Approches informatique et mathématique des dynamiques causales de graphes*).

9.3. Popularization

Arshia Cont appeared as expert in **BFM Business TV** special live event on Music and New Technology.

PARKAS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Albert Cohen was the general chair of the 20th ACM Conference on the Principles and Practice of Parallel Computing, PPOPP 2015, San Francisco (ranked A+). 186 participants. Coordination of the three co-located conferences. 700 participants.

Albert Cohen will be the general chair of the ACM Conference on Programming language Design and Implementation, PLDI 2017 conference in Barcelona (ranked A+). 600 participants expected.

9.1.1.2. Member of the organizing committees

Albert Cohen is in the steering committee of CC 2016, now separated from ETAPS. The number of submissions doubled after the renovation of the conference organization.

Albert Cohen is the sponsor chair of HiPEAC 2015 and 2016.

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

- Albert Cohen was program chair of the ARCS 2015 conference:
<http://arcs2014.itl.uni-luebeck.de>

9.1.2.2. Member of the conference program committees

- Timothy Bourke was a member of the PC of EMSOFT 2015, Modelica 2015, and RTAS 2016.
- Albert Cohen was a member of the PC of PLDI 2016, PACT 2016, 2015; IPDPS 2015; ICPP 2015 and of the ERC of PLDI 2015 (ranked A+); ASPLOS 2016 (ranked A+); ISCA 2016 (ranked A+);
- Marc Pouzet was a member of the PC of DAC 2015; EOOLT 2015; FLOPS 2015; and two french speaking conferences AFADL 2015 and MSR 2015. Member of the jury for “Prix de these GPL” (PhD thesis award in software engineering).
- Francesco Zappa Nardelli is a member of the PC of POPL 2016 and of the ERC of ECOOP 2015.

9.1.2.3. Reviewer

- Timothy Bourke was a reviewer for DAC 2015 (Design Automation Conference), DATE 2015 (Design, Automation and Test in Europe), ETAPS/FASE 2015 (Fundamental Approaches to Software Engineering), FLOPS 2015 (Symposium on Functional and Logic Programming), JFLA 2015 (Journées Francophones des Langages Applicatifs), and NFM 2015 (NASA Formal Methods Symposium).

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Albert Cohen is an Associate Editor of the ACM Transactions on Architecture and Code Optimization (TACO), since 2013.
- Albert Cohen is on the editorial board of the Int. Journal on Parallel Programming (IJPP, Springer), since 2011.

9.1.4. Invited talks

- February, T. Bourke presented “Exploiting and extending synchronous languages for hybrid modelling” at the MODPROD Workshop in Linköping, Sweden.
- February, T. Bourke presented “A synchronous approach to designing and compiling hybrid modelling languages” in the Chalmer’s Functional Programming group in Gothenburg, Sweden.
- February, T. Bourke presented “Mechanization of a mesh network routing protocol and the proof of its loop freedom in Isabelle/HOL” in the Chalmer’s Formal Methods group in Gothenburg, Sweden.
- September, T. Bourke participated in the Modelica conference in Versailles, France.
- October, T. Bourke participated in the Embedded Systems Week conferences in Amsterdam, The Netherlands.
- October, T. Bourke presented “Some recent improvements in modelling Loosely Time-Triggered Architectures” at the Journées Nationales GEOCAL-LAC-LTP 2015 in Nancy, France.
- November, T. Bourke presented “Zélus : un langage synchrone avec équations différentielles ordinaires” in the tool session of the 10th colloquium on the Modélisation des Systèmes Réactifs (MSR 2015) in Nancy, France.
- December, T. Bourke presented “Verification of code generation for a Lustre language” at the SYNCHRON workshop in Kiel, Germany.
- December, T. Bourke presented “Showing safety properties of a layered reactive model in Isabelle/HOL” at the University of Iowa, USA.
- December, T. Bourke presented “Towards the verified compilation of Lustre” at the University of Iowa, USA.
- October, M. Pouzet gave an invited talk at the EMSOFT’2015 conference, in Amsterdam “Building a Hybrid Systems Modeler from Synchronous Language Principles”.
- April, F. Zappa Nardelli gave a Keynote at the EuroLLVM international conference, London, UK.
- July, F. Zappa Nardelli gave a Keynote at the TAP international conference, L’Aquila, Italy.

9.1.5. Leadership within the scientific community

Marc Pouzet is responsible with Sandrine Blazy (Prof., Univ. Rennes) of the group LTP (Language, Types, Proof) of the French GDR (Groupe de Recherche) GPL (Genie de la Programmation) from the CNRS. Two one-day seminars are organised every year. In 2015, one seminar in Bordeaux; the second was 12-14 october 2015, in Nancy, and together with the groups LAC and GeoCal.

Albert Cohen is a member of the Steering Committee of the ACM PPoPP and Compiler Construction conferences.

Albert Cohen is a Steering Committee member of the HiPEAC 3 network of excellence.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: F. Zappa Nardelli: “A Programmer’s introduction to Computer Architectures and Operating Systems” (M1), 45h, École Polytechnique, France

Master: A. Cohen: “Operating Systems Principles and Programming” (M1), 38h, École Polytechnique, France

Master: A. Cohen & F. Zappa Nardelli, “Semantics, languages and algorithms for multicore programming”, Lecture, 9h+12h, M2, MPRI: Ecole normale supérieure and Université Paris Diderot, France

Licence : F. Zappa Nardelli: “Introduction à l’informatique” (L3), TDs, 40h, École Polytechnique, France

Licence : F. Zappa Nardelli: “Programmation Concurrente et Distribuée” (L3), TDs, 32h, École Polytechnique, France

Master : M. Pouzet & T. Bourke: “Synchronous Systems” (M2), Lectures and TDs, MPRI, France

Master: T. Bourke participated in reviewing the M1 internships of students at the ENS, France.

Licence : M. Pouzet & T. Bourke: “Operating Systems” (L3), Lectures and TDs, ENS, France.

Licence : J. Vuillemin & T. Bourke, “Digital Systems” (L3), Lectures and TDs, ENS, France

Marc Pouzet is Director of Studies for the CS department, at ENS.

9.2.2. Supervision

PhD in progress : Guillaume Baudart, 3rd year, supervised by T. Bourke and M. Pouzet

PhD in progress : Robin Morisset, 3rd year, supervised by F. Zappa Nardelli.

PhD in progress : Adrien Guatto, 4th year, supervised by A. Cohen and M. Pouzet, defended in January 2016.

PhD in progress : Riyadh Baghdadi, 4th year, supervised by A. Cohen and S. Verdoolaege, defended in September 2015.

PhD in progress : Nhat Minh Lê, 3rd year, supervised by A. Cohen.

PhD in progress : Ivan Llopard, 4th year, supervised by A. Cohen, defense in February 2016.

PhD in progress : Jie Zhao, 1st year, supervised by A. Cohen.

PhD in progress : Chandan Reddy, 1st year, supervised by A. Cohen.

M2 Internship: Virgile Andreani (Ecole normale supérieure, MPRI) supervised by T. Bourke and M. Pouzet.

L3 Internship: Chaitanya Malaviya (Nanyang Technological University) supervised by T. Bourke and M. Pouzet.

M1 Internship: Léo Testard (UPMC) - June/July 2015. Supervised by M. Pouzet

M1 Internship: Valentin Lorentz (Ecole normale supérieure de Lyon) - April/July 2015. Supervised by M. Pouzet

9.2.3. Juries

Albert Cohen was in the committees of

- Habilitation thesis, as reviewer: Marc Pérache (2015, U. Versailles and CEA DAM), Vincent Gramoli (2015, U. Pierre et Marie Curie et U. New South Wales, Australia);
- Habilitation thesis, as examiner: Dumitru Potop-Butucaru (2015, U. Pierre et Marie Curie and Inria), Stéphane Louise (2015, U. Versailles and CEA LIST);
- PhD thesis, as a reviewer: Diego Caballero (2015, U. Politècnica de Catalunya), Mohamed Bergach (2015, U. Nice Sophia-Antipolis), Lokesh Gidra (2015, U. Pierre et Marie Curie), Zakaria Bendifallah (2015, U. Versailles), Manuel Selva (2015, U. Lyon), Stefan Geuns (2015, U. Twente, The Netherlands), Jarryd Beck (2015, U. New South Wales, Australia), Jean-François Dollinger (2015, U. Strasbourg), Artem Shinkarov (2015, U. Heriot Watt, UK), Eugene Yip (2015, U. Auckland, New Zealand);
- PhD thesis, as an examiner:

Andi Drebes (2015, U. Pierre et Marie Curie),

Alexandre Aminot (2015, U. Grenoble).

Marc Pouzet was member of the PhD jury of Arlen Cox (2015, Univ. of Boulder).

Marc Pouzet was reviewer of the PhD thesis of Bernhard Thiele (2015, TUM, Munich)

Marc Pouzet was a member of the recruiting jury for two assistant professor positions at Chalmers University, Sueden, during spring 2015.

Marc Pouzet was a member of the recruiting jury for two Prof. position at University Paris Diderot, during spring 2015.

PL.R2 Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of the organising committees

Yves Guiraud and Philippe Malbos organised with Samuel Mimram (LIX, École Polytechnique) the first edition of the Higher-Dimensional Rewriting and Applications (HDRA) workshop of the International Conference on Rewriting, Deduction, and Programming (RDP), held in Warsaw in June-July 2015. The second edition of HDRA will be held in June 2016 in Porto, during the new Formal Structures for Computation and Deduction (FSCD) conference.

Yann Régis-Gianas, Pierre Letouzey, Matthieu Sozeau were the organisers of the “Ecole de Printemps d’Informatique Théorique 2015” about proof of programs (cf. Highlights section).

Matthieu Sozeau co-organised and chaired the first Coq for Programming Languages (CoqPL) workshop, collocated with POPL’15 in Mumbai, India, in January 2015.

8.1.2. Scientific events selection

8.1.2.1. Member of the conference program committees

Frédéric Loulergue is member of of the program committee of the International Conference on Computational Science (ICCS’15), and is co-chair of the special session “Formal Approaches to Parallel and Distributed Systems” (4PAD) of the Euromicro PDP 2016 conference.

8.1.2.2. Member of the conference steering committees

Pierre-Louis Curien and Hugo Herbelin were members of the steering committee of the conference *Typed Lambda Calculi and Applications* (TLCA) until its merge with the conference *Rewriting Techniques and Application* in the new conference *Formal Structures for Computation and Deduction* (FSCD), whose first edition will be held in Porto in 2016.

Pierre-Louis Curien is member of the steering committee of the international workshop Games for Logic and Programming Languages (GaLop).

Matthieu Sozeau is member of the steering committee of the Dependently Typed Programming international workshop (DTP).

Frédéric Loulergue is a member of the steering committee of the international symposium on High-Level Parallel Programming and Applications (HLPP).

8.1.3. Journal

8.1.3.1. Member of the editorial boards

Pierre-Louis Curien is co-editor in chief (and becomes editor in chief in January 2016) of *Mathematical Structures in Computer Science*.

Hugo Herbelin, Pierre Letouzey and Matthieu Sozeau were co-editors of the post-proceedings of the conference TYPES 2014. These post-proceedings were published in October 2015 as LIPICS volume 39.

8.1.3.2. Reviewer - Reviewing activities

The members of the team reviewed numerous papers for numerous journals and international conferences.

8.1.4. Invited talks

Pierre-Louis Curien gave an invited talk at the GALOP'15 (Games in Logic and Programming) Workshop, in London (April 11-12).

Matthieu Sozeau participated to the HoTT/UF workshop in Warsaw, Poland (June 29-30). He gave an invited lecture on “Coq support for Homotopy Type Theory”.

Alexis Saurin gave an invited talk, in the form of a distilled tutorial, at WoC'2015, affiliated to ETAPS 2015 on “Logical by need”.

8.1.5. Hiring committees

Pierre-Louis Curien has been member of the “Comité de Sélection” for a professor position in mathematics at the University Paris Diderot.

8.1.6. Scientific expertise

Pierre-Louis Curien is a member of the Scientific Committee of the CIRM (since June 2013).

8.1.7. Presentation of papers

Amina Doumane presented [24] at CSL (sep 2015).

Matthieu Sozeau has presented [31] at ICFP 2015.

Cyprien Mangin has presented [29] at LFMTTP 2015.

Yann Régis-Gianas has presented [32] at Formalize 2015.

Thibaut Girka has presented [33] at ATVA 2015.

Jovana Obradović has presented [43] at Category Theory 2015.

8.1.8. Other presentations

Matthieu Sozeau gave a talk on the development of Coq at the CoqPL workshop in Mumbai (Jan 2015).

Amina Doumane gave a talk at GALOP'15 on Least and Greastest Fixed Points in Ludics.

Étienne Miquey gave a talk at GALOP'15 Workshop on realisability games for arithmetical formulæ [37], and a talk on a classical sequent calculus with dependent types at TYPES'15 [34].

Hugo Herbelin gave a talk at TYPES'15 on a proof of Gödel's completeness using side-effects.

Hugo Herbelin gave a talk at the workshop HoTT-UF15 on an extension of his construction of semi-simplicial types to simplicial types.

Pierre-Louis Curien and Jovana Obradović gave talks at the workshop Logic and Applications 2015 <http://imft.ftn.uns.ac.rs/math/cms/LAP2015>, Dubrovnik (September 21-25).

Cyrille Chenavier and Jovana Obradović gave talks at the workshop HDRA, Warsaw (cf. Scientific events organisation).

8.1.9. Talks in seminars

Yves Guiraud gave talks on various aspects of Squier's theory and its applications in algebra at the LCR seminar (Jan. 2015, LIPN, Univ. Paris 13), the Logique et Interactions seminar (Nov. 2015, I2M, Univ. Aix-Marseille) and the Chocola monthly meeting (Dec. 2015, ENS Lyon).

Étienne Miquey gave talks on the classical realisability and arithmetical formulæ at the Chocola monthly meeting (May 2015, ENS de Lyon) and the Logique et Interactions seminar (Jul. 2015, I2M, Univ. Aix-Marseille).

Matthieu Sozeau gave a talk on a new unification algorithm for Coq at the MIT seminar in Boston (April 2015).

Jean-Jacques Lévy gave a talk about Readable proofs of Depth First Search in graphs using Why3, at VALS seminar, Plateau de Saclay (December), and a talk about The cost of usage in the lambda-calculus, at Deducteam seminar, Inria (April), and Journées Choccola at ENS-Lyon (November).

8.1.10. Attendance to conferences, workshops, schools,...

Matthieu Sozeau attended POPL'15, RDP'15, LFMTP'15 and ICFP'15.

Étienne Miquey attended GALOP'15, the “École Jeunes Chercheurs 2015” of the GDR-IM, TYPES'15 and the EPIT spring school.

Hugo Herbelin attended TYPES'15, RDP'15 and ITP'15.

Pierre-Marie Pédrot attended JFLA'15 and LICS'15.

Hugo Herbelin, Pierre Letouzey, Pierre-Marie Pédrot and Matthieu Sozeau attended the first Coq coding sprint as developers communicating their expertise to the participants. Cyprien Mangin attended as participant.

8.1.11. Groupe de travail Théorie des types et réalisabilité

This is one of the working groups of PPS, jointly organised by Hugo Herbelin and Paul-André Melliès, since September 2009. It is held weekly. Matthieu Sozeau joined the organisation in 2014.

The speakers in 2015 were Danko Ilik (Eliminating control operators from classical realisability), Ali Assaf (Tarski and Coq), Maxime Dénès (Coqonut: a formally verified JIT compiler for Coq), Tomer Libal (Regularity in higher-order unification), Andrew Polonsky (Defining equality by induction on type structure), Sergei Soloviev (Isomorphism of Dependent Products in Type Theory: Specifics and Scientific Context), Noam Zeilberger (Functors are Type Refinement Systems), Gabriel Scherer (Which types have a unique inhabitant?), Andrej Bauer (A sound and complete language for type theory with equality reflection), Nicolas Tabareau (Vers un analogue de l'axiome de Giraud en HoTT), Alexandre Miquel (An axiomatic presentation of forcing, or: forcing for the dummies), Danko Ilik (The exp-log normal form of formulas).

8.1.12. Groupe de travail Catégories supérieures, polygraphes et homotopie

Pierre-Louis Curien and Yves Guiraud, together with Cyrille Chenavier, Maxime Lucas and Jovana Obradović actively participate in this weekly working group of PPS, organised by François Métayer since 2009.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: Pierre-Louis Curien teaches in the course Models of programming languages: domains, categories, games of the MPRI (together with Thomas Ehrhard and Paul-André Melliès).

Alexis Saurin chairs LMF1 M2 since September 2013.

Yann Régis-Gianas took part in the MPRI course entitled “Type systems”: he gave a 12-hour course about generalised algebraic data types, higher-order Hoare logic and dependently typed programming.

In addition to his regular teaching duties for the Computer Science department of Paris 7 (M1 and M2 Pro), Pierre Letouzey taught 2 courses in the LMF1 M2 in 2015 : initiation to formal proofs on computer (24h) and models of programming (24h).

Matthieu Sozeau teaches in the MPRI course on Advanced uses of Proof Assistants (12 hours + a project), together with Assia Mahboubi (Inria SpecFun).

Licence and Master: Lourdes González had a temporary research and teaching position (A.T.E.R) at University Paris 7 for the academic year 2014–2015. During the second semester (Jan - Aug 2015) she was in charge of TP (Travaux pratiques, 44 hours) on the subjects “Projet Informatique” (L2) and “Introduction aux environnements de développement et génie logiciel” (L3). During the second semester (Jan - Aug 2015) she was in charge of TP (Travaux pratiques, 24 hours) on the subject “Programmation système” (M1).

Licence: Étienne Miquey was in charge of practical sessions in the course “Analyse de données structurées” (36h, L2) and “Programmation Orientée Objet et Interface Graphique” (60h, L2) at University Paris 7.

MOOC: In collaboration with Roberto DiCosmo and Ralf Treinen, Yann Régis-Gianas has created a MOOC about the OCaml programming language.

8.2.2. Supervision

Internship: Yann Régis-Gianas has supervised the M2 internships of Béatrice Carré and Jacques Pascal Deplaix, and the M1 internships of Léo Brun and of Loïc Runarvot.

Internship: Matthieu Sozeau has supervised the M2 internships of Gabriel Lewertowsky (with Nicolas Tabareau), who is now starting a PhD under their joint supervision, and of Cyprien Mangin, who is starting a PhD under the supervision of Bruno Barras and Matthieu Sozeau.

Internship: Yves Guiraud has supervised the M2 internship of Pierre Giraud.

PhD in progress: Guillaume Claret, supervised by Hugo Herbelin and Yann Régis-Gianas.

PhD in progress: Thibaut Girka, supervised by Roberto DiCosmo and Yann Régis-Gianas.

PhD in progress: Cyrille Chenavier, supervised by Yves Guiraud and Philippe Malbos.

PhD in progress: Maxime Lucas, supervised by Yves Guiraud and Pierre-Louis Curien.

PhD in progress: Jovana Obradović, supervised by Pierre-Louis Curien.

PhD in progress: Amina Doumane, supervised by Alexis Saurin, David Baelde and Pierre-Louis Curien.

PhD in progress: Étienne Miquey, supervised by Hugo Herbelin and Alexandre Miquel.

Pierre-Marie Pédrot and Lourdes González defended their PhD in 2015.

8.2.3. Juries

PhD Juries: Pierre-Louis Curien has been reviewer (rapporteur) for the PhD thesis of Fabio Zanasi (Lyon, October 2015).

Examinator tasks: In June and July 2015, Pierre Letouzey has participated to the jury of the competitive examination for the entrance to Ecole Normale Supérieure (ENS Ulm). More precisely, he has been responsible for the oral test of computer science and has been examiner for about forty candidates, one hour each.

8.3. Popularisation

Étienne Miquey took part in the animation of several activities about mathematics in primary and high schools of Paris.

Yann Régis-Gianas co-organised the “Journée Francilienne de Programmation”, a programming contest between undergraduate students of three universities of Paris (UPD, UPMC, UPS). Yann Régis-Gianas organised, and Étienne Miquey took part in the animation of the (computer science part of the) “Fête de la Science” event at the University Paris 7. Yann Régis-Gianas gave several presentations about “What is programming?” in primary and high schools of Paris.

Jean-Jacques Lévy gave a presentation about “Science et Informatique” at the primary school le Coteau, Vaucresson (November).

POLSYS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Guénaél Renault and Emmanuel Prouff were both General Co-chairs of CHES 2015.

9.1.1.2. Member of the organizing committees

Dongming Wang was involved in the organization of the following conferences

- Fourth International Seminar on Program Verification, Automated Debugging and Symbolic Computation (PAS 2015) (Beijing, China, October 21-23, 2015);
- Dagstuhl Seminar 15471: Symbolic Computation and Satisfiability Checking ((SC)² 2015) (Dagstuhl, Germany, November 15-20, 2015);
- International Seminar on Geometric Computation (GC 2015) (Nanning, China, February 2-4, 2015).

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

Dongming Wang was Program Co-chair of the following conferences

- Fourth International Seminar on Program Verification, Automated Debugging and Symbolic Computation (PAS 2015) (Beijing, China, October 21-23, 2015);
- Dagstuhl Seminar 15471: Symbolic Computation and Satisfiability Checking ((SC)² 2015) (Dagstuhl, Germany, November 15-20, 2015);
- International Seminar on Geometric Computation (GC 2015) (Nanning, China, February 2-4, 2015).

9.1.2.2. Member of the conference program committees

Jean-Charles Faugère was member of the program committees of the following conferences

- PKC 2015
- Eurocrypt 2016

Ludovic Perret was member of the program committees of the following conferences

- The 7th International Workshop on Parallel Symbolic Computation (PASCO'15)
- The 41th International Symposium on Symbolic and Algebraic Computation (ISSAC'16)

Emmanuel Prouff was member of the program committees of the following conferences

- Workshop on Cryptographic Hardware and Embedded Systems (CHES 2015);
- 14th Smart Card Research and Advanced Application Conference (CARDIS 2015);
- 6th International Workshop on Constructive Side-Channel Analysis and Secure Design (COSADE);
- Indocrypt 2015.

Guénaél Renault was member of the program committees of the following conferences

- International Symposium on Symbolic and Algebraic Computation (ISSAC 2015)

Mohab Safey El Din was member of the program committees of the following conference

- International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS) 2015;

Dongming Wang was member of the program committees of the following conferences

- International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS);
- International Symposium on Symbolic Computation in Software Science (SCSS).

9.1.3. Journal

9.1.3.1. Member of the editorial boards

Ludovic Perret is Member of the Editorial Board of Designs, Codes and Cryptography.

Mohab Safey El Din is member of the editorial board of Journal of Symbolic Computation.

Dongming Wang has the following editorial activities:

- Editor-in-Chief and Managing Editor for the journal Mathematics in Computer Science (published by Birkhäuser/Springer, Basel).
- Executive Associate Editor-in-Chief for the journal SCIENCE CHINA Information Sciences (published by Science China Press, Beijing and Springer, Berlin).
- Member of the Editorial Boards for the
 - Journal of Symbolic Computation (published by Academic Press/Elsevier, London),
 - Frontiers of Computer Science (published by Higher Education Press, Beijing and Springer, Berlin),
 - Texts and Monographs in Symbolic Computation (published by Springer, Wien New York),
- Member of the International Advisory Board for the Communications of JSSAC (Japan Society for Symbolic and Algebraic Computation) (published by JSSAC).

9.1.4. Invited talks

Jean-Charles Faugère was invited speaker at

Workshop on “Grobner bases techniques for post-quantum cryptography”, March 27, 2015 Washington (USA)

Workshop on Algebra, Geometry and Proofs in Symbolic Computation Thematic Program on Computer Algebra, Fields Inst. Toronto, Dec. 2015.

Sixth International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS) Nov 11–13, 2015 Zuse Institute Berlin (ZIB), Germany.

Journées Nationales de Calcul Formel (3 hours lecture) Oct 2015, Cluny France

Daniel Lazard was special invited talk at Effective Methods in Algebraic Geometry 2015 - Università di Trento, Trento, June 2015.

Emmanuel Prouff was invited talk at Workshop on Constructive Side-Channel Analysis and Secure Design 2015, Mövenpick Hotel, Berlin, Apr. 2015.

Mohab Safey El Din was invited speaker at

Workshop on Algebra, Geometry and Proofs in Symbolic Computation Thematic Program on Computer Algebra, Fields Inst. Toronto, Dec. 2015.

Workshop on Linear Computer Algebra and Symbolic-Numeric Computation, Thematic Program on Computer Algebra, Fields Inst. Toronto, Oct. 2015.

Workshop Algebraic Vision, TU Berlin, October 2015.

Dagstuhl seminar on Complexity of Symbolic and Numeric Procedures, Dagstuhl, Germany, June 2015.

Czech workshop on applied mathematics in engineering Prague, Czech, February, 2015.

Mohab Safey El Din was also invited to give talks at

Minisymposium on Maximum Likelihood Degrees and Critical Points, SIAM Conference on Applied Algebraic Geometry, Daejeon, Aug. 2015, South-Korea.

Minisymposium on Real algebraic geometry and Optimization, SIAM Conference on Applied Algebraic Geometry, Daejeon, Aug. 2015, South-Korea.

Minisymposium on Polynomial Optimization and Moments, SIAM Conference on Applied Algebraic Geometry, Daejeon, Aug. 2015, South-Korea.

Elias Tsigaridas was invited speaker at

Workshop on Algebra, Geometry and Proofs in Symbolic Computation Thematic Program on Computer Algebra, Fields Inst. Toronto, Dec. 2015.

Structured Matrices Days 2015 June 4–5, 2015 XLIM-DMI, Université de Limoges, France.

Computer Algebra in Scientific Computing (CASC) September 14–18, 2015 RWTH Aachen University, Aachen, Germany.

9.1.5. Scientific expertise

Guénaél Renault had the following scientific expertise activities :

member of jury de selection du concours CR2 Inria Saclay

participating to the panel for research proposals selection in the field of theoretical computer science, Finland Academy.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Jérémy Berthomieu had the following teaching activities:

Master : Modeling and problems numerical and symbolic solving through MAPLE and MATLAB software, 52 hours, M1, Université Pierre-et-Marie-Curie, France

Master : In charge of Basics of Algebraic Algorithms, 70 hours, M1, Université Pierre-et-Marie-Curie, France

Master : Introduction to Security, 20 hours, M1, Université Pierre-et-Marie-Curie, France

Licence : Numerical Algorithmic, 6 hours, L3, Université Pierre-et-Marie-Curie, France

Licence : Representations and Numerical Methods, 40 hours, L2, Université Pierre-et-Marie-Curie, France

Licence : Projects supervision, 20 hours, L2, Université Pierre-et-Marie-Curie, France

Jean-Charles Faugère had the following teaching activities:

Master: Fundamental Algorithms in Real Algebraic Geometry, 13,5 hours, M2, ENS de Lyon, France

Master : Polynomial Systems solving, 12 hours, M2, MPRI

Ludovic Perret had the following teaching activities amounting to around 220 hours:

Master : Polynomial Systems solving, M2, MPRI

Master : In charge of Introduction to Security, M1, Université Pierre-et-Marie-Curie, France

Master : In charge of Complexity, M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction to Algorithmic, L2, Université Pierre-et-Marie-Curie, France

Licence : In charge of the Computer Science – Applied Mathematics Program (PIMA) in Licence, L2, Université Pierre-et-Marie-Curie, France

Licence : Project supervision, L2, Université Pierre-et-Marie-Curie, France

Guénaël Renault had the following teaching activities:

Master : In charge of the Security, Reliability and Numerical Efficiency Program in Master, 45 hours, M1 and M2, Université Pierre-et-Marie-Curie, France

Master : In charge of Advanced and Applied Cryptology, 70 hours, M2, Université Pierre-et-Marie-Curie, France

Master : In charge of Security and Side-channels, 10 hours, M2, Université Pierre-et-Marie-Curie, France

Master : In charge of Threats and Attacks Modeling, 40 hours, M1, Université Pierre-et-Marie-Curie, France

Master : Pro/Research internships supervision, 40 hours, M2, Université Pierre-et-Marie-Curie, France

Master : Projects supervision, 20 hours, M1, Université Pierre-et-Marie-Curie, France

Licence : In charge of Introduction to Cryptology, 30 hours, L3, Université Pierre-et-Marie-Curie, France

Licence : Project supervision, 10 hours, L2, Université Pierre-et-Marie-Curie, France

Mohab Safey El Din had the following teaching activities:

Master : In charge of Modeling and problems numerical and symbolic solving through MAPLE and MATLAB software, 18 hours, M1, Université Pierre-et-Marie-Curie, France

Master : In charge of Introduction to polynomial systems solving, 48 hours, M2, Université Pierre-et-Marie-Curie, France

Master: In charge of Fundamental Algorithms in Real Algebraic Geometry, 22,5 hours, M2, ENS de Lyon, France

Licence : Introduction to Cryptology, 20 hours, L3, Université Pierre-et-Marie-Curie, France

Licence : In charge of the Computer Science – Applied Mathematics Program (PIMA) in Licence, L2 and L3, Université Pierre-et-Marie-Curie, France

Mohab Safey El Din gave also a course at the “Ecole Jeunes Chercheurs 2015” of GDR IM.

9.2.2. Supervision

PhD in progress : Ivan Bannwarth, Fast algorithms for studying real algebraic sets, started in Sept. 2014, Mohab Safey El Din

PhD in progress : Matías Bender, Algorithms for Sparse Gröbner basis and applications, started in Dec 2015, Jean-Charles Faugère and Elias Tsigaridas

PhD in progress : Eleonora Cagli, Analysis and interest points research in the attacks by observation context, Emmanuel Prouff and Cécile Dumas

PhD : Simone Naldi, Exact algorithms for determinantal varieties and semidefinite programming, Univ. Toulouse, defended in Sept. 2015, Didier Henrion and Mohab Safey El Din

PhD in progress : Adrian Thillard, Countermeasures to side-channel attacks and secure multi-party computation, Damien Vergnaud, Emmanuel Prouff

PhD : Frédéric Urvoy de Portzamparc, Algebraic and physical security based on error-correcting codes, Université Pierre-et-Marie-Curie, defended in Apr. 2015, Jean-Charles Faugère and Ludovic Perret

PhD in progress : Thibaut Verron, Gröbner bases and structured polynomial systems, started in Sept. 2012, Jean-Charles Faugère and Mohab Safey El Din

PhD : Rina Zeitoun, Algebraic methods for the analysis of the security of cryptographic algorithms implementations, Université Pierre-et-Marie-Curie, defended in July 2015, Jean-Charles Faugère and Guénaël Renault

9.2.3. Juries

Jean-Charles Faugère was:

- reviewer and member of the PhD committee of Tristan Vaccon;
- member of the PhD committee of Simone Naldi;
- member of the PhD committee of Frédéric de Portzamparc;
- member of the PhD committee of Simone Naldi;

Ludovic Perret was:

- member of the PhD committee of Frédéric de Portzamparc;

Emmanuel Prouff was:

- member of the PhD committee of Luke Maher;
- member of the PhD committee of Mathieu Carbone;
- member of the PhD committee of Praveen Vadnala;
- member of the PhD committee of Sonia Belaid;
- member of the PhD committee of Sylvain Ruhault;
- member of the PhD committee of Vincent Grosso;
- member of the PhD committee of Annelie Heuser as reviewer;
- member of the PhD committee of Kevin Layat.

Guénaël Renault was:

- member of the PhD committee of Rina Zeitoun;
- member of mid-term evaluation committee of Nicolas Bruneau;

Mohab Safey El Din was:

- member of the PhD committee of Simone Naldi;
- member of the PhD committee of Frédéric Urvoy de Portzamparc;

Elias Tsigaridas was

- member of the PhD committee of Aaron Herman;
- member of the mid-term evaluation committee of Mario Cornejo-Ramirez;

9.3. Popularization

Mohab Safey El Din gave a course at the “Ecole Jeunes Chercheurs 2015” of GDR IM and wrote for it a book chapter [21].

PROSECCO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events selection

10.1.1.1. Member of the conference program committees

- ACM POPL – January 2015, Mumbai, India: Karthikeyan Bhargavan
- ACM CCS – October 2015, Denver, USA: Karthikeyan Bhargavan
- ETAPS POST – April 2015, London, UK: Karthikeyan Bhargavan
- ACM SEC@SAC – April 2015, Salamanca, Spain: Karthikeyan Bhargavan
- HotSpot – April 2015, London, UK: Bruno Blanchet

10.1.1.2. Reviewer

- Members of Prosecco reviewed papers for many major conferences and workshops including ACM CCS, ACM POPL, IEEE S&P, etc.

10.1.2. Journal

10.1.2.1. Member of the editorial boards

Associate Editor

- of the *International Journal of Applied Cryptography (IJACT)* – Inderscience Publishers:
Bruno Blanchet

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Bruno Blanchet, Cryptographic protocols: formal and computational proofs, 9h equivalent TD, master M2 MPRI, universit  Paris VII, France

License: Karthikeyan Bhargavan, INF431, INF421, INF672, INF321, introductory courses at at Ecole Polytechnique, Palaiseau, France

Doctorat: Catalin Hritcu, lectures at University of Saarbruecken, Germany

Doctorat: Catalin Hritcu, F* tutorials at POPL 2015 and ICFP 2015

10.2.2. Supervision

PhD in progress: Evmorfia-Iro Bartzia

Machine-checked program verification for concrete cryptography, started October 2011, supervised by Karthikeyan Bhargavan and Pierre-Yves Strub

PhD in progress: Antoine Delignat-Lavaud

Verified security for web applications, started September 2012, supervised by Karthikeyan Bhargavan

PhD in progress: Jean Karim Zinzindohoue

Analyzing cryptographic protocols and their implementations, started September 2014, supervised by Karthikeyan Bhargavan

PhD in progress: Nadim Kobeissi

Analyzing cryptographic web applications, started February 2015, supervised by Karthikeyan Bhargavan

PhD in progress: Yannis Juglaret
Micro-policies and Secure Compilation,
started September 2015, supervised by Catalin Hritcu

10.2.3. Juries

Rémy Chrétien – Ph.D. – Jan. 11, 2016 – ENS Cachan
Automated analysis of equivalence properties for cryptographic protocols
Bruno Blanchet (reviewer)

Joeri de Ruiter – Ph.D. – Aug. 27, 2015 – Radboud University Nijmegen
Lesson learned in the analysis of the EMV and TLS security protocols
Karthikeyan Bhargavan (reviewer)

Bart van Delft – Licentiate – Mar. 14, 2015 – Chalmers University
Karthikeyan Bhargavan (discussion leader)

10.3. Popularization

10.3.1. Popular Press and Vulnerability Reports

The FREAK and Logjam attacks discovered by the miTLS team resulted in articles in many newspapers, magazine, and popular websites, including the New York Times, Wall Street Journal, Economist, and Wired. As a result of our discovery of these attacks and their popularization, major changes were made in all web browsers, web servers, and in the TLS protocol itself.

10.3.2. Seminars

- Catalin Hritcu: invited talks at CoqPL Workshop (Jan 2015), HP Labs France (May 2015), Inria Rennes (Jun 2015), PLAS Workshop (Jul 2015), Microsoft Research Redmond (Aug 2015), University of Washington (Aug 2015), ML Workshop (Sep 2015), Alcatel-Lucent Bell Labs (Dec 2015)
- Karthikeyan Bhargavan: invited talks at Real World Crypto (Jan 2015), Inria Nancy (Feb 2015), OSSIR Paris (Jun 2015), DefCon Crypto Village (Aug 2015), Catreil Workshop (Oct 2015)

SECRET Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- WCC 2015 (Paris, April 13-17, 2015) has been organized by the project-team. The organizing committee is composed of A. Canteaut, G. Leurent, M. Naya Plasencia.
- N. Sendrier, co-organizer of Dagstuhl Seminar 15371, "Quantum Cryptanalysis", September 7-11, 2015, Dagstuhl, Germany.

9.1.1.2. Member of the organizing committees

- Advances in Quantum Cryptography Workshop, AQC 2015: March 23-24, 2015, Paris (France): A. Chailloux and A. Leverrier

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

- WCC 2015: April 13-17, 2015, Paris (France): P. Charpin, N. Sendrier and J.P. Tillich (co-chairs).

9.1.2.2. Member of the conference program committees

- FSE 2015: March 8-11, 2015, Istanbul, Turkey (A. Canteaut, G. Leurent, M. Naya-Plasencia);
- CT-RSA 2015: April 20-24, 2015, San Francisco, USA (M. Naya-Plasencia);
- Eurocrypt 2015: April 26-30, 2015, Sofia, Bulgaria (A. Canteaut);
- Codes, Cryptology, and Information Security - C2SI 2015: May 26-28, 2015, Rabat, Morocco (A. Canteaut).
- Finite Fields and their applications $F_{q^{12}}$, Saratoga, USA, July 13-17, 2015 (A. Canteaut);
- SAC 2015: August 12-14, 2015, Sackville, Canada (M. Naya-Plasencia);
- Crypto 2015: August 16-20, 2015, Santa Barbara, USA (A. Canteaut);
- National workshop on Coding and Cryptography (Journées C2), October 5-9, 2015, La-Londe-Les-Maures, France (M. Naya-Plasencia, JP. Tillich);
- QCrypt 2015, Fifth annual conference on Quantum Cryptography, 28 September - 2 October 2015, Tokyo, Japan (A. Leverrier);
- ICCA 2015, International Conference on Coding and Cryptography, Alger, Algeria, November 2-5, 2015 (P. Charpin)
- Indocrypt 2015: December 6-9, 2015, Bangalore, India (A. Canteaut, G. Leurent)
- IMA-CC 2015, December 15-17, 2015, Oxford, UK (P. Charpin)
- PQCrypto 2016: February 24-26, 2016, Fukuoka, Japan (N. Sendrier, J.P. Tillich);
- CT-RSA 2016: Feb. 29- March 4, 2016, San Francisco, USA (M. Naya Plasencia)
- FSE 2016: March 20-23, 2016, Bochum, Germany (G. Leurent)
- Eurocrypt 2016: May 8-12, 2016, Vienna, Austria (M. Naya Plasencia)
- Crypto 2016: August 14-18, 2016, Santa Barbara, USA (A. Canteaut)
- ACISP 2016: July 4-6, 2016, Melbourne, Australia (G. Leurent)
- Waifi 2016: July 13-15, 2016, Ghent, Belgium (A. Canteaut)

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- *Designs, Codes and Cryptography*, associate editor: P. Charpin.
- *Finite Fields and Their Applications* associate editors: A. Canteaut, P. Charpin.
- *Annals of telecommunications*, associate editor : J.-P. Tillich.

9.1.3.2. Guest editor for books or special issues

- Special issue in Coding and Cryptography, *Designs, Codes and Cryptography*, 2015, co-editors: P. Charpin, N. Sendrier and J-P. Tillich.
- *Contemporary Developments in Finite Fields and Applications*, 2016, World Scientific Publishing, co-editor: A. Canteaut.

9.1.4. Invited talks

- A. Canteaut, *Differential Attacks Against SPN: A Thorough Analysis*, Codes, Cryptology, and Information Security - C2SI 2015, Rabat, Morocco, May 2015.
- G. Leurent, *Generic Attacks against MAC Algorithms*, Selected Areas in Cryptography - SAC 2015, Sackville, Canada, August 2013
- A. Leverrier, *Introduction to Quantum Cryptography*, WIC Symposium on Information Theory in the Benelux Brussels, Belgium, May 2015.
- J.P. Tillich *A survey on decoding quantum LDPC codes*, Quantum Information Processing - QIP 2015, Sydney, Australia, January 2015.

The members of the project-team have also been invited to give talks to some workshops or international seminars, including:

- A. Canteaut, *On the behaviors of affine equivalent Sboxes regarding differential and linear attacks*, Early Symmetric Crypto - ESC 2015, Clervaux, Luxemburg, January 2015.
- A. Canteaut, *Sur la résistance aux cryptanalyses différentielles et linéaires*, Journées Codage et Cryptographie 2015, La Londe-les-Maures, France, October 2015.
- A. Chailloux *Arbitrarily long relativistic bit commitment*, QuPa - Quantum Information in Paris, Paris, France, December 2015.
- A. Chailloux *Introduction to Quantum Cryptography*, 9ème Journées Scientifiques de l'Université de Toulon - France, April 2015.
- A. Chailloux *Introduction à l'Informatique Quantique*, ENS Lyon Seminar, France, January 2015.
- G. Leurent, *On cryptanalysis of the Chaskey MAC*, Early Symmetric Crypto - ESC 2015, Clervaux, Luxemburg, January 2015.
- G. Leurent, *Generic Attacks against MAC Algorithms*, Asian Workshop on Symmetric Key Cryptography - ASK 2015, Singapore, September 2015
- A. Leverrier, *Quantum differential cryptanalysis*, Dagstuhl Seminar Quantum Cryptanalysis, Dagstuhl, Germany, 7-11 September 2015.
- A. Leverrier, *Quantum expander codes*, QuPa - Quantum information in Paris, France, 7-8 December 2015.
- M. Naya-Plasencia, *On impossible differential attacks*, Early Symmetric Crypto - ESC 2015, Clervaux, Luxemburg, January 2015.
- N. Sendrier, *Best known attacks on code-based cryptosystems: state of the art and perspectives*, DIMACS Workshop on the Mathematics of Post-Quantum Cryptography, Piscataway, USA, January 2015.

9.1.5. Leadership within the scientific community

- A. Canteaut serves as a chair of the steering committee of *Fast Software Encryption (FSE)*;
- N. Sendrier serves on the steering committee of *Post-quantum cryptography (PQCrypto)*;
- M. Naya Plasencia serves on the steering committee of the *Coding and Cryptography* group of GDR-IM <https://crypto.di.ens.fr/c2:main>;
- Since Autumn 2014, JP. Tillich organizes a working group on code-based cryptography which meets on a monthly/bimonthly basis. It gathers people from the project-team, from the GRACE project-team (Inria Saclay), from the University of Limoges, from the University of Rennes and from the University of Rouen who all work on this topic.

9.1.6. Research administration

- N. Sendrier is a vice-chair of the “Commission d’Evaluation” at Inria;
- A. Canteaut is a member of the “Comité de pilotage” of the Fondation Sciences Mathématiques de Paris;
- N. Sendrier is a member of the committee PEDR INS2I (CNRS) 2015
- N. Sendrier is a member of the committee for PhD fundings, EDITE, Commission thématique O (RO, Algo, Calcul et Programmation).
- J.-P. Tillich is in charge of “Formation par la recherche” for the Paris-Rocquencourt Inria center.
- **Committees for the selection of professors, assistant professors and researchers:** Inria Directeurs de recherche (N. Sendrier), Inria Paris-Rocquencourt Chargés de recherche (A. Canteaut), Université Rennes 1 MC (M. Naya Plasencia), Université de Limoges PR (A. Canteaut)
- Inria Jury d’admission, Directeurs de recherche and Chargés de recherche (N. Sendrier)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: A. Canteaut, *Stream ciphers*, 6 hours, M1, Telecom ParisTech, France;

Master: A. Canteaut, *Introduction to symmetric cryptography*, 7 hours, M1, Telecom ParisTech, France;

Master: A. Canteaut, *Error-correcting codes and applications to cryptology*, 11 hours, M2, University Paris-Diderot (MPRI), France;

Master: A. Chailloux, *Quantum computing*, 6 hours, M2, University Paris-Diderot (MPRI), France.

Master: N. Sendrier, *Code-based cryptography*, 4.5 hours, M2, University Paris-Diderot (MPRI), France;

Master: J.-P. Tillich, *Introduction to Information Theory*, 32 hours, M2, Ecole Polytechnique, France.

The members of the project-team also gave advanced lectures to summer schools for PhD students:

- *IACR School on Design and security of cryptographic algorithms and devices*, Sardinia, Italy, Oct. 18-23, 2015: A. Canteaut.

A. Canteaut, M. Naya-Plasencia and JP. Tillich gave several lectures on symmetric cryptography at Thales.

9.2.2. Supervision

PhD: Joëlle Roué, *Analysis of the resistance of block ciphers against linear and differential attacks*, University Pierre-et-Marie Curie, October 14, 2015, supervisor: A. Canteaut

PhD: Audrey Tixier, *Blind identification of error-correcting codes*, University Pierre-et-Marie Curie, October 14, 2015, supervisor: J.P. Tillich

PhD in progress: Virginie Lallemand, *Cryptanalysis for symmetric cryptography*, since October 2013, supervisors: M. Naya-Plasencia and A. Canteaut

PhD in progress: Julia Chaulet, *Study of public-key cryptosystems based on MDPC quasi-cyclic codes*, since February 2014, CIFRE convention with Thales, supervisor: N. Sendrier

PhD in progress: Kaushik Chakraborty, *Position-based Quantum Cryptography*, since October 2014, supervisors: A. Leverrier, J.P. Tillich

PhD in progress: Adrien Hauteville, *Rank-metric-based Cryptosystems*, since October 2014, supervisors: P. Gaborit (Univ. Limoges) and J.-P. Tillich

PhD in progress: Rodolfo Canto Torres, , since September 2015, supervisor: N. Sendrier

PhD in progress: Sébastien Duval, *Constructions for lightweight cryptography*, since October 2015, supervisor: A. Canteaut and G. Leurent

PhD in progress: Yann Rotella, *Finite fields and symmetric cryptography*, since October 2015, supervisor: A. Canteaut

9.2.3. Juries

- Martin M. Lauridsen, *Design and Analysis of Symmetric primitives*, Technical University of Denmark (DTU), October 26, 2015, committee: A. Canteaut (reviewer).
- Carl Löndahl, *Some Notes on Code-Based Cryptography*, Lund University, February 6, 2015, committee: N. Sendrier (opponent)
- Joëlle Roué, *Analysis of the resistance of block ciphers against linear and differential attacks*, University Pierre-et-Marie Curie, October 14, 2015, committee: A. Canteaut (supervisor), M. Naya Plasencia.
- Sylvain Ruhault, *Security Analysis for Pseudo-Random Number Generators*, École Normale Supérieure, June 30, 2015, committee: N. Sendrier
- Audrey Tixier, *Blind identification of error-correcting codes*, University Pierre-et-Marie Curie, October 14, 2015, committee: J.P. Tillich (supervisor), N. Sendrier
- Gaël Thomas, *Design and security analysis for constructions in symmetric cryptography*, University of Limoges, May 13, 2015, committee: A. Canteaut (chair).

9.3. Popularization

- André Chailloux published a paper in the general-audience journal *La Recherche*: Calcul quantique sans erreurs.
- Gaëtan Leurent took part to the radio program *Service Public*: "Mot de passe partout", France Inter, April 2015 <http://www.franceinter.fr/emission-service-public-mot-de-passe-partout>
- Anne Canteaut gave a talk on cryptography for female students in "Première" and "Terminale" attending the *Girls can code!* week organized at EPITA, August 24-29, 2015 <https://gcc.prologin.org/>.

GAMMA3 Project-Team (section vide)

MATHERIALS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

S. Boyaval has coorganized with G. Enchéry (IFPEN) a SMAI 2015 minisymposium about fast numerical simulation techniques for porous-media flows with highly heterogeneous permeabilities, June 2015.

E. Cancès

- is a member of the editorial boards of *Mathematical Modeling and Numerical Analysis* (2006-), *SIAM Journal of Scientific Computing* (2008-), *Communications in Mathematical Sciences* (2011-), and *SIAM MMS* (2012-),
- is a member of the executive committee of the CEA-EDF-Inria schools in applied mathematics and computer science.

He has organized or co-organized:

- the ICS summer school on Computational Chemistry and Applied Mathematics, Roscoff, France, Jul. 15-Aug. 14, 2015,
- the MBI Workshop Mathematical Challenges in Drug and Protein Design, Columbus, Ohio, Dec. 7-11, 2015.

L. Chamoin has been a member of the organization committee of the conference "Reduced Basis, POD and PGD Model Reduction Techniques", ENS Cachan, November 2015, and the co-chairman of the "International Conference on Adaptive Modeling and Simulation (ADMOS)", Nantes, June 2015.

He has organized a minisymposium entitled "Applications of error estimation and model adaptation in Computational Mechanics" within the US National Congress of Computational Mechanics, San Diego, July 2015.

V. Ehrlacher has co-organized with Areski Cousin the semester on "Uncertainty Quantification" in the framework of the IHP thematic semester on "Monte-Carlo methods" organized by B. Bouchard, E. Gobet and B. Jourdain.

T. Hudson has organized a minisymposium entitled "Modeling microstructure and material instabilities across a range of scales" at the 3rd ECCOMAS Young Investigator's Conference, Aachen, 20-23 July 2015.

C. Le Bris is editor-in-chief of *Applied Mathematics Research Express* (2003-). He is a managing editor of *Networks and Heterogeneous Media*. He is a member of the editorial boards of *Annales mathématiques du Québec* (2013-), *Archive for Rational Mechanics and Analysis* (2004-), *COCV (Control, Optimization and Calculus of Variations)* (2003-), *Mathematics in Action* (2008-), *Nonlinearity* (2005-) and *Journal de Mathématiques Pures et Appliquées* (2009-).

He is a member of the editorial boards of the monograph series *Mathématiques & Applications, Series*, Springer (2008-), and *Modeling, Simulations and Applications, Series*, Springer (2009-).

He is a member of

- the Cabinet of the High Commissioner for Atomic Energy,
- the "Comité d'experts" for the "Fondation de Recherche pour l'Aéronautique et l'Espace",
- the "International Scientific Advisory Committee" of the Centre de Recherche Mathématique, Université de Montréal,
- the "Advisory Board" of the DFG Cluster of Excellence Engineering of Advanced Materials, Erlangen,
- the "International Scientific Advisory Board" of the DFG research center Matheon, Berlin,
- the "Conseil scientifique de la SMAI" (Scientific Council of the French Applied Maths Society),
- the International Mathematical Union Circle.

He has held a regular position of Visiting Professor at the University of Chicago.

He has been a member of the scientific committee of the conference "Dimension reduction: mathematical methods and Applications", Pennsylvania State University, March 21-24, 2015.

He has co-organized

- with G. Hagedorn and C. Lasser, the Oberwolfach Workshop *Mathematical problems in dynamical quantum chemistry*, Oberwolfach, June 1-6 2015,
- with I. Kim, Fang-Hua Lin and P. Souganidis, the Banff Workshop *Developments in the Theory of Homogenization*, BIRS, Banff, July 26-31 2015.

F. Legoll

- is a member of the editorial board of SIAM MMS (2012-) and of ESAIM Proc (2012-),
- has been a member of the Scientific Committee of SciCADE 2015.

T. Lelièvre

- is editor-in-chief of ESAIM: Proceedings (with D. Chafai, P. Lafitte and C. Mouhot),
- has co-organized the Workshop "Free-energy calculations: A mathematical perspective" at BIRS, Casa Matemática Oaxaca, Mexico, July 19-24th, 2015 (with C. Chipot and R. Skeel).
- was in the scientific committee of the conference MoRePaS 2015, Trieste, October 2015,
- co-organizes the Journées EDP-Probab at Institut Henri Poincaré (with F. Malrieu),
- is in charge of the Theme 4 (Stochastic modeling, quantification and uncertainty propagation for multiscale mechanical models of materials) of the Labex MMCD,
- is involved in the organization of the IHP trimester on numerical PDEs (PI D.A. Di Pietro, A. Ern and L. Formaggia), September-December 2016.

G. Stoltz co-organizes the IHP trimester "Stochastic Dynamics Out of Equilibrium", Spring 2017 (with G. Giacomini, S. Olla, E. Saada and H. Spohn).

9.2. Teaching - Supervision - Juries

The members of the project-team have taught the following courses:

- Licence: Maths I et 2, 9h, L3, École des Mines (G. Stoltz),
- Licence: Outils mathématiques pour l'ingénieur, 15h, L3, École des Ponts (E. Cancès, V. Ehrlacher, T. Hudson, F. Legoll, T. Lelièvre),
- License: Analyse et calcul scientifique, 30h, L3, École des Ponts (T. Hudson, G. Stoltz),
- Master: Mécanique des Milieux Continus - partie Solides, 14h, M1, ENS Cachan (L. Chamoin),
- Master: Ondes et Chocs dans les Structures, 8h, M1, ENS Cachan (L. Chamoin),
- Master: Mathématiques des modèles multiéchelles, 39h, M1, École des Ponts (F. Legoll),
- Master: Contrôle des modèles et dualité, 24h, M2, ENS Cachan (L. Chamoin),
- Master: Problèmes multi-échelles, 24h, M2, Paris 6 (F. Legoll),
- Master: Approximation numérique et optimisation, 32h, École Polytechnique (E. Cancès),
- Master: Analyse variationnelle des équations aux dérivées partielles, 32h, École Polytechnique (E. Cancès),
- Master: Méthodes variationnelles et théorie spectrale, 10h, M2, Paris 6 (E. Cancès),
- Master: Modélisation mathématique des vagues, 3h, École des Ponts (S. Boyaval),
- Master: Outils Probabilistes pour la Finance, 25h, M1, École des Ponts, France (M. Rousset),
- Master: Analyse Spectrale, 39h, École des Ponts (V. Ehrlacher, A. Levitt),
- Master: Projets de physique, 10h, M1, École des Ponts, France (V. Ehrlacher, G. Stoltz),
- Master: Introduction au calcul Scientifique, 13h, M1, École des Mines, France (G. Stoltz, F. Madiot),
- Master: Introduction to computational statistical physics, 20h, M2, Paris 6 (G. Stoltz),
- Master: Modéliser Programmer Simuler, 28 h, M1, Cours École des Ponts (T. Lelièvre),
- Master: Méthodes numériques probabilistes, 36 h, M2 Mathématiques et Applications, Paris 6 (T. Lelièvre).

The following PhD theses have been defended:

- David Gontier, Contributions mathématiques aux calculs de structures électroniques, Université Paris Est, September 28 2015 (supervised by E. Cancès),
- William Minvielle, Quelques problèmes liés à l'erreur statistique en homogénéisation stochastique, Université Paris-Est, Université Paris Est, September 25 2015 (supervised by C. Le Bris and F. Legoll).

The following PhD theses are ongoing:

- Athmane Bakhta, Modélisation and simulation for photovoltaic applications, Université Paris-Est, École des Ponts, started October 1st, 2014, supervised by E. Cancès and T. Lelièvre, co-supervised by V. Ehrlacher,
- Gerome Faure, Multiscale methods for the simulation of shock and detonation waves, Université Paris-Est, École des Ponts and CEA/DAM, started November 1st 2014, supervised by G. Stoltz and J.-B. Maillat,
- Ahmed-Amine Homman, Multiscale methods for the simulation of shock and detonation waves, Université Paris-Est, École des Ponts and CEA/DAM, started April 1st, 2013, supervised by G. Stoltz and J.-B. Maillat,
- Marc Josien, Multiscale approaches for materials science, started September 1st, 2015, supervised by C. Le Bris,
- François Madiot, Multiscale finite element methods for advection diffusion problems, Université Paris-Est, Ecole des Ponts ParisTech, started October 1st, 2013, supervised by C. Le Bris and F. Legoll,
- Boris Nectoux, Métastabilité et distribution quasi-stationnaire, since November 2014, supervised by T. Lelièvre and E. Cancès,
- Julien Roussel, Variance reduction techniques for nonequilibrium systems, Université Paris-Est, École des Ponts, started September 1st 2015, supervised by G. Stoltz,
- Rémi Saint, Modèles multi-échelles pour le trafic, since September 2013, supervised by T. Lelièvre and X. Louis,
- Pierre Terrier, Reduced models for defect migration in metals, Université Paris-Est, École des Ponts and CEA Saclay, started September 1st 2015, supervised by G. Stoltz and M. Athènes,
- Zofia Trstanova, A mathematical analysis of some importance sampling strategies in molecular dynamics, Université Joseph Fourier and Inria Grenoble, started June 1st 2013, supervised by S. Redon and G. Stoltz.

Project-team members have participated in the following PhD juries:

- E. Cancès was a member (as referee) of the PhD committee of B. Pawilowski (Rennes, Dec. 2015), supervised by F. Nier and N. Mauser.
- F. Legoll was a member (as the opponent) of the PhD committee of D. Elfverson (Univ. Uppsala, Oct. 2015), supervised by A. Malqvist.
- F. Legoll was a member of the PhD committee of M. Capaldo (LMT, ENS Cachan, Nov. 2015), supervised by P. Ladevèze and D. Néron.
- T. Lelièvre was a member (as referee) of the PhD committee of C. Vergé (École Polytechnique, July 2015), supervised by P. Del Moral.
- T. Lelièvre was a member (as referee) of the PhD committee of D. Lesnicki (Paris 6, Sep. 2015), supervised by R. Vuilleumier.
- T. Lelièvre was a member of the PhD committee of O. Zahm (École Centrale de Nantes, Nov. 2015), supervised by A. Zouy.
- T. Lelièvre was a member (as referee) of the HDR committee of J. Tugaut (Dec. 2015, Saint-Étienne).

9.3. Conference participation

Members of the project-team have delivered lectures in the following seminars, workshops and international conferences:

- S. Boyaval, Atelier EDPs stochastiques à Marseilles, June 2015,
- S. Boyaval, Séminaire mathématiques appliquées à Université Versailles Saint-Quentin en Yvelines, October 2015,
- E. Cancès, workshop on Fundamental Aspects of DFT, Oslo, Norway, January 2015,
- E. Cancès, GDR Dynqua Conference on Mathematical Physics, Nantes, France, February 2015,
- E. Cancès, Weekly seminar, ONERA, France, April 2015,
- E. Cancès, distinguished lecture series "Adventures in Theory", Duke University, USA, April 2015,
- E. Cancès, Weekly seminar of the mathematics department, Duke University, USA, April 2015,
- E. Cancès, Weekly seminar of the mathematics department, Michigan State University, Lansing, USA, May 2015,
- E. Cancès, IPAM workshop on materials for a sustainable energy future, Lake Arrowhead, USA, June 2015,
- E. Cancès, SFB conference on Discretization in Geometry and Dynamics, Herrsching am Ammersee, Germany, October 2015
- E. Cancès, Weekly seminar of the mathematics department, University of Metz, France, October 2015,
- E. Cancès, Weekly seminar of the JL Lions laboratory, Paris, France, October 2015,
- L. Chamoin, Séminaire de l'IMT, Toulouse, January 2015,
- L. Chamoin, Séminaire Aristote, École Polytechnique, Palaiseau, February 2015,
- L. Chamoin, 12ième Colloque National en Calcul des Structures, Giens, May 2015,
- L. Chamoin, International conference on Adaptive Modeling and Simulation (ADMOS), Nantes, June 2015,
- L. Chamoin, YIC GACM 2015 (3rd ECCOMAS Young Investigators Conference), Aachen, July 2015,
- L. Chamoin, US National Congress on Computational Mechanics, San Diego, July 2015,
- L. Chamoin, MORE workshop on model reduction, Pilsen, September 2015,
- L. Chamoin, Séminaire de l'équipe-projet POEMS, Palaiseau, December 2015,
- V. Ehrlacher, HIM Workshop: "Gradient flows and entropy methods", Bonn, Germany, February 2015,
- V. Ehrlacher, SIAM CSE 2015, Salt Lake City, USA, March 2015,
- V. Ehrlacher, MSME seminar, Université Marne-la-Vallée, March 2015,
- V. Ehrlacher, MOKAPLAN seminar group, Université Paris-Dauphine, March 2015,
- V. Ehrlacher, Séminaire du groupe de travail "Mécanique des fluides réels", ENS Cachan, May 2015,
- V. Ehrlacher, Séminaire du CMAP, École Polytechnique, Juin 2015,
- V. Ehrlacher, IPAM Workshop on Materials Defects: Mathematics, Computation and Engineering, Lake Arrowhead, USA, June 2015,
- V. Ehrlacher, Numerical Analysis Conference, University of Strathclyde, Glasgow, Great Britain, June 2015,
- V. Ehrlacher, USNCCM 13, San Diego, USA, July 2015,

- V. Ehrlacher, Seminar of the Theoretical Chemistry Group, Johannes Gutenberg Universität, Mainz, Germany, October 2015,
- V. Ehrlacher, 3rd MOKALIEN Meeting, Université Paris-Dauphine, November 2015,
- D. Gontier, workshop on Fundamental Aspects of DFT, Oslo, Norway, January 2015,
- D. Gontier, Oberwolfach workshop Mathematical Methods in Quantum Molecular Dynamics, Germany, June 2015,
- D. Gontier, Nonlinear equations seminar, University Paris 13, November 2015,
- T. Hudson, Workshop on "Analytic approaches to scaling limits for random system", Bonn, January 2015,
- T. Hudson, US National Congress on Computational Mechanics, San Diego, July 2015,
- T. Hudson, ICIAM conference, Beijing, August 2015,
- C. Le Bris, PIRE Workshop, "Design of materials: From grain boundaries to stochastic homogenization", Leipzig, July 2015,
- C. Le Bris, International conference on numerical mathematics and scientific computing, Nanjing (China), August 2015,
- D. Le Peutrec, Séminaire ANEDP au LMO, Université Paris-Sud, 2015,
- D. Le Peutrec, Séminaire Spectral problems in mathematical physics à l'IHP, Paris, 2015,
- D. Le Peutrec, Séminaire EDP à l'IRMAR, Université Rennes 1, 2015,
- F. Legoll, Journées annuelles du GdR ModMat, Lyon, January 2015,
- F. Legoll, Euromech Colloquium on "Multiscale Computational Methods for bridging scales in materials and structures", Eindhoven, February 2015,
- F. Legoll, Workshop "Dimension reduction: mathematical methods and applications", Penn State University, March 2015,
- F. Legoll, Reunion Conference of the Materials Defects IPAM program, Los Angeles, June 2015,
- F. Legoll, Equadiff Conference, Lyon, July 2015,
- F. Legoll, BIRS workshop on "Free-energy calculations: a mathematical perspective", Oaxaca, July 2015,
- F. Legoll, BIRS workshop on "Developments in the Theory of Homogenization", Banff, July 2015,
- F. Legoll, Workshop on "Multiscale Modeling and Analysis in Materials Science", Shanghai, August 2015,
- F. Legoll, ICIAM conference, Beijing, August 2015,
- F. Legoll, SciCADE conference, Potsdam, September 2015,
- F. Legoll, Colloque "Mathématiques appliquées et nanoélectronique", Grenoble, September 2015,
- F. Legoll, Weekly seminar of Numerical Analysis, KTH, Stockholm, October 2015,
- F. Legoll, Workshop "Reduced Basis, POD and PGD Model Reduction Techniques", ENS Cachan, November 2015,
- F. Legoll, Workshop "Gradient flows, Large deviations and Applications", Eindhoven, November 2015,
- F. Legoll, Journée EDP – Probas "Homogénéisation aléatoire", Paris, December 2015,
- F. Legoll, Journées NEEDS – Milieux Poreux, Paris, December 2015,
- T. Lelièvre, Workshop "New Discretization Methods for the Numerical Approximation of PDEs", Oberwolfach, January 2015,
- T. Lelièvre, Séminaire transversal MSME, Paris, January 2015,
- T. Lelièvre, Séminaire Collège de France, January 2015,

- T. Lelièvre, HIM workshop "Analytic approaches to scaling limits for random system", Bonn, January 2015,
- T. Lelièvre, Maxwell mini-symposium, Analysis and its applications, April 2015,
- T. Lelièvre, ADMOS, Nantes, June 2015,
- T. Lelièvre, PASC15, Zurich, June 2015,
- T. Lelièvre, Workshop "Statistical mechanics and computation of large deviation rate functions", Lyon, June 2015,
- T. Lelièvre, Workshop "Probabilistic numerical methods for non-linear PDEs", Imperial College London, July 2015,
- T. Lelièvre, MCM 2015, Linz, July 2015,
- T. Lelièvre, Workshop "Free-energy calculations: A mathematical perspective", BIRS Oaxaca, July 2015,
- T. Lelièvre, CRiSM Workshop "Non reversible dynamics", Warwick, September 2015,
- T. Lelièvre, Scicade 2015, Potsdam, September 2015,
- T. Lelièvre, Set-Oriented Numerics, Imperial College London, September 2015,
- T. Lelièvre, Séminaire de probabilités LJK, Grenoble, November 2015,
- T. Lelièvre, Séminaire analyse numérique, Orsay, November 2015,
- T. Lelièvre, Workshop "Predictive multiscale materials modelling, Cambridge, December 2015,
- T. Lelièvre, Workshop "Mathematical challenges in drug and protein design", MBI Columbus, December 2015,
- S. Lemaire, Workshop on "High order methods on polyhedral meshes", Milano, February 2015,
- S. Lemaire, PANACM conference, Buenos Aires, April 2015,
- S. Lemaire, Weekly seminar of the ANMC group, EPFL, June 2015,
- S. Lemaire, Congrès SMAI 2015, June 2015,
- F. Madiot, Congrès SMAI 2015, June 2015,
- F. Madiot, ICIAM conference, Beijing, August 2015,
- W. Minvielle, Workshop on "Analytic approaches to scaling limits for random system", Bonn, January 2015,
- W. Minvielle, International conference on Adaptive Modeling and Simulation (ADMOS), Nantes, June 2015,
- W. Minvielle, Equadiff Conference, Lyon, July 2015,
- M. Rousset, IRMAR Probability Seminar, Rennes, November 2015,
- M. Rousset, LPMA Probability Seminar, Paris, May 2015,
- M. Rousset, LATP Proba-EDP GdT, Marseille, February 2015,
- G. Stoltz, workshop "Analytic approaches to scaling limits for random systems", Bonn, January 2015,
- G. Stoltz, workshop "Progress in nonequilibrium statistical mechanics", Nice, France, June 2015,
- G. Stoltz, workshop "Free-energy calculations. A mathematical perspective", Oaxaca, Mexico, July 2015,
- G. Stoltz, workshop NASPDE 2015, Sophia-Antiopolis, France, September 2015,
- G. Stoltz, program "Nonequilibrium Statistical Physics 2015", Bangalore, India, November 2015,
- G. Stoltz, meeting of the GdR ISIS, Paris, November 2015,
- G. Stoltz, workshop "Challenges in statistical mechanics: from mathematics to molecular dynamics to technological applications", London, December 2015.

Members of the project-team have delivered the following series of lectures:

- E. Cancès, Winter School on Computational and Mathematical Methods for Materials Defects and Multiphase Flows, 4h, Singapore, February 2015,
- E. Cancès, International summer School in electronic structure Theory: electron correlation in Physics and Chemistry, 2h, Aussois, France, June 2015,
- E. Cancès and T. Lelièvre, ICS summer school on Computational Chemistry and Applied Mathematics, 10h, Roscoff, France, July 15-August 14, 2015.

Members of the project-team have presented posters in the following seminars, workshops and international conferences:

- F. Madiot, Séminaire CEA GAMNI 2015, Paris, February. 2015

Members of the project-team have participated (without giving talks nor presenting posters) in the following seminars, workshops and international conferences:

- E. Cancès, Oberwolfach workshop on Mathematical Methods in Quantum Molecular Dynamics, Germany, June 2015,
- D. Gontier, GDR DYNAmique QUAntique, Nantes, February 2015,
- D. Gontier, XVIII International Congress on Mathematical Physics, Santiago, July 2015,
- D. Gontier, Summer School on Current Topics in Mathematical Physics, Valparaiso, August 2015,
- M. Josien, PIRE Workshop, "Design of materials: From grain boundaries to stochastic homogenization", Leipzig, July 2015
- M. Josien, BIRS workshop on "Developments in the Theory of Homogenization", Banff, July 2015
- F. Madiot, École de Mécanique des Fluides Numérique 2015, Porquerolles, June 2015
- J. Roussel, Oberwolfach workshop on Mathematical Methods in Quantum Molecular Dynamics, Germany, June 2015
- J. Roussel, Non-equilibrium simulation school, Sheffield, September 2015,
- J. Roussel, Numerical Analysis of Stochastic Partial Differential Equations, Sofia-Antipolis, September 2015,
- J. Roussel, Non-equilibrium statistical physics, Bangalore, Octobre 2015,
- G. Stoltz, Oberwolfach workshop on Mathematical Methods in Quantum Molecular Dynamics, Germany, June 2015.

MATHRISK Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

- A. Alfonsi: Co-organizer of the working group seminar of MathRisk “Méthodes stochastiques et finance”. <http://cermics.enpc.fr/~alfonsi/GTMSF.html>
- R. Dumitrescu: Co-organizer of the young researchers in Mathematics Seminar of Université Paris Dauphine.
- B. Jourdain (with B. Bouchard and E. Gobet): organization of the 2015-2016 thematic semester on Monte Carlo methods financed by the Institute Louis Bachelier.

10.1.2. Journal

10.1.2.1. Member of the editorial boards

- R. Elie
Associate editor of *SIAM Journal on Financial Mathematics (SIFIN)* (since November 2014)
- D. Lamberton
Associate editor of
 - Mathematical Finance,
 - Associate editor of ESAIM Probability & Statistics
- A. Sulem
Associate editor of
 - 2011- Present: *Journal of Mathematical Analysis and Applications (JMAA)*
 - 2009- Present: *International Journal of Stochastic Analysis (IJSA)*
 - 2008- Present: *SIAM Journal on Financial Mathematics (SIFIN)*

10.1.2.2. Reviewer - Reviewing activities

The members of the team reviewed numerous papers for numerous journals.

10.1.3. Invited talks

- A. Alfonsi
 - "Dynamic optimal execution in a mixed–market–impact Hawkes price model", Workshop on "The Mathematics of High Frequency Financial Markets", IPAM, Los Angeles, April 13 2015:
 - "Optimal transport bounds between the time-marginals of a multidimensional diffusion and its Euler scheme", AMS-EMS-SPM conference, Porto, June 10 2015:
 - "Dynamic optimal execution in a mixed–market–impact Hawkes price model", séminaire de la chaire Risques financiers, June 12 2015:
 - "Optimal execution in a Hawkes price model", London-Paris Bachelier Workshop on Mathematical Finance 2015, Sept 26 2015
- R. Dumitrescu
 - Financial Mathematics Seminar, Univ Marne-la-Vallée, ENPC and Inria, 12 January
 - Stochastic Analysis Seminar, Imperial College London, 17 March
 - Financial Mathematics Seminar, Univ Evry, 26 March.

- B. Jourdain
 - Conference in honor of Vlad Bally, le Mans, 6-9 October 2015 : Strong convergence properties of the Ninomiya Victoir scheme and applications to multilevel Monte Carlo
 - Workshop on NASPDE 2015, Inria Sophia, 22-23 September 2015 : Multitype sticky particles and diagonal hyperbolic systems of PDEs
 - Workshop BIRS Free-energy calculations, a mathematical perspective, Oaxaca 19-24 July 2015 : Analysis of discrete space versions of the self-healing umbrella sampling and well-tempered metadynamics algorithms
 - Workshop Probabilistic Numerical Methods for Non-Linear PDEs, Imperial College London , 29 June-1st July 2015 : On a stochastic particle approximation of the Keller-Segel equation - Workshop Numerical Probability and Applications to Finance, Enit Tunis, 30 April 2015 : Strong convergence properties of the Ninomiya Victoir scheme and applications to multilevel Monte Carlo
 - Maxwell Colloquium, Edimbourg, 6 February 2015 : Multitype sticky particles and diagonal hyperbolic systems of PDEs
- C. Labart : **MCM2015**, Linz, Austria, July 2015.
- J. Lelong : **MCM2015**, Linz, Austria, July 2015.
- D. Lamberton:
 - Workshop Numerical Probability and Applications to Finance, Tunis, April 2015. "On the Canadian approximation of the American put".
 - Workshop in honor of Vlad Bally, Stochastic Calculus, Monte Carlo Methods and Mathematical Finance, Le Mans October 2015. "On the binomial approximation of the American put".
- R. Elie
 - 7th general AMAMEF and Swissquote conference, Lausanne, 2015
 - Workshop Advanced methods in Mathematical Finance, Angers, France, 2015
 - Workshop on current challenges in financial mathematics and economics, London, 2015
 - Workshop on smart energy and stochastic optimization, ENPC, Paris, 2015
 - South East Asia conference in Mathematical Finance, Siem Reap, Cambodia, 2015
 - 9th Bachelier Colloquium, Metabief, France, 2015
 - seminar, Imperial College, London, 2015
- A. Lionnet - MS-EMS-SPM International Meeting, special session on Stochastic Numerical Methods for Non-linear Equations. Porto, June 10-13.
 - 2nd IMA conference on mathematics in finance. Manchester, 18–19 June.
 - Workshop on Probabilistic numerical methods for nonlinear PDEs at Imperial College. London, June 29 – July 1.
 - The 2015 conference on Stochastic Processes and Applications. Oxford, July 13–17.
- A. Sulem
 - International Conference "Stochastics and Computational Finance 2015- from academia to industry", July 6-10, 2015, ISEG - University of Lisbon, keynote speaker, <http://www.scf2015.com>
 - Conference on Mathematical Finance and Partial Differential Equations, Rutgers University, New Brunswick, New Jersey, May 2015, Plenary speaker, <http://www.finmath.rutgers.edu/mfpde2015/>
 - Second conference on " Stochastics of Environmental and Financial Economics", April 20-24, 2015, Academy of Science in Oslo, Plenary speaker, <http://www.mn.uio.no/math/english/research/groups/stochastic-analysis/events/conferences/StochEnviron-april2015/index.html>

- Conference in honor of Prof. V. Bally, "Stochastic Calculus and Malliavin Calculus, Monte-Carlo Methods and Mathematical Finance", Université du Mans, 6-9 Octobre 2015. <http://imm.univ-lemans.fr/spip.php?article129>

10.1.4. Research administration

- A. Alfonsi: In charge of the Master "Finance and Application" at the Ecole des Ponts.
- V. Bally: Member of the scientific committee of Université Paris-Est Marne-la-Vallée; member of the scientific committee and responsible of the theme "Stochastic equations and PDEs" of ; Responsible of the Probability team of LAMA (until April) and organizer of the seminar of the LAMA laboratory. Labex Bezout;
- R. Dumitrescu : creation of the ALUMNI of *Fondation des Sciences Mathématiques de Paris*
- B. Jourdain: Head of the doctoral school MSTIC, University Paris-Est
- D. Lamberton: Vice-president for research at Université Paris-Est Marne-la-Vallée
- A. Sulem: member of the Committee for technology development , Inria Paris-Rocquencourt

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Undergraduate programs

A. Alfonsi: "Modéliser, Programmer et Simuler", second year course at the Ecole des Ponts.

R. Dumitrescu, Applied courses (Travaux Dirigés) "introduction to finance", L2, Université Paris Dauphine

R. Elie

- Machine learning for actuarial sciences , Institut des actuaires français

- Arbitrage et valorisation d'options, ENSAE

- Introduction to Python, TD L2 Université Paris-Est

B. Jourdain : - course "Probability theory and statistics", first year ENPC

- "Introduction to probability theory", 1st year, Ecole Polytechnique

- "Stochastic numerical methods", 3rd year, Ecole Polytechnique

- projects in finance and numerical methods, 3rd year, Ecole Polytechnique

A. Lionnet

Stochastic Processes, ESIEA, Paris , 18h .

Graduate programs

A. Alfonsi:

- "Calibration, Volatilité Locale et Stochastique", third-year course at ENSTA (Master with University Paris I).

- "Traitement des données de marché : aspects statistiques et calibration", lecture for the Master at UPEMLV.

- A. Alfonsi: "Mesures de risque", Master course of UPEMLV and Paris VI.

V. Bally,

- Advanced Probability (Master 1 Recherche Mathématiques et Application, University of Marne-la-Vallée

- "The Malliavin calculus and applications in finance", 30h, Master 2 Mathematical Finance, Université Marne la Vallée

- V. Bally, " Interest Rates", 20h, Master 2 Mathematical Finance , Université Marne la Vallée
- V. Bally, " Risk methodes in actuarial science", 36h, Master IMIS, Université Marne la Vallée
- R. Dumitrescu, Applied courses (Travaux Dirigés) in " Asset pricing by absence of arbitrage opportunity", Université Paris Dauphine
- R. Elie - Imperfect markets modeling M2 Master MASEF (Paris-Dauphine)
- Machine learning and applications, Master 2 Mathematics, , ENPC
- Portfolio management and risk measures, Master Actuariat, Université Paris-Est
- Arbitrage, volatility and portfolio management, Master 2 Math. Finance, Université Paris-Est
- B. Jourdain, B. Lapeyre "Monte-Carlo methods", 3rd year ENPC and Master Recherche Mathématiques et Application, University of Marne-la-Vallée

A. Sulem

- "Finite difference for PDEs in Finance", Master 2 MASEF, Université Paris IX-Dauphine, Département Mathématiques et Informatique de la Décision et des Organisations (MIDO), 18h.
- Master of Mathematics, University of Luxembourg, 22 h lectures and responsible of the module "Numerical Methods in Finance".

10.2.2. Supervision

Anis Al Gerbi (started november 2013) "Discretization of stochastic differential equations and systemic risk modeling", supervised by B. Jourdain and E. Clément

Pierre Blanc, "Price impact on marker orders and limit order books (from Nov. 2012), Ecole des Ponts, Adviser : A. Alfonsi defended on October 9th 2015.

Rui Chen (Fondation Sciences Mathématiques de Paris grant), "Stochastic Control of mean field systems and applications to systemic risk, from September 2014, Université Paris-Dauphine, Adviser A. Sulem

Roxana Dumitrescu, (Fondation Sciences Mathématiques de Paris grant, RDMath Ile de France), *Contributions au contrôle stochastique avec des espérances non linéaires et aux équations stochastiques rétrogrades* , Advisers: A. Sulem with B. Bouchard and R. Elie, defended on September 28 2015, Université Paris-Dauphine.

Antoine Ly, CIFRE agreement, Partner: Miliman, advisers: R. Elie and Arthur Charpentier, Applications du machine learning en Actuariat, started 2015, Advisers: R. Elie and Arthur Charpentier

Sebastien Mollaret, CIFRE agreement, Partner: Natixis, Valorisation et couverture dans les modèles à changement de régime started 2015, Advisers: R. Elie.

Ernesto Palidda, Advisers: A. Alfonsi and Bernard Lapeyre, Ecole des Ponts, defended on May 29 2015.

- Paulo Pigato, "Lower bounds for the density of the solution of SDE's under the weak Hörmander condition, and applications in finance", Advisers: V. Bally and A. Dai Pra, University of Padova, defended October 2015, Université Paris-Est Marne la Vallée,

Victor Rabiet : "On a class of jump type stochastic equations", Université Paris-Est Marne la Vallée, Advisers: V. Bally (75 %) and E. Locherbach, defended June 2015.

Clément Rey (from Oct. 2012), " High order discretization schemes for singular diffusions", Ecole des Ponts, Advisers : A. Alfonsi and Vlad Bally, defended on December 4th 2015.

Giulia Terenzi (from October 2015) "American options in complex financial models", Advisers : D. Lamberton and Lucia Caramellino, from University Tor Vergata, Rome.

Alexandre Zhou (started November 2015) "Analysis of stochastic particle methods applied to finance", supervised by B.Jourdain

10.2.3. Juries

- B.Jourdain
 - Head of the HCERES visit committee of the Laboratoire de Mathématiques Raphael Salem, Rouen, November 20 2015
 - PhD of Victor Rabiet, defended on June 23 2015, University Paris-Est
 - PhD of Thi Quynh Giang NGUYEN, defended on October 19 2015, University Paris-Est
- A. Sulem
 - PhD Roxana Dumitrescu, September 2015, Université Paris-Dauphine
 - Referee (Rapporteur) HdR "*Quelques contributions en finance mathématique, risque de liquidité et finance d'entreprise*", Ly Vath Vathana, Université Evry Val d'Essonne, November 23 2015
 - Faculty opponent, PhD thesis "*Aspects of Waiting and Contracting in Game Theory*", Peter Helgesson, Chalmers University of Technology and University of Gothenburg, Sweden, June 5th 2015.
 - Sulem : Committe for the recruitment of a Professor of Insurance Mathematics, ETH Zurich January 2015
 - Committe for the recruitment of a Professor (in Financial Mathematics and numerical probability, Laboratoire de probabilités, Université Paris-Diderot, May 2015
 - Committe for the recruitment of a researcher (chargé de recherche) Inria Paris-Rocquencourt, June 2015

10.3. Popularization

- A. Lionnet:
 - article on Financial Mathematics published in the online popularization magazine Interstices https://interstices.info/jcms/p_82123/les-mathematiques-financieres-des-quants
 - Conference given for middle-schoolers at University Paris 8 during the "Week of Mathematics 2015".
 - Participation to the colloquium "Science and You", Nancy, June 1–6.
 - The two entries of A. Lionnet to the contest SIAM Math Matters, Apply It (<https://www.siam.org/careers/matters.php>) were selected to be turned into a poster. One was on financial derivatives (<https://www.siam.org/careers/pdf/derivatives.pdf>) the other on systemic risk (<https://www.siam.org/careers/pdf/risk.pdf>).
- A. Sulem:
 - "Applications of stochastic analysis", (2015), invited contribution for the *Princeton Companion to Applied Mathematics*, <http://press.princeton.edu/titles/10592.html>
 - Responsible for the partnership of Inria with Institut Henri Poincaré for the creation of a museum of Mathematics.

MOKAPLAN Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Q. Mérigot was chair of the annual SMAI-Sigma meeting in Paris (2 Nov 2015)?

G. Peyré is the chair of the conference SIGMA 2016 (<https://www.ceremade.dauphine.fr/~peyre/sigma2016/>).

9.1.1.2. Member of the organizing committees

G. Peyré is in the organizing committee of Mathematics and Image Analysis MIA'16 (<https://fadili.users.greyc.fr/mia/events/fgmia-16/>).

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

G. Peyré is in the conference program committees of CANUM 2016 (<http://smai.emath.fr/canum2016/>).

9.1.2.2. Member of the conference program committees

Q. Mérigot and G. Peyré were part of the program committee of Geometric Science of Information 2015

G. Carlier was member of the Scientific Committee of SMAI-2015.

9.1.2.3. Reviewer

G. Peyré is reviewer for conferences in machine learning (ICML, NIPS) and computer graphics (SIGGRAPH).

V. Duval has reviewed several contributions to the conferences GRETSI, CAMSAP, SSVM, SPARS.

Q. Mérigot has reviewed for Symposium on Computational Geometry (SoCG), Symposium on the theory of computational (STOC).

9.1.3. Journal

9.1.3.1. Member of the editorial board

Guillaume carlier is member of the editorial Board of "Journal de l'Ecole Polytechnique" and co-editor of "Mathematics and Financial Economics".

G. Peyré associate editor for SIAM Journal on Imaging Sciences and Journal of Mathematical Imaging and Vision (Springer).

9.1.3.2. Reviewer

The members of the team are frequently reviewing papers in SIIMS (SIAM Journal on Imaging Sciences), JMAA (Journal of Mathematical Analysis and Applications), IPol (Image Processing Online), JVCI (Journal of Visual Communication and Image Representation), COCV, M2AN ... Discrete and computational geometry, Journal of the London Math Society, JOTA, JCP, "Information and Inference: A Journal of the IMA", JMIV, Optimization Letters, PAMI, SIAM optimization and control ...

9.1.4. Invited talks

V. Duval has given invited talks at the Séminaire de Mathématique Appliquée au Traitement d'Image (Télécom ParisTech & Université Paris-Descartes), Journée Traitement d'Images du projet M2NUM du GRR LMN (INSA Rouen), and Mokameetings (Inria & Université Paris-Dauphine).

Q. Mérigot: Séminaire parisien de géométrie algorithmique, Paris (décembre 2015) ; Applied PDEs Seminar, Imperial College, Londres (décembre 2015), Convexity, Probability and Discrete Structures, Marne-la-vallée (octobre 2015) ; Journée thématique transport optimal et applications, Bordeaux (octobre 2015) ; Mini-symposium on gradients flow , SciCADE conference, Potsdam (september 2015) ; Geometric Computing Group Seminar, Stanford University (février 2015)

F-X. Vialard was invited at to give talks at: Semester on Riemannian geometry in infinite dimension in Vienna, Semester on geometric mechanics and stochastics at EPFL, Math on the Rocks conference, Séminaire d'analyse at University Paris 11.

9.1.5. Scientific expertise

The members of the team are frequently reviewing and evaluating ANR projects.

G. Peyré was in the 2015 recrutement committees in Nice Univ. (Professor in analysis) and Paris-Dauphine (Maitre de Conference in statistics).

G. Carlier was in the AERES visiting committee at Université du Havre.

Q. Mérigot participated to the section committee MCF 26 at Paris 6.

F-X. Vialard was reviewer for the DFG RSF grant proposal (Russian-German cooperation grant).

9.1.6. Research administration

J-D. Benamou is a member of Inria-Paris Restaurant committee.

J-D. Benamou is an elected member of the Academic council of PSL.

G. Peyré is in the scientific advisory committee of "Fondation Sciences Mathématiques de Paris" and in the scientific advisory committee of the Ceremade laboratory, University Paris-Dauphine.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Q. Mérigot teaches Analyse convexe approfondie, 50h equivalent TD, Univ. Paris Dauphine teaches two courses on "Sparsity and Compressed Sensing" and "Deformable Models and Geodesic Methods" in Master 2 MVA ENS Cachan, France. Gabriel Peyré teaches a pre-doctoral course "image and surface processing" in PSL* University network.

9.2.2. Supervision

PhD : Roméo Hatchi, intitulé , Université Paris 9 Dauphine, december 2015, G. Carlier

PhD : Julien André, These CIFRE avec l'entreprise OPTIS Grenoble-INP (co-direction D. Attali, B. Thibert, Q. Mérigot)

PhD in progress : Jocelyn Meyron, IED de Grenoble, Q. Mérigot, D. Attali and B. Thibert.

PhD in progress : Lenaïc Chizat, intitulé , october 2014, F-X. Vialard and G. Peyré.

PhD in progress : Aude Genevay, intitulé , october 2015, J-D. Benamou and G. Peyré.

PhD in progress : Luca Nenna, intitulé , october 2013, J-D. Benamou and G. Carlier.

PhD in progress : Jonathan Vacher, Machine learning approaches for neurosciences of the visual brain, October 2013, G. Peyré and Y. Fregnac.

PhD in progress : Quentin Denoyelle, *Analyse théorique et numérique de la super-résolution sans grille*, October 2014, G. Peyré and V. Duval.

Postdoc in progress : Clarice Poon, *Support recovery using total variation and others sparse priors*, September 2015, G. Peyré and V. Duval.

Postdoc in progress: Dario Prandi, sub-Riemannian model for imaging, Oct. 2015, G. Peyré and J-M Mirebeau

Postdoc in progress: Bernhard Schmitzer, fast algorithms for optimal transport, Oct. 2014, G. Peyré.

Postdoc in progress: Thomas Gallouët, Fluid model and optimal transport, Oct. 2015, Q. Mérigot and Yann Brenier.

Postdoc in progress: Roman Andreev, Numerical Methods for Mean Field Games , Mai 2015, Yves Achdou and J-D. Benamou.

9.2.3. *Juries*

J-D. Benamou and G. Carlier were in the Ph.D. committee of Roméo Hatchi (Paris 9, december 2015) and G. Carlier was referee for the Ph.D of A. Meszaros (Paris Sud Orsay).

Gabriel Peyré was PhD reviewer of Yi-Qing Wang (Cachan, mars 2015), Laurent Gajny (Lille, avril 2015), Arthur Leclaire (Paris, juin 2015), Nicolas Chauffert (Toulouse, Sept. 2015), Matthieu Toutain (Nice, Dec. 2015).

Gabriel Peyré was habilitation reviewer of Boris Thibert (Grenoble, June 2015), Marianne Clausel (Grenoble, Sep. 2015).

Gabriel Peyré was in the PhD comitees of Solène Ozeré (Rouen, Dec. 2015)

9.3. Popularization

G. Carlier gave a general audience lecture on mathematics of urban traffic at the Consulat de France in Vancouver.

QUANTIC Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

Benjamin Huard organized and was a member of the program committee of two international conferences in 2015: the CTCQED15 conference in Dresden (1 week in June/July) and the Third Conference on Quantum Thermodynamics in Porquerolles (1 week in October).

Alain Sarlette has organized an invited session on “quantum control” at IEEE Conference on Decision and Control (CDC) 2015 in Osaka.

8.1.2. Journal

8.1.2.1. Member of the editorial boards

Mazyar Mirrahimi is an associate editor of System and Control Letters.

Pierre Rouchon is an associate editor of SIAM J. of Control and Optimization.

8.1.2.2. Reviewer - Reviewing activities

Benjamin Huard served as a referee for Nature, Science, Physical Review Letters and other physics journals.

François Mallet served as a referee for Physical Review Letters .

Mazyar Mirrahimi served as a referee for Nature Comm., Reviews of Modern Physics, and Physical Review Journals.

Pierre Rouchon served as referee for IEEE Trans. Automatic Control, Automatica, System and Control Letters, and New J. of Physics.

Alain Sarlette has been a reviewer for several automatic control and dynamical systems journals and conferences.

8.1.3. Invited talks

Benjamin Huard gave an invited talk at the Colloquium of the Université de Sherbrooke, Canada, June 2015.

Benjamin Huard gave an invited talk at the PIERS conference, Prague, July 2015.

Benjamin Huard gave an invited talk at the Colloquium of the Physics department, University of Basel, Switzerland, Oct 2015.

Benjamin Huard gave an invited talk at the workshop of University of Tokyo- Ecole Normale Supérieure, Tokyo, Japan, Nov 2015.

Philippe Campagne-Ibarcq gave an invited talk at the “Congrès du GDR IQFA”, Palaiseau, France, Novembre 2015.

Philippe Campagne-Ibarcq gave an invited talk at the American Physical Society’s March Meeting in Saint Antonio, Texas, March 2-6.

Benjamin Huard and Mazyar Mirrahimi gave invited talks at the conference organized for the 30 years of Quantronics: Paris, June 22-25.

François Mallet gave an invited talk at the 14th International Conference on Squeezed States and Uncertainty Relations In Gdansk, 29 June- 3 July.

Mazyar Mirrahimi gave an invited talk at the Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT) conference in Prague: July 27-August 1.

Mazyar Mirrahimi gave an invited talk at the Gordon Research Conference on Quantum Control of Light and Matter: Mount Holyoke College, MA, August 2-7.

Mazyar Mirrahimi gave an invited talk at Quantum Science Symposium in Cambridge, MA: Sept 21-22.

Pierre Rouchon gave an invited talk at the Workshop on Control Systems and Identification Problems January 12-16, 2015 in Valparaso, CHILE.

Mazyar Mirrahimi and Pierre Rouchon gave invited talks at the Oberwolfach Workshop on Mathematical Methods in Quantum Molecular Dynamics.

Pierre Rouchon gave an invited talk at the PRACQSYS meeting in Sydney: 20-25 July 2015.

Alain Sarlette gave an invited talk at the International Conference on Industrial and Applied Mathematics (ICIAM) in Beijing, August 10-14.

Alain Sarlette gave an invited talk at the second international conference on Geometric Science of Information in Palaiseau, France, Oct 28-30.

8.1.4. Scientific expertise

Benjamin Huard was a member of the ANR CES30 committee in 2015.

Mazyar Mirrahimi is a member of the Technical Committee on "Distributed Parameter Systems" in IFAC (International Federation of Automatic Control).

Pierre Rouchon is a member of the "Conseil Scientifique du Conservatoire National des Arts et Metiers" since 2014.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Benjamin Huard has given a course (20 hours) entitled "Quantum fluctuations and measurement" in the Master ICFP (International Centre for Fundamental Physics) of ENS Paris, UPMC, Paris 7 and Orsay.

Benjamin Huard has coordinated an experimental project (40 hours) entitled "Measuring the quantum of conductance across an ato" at ENS Paris for Physics students in L3.

Benjamin Huard has taught a "préceptorat" (16 hours) in Quantum Physics for L3 students in ESPCI, Paris.

François Mallet has taught approximately 192 hours as a university associate professor. Besides undergrad teaching, he has done classes on quantum physics (30 hours) and solid state physics (15 hours) for M1 at UPMC, and quantum transport for M2 ICFP (20 hours).

Mazyar Mirrahimi and Pierre Rouchon have given a course (20 hours) entitled "UE : Analyse et contrôle de systèmes quantiques " in the "Master de sciences et technologies, mention mathématiques et applications, Université Pierre et Marie Curie".

Pierre Rouchon has given a course (25 hours) entitled "Cryptographie, théorie des nombres et information quantique" at Mines Paristech.

Pierre Rouchon has given a course (12 hours) entitled "Modelling, simulation and feedback of open quantum systems " in the "module d'Ingénierie Quantique" of the "parcours doctoral de PSL-ITI".

Pierre Rouchon and Alain Sarlette gave a one week course (22 hours) on feedback control of quantum systems in the European Embedded Control Institute in 23-27 March 2015.

Alain Sarlette has given a master course on "Probabilistic robotics" at Ghent University (30 hours).

8.2.2. Supervision

PhD: Philippe Campagne-Ibarcq successfully defended his PhD thesis at ENS in June 2015. He presented his works on “Measurement back action and feedback in superconducting circuits”. (advisor: Benjamin Huard).

PhD: Pascal Combes, Mines Paristech. “Control of electrical drive” with Schneider-Electric. He has obtained his PHD in December 2015. (advisors: Pierre Rouchon and Philippe Martin).

PhD in progress: Danijela Markovic. ENS. “Quantum information protocols with microwave quantum optics”. Sept 2014. (advisors: Benjamin Huard and François Mallet).

PhD in progress: Nathanaël Cottet. ENS. “Quantum heat engines based on superconducting circuits”. Sept 2015. (advisor: Benjamin Huard).

PhD in progress: Quentin Ficheux. ENS. “Thermodynamics of quantum information”. Sept 2015. (advisors: Benjamin Huard and Zaki Leghtas).

PhD in progress: Joachim Cohen. ENS. “Fault-tolerant quantum computation for experiments in circuit QED”. Nov 2013 (advisor: Mazyar Mirrahimi).

PhD in progress: Noad Hamze El Badaoui. Mines Paristech. “Real-time estimation for Laser Gyroscope” with Thales. January 2013. (advisors: Pierre Rouchon and Philippe Martin).

PhD in progress: Pierre Six. Mines Paristech. “Parameter and quantum state estimation relying on quantum measurements”. Sept 2013. (advisor: Pierre Rouchon).

PhD in progress: Rémi Azouit. Mines Paristech. “Quantum circuits, Input/Output theory and adiabatic elimination”. Sept 2014. (advisor: Pierre Rouchon).

PhD in progress: Alain Sarlette is co-supervising 3 PhD students with his former institution UGent (Simon Apers, Zhifei Zhang, Arash Farnam). Simon Apers is working on (quantum) network algorithms accelerations and intends to address other quantum control questions.

8.2.3. *Juries*

Benjamin Huard was a member the PhD defense committees of Kevin Lalumière (Université de Sherbrooke, Canada), Eric Holland (Yale University, New Haven, CT USA) and Pasi Lähteenmäki (Aalto University, Finland).

Pierre Rouchon was a member the PhD defense committees of Achraf Kallel (Mines ParisTech, Sophia Antipolis), Axel Barrau (Mines ParisTech), Giovanni De Nunzio (Université de Grenoble), Philippe Laurent (Université de Nantes).

8.3. Popularization

Benjamin Huard gave a talk at Journée X-ENS, Ecole Polytechnique, Palaiseau, France (May 2015) in front of an assembly of professors in “classes préparas”. He also gave a seminar for students at ENS Paris (Jan 2015).

Benjamin Huard, François Mallet and Mazyar Mirrahimi gave interviews for newspapers, magazines and websites (Libération, La Recherche, Phys.org, les Echos, 01net, Silicon).

Benjamin Huard wrote an article for La Recherche: B Huard, Les microprocesseurs du futur, La Recherche 501, 62 (Juillet 2015).

Pierre Rouchon gave a lecture on "Stabilisation par feedback quantique de la boîte à photons du LKB" (May 21, 2015) during the "journées de l'école doctorale des Universités de Bourgogne et de Franche Comté".

Alain Sarlette is answering questions about quantum control and quantum computing on the website "ik-heb-een-vraag.be" where Flemish layman can ask questions to scientific experts.

SIERRA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- F. Bach, program co-chair for International Conference on Machine Learning (ICML), 2015.

10.1.1.2. Member of the organizing committees

- A. d'Aspremont, workshop organizer, "Optimisation pour l'apprentissage statistique", École de Physique des Houches, January 2015.
- V. Perchey, local chair for the main conference in learning theory, the "Conference On Learning Theory – COLT'15", July 2015.
- V. Perchey, workshop organizer, "Challenges in Optimization for Data Science", July 2015.
- V. Perchey, organizer of the conference "French Symposium on Games - Theory and Applications", May 2015.

10.1.2. Scientific events selection

10.1.2.1. Area chairs

- S. Lacoste-Julien, International Conference on Machine Learning (ICML), 2015.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- A. d'Aspremont, SIAM Journal on Optimization, Associate Editor.
- F. Bach, Journal of Machine Learning Research, Action Editor.
- F. Bach, Information and Inference, Associate Editor.
- F. Bach, SIAM Journal on Imaging Sciences, Associate Editor.

10.1.4. Others

- A. d'Aspremont is on the scientific committee for Programme Gaspard Monge pour l'Optimisation, Fondation mathématique Jacques Hadamard.
- S. Lacoste-Julien received a NIPS 2015 Outstanding Reviewer Award.

10.1.5. Invited talks

- S. Arlot, "V-fold selection of kernel estimators", EMS 2015: European Meeting of Statisticians, session 'Recent advances in resampling methods' (Amsterdam, July 6, 2015).
- S. Arlot, "Cross-validation for estimator selection", Workshop "Information Based Complexity and Model Selection" (IHP, Paris, April 9, 2015).
- S. Arlot, "Comparaison de procédures de validation croisée (V-fold)", Conférence "Calibration statistique" (Université de Nice - Sophia Antipolis, February 20, 2015).
- S. Arlot, "Cross-validation for estimator selection", SMPGD 2015: Statistical Methods for Post Genomic Data (Ludwig-Maximilians University, February 13, 2015).
- S. Arlot, "Sélection d'estimateurs par validation croisée", Colloquium du MAP5 (Université Paris Descartes, November 13, 2015).

- S. Arlot, “Analyse du biais de forêts purement aléatoires”, Séminaire de Probabilités et Statistiques (Lieu, Laboratoire JA Dieudonné, Université de Nice - Sophia Antipolis, January 8, 2015).
- A. d’Aspremont, “Ranking from Pairwise Comparisons using Seriation”:
 - Séminaire du Collège de France, June 2015.
 - International Symposium on Mathematical Programming, July 2015.
 - STATLEARN 2015.
 - Fields Institute workshop on big data, Toronto, Feb. 2015.
- A. d’Aspremont, “Seriation, DNA Sequencing and Nanopores”, Datalead 2015.
- A. d’Aspremont, “Optimisation et apprentissage”, Conférence SCOR - Institut des actuaires, December 2015.
- F. Bach, Invited presentation at Workshop on Data-driven Algorithmics, Harvard, September 2015.
- F. Bach, Invited tutorial at Allerton Conference, Urbana-Champaign, 2015.
- F. Bach, Invited seminar at Ecole Polytechnique Federale de Lausanne, October 2015.
- D. Garreau, “Kernel change-point detection”, 45th Ecole d’été de Saint-Flour (Saint-Flour, July 7-17, 2015).
- S. Lacoste-Julien, “Sequential Kernel Herding: Frank-Wolfe Optimization for Particle Filtering”, invited talk at the Bayes in Paris Seminar at ENSAE, Paris, France, March 2015.
- S. Lacoste-Julien, “SAGA: a fast incremental gradient method”, invited talk in the Nonsmooth Optimization cluster at ISMP 2015 (22nd International Symposium on Mathematical Programming), Pittsburgh, PA, USA, July 2015.
- S. Lacoste-Julien, “Frank-Wolfe Optimization for Structured Machine Learning”:
 - McGill University, Montreal, Canada, December 2015.
 - Université de Montréal, Montreal, Canada, December 2015.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : S. Arlot and F. Bach, “Statistical learning”, 24h, M2, Université Paris-Sud.

Master : A. d’Aspremont is co-director of the Master MASH (Mathématiques, Apprentissage et Sciences Humaines) at Paris Sciences et Lettres.

Master : A. d’Aspremont, “Optimisation et apprentissage”, 21h, M2 (MVA), ENS Cachan.

Master : A. d’Aspremont, “Optimisation convexe”, 21h, M2, Ecole Normale Supérieure.

Master : S. Lacoste-Julien and F. Bach, “Apprentissage statistique”, 35h, M1, Ecole Normale Supérieure.

Master : S. Lacoste-Julien and F. Bach (together with G. Obozinski), 30h, M2 (MVA), ENS Cachan.

Master : S. Lacoste-Julien, “Projets informatiques”, 20h, M2 (MASH), Université de Paris-Dauphine.

10.2.2. Supervision

PhD : Fabian Pedregosa, “Feature extraction and supervised learning on fMRI: from practice to theory”, UPMC, February 20th, 2015, F. Bach, co-advised with A. Gramfort (Telecom).

PhD : Rémi Lajugie, “Structured prediction for sequential data”, UPMC, September 18th, 2015, S. Arlot and F. Bach.

PhD : Fajwel Fogel, “Convex and spectral relaxations for phase retrieval, seriation and ranking”, Ecole Polytechnique, November 18th, 2015, A. d’Aspremont and F. Bach.

PhD in progress: Thomas Schatz, September 2012, F. Bach, co-advised with E. Dupoux (ENS, cognitive sciences).

PhD in progress: Sesh Kumar, September 2013, F. Bach.

PhD in progress: Rafael Rezende, September 2013, F. Bach, co-advised with J. Ponce.

PhD in progress: Anastasia Podosinnikova, December 2013, F. Bach and S. Lacoste-Julien.

PhD in progress: Christophe Dupuy, January 2014, F. Bach, co-advised with C. Diot (Technicolor).

PhD in progress: Jean-Baptiste Alayrac, September 2014, S. Lacoste-Julien, co-advised with J. Sivic and I. Laptev.

PhD in progress: Aymeric Dieuleveut, September 2014, F. Bach.

PhD in progress: Nicolas Flammarion, September 2014, A. d'Aspremont and F. Bach.

PhD in progress: Damien Garreau, September 2014, S. Arlot (co-advised with G. Biau).

PhD in progress: Vincent Roulet, October 2014, A. d'Aspremont.

PhD in progress: Anaël Bonneton, December 2014, F. Bach, located in Agence nationale de la sécurité des systèmes d'information (ANSSI).

PhD in progress: Dmitry Babichev, September 2015, F. Bach, co-advised with A. Judistky (Univ. Grenoble).

PhD in progress: Rémi Leblond, September 2015, S. Lacoste-Julien.

PhD in progress: Antoine Recanati, September 2015, A. d'Aspremont.

PhD in progress: Damien Scieur, September 2015, A. d'Aspremont and F. Bach.

PhD in progress: Tatiana Shpakova, September 2015, F. Bach.

10.2.3. Juries

S. Arlot, member of the PhD Committee for Maud Thomas at Université Paris Diderot on July 2, 2015.

F. Bach, member of the HDR committee of Jeremie Mary (Univ. Lille).

10.3. Popularization

S. Lacoste-Julien, general public talk "Apprentissage automatique et big data", at La Maison des Sciences, Châtenay-Malabry, France, September 2015.

ANGE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

Y. Penel was involved in the organising committee of the day workshop “Low velocity flows – application to low Mach and low Froude regimes” that took place in University Paris Descartes on November 5-6 and that gathered 105 researchers.

E. Audusse and Y. Penel organised the welcome session for newly recruited researchers in mathematics on behalf of national research institutions (CNRS, Inra, Inria, SFdS, SMAI, SMF) on January 19.

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing activities

Member	Journal
E. Audusse	Ocean Modeling, Computational Geosciences, M2AN
C. Guichard	International Journal On Finite Volumes
A. Mangeney	Natural Hazards
J. Sainte-Marie	M2AN, M3AS, IJNMF, Computers & Fluids
N. Seguin	M2AN, ESAIM ProcS, SIAM Scientific Computing

10.1.3. Invited talks

Conference	Location	Month	Members involved
Avalanche and Rupture Phenomena	Inria (Nancy)	Feb.	A. Mangeney
CoToCoLa	Besancon	Feb.	J. Sainte-Marie, N. Seguin
Inria-Mexico	Mexique	June	M. Parisot
MAMERN15	Pau	June	C. Guichard
NumHyp15	Cortone (Italy)	June	N. Aïssiouene, M. Parisot, N. Seguin
AP and Multiscale methods	June	Madison (USA)	N. Seguin
CEMRACS	CIRM (Marseille)	Aug.	N. Aïssiouene, E. Audusse, Y. Penel
JAG15	Caen	Sept.	A. Mangeney
CAFFEET15	San Francisco (USA)	Sept.	J. Sainte-Marie
Algae In Silico	Sophia-Antipolis	Oct.	N. Aïssiouene
Workshop Gladys	Gard	Nov.	N. Aïssiouene
Workshop LowMach	Paris	Nov.	E. Audusse, M. Parisot
FAST	Orsay	Nov.	A. Mangeney
JILL15	LJLL (Paris)	Nov.	B. di Martino
Seminars	Date	Member	
Suisse (Zürich, Davos)	19-20 Jan.	A. Mangeney	
Orsay	16 Apr.	N. Seguin	
Manon (LJLL)	07 May	M. Parisot	
Amiens	05 Oct.	E. Audusse	
Nice	12 Nov.	Y. Penel	

10.1.4. Leadership within the scientific community

Organisation	People	Duty
AMIES	E. Godlewski	Member of board
CNU 26	N. Seguin	Member
EGRIN	E. Audusse	Correspondent (Paris 13)
	B. di Martino	Correspondent (Corse)
	N. Goutal	Correspondent (EDF)
	C. Guichard	Correspondent (UPMC)
	A. Mangeney	Member of board
	M. Parisot	Correspondent (ANGE)
	J. Sainte-Marie	Scientific head
SMAI	Y. Penel	Member of board

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master's degree (M2) - E. Godlewski and J. Sainte-Marie, Models and numerical methods for free surface flows, 20 hours (lectures), Univ. Pierre et Marie Curie Paris 6

Master's degree (M2) - C. Guichard, Numerical methods for nonstationary PDEs, 18 hours (example and programming classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M2) - A. Mangeney and J. Sainte-Marie, Modélisation des écoulements gravitaires et tsunamis, 40 hours (lectures and programming classes), Univ. Paris Diderot Paris 7, IPGP

Engineering school (2nd year) - E. Audusse, Hyperbolic systems, 30 hours (lectures), Univ. Paris 13

Master's degree (M1) - C. Guichard, Basis of numerical methods, 63 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M1) - A. Mangeney and J. Sainte-Marie, Dynamique des écoulements gravitaires et tsunamis, 40 hours (lectures and programming classes), Univ. Paris Diderot Paris 7, IPGP

Master's degree (M1) - N. Seguin, Mathematics, Numerical Analysis and Algorithmics, 72 hours (lectures, example and programming classes), Univ. Nantes

Bachelor's degree (L3) - N. Aïssiouene, Numerical methods for linear systems with Scilab, 36 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Engineering school (1st year) - E. Audusse, Numerical analysis for differential equations, 30 hours (example classes), Univ. Paris 13

Bachelor's degree (L3) - C. Guichard, Numerical linear algebra, 72 hours (example and programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L3) - M. Parisot, Hilbert analysis, 30 hours (lectures and example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L3) - N. Seguin, Mathematics for engineers, 37 hours (lectures and example classes), Univ. Nantes

Bachelor's degree (L2) - E. Audusse, Scientific computing, 36 hours (lectures), Univ. Paris 13

Engineering school (1st year) - Y. Penel, Partial Differential Equations, 15 hours (example classes), École Centrale Paris

Bachelor's degree (L2) - Y. Penel, Integration in 2 and 3 dimensions, 42 hours (lectures and example classes), Univ. Pierre et Marie Curie Paris 6 and Station Biologique Marine de Roscoff

Bachelor's degree (L1) - E. Nayir, Mathematics, 72 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1) - F. Wahl, Calculus, 18 hours (example classes), Univ. Pierre et Marie Curie Paris 6

E. Godlewski is the head of the “Mathematics for Industry” M.Sc. program of Univ. Pierre et Marie Curie Paris 6. We mention that E. Audusse is the deputy director of the “Applied Mathematics and Scientific Computing” program of the SupGalilee engineering school.

10.2.2. Supervision

PostDoc in progress - Pierre-Olivier Lamarre, *Optimization of the hydrodynamic regime in a raceway and lagrangian trajectories of algae*, supervised by J. Sainte-Marie (in collaboration with O. Bernard, BIOCORE), from Nov. 2015

PostDoc in progress - Erica Schwindt, *Data assimilation for an advection/diffusion equation*, supervised by J. Sainte-Marie (in collaboration with M. Boulakia, REO), from Sept. 2015

PostDoc - Vivien Desveaux, *Méthodes d'assimilation de données dans le cadre de la surveillance des agressions biologiques et chimiques*, supervised by J. Sainte-Marie (in collaboration with M. Boulakia, REO), until Aug. 2015

PhD in progress - Nora Aïssiouene, *Derivation and analysis of a non-hydrostatic Shallow water type model*, Univ. Pierre et Marie Curie Paris 6 (Inria grant), supervised by E. Godlewski and J. Sainte-Marie, from 2013

PhD in progress - Vincent Bachelet, *Granular flows and generated acoustic waves: a laboratory investigation*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with J. De Rosny and R. Toussaint), from 2015

PhD in progress - Tim Borikov, *Physical processes at play in Martian landslides*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with D. Mège), from 2012

PhD in progress - Do Minh Hieu, *Analyse mathématique et schémas volumes finis pour la simulation des écoulements quasi-géostrophiques à bas nombre de Froude*, Univ. Paris 13, supervised by E. Audusse and Y. Penel (in collaboration with S. Dellacherie and P. Omnes), from 2014

PhD in progress - Dena Kazerani, *Simulation et modélisation de problèmes à frontière libre*, Univ. Pierre et Marie Curie Paris 6, supervised by N. Seguin (in collaboration with P. Frey and C. Audiard), from 2013

PhD in progress - Hélène Miallot, *Numerical modelling of landquakes*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with Y. Capdeville), from 2015

PhD in progress - Clément Mifsud, *Analyse et approximation des systèmes de Friedrichs : application à la modélisation de l'élastoplasticité*, Univ. Pierre et Marie Curie Paris 6, supervised by N. Seguin (in collaboration with J.-F. Babadjian and B. Després), from 2013

PhD in progress - Ethem Nayir, *Approximation multi-vitesse des équations de Navier-Stokes hydrostatiques: Analyse mathématique et simulations numériques*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse, Y. Penel and J. Sainte-Marie, from 2014

PhD in progress - Amandine Sergeant-Boy, *Detection and characterisation of seismic sources generated by glaciers: numerical modelling and analysis of seismic waves*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with J.-P. Montagner, E. Stutzmann and O. Castelnau), from 2013

PhD - Maxime Farin, *Analysis of the seismic signal generated by laboratory granular flows*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with R. Toussaint and J. de Rosny), until Mar 2015

PhD - Jannes Kinscher, *Analysis of seismicity in quarries*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with P. Bernard and I. Contrucci), until Feb 2015

PhD - Philippe Ung, *Simulation, modélisation et analyse numérique pour le transport sédimentaire*, Univ. Orléans (EDF–CNRS grant), supervised by E. Audusse and Y. Penel (in collaboration with S. Cordier), until Dec 2015

M2 internship - Pauline Le Bouteiller, *Ecoute sismique et analyse statistique des éboulements sur le Piton de la Fournaise*, Ecole des Mines, supervised by A. Mangeney, Summer 2015

M2 internship - Hugo Martin, *Modélisation et simulation d'un fluide partiellement à surface libre*, Univ. Pierre et Marie Curie Paris 6, supervised by C. Guichard, M. Parisot and J. Sainte-Marie, Summer 2015

M2 internship - Jean-Luc Ralaiarisoa, *Ecoute sismique et analyse statistique des tremblements de terre liés au vêlage d'icebergs au Groenland*, IPGP, supervised by A. Mangeney, Summer 2015

M2 internship - Fabien Wahl, *Simulations de tsunamis à l'aide d'un modèle non-hydrostatique*, Univ. Pierre et Marie Curie Paris 6, supervised by A. Mangeney and J. Sainte-Marie, Summer 2015

10.2.3. Juries

Feb, PhD - A. Mangeney (referee): Noe Bernabeu (Univ. Grenoble, *Modélisation multi-physique des écoulements viscoplastiques: application aux coulées de lave volcaniques*)

Apr, PhD - J. Sainte-Marie: Xavier Lhébrard (Univ. Paris-Est, *Analyse de quelques schémas numériques pour des problèmes de shallow water*)

May, HdR - A. Mangeney (referee): Yves Le Gonidec (Institut de Physique de Rennes, *Propagation, imagerie et monitoring acoustiques : développements méthodologiques et expérimentaux pour des systèmes complexes en géosciences*)

May, PhD - J. Sainte-Marie (referee): Sébastien Barthélemy, (Univ. Toulouse, *Ensemblist data assimilation and 1D-2D hydraulic model coupling for real-time flood forecasting. Application to the "Adour maritime" hydraulic network*)

Aug, PhD - A. Mangeney (referee): Franzisca Dammeier (ETH Zurich, *Seismic characterization of rockslides using existing regional networks*)

Aug, PhD - A. Mangeney (referee): Belinda Bates (EPF Lausanne, *Basal Entrainment by Geophysical Gravity Currents: An Experimental Fluid Dynamics Approach*)

Oct, PhD - A. Mangeney (referee): Aurore Carrier (IsTerre Chambéry, *Endommagement et processus non-linéaires au sein d'un édifice volcanique pressurisé*)

Dec, HdR - E. Godlewski: C. Cancès (Univ. Pierre et Marie Curie, *Analyse mathématique et numérique d'équations aux dérivées partielles issues de la mécanique des fluides : application aux écoulements en milieux poreux*)

Dec, PhD - A. Mangeney (referee): Jordane Mathé (Univ. Blaise Pascal, Clermont-Ferrand, *Modélisation d'écoulements gravitaires fluidisés et application à la volcanologie*)

Dec, PhD - N. Seguin: Matthias Mimault (Univ. Nice–Sophia Antipolis, *Lois de conservation pour la modélisation des mouvements de foule*)

10.3. Popularization

11/06/15 - Futur en Seine (Cap Digital): B. di Martino, M. Parisot and J. Sainte-Marie were present during the numerical festival

24/09/15 - 6th Plenary Research Data Alliance (Cap Digital): N. Aïssiouene, B. di Martino, Y. Penel and J. Sainte-Marie contributed to the Inria stand

9-11/10/15 - Fête de la Science: all the members of the team run the ANGE stand to present scientific works related to water

07-10/12/15 - Solutions COP21: N. Aïssiouene, E. Nayir, M. Parisot, Y. Penel and J. Sainte-Marie participated to the exhibition at the Grand Palais to show the application of applied mathematics to climate issues

ARAMIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

S. Durrleman was co-chair of the 5th Workshop on "Mathematical Foundations of Computational Anatomy" held in Munich on October 5, 2015 in conjunction with the MICCAI conference.

F. De Vico Fallani was co-chair of the satellite on "Brain Networks" during the International School and Conference on Network Science (NETSCI15) in Zaragoza, Spain, 2015.

F. De Vico Fallani was co-chair of the satellite on "Graph Models in Neuroimaging " in conjunction with the annual conference Wavelets and Sparsity (SPIE), San Diego, US, 2015.

M. Chavez was co-chair of the Minisymposia "Graph analysis of functional brain networks: theory, applications and issues" during the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society that took place in Milano, Italy, 2015.

10.1.1.2. Member of the organizing committees

F. De Vico Fallani was technical member of the symposium on "Human brain connectomics " in conjunction with IEEE Global SIP conference, Orlando, US, 2015

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

O. Colliot was a member of program committee of the Workshop on Patch-based Techniques in Medical Imaging (Patch-MI) held in Munich in October 2015 in conjunction with the MICCAI conference.

10.1.2.2. Reviewer

O. Colliot acted as a reviewer for the annual meeting of the Organization for Human Brain Mapping (OHBM).

S. Durrleman acted as a reviewer for the conferences Information Processing in Medical Imaging (IPMI) and International Conference on Computer Vision (ICCV).

F. De Vico Fallani acted as a reviewer for the annual conference of the IEEE Engineering in Medical and Biology Society (EMBS).

10.1.3. Journal

10.1.3.1. Member of the editorial boards

O. Colliot is a member of the Editorial Board of Medical Image Analysis (Elsevier).

10.1.3.2. Reviewer - Reviewing activities

During the past year the members of the team acted as reviewers for numerous journals:

O. Colliot acted as a reviewer for NeuroImage, NeuroImage: Clinical, IEEE Trans Medical Imaging, Medical Image Analysis and Neurobiology of Aging.

S. Durrleman acted as a reviewer for NeuroImage, IEEE Trans Medical Imaging, Medical Image Analysis, IEEE Trans Pattern Analysis and Machine Intelligence, IEEE Trans Biomedical Engineering.

F. De Vico Fallani acted as a reviewer for NeuroImage, IEEE Trans Biomedical Engineering, IEEE Trans Neural Systems Rehabilitation Engineering, Brain Topography, Plos One, Human Brain Mapping, Nature Scientific Reports, Journal of neuroscience methods, PLoS Computational Biology.

M. Chavez acted as a reviewer for the Imperial College Press and the following journals: PLoS Comput Biol; PLoS One; J. Neurosci Methods; Phil. Trans. R. Soc. B; J. R. Soc. Interface; Human Brain Mapping; IEEE Proceedings; Neurosci. Biobehav. Rev. and Clin Neurophys;

10.1.4. Invited talks

S. Durrleman was invited lecturer at:

- Erwin Schrodinger International Institute for Mathematical Physics in Vienna for the program "Infinite-dimensional Riemannian Geometry with Applications to Image Matching and Shape Analysis",
- First congress of the Trisomy 21 Research Society at the ICM in Paris,
- "Shape Symposium" in Délemont, Switzerland,
- Colloquium "Horizon-Math" of the Mathematical Fundation of Paris.

F. De Vico Fallani was invited lecturer at:

- Conference of the IEEE Engineering in Medicine and Biology Society", Milan, Italy
- Conference on Wavelets and Sparsity (SPIE), San Diego, US
- Workshop on computational methods in system neuroscience, Tenerfe, Spain
- Symposium on Magnetoencephalography, Lyon, France

M. Chavez was invited lecturer at:

- Seminario de Biofisica, Instituto de Fisica, Universidad de San Luis Potosi, Mexico (10/12/2015)
- Mediterranean School of Complex Networks, Salina, Italy (09/2015)
- Satellite Physics of Multiplex Networks, International School and Conference on Network Science (NetSci15), Zaragoza, Spain, (06/2015).
- Scientific sessions of the Centro de Tecnologia Biomédica (CTB), Madrid, Spain, (05/2015)

10.1.5. Scientific expertise

O. Colliot acted as an expert for the HCERES (Haut-Conseil de l'Evaluation de la Recherche et de l'Enseignement Supérieur).

F. De Vico Fallani acted as an expert for the NIH-NSF CRCNS program, US; the Research Foundation (FWO), Flanders; the Organization for research (NWO), Netherlands.

M. Chavez acted as an expert for the Fond National Suisse de la Recherche Scientifique.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Olivier Colliot coordinates the module "Méthodes d'imagerie médicale" of the Master 2 in Computer Science of Université Pierre et Marie Curie.

Master: Olivier Colliot, Master in Computer Science, 4.5 hours (eqTD), Université Pierre et Marie Curie

Master: Stanley Durrleman, Master in Computer Science, 9 hours (eqTD), Université Pierre et Marie Curie

Master: Olivier Colliot, Master in Cognitive Science, 4.5 hours (eqTD), Ecole Normale Supérieure (Ulm)

Master: Stanley Durrleman, Master in Applied Mathematics, 2 hours (eqTD), Ecole Normale Supérieure (Cachan)

Master: Marie Chupin, Master in Computer Science, 3 hours (eqTD), Université Pierre et Marie Curie

Master: Dominique Hasboun, Master in Biology, 4 hours, Ecole Normale Supérieure (Ulm)

Master: Dominique Hasboun, Master in Cognitive Science, 12 hours, Ecole Normale Supérieure (Ulm)

Master: Dominique Hasboun, Master in Biology, 15 hours, Université Pierre et Marie Curie

Master: Dominique Hasboun, Master in Medical Physics, 7 hours, Université Paris-Sud

Master: Fabrizio De Vico Fallani, Master in "Méthodologies et applications en imagerie médicale", 3 hours (eqTD), Université Pierre et Marie Curie

Master: Damien Galanaud, Master in Medical Physics, 4 hours, Université Paris-Sud

Engineering school: Olivier Colliot, 4.5 hours (eqTD), Telecom ParisTech

Engineering school: Dominique Hasboun, 3 hours, ENSEA

Medical school: Didier Dormont is the Director of the University Diploma (DIU) "Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Medical school: Didier Dormont, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Dominique Hasboun, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Damien Galanaud, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Didier Dormont organizes and participates in the practical teaching of Neuroradiology for Medical Students in the Department of Diagnostic Neuroradiology of Pitié Salpêtrière University Hospital

Medical school: Didier Dormont organizes and participates in the practical teaching of Neuroradiology for Radiology Specializing Residents in the Department of Diagnostic Neuroradiology of Pitié Salpêtrière University Hospital

Medical school: Didier Dormont, Courses to the university diplomas (DU) : "Maladie d'Alzheimer", and "Imagerie Vasculaire non Invasive"

Medical school: Damien Galanaud, courses to the University Diploma (DIU) "Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Medical school: Dominique Hasboun, courses to the University Diploma (DIU) "Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Paramedical studies: Dominique Hasboun, Psychomotricity, 50 hours, Université Pierre et Marie Curie

10.2.2. Supervision

Post-doc in progress : Xavier Navarro, "Analyse des interactions entre les activités corticales et la respiration", UPMC, started in 2014, advisor: Mario Chavez

PhD in progress : "Catalina Obando-Forero, Graph models of cortical plasticity in temporal brain networks", Inria, started in 2015, advisor: Fabrizio De Vico Fallani

PhD in progress : Jeremy Guillon, "Méthode d'analyse multimodale de connectivités neuronales basée sur la théorie des réseaux complexes multicouches", EDITE Université Pierre et Marie Curie, started in 2015, advisors: Fabrizio De Vico Fallani and Mario Chavez

PhD in progress : Wen Junhao, "Cortical morphometry for discovering new biomarkers of neurodegenerative diseases", Université Pierre et Marie Curie, Started in 2015, advisors: Olivier Colliot and Stanley Durrleman

PhD in progress : Jorge Samper-Gonzalez, "Learning from heterogeneous data for prediction of Alzheimer's disease", Université Pierre et Marie Curie, Started in 2015, advisors: Olivier Colliot and Theodoros Evgeniou

PhD in progress : Alexandre Routier, “Multimodal neuroimaging for characterization of primary progressive aphasia”, Université Pierre et Marie Curie, Started in 2015, advisors: Marc Teichmann, Olivier Colliot and Marie-Odile Habert

PhD in progress: Jean-Baptiste Schiratti, “Méthodes et algorithmes pour l’analyse statistique de données anatomiques longitudinales – application à la caractérisation des phases pré-symptomatiques des maladies neurodégénératives”, Ecole Polytechnique, Started in 2013, advisors: S. Allassonnière and S. Durrleman

PhD in progress: Barbara Gris, “Approche modulaire des méthodes de grandes déformations pour l’appariement de formes”, Ecole Normale Supérieure de Cachan, Started 2013, advisors: A. Trouvé and S. Durrleman

Engineer: Fanny Grosslin, “Implementation of a Brain Computer Interface for the MEG platform”, ICM, started in January 2015, advisor: Mario Chavez

Master 2: Francois Deloche, “Sparse estimation of Granger-causality with MVAR models”, Ecole Polytechnique, Mar-Aug 2015, advisor: Fabrizio De Vico Fallani and Stephanie Allassoniere

Master 2: Jorge Samper-Gonzalez, Master in data mining and knowledge management – Erasmus Mundus, Mar-Sept 2015, advisor: Olivier Colliot

Master 2: Alexandre Pron, Master in BioMedical Engineering – ParisTech Université Paris Descartes, Mar-Sept 2015, advisor: Marie Chupin

Summer internship: Daniela Ganelin, Massachusetts Institute of Technology, June-Aug 2015, advisor: Olivier Colliot

Summer internship: Regis Pierrard, Supelec, July-Aug 2015, advisor: Olivier Colliot

10.2.3. Juries

Olivier Colliot participated, as referee, to the PhD committee of Yogesh Karpate (Inria Rennes), 2015 (supervisors: Christian Barillot and Olivier Commowick).

Olivier Colliot participated, as examiner, to the PhD committee of Claudia Cioli (Université Pierre et Marie Curie), 2015 (supervisor: Yves Burnod and Habib Benali).

Marie Chupin participated, as examiner, to the PhD committee of Elise Blandin (Université Pierre et Marie Curie), 2015 (supervisor: Philip Gorwood).

Marie Chupin participated, as examiner, to the PhD committee of Quentin Duché (Université de Rennes 1), 2015 (supervisor: Hervé Saint-James, Oscar Acosta, Olivier Salvado).

Fabrizio De Vico Fallani participated, as referee, to the PhD committee of Yoann Isaac (Univ. Paris Sud), 2015 (supervisors: Michele Sebag).

10.3. Popularization

Fabrizio De Vico Fallani was interviewed for the French TV program “Zone Interdite” (M6) about the project on Brain Computer Interfaces. The video of the interview is available at <https://www.youtube.com/watch?v=BmGiaPG9cnA>

CLIME Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

- Vivien Mallet: Aristote seminar on “Le calcul scientifique pour la ville intelligente” (scientific computing for smart cities), IFSTTAR, Champs-sur-Marne, March 2015.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Isabelle Herlin: ISPRS workshop on Image Sequence Analysis for Object Extraction (ISPRS Geospatial Week 2015).

9.1.2.2. Reviewer

- Isabelle Herlin: International Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Computer Vision (ICCV), International Conference on Image Processing (ICIP).

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing activities

- Julien Brajard: IEEE Transactions on Geoscience and Remote Sensing (TGRS).
- Isabelle Herlin: IEEE Transactions on Geoscience and Remote Sensing (TGRS).
- Vivien Mallet: Annals of Nuclear Energy. Environmental Science & Technology. Quaterly Journal of the Royal Meteorological Society.

9.1.4. Leadership within the scientific community

- Isabelle Herlin is a member of the Scientific Council of CSFRS (High Council for Strategic Education and Research in France).

9.1.5. Scientific expertise

- Isabelle Herlin participates to the scientific expertise on satellite observations for agriculture for CVT Allenvi.
- Isabelle Herlin is a member of the hiring committee for researchers at Inria - Rennes Bretagne Atlantique and for research directors at Inria.
- Isabelle Herlin is a member of the program committee of DIGITEO, french research cluster in science and technology of information.
- Isabelle Herlin is a member of the program committee of the interdisciplinarity mission at CNRS.
- Isabelle Herlin is a member of the Evaluation Committee at Inria.

9.1.6. Research administration

- Isabelle Herlin is a member of the Center Committee for Inria-Paris research center.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master OACOS/WAPE: Vivien Mallet; Introduction to Data Assimilation for Geophysics; 10.5 hours; M2; UPMC, X, ENS, ENSTA ParisTech, École des Ponts ParisTech; France.

Master SGE and 3rd-year class at École des Ponts ParisTech: Vivien Mallet; Air quality modeling; 9h; M2; Universities Paris Diderot- Paris 7, Paris 12 and École des Ponts ParisTech, France.

Training: Vivien Mallet; Uncertainty Quantification: Ensembles and Data Assimilation – Application to Climate and Geosciences; 5.25 hours; CERFACS; France.

9.2.2. Supervision

- HdR : Isabelle Herlin, “Images and Dynamics”, University Paris 6, June 2015.
- PhD : Paul Baudin, “Sequential prediction with ensemble aggregation: application to meteorological prediction with uncertainties”, University Paris-Sud, November 2015.
- PhD : Yann Lepoittevin, “Estimation of motion from observed structures in image sequences, University Paris 6, December 2015.
- PhD in progress: Ruiwei Chen, “Quantification d’incertitude en simulation des émissions du trafic routier”, November 2014, Vivien Mallet.
- PhD in progress : Pacôme Eberhart, “Génération automatique de codes performants et fiables pour l’assimilation de données”, September 2013, Fabienne Jezequel, Pierre Fortin and Julien Brajard
- PhD in progress : Jean Thorey, “Prévision d’ensemble du rayonnement solaire pour la production photovoltaïque du parc EDF”, November 2013, Vivien Mallet.
- PhD in progress: Raphaël Ventura, “Simulation numérique de la ville par couplage entre la modélisation et l’observation”, September 2014, Vivien Mallet.

9.3. Popularization

- Isabelle Herlin made a talk on the careers in image processing at GdR ISIS in November 2015.
- Vivien Mallet took part to a one-day introduction to Inria research at Sénat, in February 2015.
- Vivien Mallet and Raphaël Ventura took part to the UrbanDirtLab organized during the Futur-en-Seine digital festival, in June 2015.
- Vivien Mallet was auditioned by "l’Office parlementaire d’évaluation des choix scientifiques et technologiques" ("Assemblée nationale" and "Sénat") on big data and agriculture, in July 2015.

LIFEWARE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Grégory Batt, Pascal Hersen, and Denis Thiéffry organized the 2nd International Conference on Design, optimization and control in systems and synthetic biology, **DOC'15**, November 12-13, 2015, ENS, Paris.
- François Fages was co-chair with Nicolas Beldiceanu of the 6th International Workshop on Bin Packing and Placement Constraints, **BPPC'15** associated to CP'15, 31st August 2015, Cork, Ireland.
- François Fages is member of the Steering Committee of the **International Conference on Computational Methods for Systems Biology** since 2008.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Grégory Batt was member of the program committees of :
 - **HSB'15** Fourth International Workshop on Hybrid Systems Biology, Madrid, Spain, September 3-4, 2015
 - **CMSB'15**, 13th International Conference on Computational Methods in Systems Biology, Nantes, France, Sept. 16-18, 2015.
- François Fages was member of the program committees of :
 - **IJCAI'16** 25th International Joint Conference on Artificial Intelligence, New York, USA, 2016.
 - **CIE'16** Computability in Europe, Paris, 2016.
 - **HSB'15** Fourth International Workshop on Hybrid Systems Biology, Madrid, Spain, September 3-4, 2015
 - **CP'15** 21st International Conference on Principles and Practice of Constraint Programming, Cork, Ireland, Aug 31-Sep 4, 2015.
 - **ICLP'15** 31st International Conference on Logic Programming, Cork, Ireland, Aug 31-Sep 4, 2015.
 - **WCB'15** 11th Workshop on Constraint-based methods for Bioinformatics, associated to CP'15, Cork, Ireland, August 31st 2015.
 - **CMSB'15**, 13th International Conference on Computational Methods in Systems Biology, Nantes, France, Sept. 16-18, 2015.
 - **LMBS'15**, 1st International Workshop on Logical Modeling of Biological Systems, satellite workshop of CMSB'15, Nantes, France, Sept. 18, 2015.
 - **VEMDP'15**, Verification of Engineered Molecular Devices and Programs, July 19, 2015, San Francisco, USA.
 - **FroCoS'15**, Wroclaw, Poland, 15-19 Sep 2015.
- Sylvain Soliman was member of the program committee of:

- **WCB'15** 11th Workshop on Constraint-based methods for Bioinformatics, associated to CP'15, Cork, Ireland, August 31st 2015.

9.1.3. Journal

9.1.3.1. Member of the editorial boards

François Fages is member of

- the Editorial Board of the Computer Science area of the Royal Society Open Science journal since 2014
- the Editorial Board of the journal RAIRO OR Operations Research since 2004

9.1.3.2. Reviewer - Reviewing activities

- Grégory Batt and Jean-Baptiste Lugagne were reviewers for the journal *ACS Synthetic Biology*. Grégory Batt was reviewer for the *Journal of Molecular Biology*.
- Chiara Fracassi was reviewer for the journal *Epidemiology and Infection*.
- François Fages and Pauline Traynard were reviewers for *Theoretical Computer Science*. François Fages was reviewer for *PLoS Computational Biology*, *Transaction on Computational Biology and Bioinformatics*, *Theoretical Computer Science*, *Acta Biotheoretica*, *Transactions on Computational Logic*, and *Journal of Constraints*.

Sylvain Soliman was reviewer for *BMC Systems Biology*, *AMS Math Reviews*, *PLoS One*, and *Bioinformatics*.

9.1.4. Invited talks

- Virgile Andréani gave an invited talk at the Journée nationale du groupe de travail BIOSS, 23 Nov 2015.
- Grégory Batt gave invited talks at
 - workshop Integrative cell models: Bridging microbial physiology and systems biology, Leiden, the Netherlands (short talk), January 2015
 - Institute of Genetics and Development of Rennes, Reverse Engineering Cell Division team, February 2015
 - Interdisciplinary Computing and Complex BioSystems group, Newcastle University, UK, May 2015
 - Laboratoire de Biologie Moléculaire de la Cellule, ENS Lyon, October 2015
- François Bertaux gave an invited talk at the conference Design, Optimization and Control of Systems and Synthetic Biology, ENS Paris, Nov 2015.
- François Fages gave invited talks at
 - University of Bonn, Bioinformatics Seminar, Germany, 11 December 2015,
 - CNRS Sys2Diag lab, Montpellier, 8 December 2015,
 - Journée nationale du groupe de travail BIOSS, Paris, 23 November 2015,
 - National Taiwan University, Biology Dept., Taipei, Taiwan, 14 July 2015
 - National Taiwan University, Electrical Engineering Dept., Taipei, Taiwan, 15 July 2015
 - CIRM, “Méthodes de réduction de modèles discrets”, Marseille, 28 May 2015
 - aSSB'15 Thematic Research School, Strasbourg, 23-27 March 2015
- Artemis Llamosi gave an invited talk at the Conference **Lyon SysBio 2015**, November 2015
- Jean-Baptiste Lugagne gave an invited talk at the conference Design, Optimization and Control of Systems and Synthetic Biology, ENS Paris, Nov 2015.
- Chiara Fracassi gave an invited talk at BioSynSys'15, the first conference of the GDR Synthetic and Systems Biology, Paris Diderot U, Sept 2015.

9.1.5. Leadership within the scientific community

- Grégory Batt is a member of
 - the IEEE/CSS Technical Committee on Systems Biology,
 - the scientific board of the GDR de Biologie de Synthèse et des Systèmes
 - the GDR de Bioinformatique Moléculaire, in charge of the axis on Biological network modelling, systems biology and synthetic biology
- François Fages is a member of the Steering Committee of the international conference series Computational Methods in Systems Biology since 2008

9.1.6. Scientific expertise

Grégory Batt was member of the review and selection panels of ERASysAPP, an ERA-NET for Systems Biology Applications (Gothenborg, April 2015). He was also a reviewer for ANR blanc programme. He is a member of the scientific committee of the Advanced Lecture Course on Computational Systems Biology summer school. He has also served as a mentor in the workshop Teaching Through Research of the Leadership Program, organised by the Centre for Research and Interdisciplinarity under the auspice of the “learning science” UNESCO chair (April 2015, Paris).

François Fages is a member of the Scientific Council of the *Doctorate School “Frontières Du Vivant” at Center for Research and Interdisciplinarity*, Universities Paris Descartes and Paris Diderot (since 2010). He was a member of the *Comité de Sélection* for a Professorship position in Section 27 in Lille and member of the jury for the *Prix de thèse Gilles Kahn* of the *Société Informatique de France*.

9.1.7. Research administration

François Fages is member of the “Bureau du Comité des Projets” of Inria Paris-Rocquencourt.

Sylvain Soliman is president of the “Comité de Suivi Doctoral” and of the “Commission de Développement Technologique” of Inria Paris-Rocquencourt.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Grégory Batt, *Computational Biology*, coordinator 48h, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master: Grégory Batt (6h), Denis Thieffry (coordinator), *Dynamical Modelling of Cellular Regulatory Networks*, M2, Interdisciplinary Master in Life Science at the Ecole Normale Supérieure, Paris.

Master: François Fages (coordinator module 48h, teaching 12h), Grégory Batt (12h), Denis Thieffry (12h), C2-19 *Computational Methods for Systemic and Synthetic Biology*, Master Parisien de Recherche en Informatique (MPRI), Paris.

Master: Chiara Fracassi, *Dynamics of Living Systems*, 24h, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master: Thierry Martinez, *Développement logiciel*, 17h, M1, Ecole des Ponts et Chaussée, Champs-sur-Marne.

Master: Sylvain Soliman, C2-35-1 *Constraint Programming*, coordinator and teaching 24h, M2, Master Parisien de Recherche en Informatique (MPRI), Paris.

Master: Pauline Traynard, *Introduction to Linux and Programming with Python and R*, M1, M2, 30h, master IMaLiS du département de biologie de l’ENS,

9.2.2. Supervision

PhD : Katherine Chiang, *Biomolecular Computing System Design: Architecture, Synthesis, and Simulation*, National Taiwan University, Taipei, Taiwan (Sep 2012), Dir. Jie-Hong Jiang and François Fages, 13 July 2015.

PhD : Steven Gay, *Subgraph Epimorphisms: Theory and Application to Model Reductions in Systems Biology*, Université Paris Diderot, Paris (Oct 2009), Dir. François Fages and Sylvain Soliman, 26 May 2015.

PhD : Artémis Llamosi, Université Paris Diderot, Paris (Nov 2012), Dir. Grégory Batt and Pascal Hersen (MSC), 15 Dec 2015.

PhD : Thierry Martinez, *Execution models for Constraint Programming: kernel language design through semantics equivalence*, Université Paris Diderot, Paris (Oct 2009), Dir. François Fages, 17 December 2015

PhD in progress : François Bertaux, Université Pierre et Marie Curie, Paris (Sept 2011), Dir. Dirk Drasdo (EPI MAMBA) and Grégory Batt

PhD in progress : Jean-Baptiste Lugagne, Université Paris Diderot, Paris (Oct 2012), Dir. Grégory Batt and Pascal Hersen (CNRS, MSC)

PhD in progress : Jonas Sénizergues, Université Paris Diderot, Paris (Oct 2015), Dir. François Fages and Sylvain Soliman

PhD in progress : Pauline Traynard, Université Paris Diderot, Paris (Oct 2012), Dir. François Fages and Denis Thieffry (ENS)

9.2.3. *Juries*

- PhD Alexis Courbet, “Engineering autonomous and programmable biosensors through synthetic biology: integrating multiplexed biomarker detection and biomolecular signal processing into next-generation diagnostics”, Univ. Montpellier, 7 December 2015, Invited Examiner: François Fages
- PhD Christopher Banks, “Spatio-temporal Logic for the Analysis of Biochemical Models”, 28 Jan 2015, Univ. of Edimburgh, Scotland, Reviewer: François Fages
- PhD Erwan Bigan, “Minimal conditions for protocell growth”, Dec 2015, Ecole Polytechnique, France, Reviewer: Gregory Batt

9.3. Popularization

Pascal Hersen and Artémis Llamosi are founders of the *OpenLab* at the *Center for Research and Interdisciplinarity* in Paris, and organizers of related events on product industrialization. They provide scientific expertise to hosted startups.

MAMBA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

L. Almeida organiser: “Mathematical modeling and new methods for dengue control” meeting in Rio de Janeiro (Brazil), June 1 and 8, 2015

J. Clairambault and V. Volpert organisers: “Workshop on hybrid and multiscale models in cell and cell population biology”, UPMC, Paris, 16-18 mars 2015, <http://www.itm-conferences.org/articles/itmconf/abs/2015/02/contents/contents.html>

J. Clairambault organiser: Session #70 “Mathematical models and methods to investigate heterogeneity in cell and cell population biology”, 13th ICNAAM, Rhodes, Greece, Sep 23-29, 2015

M. Tournus organiser: mini-symposium at SMAI 2015 on ‘Coagulation/Fragmentation : stochastic and deterministic approaches’

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

J. Clairambault, member of the scientific committee of the conference “Present challenges of mathematics in oncology and biology of cancer”, CIRM, Luminy, Dec 7-11 2015

9.1.2.2. Reviewer

J. Clairambault for Indian Control Conference 2016

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing activities

J. Clairambault in 2015 for Applicable Analysis, Bull Math Biol, BMC Biol, BMC Cancer, Cancer Research, J Theor Biol, Nonlinear Biomed Physics, Springer books, Stem Cells Intl

9.1.4. Invited talks

L. Almeida: Workshop on mathematical methods and modelling of biophysical phenomena, Cabo Frio, Brazil (March 2015); Workshop on Mathematical and Physical Methods for Biological Systems, Shanghai, China (June 2015); Workshop on biofilms modelling, Rouen (October 2015); Workshop en Biomathématiques, Rabat, Maroc (Novembre 2015)

J. Clairambault: 1) Conferences “Sciences et société”, Nancy and Epinal (France), October 2015; 2) Seminar, Dept. of Mathematics, Duke University, Durham (NC), October 2015; 3) Workshop on Models in cancer therapy, WPI, Vienna (Austria), July 2015; 4) {MB}2 conference, Métabief (France), July 2015; 5) Fifth International Conference on Multiscale Modelling and Methods: Upscaling in Engineering and Medicine, Moscow, Bauman University, June 2015; 6) 15e journée “Calcul scientifique et modélisation mathématique”, Amiens (France), June 2015; 7) Seminar and courses, Dept. of Mathematics, Tlemcen University (Algeria), April 2015; 8) INCA seminar “Ciência extramuros”, Rio de Janeiro, February 2015; 9) Workshop “Mathematical Methods and Modelling of Biophysical Phenomena”, Cabo Frio, Brazil, March 2015; 10) BIRS workshop “Partial differential equations and cancer”, Banff (Alberta) and Mathematical Biology Seminar, University of Alberta, Edmonton (Alberta), February 2015.

M. Doumic: plenary speaker to MPDE15, Universidade Federal Fluminense (UFF Niteroi), Brazil; invitation to minisymposia in SIAM PD15, Phoenix, December 2015, by Piotr Gwiązda; in ICIAM, Beijing, August 2015, by Agnieszka Świerczewska; in Applied Inverse Problems Conference 2015, Helsinki, by Jan-F. Pietschmann. Invitation of Magali Tournus to a minisymposium by David Bortz in SMB 2015, Atlanta, June 30-July 3, 2015.

D. Drasdo: D. Drasdo: EASL conference, 4/2015 (I) (European Association for Study in the Liver, several thousand attendees) (hepatology); Workshop Edmonton (Canada) 2/2015 (not able to come); Workshop Ohio MBI 4/2015 (cancer invasion); Bordeaux, 5/2015; Workshop at ICMS, Edinburgh, on cancer invasion (mathematical biology) 5/2015; Conference CYTO 2015 (cytology), Glasgow 6/2015 (plenary speaker); Hepatinov workshop, 12/2015 (hepatology)

N. Vauchelet: Second Mokalien Meeting, Univ Paris-Dauphine (Nov. 2015); ICIAM 2015, Beijing, China (Aug. 2015); Workshop on Mathematical and Physical Methods for Biological Systems, Shanghai, China (June 2015); Workshop on mathematical methods and modelling of biophysical phenomena, Cabo Frio, Brazil (March 2015); Working group in biomathematics, Universidade Federal Fluminense (Niteroi), Brazil (Feb. 2015).

9.1.5. Scientific expertise

J. Clairambault in 2015 for Belgian FNRS, Swiss NSF

9.1.6. Research administration

L. Almeida: member CID 51 of Comité National de la Recherche Scientifique

L. Almeida and J. Clairambault: members of the bureau of the “Interfaces pour le Vivant” doctoral programme of UPMC

D. Drasdo member of scientific leadership team of virtual liver network

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: J. Clairambault, “Modélisation de la croissance cellulaire et tissulaire”, course 2 hours, L2 Parcours Médecine-Sciences UPMC, France, January 2015

Licence: N. Vauchelet, in charge of the double major academic course in mathematics and informatics: student followup, implementation of the Summer programme

Master: L. Almeida and T. Lorenzi, International course at the University of Verona (Italy): “Phenotype-structured equations” (24h).

Master: M. Doumic, course on inverse problems and applications in population dynamics (24 hours)

Master: D. Drasdo, Mathematical Biology, UPMC: “Agent-based models of tissue organisation” (24 hours)

Master: N. Vauchelet, “Introduction to mathematical modelling of biophysical phenomena” (24 hours) at UPMC and IMPA

Doctorat: J. Clairambault, course UFF Niteroi (Rio de Janeiro), “Continuous models of cell population growth dynamics to optimise anticancer treatments”, 3 hours, February 2015

Doctorat: J. Clairambault, course Tlemcen University, “Continuous models of cell population growth dynamics to optimise anticancer treatments”, 3 hours, April 2015 Clem

9.2.2. Supervision

PhD defence: Thibault Bourgeron, “Linear and nonlinear structured population models”, UPMC, June 29, 2015, supervision by M. Doumic and B. Perthame

PhD defence: Ján Eliaš, “p53 intracellular spatio-temporal dynamics”, UPMC, September 1, 2015, [2], supervision by J. Clairambault and B. Perthame

PhD defence: Adélaïde Olivier, “Analyse statistique des modèles de croissance-fragmentation”, Paris IX-Dauphine, November 27, 2015, [3], supervision by M. Doumic and M. Hoffmann (Prof. Univ. Paris-Dauphine)

PhD defence: Cristobal Quiñinao, “Mathematical modelling in Neuroscience: collective behaviour of neuronal networks and the role of local homeoproteins diffusion in morphogenesis”, UPMC, June 2, 2015, supervision by S. Mischler, B. Perthame and J. Touboul

PhD in progress: Aurora Armiento, “Inverse problems for aggregation kinetics”, UPMC, begun September 2013, supervision by M. Doumic and Ph. Moireau (Inria Saclay, M3DISIM team)

PhD in progress: François Bertaux (since September 2011, manuscript submitted October 2015), supervision by Dirk Drasdo and Gregory Batt

PhD in progress: Noémie Boissier (since November 2013), supervision by Dirk Drasdo and Irène Vignon-Clementel

PhD in progress: Géraldine Cellière (since October 2012), supervision by Dirk Drasdo, Andrei Zinovyev and Emmanuel Barillot (Institut Curie)

PhD in progress: Sarah Eugène, “Stochasticity in nucleation dynamics”, UPMC, begun September 2013, M. Doumic and Ph. Robert (Inria Paris-Rocquencourt, RAP project-team)

PhD in progress: Casimir Emako-Kazianou, UPMC, L. Almeida and N. Vauchelet

PhD in progress: Adrian Friebel (since June 2011), supervision by Dirk Drasdo and Stefan Hoehme

PhD in progress: Ghassen Haddad, “Optimisation of cancer treatments: application to bladder cancer”, UPMC in co-tutela with ENIT Tunis, begun October 2015, J. Clairambault and S. Ben Miled (Tunis)

PhD in progress: Shalla Hanson, “Modelling evolution of interactions between cancer and immune cells in solid tumours”, UPMC in co-tutela with Duke University, begun October 2015, J. Clairambault and M. Reed (Duke)

PhD in progress: Johannes Neitsch, Univ. Leipzig (since June 2011), supervision by Dirk Drasdo and Paul Van Liedekerke

PhD in progress: Camille Pouchol, “Modelling interactions between tumour cells and adipocytes in breast cancer”, UPMC, begun September 2015, J. Clairambault, M. Sabbah, and E. Trélat

PhD in progress: Antonin Prunet, UPMC, begun October 2014, L. Almeida and M. Sabbah

PhD in progress: Andrada Quillas Maran, “Modelling early leukaemogenesis”, UPMC, begun March 2014, J. Clairambault and B. Perthame

PhD in progress: Martin Strugarek, “Structured population dynamics for transmissible diseases”, UPMC, begun October 2015, N. Vauchelet and B. Perthame

PhD in progress: Cécile Taing, UPMC, begun October 2014, A. Lorz and B. Perthame

9.2.3. *Juries*

- J. Clairambault: Arnaud Poret, PhD defence, Jul 1, 2015, Lyon I (Computational biology) *member of the jury*
- J. Clairambault: Ján Eliaš, PhD defence, Sep 1, 2015, UPMC (Applied mathematics) *supervisor*
- M. Doumic: M. Doumic: Ján Eliaš, PhD defence, Sep 1, 2015, UPMC (Applied mathematics) *member of the jury*,
- M. Doumic: Adélaïde Olivier, PhD defence, Nov 27, 2015, Paris IX-Dauphine (Applied mathematics) *supervisor*,
- M. Doumic: Thibault Bourgeron, PhD defence, Jun 29, 2015, UPMC (Applied mathematics) *supervisor*

9.3. Popularisation

- Article J. Clairambault, “My personal journey in mathematical biology and medicine”. Society for Mathematical Biology Newsletter 28(1):11-12, January 2015 [36], <http://www.smb.org/publications/newsletter/vol28no1.pdf>
- Conferences “Sciences et société”, J. Clairambault, “Comment décrire et optimiser l’action des médicaments contre le cancer”, <https://numerique.univ-lorraine.fr/node/513>. IUT Nancy, October 8 and IUT Epinal, October 9, 2015.

MYCENAE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of the organizing committees

- **Reprosciences 2015**, April 13-15, Rennes, co-organized by Frédérique Clément, Yves Combarrous, Florian Guillou, Joëlle Cohen-Tannoudji and Olivier Kah.
2 oral presentations were given by the team
 1. Aymard B, Clément F, Monniaux D, Postel. *Multiscale modeling of terminal folliculogenesis*.
 2. Clément F, Monniaux D, Michel P, Stiehl T. *Mathematical model of the basal follicular development*
- **“Modeling in Cell and Developmental Biology”**, ITMO BCDE annual workshop. Dec 1st, Paris, co-organized by Frédérique Clément, Kaurent Héliot, Nadine Peyrieras and Sylvie Schneider-Maunoury. 3 posters were presented by the team
 1. Fernández-García S, Desroches M, Krupa, Vidal A, de Vico Fallani F, Clément F. *Modeling ionic and secretory rhythms in adult and embryonic neural networks with multiple time scale dynamical systems*.
 2. Köksal Ersöz E, Vidal A, Clément F. Complex oscillatory rhythms in neurohormone secretion : the instance of the GnRH neurosecretory system.
 3. Postel M, Karam A, Latbi M, Pezeron G, Tran L, Clément F, Schneider-Maunoury S. *Designing a mathematical model of the dynamics of progenitor cell populations in the mouse cerebral cortex*.

Organization of mini-symposia at the SIAM Conference on the Application of Dynamical Systems May 17-21, SnowBird

- Mathieu Desroches co-organized (with Morten Brøns) the *Model Reduction and Epsilon-free Methods in Singular Perturbation Problems* minisymposium
- Jonathan Touboul co-organized (with Zack Kilpatrick and Bard Ermentrout) the *Stochastic neuronal dynamics* minisymposium

Thematic sessions organized within the framework of the CIRB

- **Troisième journée “Biologie & Mathématiques sur la Montagne”**, November 4th, 2015, co-organization Jonathan Touboul Amaury Lambert and Alain Prochiantz
- Colloquium *Mathematics of the brain*, Dec. 8th 2015, co-organization Jonathan Touboul and Khashayar Pakdama

8.1.2. Journal

8.1.2.1. Member of the editorial boards

Jonathan Touboul is Associate Editor of *PloS One* and *Frontiers in Neuronal Circuits*

8.1.2.2. Reviewer - Reviewing activities

Electronic Journal of Probability, Physica D, Frontiers in Neuroscience, Journal of Statistical Physics, Mathematical Biosciences, Mathematics and Computers in Simulation, Nonlinear Dynamics, Nonlinearity, PloS Computational Biology, SIAM Journal on Applied Dynamical Systems, SIAM Journal on Applied Mathematics

8.1.3. Scientific expertise

Frédérique Clément belongs to the expert board of the **BCDE** (Cell Biology, Development and Evolution) ITMO (Multi Organization Thematic Institute) of the French National Alliance for Life and Health Sciences **Aviesan**.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

M. Desroches

M1 course on “Mathematical and Computational Neuroscience” as part of the Master program in Bioinformatics (BIM) of the University Pierre et Marie Curie (UPMC, Paris)

This teaching has been organised over a five-week period (January-February 2015) with a total of 30 hours, including lectures, example classes and computer labs (2 hours per week each). This first half of the course was focused on an introduction to mathematical slow-fast models of spiking and bursting neurons using bifurcation theory, slow-fast dissection and numerical analysis (simulation and continuation) with the software package XPPAUT.

8.2.2. Supervision

Tanguy Cabana, Limits of randomly connected networks and their dynamics, since September 2013, Université Pierre & Marie Curie (ED386), supervisors: Raphaël Krikorian, Jonathan Touboul and Gilles Wainrib

Yi Cui, Role of Pax6 in neurodevelopment: experiments and models, since September 2014, Université Pierre & Marie Curie (ED158), supervisors: Jonathan Touboul, Alain Prochiantz and Alessandra Pierani

Elif Köksal Ersoz, Synchronization of GnRH neurons: a multiscale mathematical study, since November 2013, Université Pierre & Marie Curie (ED386), supervisors: Frédérique Clément and Jean-Pierre François, with the involvement of Mathieu Desroches.

Lucile Megret, Mathematical analysis of complex oscillations in models with multiple time scales, since October 2013, Université Pierre & Marie Curie (ED386), supervisors: Jean-Pierre François and Frédérique Clément, with the involvement of Mathieu Desroches.

Kim Long Tran, Reduction and calibration of multiscale models for structured cell populations, since October 2014, Université Pierre & Marie Curie (ED386), supervisors: Marie Postel and Frédérique Clément.

Luis Carlos García del Molino, Dynamics of randomly connected networks and spectral theory of random matrices, Université Denis Diderot (ED393), October 1st, supervisors: Khashayar Pakdaman and Jonathan Touboul.

Cristóbal Quiñinao, Mathematical modeling in Neuroscience: collective behavior of neuronal networks & the role of local homeoproteins diffusion in morphogenesis. Université Pierre & Marie Curie (ED386), June 2nd, 2015, supervisors: Benoît Perthame, Stéphane Mischler (CEREMADE) and Jonathan Touboul.

Mérina Latbi, Modélisation mathématique de la neurogenèse corticale, Centrale Lyon and Master M2 Maths en action (Lyon 1), co-supervisors Frédérique Clément & Marie Postel.

8.2.3. Juries

Jonathan Touboul participated in the selection committee of the Bernstein Award for Computational Neuroscience (BPCN)

Frédérique Clément participated in the admission committee of the Inria Senior Researcher (DR2) open competition

8.3. Popularization

- *The hipster effect: when anticonformists all look the same*. Popularization on the synchronization of random elements inspired from a simplification of brain dynamics. International press coverage in scientific (Science, AMS news, Science et Vie,...) and general information journals (Washington post, JDD, Le soir,...)
- *La recherche sur la reproduction animale et humaine*. Booklet edited by GdR REPRO, including an interview of Alexandre Vidal and a dedicated chapter on "Reproduction, biomathématiques et bioinformatique"

REO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- Matteo Aletti
 - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- Laurent Boudin
 - Member of the scientific committee of the “EDP Normandie 2015” conference.
- Sanjay Pant
 - Program committee member for the Australasian Conference on Artificial Life and Computational Intelligence (ACALCI), 2016.
- Jessica Oakes
 - ISAM Student Leader and 2015 Student Activity Conference Organizer
- I. Vignon-Clementel
 - Organizer of a minisymposium at the 4th International Conference on Computational & Mathematical Biomedical Engineering, July 2015, Cachan, France
 - Organizer of the monthly seminar at Inria Paris-Rocquencourt on “modeling and scientific computing”

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- J-F. Gerbeau
 - Scientific Committee of the ENUMATH 2015 conference. Ankara, Turkey.
 - International Advisory Committee of the 2nd International Workshop on Latest Advances in Cardiac Modeling, 2015. Munich, Germany.

10.1.2.2. Reviewer

- J-F. Gerbeau
 - Expert evaluator for Horizon2020 FET OPEN RIA Call 2015/2.
 - Member of the Mathematics panel of the FCT, the national funding agency of Portugal (*Fundação para a Ciência e a Tecnologia*).
- M. Thiriet
 - European Research Council - Advanced Grant (run 2)
 - ANRT
 - Fund for Scientific Research - FNRS, Belgium

10.1.3. Journal

10.1.3.1. Member of editorial boards

- Jean-Frédéric Gerbeau
 - Editor-in-Chief of Mathematical Modelling and Numerical Analysis (M2AN).
 - Series editor of “SEMA SIMAI Springer Series”.

- Member of the editorial board of International Journal for Numerical Methods in Biomedical Engineering (IJNMBE).
- Member of the editorial board of Communications in Applied and Industrial Mathematics.
- Member of the editorial board of Journal for Modeling in Ophthalmology.
- I. Vignon-Clementel
 - Editor of Frontiers in Pediatric Cardiology
- M. Thiriet
 - Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization.

10.1.4. Research administration

- Laurent Boudin
 - Member of the Board of Mathematics Licence (EFU de Licence de mathématiques), UPMC
 - Member of the think-tank for third-year programs in Mathematics at UPMC.
 - Member of the IREM (Institutes for Research on Mathematics Teaching) Scientific Committee.
 - Member of the SMAI (French Society for applied and industrial mathematics) Teaching Committee.
- Muriel Boulakia
 - Supervisor of the teaching of mathematics at the engineer school Polytech Paris-UPMC
- Miguel Ángel Fernández Varela
 - Co-president of the Scientific Positions Commission, Inria Paris-Rocquencourt
- Jean-Frédéric Gerbeau
 - Service activity at Inria: Délégué Scientifique / Chairman of the project-teams' committee of Inria Paris-Rocquencourt research center; Member of the Inria Evaluation Committee; Member of the Inria International Chairs committee.
 - Service activity in other French institutions: member of the research committee of Sorbonne Universités; member of the scientific committee of Labex NUMEV, Montpellier.
 - Service activity abroad: member of the Reference Committee of the PhD program Mathematical Models and Methods in Engineering (Politecnico di Milano, Italy).
- Céline Grandmont
 - Member of the CNU 26 (2011–2015). Member of the CNU extended board.
 - Member of the Evaluation Committee Inria (2015-...)
- I. Vignon-Clementel
 - Mediator between PhD students and their supervisors for Inria Paris-Rocquencourt

10.1.5. Conferences

- Matteo Aletti
 - Minisymposium talk, 4th International Conference on Computational & Mathematical Biomedical Engineering (CMBE2015), June 29 - July 1, 2015, Cachan, France
 - Minisymposium talk, 13th U.S. National Congress on Computational Mechanics (US-NCCM13), July 27 - July 30, 2015, San Diego, CA
 - Presentation at REVAMMAD (EU Marie Curie ITN) meeting, September 2015, Padova, Italy
- Chloé Audebert

- Minisymposium talk, 4th International Conference on Computational and Mathematical Biomedical Engineering - CMBE2015, June 29th - July 1st, 2015, Cachan, France
- PhD students seminar, Inria-Rocquencourt Junior Seminar, October 20th, 2015, Paris, France
- Seminar, Laboratoire de mathématiques de Besançon, Université de Franche-Comté, November 12th, 2015, Besançon, France
- PhD students seminar, Laboratoire de mathématiques de Versailles, Université Versailles St-Quentin, December 3rd, 2015, Paris, France
- Laurent Boudin
 - Seminar, Analysis, LMPT, Univ. Tours, France, March 2015.
 - Seminar, Applied Mathematics, LMNO, Univ. Caen, France, March 2015.
 - Invited speaker, Workshop "From opinion dynamics to voting, conflict and terrorism", Sciences Po Paris, France, March 2015
 - Invited speaker, Labex SMART Summer School on "Computational Social and Behavioral Sciences", UPMC, France, September 2015
 - Seminar, Numerical analysis and PDEs, LMO, Univ. Paris-Sud, France, December 2015
- Muriel Boulakia
 - November 2015 : Seminar at University College London
 - August 2015 : Workshop PDE, optimal design and numerics, Benasque (Spain)
 - April 2015 : Seminar at Université d'Orsay Paris-Sud
- Miguel Ángel Fernández Varela
 - Invited speaker, Workshop on fluid-structure interactions: an asymptotic approach, A Coruña, Spain, October 8-9, 2015
 - Minisymposium talk, X-DMS 2015 eXtended Discretization MethodS conference, Ferrara, Italy, September 9-11, 2015
 - Invited speaker, Workshop on Control and Numerics for Fluid-Structure Interaction Problems, TFIR CAM, Bangalore, India, June 29-July 1, 2015
 - Invited speaker, Numerical analysis week of Besançon on XFEM, Nitsche FEM, adaptive FEM and artificial boundary conditions, Besançon, France, June 15-19, 2015
 - Seminar, Modeling and Scientific Computing Seminar, Inria Paris-Rocquencourt, March 3, 2015
- Benoit Fabrèges
 - Seminar, MOX Seminar at Politecnico di Milano, Milan, Italy, July 28, 2015
- Jean-Frédéric Gerbeau
 - Invited lecture at the Edinburgh Mathematical Society, 2015
 - Invited lecture, 2d International Workshop on Latest Advances in Cardiac Modeling (LACM), Munich, 2015
 - Invited lecture, 3rd Workshop on Model Reduction (MORE), Pilsen, Czech Republic, 2015
 - Seminar, MOX, Politecnico di Milan, Italy, March, 2015
 - Seminar, ENS Rennes, Dec 16, 2015
 - Minisymposium talk, USNCCM, San Diego, USA, 2015
- Céline Grandmont
 - Invited speaker, Lions-Magenes day, April 2015, Pavia, Italy

- Invited Speaker, Workshop on Control and Numerics for Fluid-Structure Interaction Problems, TFIR CAM, Bangalore, India, June 29-July 1, 2015
- Mikel Landajuela
 - Contributed talk, 13th U.S. National Congress on Computational Mechanics, San Diego, USA, July 26–30, 2015
 - Seminar, 2nd UCL/Inria Workshop on embedded interfaces, UPMC, Paris, France, April 8, 2015
 - Seminar, MOX, Milano, Italy, December 10, 2015
- Damiano Lombardi
 - Invited talk, Optimal Transport workshop, Bordeaux, October 16 2015
 - Seminar, Bordeaux, *On the Backward Uncertainty Quantification problem*, March 2015
 - Seminar, Laboratoire Jacques Louis Lions, UPMC, December, Paris, 2015
 - Minisymposium talk, 1st Pan-American Congress on Computational Mechanics, Buenos Aires, Argentina, April 27-29, 2015
- Jessica Oakes
 - Invited talk, Computational Fluid Dynamics in Medicine and Biology. Albufeira, Portugal. September 2015
 - Seminar, University at Buffalo, December 2015
 - Seminar, University of California, Los Angeles. November 2015
 - Seminar, University of California, Irvine. October 2015
 - Seminar, University of Arizona, Tucson. February 2015
 - Seminar, University of California, Davis. January 2015
 - Contributed talk 13th U.S. National Congress on Computational Mechanics. San Diego, California. July 2015
 - Contributed talk 4th International Conference on Computational and Mathematical Biomedical Engineering. June 2015
 - Poster, International Society of Aerosol Medicine. Munich, Germany. June 2015
- Sanjay Pant
 - Seminar, King's College London, UK, October 2015
 - Seminar, Great Ormond Street Hospital, London, UK, October 2015
 - Contributed talk, 13th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, CMBBE, Montreal, Canada, September 2015
 - Contributed talk, 4th International Conference on Computational & Mathematical Biomedical Engineering, CMBE, Cachan, France, June–July, 2015
- Nicolas Pozin
 - Poster, 20th International Congress on Aerosols in Medicine and Pulmonary Drug Delivery, May 30 - June 3, 2015, Munich, Germany
- Marc Thiriet
 - Invited speaker, Second Tbilisi-Salerno Workshop on Modeling in Mathematics, Tbilisi, Mars 16-18, 2015
 - Keynote speaker, First Computational Mechanics Conference in Taiwan (ACMT), minisymposium MS017. Computational Biomedicine and Biomechanics, October 21–23, 2015, National Taiwan University, Taipei

- Invited speaker, First Computational Mechanics Conference in Taiwan (ACMT), minisymposium MS017. Computational Biomedicine and Biomechanics, October 21–23, 2015, National Taiwan University, Taipei
- Elliott Tixier
 - Invited speaker, Lions-Magenes Days Scientific Meeting, April 13-14, 2015, Pavia, Italy.
 - Minisymposium talk, 1st International Conference on Uncertainty Quantification in Computational Sciences (UNCECOMP 2015), May 25-27, 2015, Crete Island, Greece.
 - Minisymposium talk, 4th International Conference on Computational & Mathematical Biomedical Engineering (CMBE 2015), June 29 - July 1, 2015, Cachan, France.
- Marina Vidrascu
 - Invited speaker, Workshop on numerical approximations of PDEs Honoring the 60th birthday of Frédéric Hecht, Málaga, April 20-22
 - Invited speaker, Progrès récents en mécanique des fluides numérique. Colloque en l'honneur d'Alain Dervieux, april 10, Inria Sophia-Antipolis
- Irène Vignon-Clementel
 - Invited talk, Workshop DHU Hepatinov, Dec. 4th, Paul Brousse Hospital, Villejuif, France
 - Invited talk, CEA-GAMNI workshop, Feb. 5th, Paris, France
 - Invited talk, Computational Fluid Dynamics (CFD) in Medicine and Biology II, Sept. 2nd, Albufeira, Portugal
 - Seminar, Laboratoire Jacques Louis Lions, UPMC, April 3rd, Paris, France
 - Seminar, Paul Brousse Hospital meeting with ESPCI, March 16th, Villejuif, France
 - Talk, 4th International Conference on Computational & Mathematical Biomedical Engineering, July, Cachan, France
 - Evaluation seminar, ANR iFLOW midterm review, Nov 3rd, Paris, France

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence :

- Chloé Audebert
 - Sequences and series of functions, series, generalised integrals, 20h, L2-CNED, UPMC
- Laurent Boudin
 - Introduction to series for signal theory, 18h, L2, UPMC
 - Shared studies supervision in mathematics licence for approximately 500 students, 30h, L2-L3, UPMC
 - Mathematics licence supervision of all the “Double majeure” intensive bi-disciplinary curriculum, 4h, L2, UPMC
- Muriel Boulakia
 - Scilab, 35h, L2, UPMC
 - Hilbertian analysis, 30h, L3, Polytech'Paris
 - Oral tests in numerical analysis, 20h, L3, UPMC
- Miguel Ángel Fernández Varela
 - Scientific Computing, 32h, L3, ENPC
 - Analysis and Scientific Computing, 31h, L3, ENPC

- Céline Grandmont
 - Professional insertion and orientation, 24h, L2, UPMC
 - EDO, 24h, L3, UPM
- Damiano Lombardi
 - Numerical methods, 48h, L3, Polytech'Paris
- Elliott Tixier
 - Matrix calculus, 36h, L1, UPMC
 - Linear algebra, 60h, L2, UPMC
- Irène Vignon-Clementel
 - Mathematics for biology, 54h, L1, Université de Versailles Saint Quentin
 - Numerical simulations of blood flow, 1,5h, as part of the undergraduate "continuum mechanics", AgroParisTech

Master :

- Laurent Boudin
 - Basics for numerical methods, 36h, M1, UPMC
- Muriel Boulakia
 - Preparatory course for teaching admission examination "Agrégation", 15h, M2, UPMC
- Jean-Frédéric Gerbeau
 - Numerical methods in hemodynamics (20h), M2, UPMC / Univ Paris-Sud / Ecole Polytechnique.
 - Seminar for the M2 students of the master "Math SV" (1h), M2, Univ Paris-Sud, December, 2015
 - Seminar for the Ecole des Mines students (3h), M2, Paris, February, 2015

Thematic schools:

- Laurent Boudin
 - Invited lecturer: "Aerosol in the lung: what mathematics can bring", Univ. Pavia, Italy. 4h. Doctoral level
- Miguel Ángel Fernández Varela
 - Invited lecturer: Summer school on "Control and numerics in fluid-structure interaction problems", TFIR CAM, Bangalore, India, June 22-26, 2015. 10h. Master and doctoral level
 - Invited lecturer: Autumn School on "Data driven computations in the life sciences", IST, Lisbon, Portugal, November 9-13, 2015. 7,5h. Master and doctoral level
- Céline Grandmont
 - Invited lecturer: Summer school on "Control and numerics in fluid-structure interaction problems", TFIR CAM, Bangalore, India, June 22-26, 2015. 10h. Master and doctoral level
 - Invited lecturer: CEMRACS "Coupling multi-physics models involving fluids", July 20 - August 28, 2015, CIRM, Marseille. 6h. Master and doctoral level

10.2.2. Supervision

PhD: Justine Fouchet-Incaux, Mathematical and numerical modeling of the human breathing,
Supervisors: C. Grandmont & B. Maury, Defended on April 2015, Orsay.

PhD in progress: Chloé Audebert, *Modeling of liver hemodynamics*, since October 2013. Supervisors: J.-F. Gerbeau & I. Vignon-Clementel.

PhD in progress: Francesco Bonaldi, *Modélisation Mathématique et Numérique de Multi-Structures avec couplage Magnéto-Electro-Thermo-Elastique*, since October 2013, Supervisors: F Krasucki & M. Vidrascu

PhD in progress: Mikel Landajuela, *Coupling schemes and unfitted mesh methods for fluid-structure interaction*, since October 2012, Supervisor: M.A. Fernández Varela.

PhD in progress: Matteo Aletti, *Multiscale retinal vascular modeling*, since January 2014 Supervisors: J.-F. Gerbeau & D. Lombardi.

PhD in progress: Eliott Tixier, *Stem cells electrophysiology*, since September 2014 2014. Supervisors: J-F. Gerbeau & Damiano Lombardi.

PhD in progress : Nicolas Pozin Multiscale lung ventilation modeling in health and disease, since March 2014. Supervisors: C. Grandmont & I. Vignon-Clementel.

PhD in progress : Andrea Bondesan, Kinetic and fluid models, numerical and asymptotic analysis, since October 2015, Supervisors: L. Boudin, B. Grec & S. Martin.

10.2.3. Juries

- Laurent Boudin
 - Member of the PhD committee of Justine Fouchet-Incaux, Univ. Paris-Sud, April 2015
- Muriel Boulakia
 - Member of the PhD committee of Gwladys Ravon, Inria Bordeaux Sud-Ouest (referee)
- Jean-Frédéric Gerbeau
 - PhD committees: Francesco Ballarin, Politecnico di Milano (referee); Romain Lacroix, SupTelecom (referee); Alessandra Menafoglio, Politecnico di Milano; Victorien Menier, UPMC (chairman); Simone Palamara, Politecnico di Milano; Alexander Serov, Ecole Polytechnique (referee).
 - Hiring committee: Inria Rennes (CR2); UTC (Assistant Professor).
- Céline Grandmont
 - Hiring committee: Toulouse Univ. (Professor position), Bordeaux Univ. (Head of the hiring committee, Professor position), Orleans Univ. (Professor position).
 - Phd Referee: Philipp Nägele, Friburg University, Germany, June 2015
 - HDR Committee: Muriel Boulakia, UPMC, October 2015
- Marc Thiriet
 - Member of the PhD committee of Sami Hached, Ecole Polytechnique de Montréal (referee)
 - Member of the PhD committee of Tamara El Bouti, Université de Versailles Saint Quentin en Yvelines (referee)
 - Member of the PhD committee of Mohammad Haddadi, Université Paris Est-Créteil (referee)
 - President of thematic comittee CT3 (Biomedical Simulation and Applications to Health) of GENCI (Grand Equipement National de Calcul Intensif – National Large Equipment for Intensive Computation).
 - Member of Evaluation Groups of the Canadian Granting Agency NSERC
- Irène Vignon-Clementel
 - Member of the PhD committee of Damon Afquari, Universidad Politecnica de Madrid, Spain, December 2015

- Member of the PhD committee of Stephanie Lindsey, Cornell University, USA, August 2015
- Member of the PhD committee of Tamara El Bouti, Université Versailles Saint Quentin, July 2015

10.3. Popularization

- Matteo Aletti
 - presentation, "Raconte-moi ta thèse", Fête de la science, October 10th, 2015, Paris, France
- Chloé Audebert
 - poster session, Journée "Correspondances", Projet PEPS-égalité "Correspondances de Langlands", April 10th, 2015, Paris, France
 - presentation, "Raconte-moi ta thèse", Fête de la science, October 10th, 2015, Paris, France
- Jessica Oakes
 - Tutor and mentor to an under-represented minority student struggling in mathematics (1h per week)
 - SECO: Visit local elementary schools to assist students with hands on science activities (1h per month)
- Irène Vignon-Clementel
 - Intervention at the conference "Research: challenges and adventures", at which the research national strategic plan was presented to the French Prime Minister, in presence of the Minister for Education, Higher Education and Research, Dec 14th., Paris, France <https://www.inria.fr/actualite/actualites-inria/la-strategie-nationale-de-recherche-presentee-au-premier-ministre>

SERENA Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

M. Vohralík co-organizes, together with Irène Vignon-Clementel from the project-team **REO**, the monthly *Modeling and Scientific Calculation Seminar* of the Inria Paris-Rocquencourt research centre, see the web page https://iwww.inria.fr/modelisation_et_calcul_scientifique/en/.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

M. Kern and M. Vohralík both served on the Scientific Committee of *SimRace, Conference on numerical methods and High Performance Computing for industrial fluid flows* <http://www.rs-simrace.com/> in 2015.

M. Vohralík served in the scientific committee of *ENUMATH 2015* <http://enumath2015.iam.metu.edu.tr/>.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

M. Vohralík is a member (from December 2013) of the editorial board of *SIAM Journal on Numerical Analysis*, see <http://www.siam.org/journals/sinum/board.php>.

10.1.3.2. Reviewer - Reviewing activities

G. Pichot served as a reviewer for *Journal of Computational Physics*.

M. Kern served as a reviewer for the journals *Electronic Transactions on Numerical Analysis*, *Computational Geosciences*, *Transport in Porous Media*, and *Oil & Gas Science and Technology*.

M. Vohralík served as a reviewer for *SIAM Journal on Numerical Analysis*, *Mathematics of Computation*, *Numerische Mathematik*, *Computer Methods in Applied Mechanics and Engineering*, *SIAM Journal on Scientific Computing*, *M2AN. Mathematical Modelling and Numerical Analysis*, *Numerical Methods for Partial Differential Equations*, *IMA Journal of Numerical Analysis*, and *Comptes rendus de l'Académie des sciences (mathématique)*, as well as for *Mathematical Reviews* of the American Mathematical Society.

10.1.4. Invited talks

“The current landscape of energy a posteriori error estimators”, 29 September 2015, 28th Chemnitz FEM symposium, Germany, by M. Vohralík.

“Polynomial-degree-robust a posteriori estimates in a unified setting”, 14 January 2015, 8th Chilean Numerical Analysis and Partial Differential Equations Meeting, La Serena, Chile, by M. Vohralík.

“Discrete reduced models for flow in porous media with faults and barriers”, 30 June 2015, SIAM Geosciences (GS15), Stanford, June 29 - July 2, 2015. This lecture was given at the award ceremony for the SIAM Geosciences Senior Career prize awarded to Jérôme Jaffré.

“Global in time domain decomposition methods for flow and transport in porous media”, 16 October 2015, ENIT LAMSIN, Tunis, M. Kern

10.1.5. Scientific expertise

J. E. Roberts is a member of the External Advisory Board for **CFSES** (Center for Frontiers of Subsurface Energy Security), University of Texas at Austin and SANDIA National Laboratories, Albuquerque, New Mexico.

J. E. Roberts is a member of the selection committee for recruiting professors in the department of maths of the University of Bergen, and a member of the national Norwegian committee for the promotion of professors.

M. Kern is a member of the Scientific Committee of **Orap** (ORganisation Associative du Parallélisme), of the Scientific Board of **GDR Calcul**, and of the jury and executive board of **Label C3I**.

10.1.6. Research administration

F. Clément is the *correspondant Inria-entreprise* of the center of Paris-Rocquencourt for **AMIES** (from September 2015).

G. Pichot is member of the Conseil de département MAM of Polytech Lyon.

M. Kern is the Deputy Director of **Maison de la Simulation**, a joint project between CEA, CNRA, Inria, Université de Paris 11, and Université de Versailles, focused on applications of high end computing.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, 2nd year master, Laboratoire Jacques-Louis Lions (University Paris VI), France.

Master : M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, 2nd year master, Department of Numerical Mathematics, Charles University in Prague, Czech Republic.

Doctorat: M. Kern, *Méthodes numériques pour les problèmes inverses*, 18 hours, ENIT, Tunis

Master: M. Kern, *Modélisation et simulation des écoulements de fluides dans la géosphère*, 18 hours/year, 2nd year master “Mathématiques et Applications” (parcours Analyse, Modélisation et Simulation), Université Paris Saclay, France

École d’Ingénieurs: M. Kern, *Éléments finis* (avec D. Ryckelynck), *Problèmes inverses*, 40 hours/year, 2nd year students, École Mines-ParisTech, France.

10.2.2. Supervision

PhD: L. Lenôtre, University of Rennes 1, November 2015, co-advisors A. Lejay (Inria Nancy) and G. Pichot, with J. Erhel.

PhD in progress: S. Ali Hassan, *Estimations d’erreur a posteriori et critères d’arrêt pour des solveurs par décomposition de domaine et avec des pas de temps locaux (A posteriori error estimates and stopping criteria for domain decomposition solvers with local time stepping)*, University Paris VI, November 2013, advisor M. Vohralík, co-advisors C. Japhet and M. Kern.

PhD in progress: P. Daniel, *Adaptive multilevel solvers with a posteriori error control for porous media flows*, University Paris VI, October 2015, advisor M. Vohralík, co-advisor A. Ern.

PhD in progress: J. Dabaghi, *Modélisations adaptives par complémentarité d’apparition et de disparition de phases en milieux poreux et fracturés (Adaptive modeling via complementarity of phase appearance and disappearance in fractured and porous media)*, University Paris VI, November 2015, advisor M. Vohralík, co-advisor V. Martin.

PhD in progress : N. Birgler, *Écoulements souterrains, méthodes numériques, et calcul haute performance*, University Paris VI, October 2012, advisor J. Jaffré, co-advisor J. E. Roberts.

PhD in progress : F. Cheikh, *Identification de failles dans un milieu poreux par une méthode d’indicateurs*, University Paris VI and University of Tunis El Manar, December 2011, advisors J. E. Roberts and H. Ben Ameer, co-advisors V. Martin and F. Clément.

PhD : E. Ahmed, *Décomposition de domaines pour quelques problèmes de transmission des fluides dans les milieux poreux : Applications en hydrogéologie et en biologie*, University of Tunis El Manar, ENIT-LAMSIN, Defended on April 30, Advisors J. Jaffré, J. E. Roberts and A. Ben Abda.

PhD in progress : M. H. Riahi, *Identification de paramètres hydrogéologiques dans un milieu poreux*, University Paris VI and University of Tunis El Manar, December 2011, advisors J. Jaffré and H. Ben Ameer.

10.2.3. Juries

F. Clément was member of the PhD thesis committee of Julien-Pierre Offret, Université Paris Ouest Nanterre La Défense (December 2nd, 2015).

M. Kern was member of the PhD thesis committees of

- Zifan Liu, Université de Versailles (January 2015);
- Thomas Applencourt, université de Toulouse (November 2015);
- Rudi Leroy, université de Lille (December 2015).

[1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

ALPINES Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- Frédéric Hecht: Organizing the 7th FreeFem++ days (December 2015, Paris)
- Frédéric Hecht: Organizing Contributions to PDE for Applications, September 2015, Paris

10.1.1.2. Member of the organizing committees

- Laura Grigori: Member of Scientific Committee of Ecole CEA-EDF-Inria on Efficacité Énergétique dans le Calcul Haute Performance / Green HPC, 2015.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- Laura Grigori: Member of Program Committee of IEEE International Parallel and Distributed Processing Symposium, IPDPS 2015.
- Laura Grigori: Member of Program Committee of IEEE/ACM SuperComputing SC15 Conference, November 2015.
- Laura Grigori: Member of Program Committee of HiPC 2015, IEEE Int'l Conference on High Performance Computing.
- Laura Grigori: Member of Program Committee of International Conference on Parallel Processing and Applied Mathematics PPAM15, 2015.
- Laura Grigori: Member of Program Committee of Workshop on Parallel Symbolic Computation (PASCO 2015), University of Bath, UK, 2015.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Laura Grigori: Area editor for Parallel Computing Journal, Elsevier, since June 2013.
- Laura Grigori: Member of the editorial board for the SIAM book series Software, Environments and Tools. See http://bookstore.siam.org/software-environments-and-tools/?_ga=1.57283618.921241804.1409909401. Since March 2014.
- Frédéric Nataf: Member of the editorial board of Journal of Numerical Mathematics

10.1.4. Invited talks

- Laura Grigori: Invited speaker (plenary), ACM/IEEE Supercomputing'15, International Conference for High Performance Computing, Networking, Storage, and Analysis, Austin, November 2015, http://sc15.supercomputing.org/schedule/event_detail?evid=inv103. This is the major conference of high performance computing, attended by 12,000 people.
- Laura Grigori: Invited plenary speaker, Emerging Technology Conference, June 2015, University of Manchester, <http://emit.manchester.ac.uk/>.
- Frédéric Nataf: Invited plenary speaker, XXIII International Conference on Domain Decomposition Methods, 6-10 July 2015, South Korea.

- Frédéric Nataf: Invited plenary speaker, International Conference on Preconditioning Techniques for Large Sparse Matrix Problems, 17-19 June 2015, at the University of Technology, Eindhoven, Netherlands.
- Xavier Claeys: invited talk in the Seminar on PDE, LMV, Univ. Versailles, 15th of Jan. 2015.
- Xavier Claeys: invited talk in the Seminar on Applied Math., CMAP, École Polytechnique, 8th of Dec. 2015.

10.1.5. Leadership within the scientific community

- Laura Grigori: Program Director of the SIAM SIAG on Supercomputing (SIAM special interest group on supercomputing), January 2014 - December 2015. Nominated by a Committee and elected by the members of this SIAG. One of the roles is to Co-Chair the SIAM Conference on Parallel Processing and Scientific Computing 2016.

10.1.6. Scientific expertise

- Laura Grigori: November 2015 - current, expert to the Scientific Commission of IFPEN (French Petroleum Institute). Evaluation of research programs, PhD theses, work representing a total of 5 days per year.

10.1.7. Research administration

- Frédéric Hecht: President of the selection committee of the opening 0254 MCF 26, Université de Technologie de Compiègne.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: Laura Grigori, Guest lecture in a class on Randomized Linear Algebra taught by Ravi Kanan, UC Berkeley, November 2015. The slides of the lecture on *Algorithms for computing low rank approximations* can be found on Laura Grigori's webpage.
- Master: Laura Grigori, Spring 2015, UC Berkeley, Creation of a reading group and lectures on randomized linear algebra that gathers together students and experts interested in learning more and working on fast linear algebra algorithms for machine learning applications. More details are available at <https://who.rocq.inria.fr/Laura.Grigori/RandNLA.html>, including the videos of the lectures. The co-organizers of this reading group are Prof. J. Demmel (CS Department), Prof. M. Gu (Math Department), Prof. M. Mahoney (Statistics Department).
- Master: Laura Grigori, Spring 2015, UC Berkeley, Guest lecturer in CS267 Class of J. Demmel on *Applications of Parallel Computing* (lectures 13 to 16). The slides are available on L. Grigori's website, videos can be found here https://www.youtube.com/playlist?list=PLkFD6_40KJIyX8nEjk6oTLWohdVhjjP3X.
 - Lecture 13 on Communication Avoiding Algorithms in Linear Algebra
 - Lecture 14 on Graph partitioning
 - Lecture 15 on Sparse Direct Solvers
 - Lecture 16 on Iterative Solvers
- Master : Frederic Nataf, Course on Domain Decomposition Methods, 30 hours, Master 2, UPMC, France.
- Master : Frederic Nataf, Course on Domain Decomposition Methods, 15 hours, Master 2, ENSTA, France.
- Textbook published by SIAM: AN INTRODUCTION TO DOMAIN DECOMPOSITION METHODS: ALGORITHMS, THEORY, AND PARALLEL IMPLEMENTATION, V. Dolean, P. Jolivet and F. Nataf, 2015.

- Licence : Xavier Claeys, Calculus, 12hrs, L1, Université Pierre-et-Marie Curie Paris 6, France
- Licence : Xavier Claeys, Orientation et Insertion Professionnelle, 40hrs, L2, Université Pierre-et-Marie Curie Paris 6, France
- Master : Xavier Claeys, Informatique de base, 72hrs, M1, Université Pierre-et-Marie Curie Paris 6, France
- Master : Xavier Claeys, Informatique Scientifique, 44hrs M1, Université Pierre-et-Marie Curie Paris 6, France
- Master : Xavier Claeys, Résolution des EDP par éléments finis, 18hrs M2, Université Pierre-et-Marie Curie Paris 6, France
- Master : Frédéric Hecht , Informatique de base, 24hrs, M1, Université Pierre-et-Marie Curie Paris 6, France
- Master : Frédéric Hecht , Des EDP à leur résolution par la méthode des éléments finis (MEF), 24hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
- Master : Frédéric Hecht , Numerical methods for fluid mechanics, 10hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
- Master : Frédéric Hecht , Calcul scientifique 3 / projet industriel Freefem++, 28hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
- Master : Frédéric Hecht , Ingénierie 1 / Logiciel pour la simulation (Freefem++), 21hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
- Master : Frédéric Hecht , Ingénierie 2 / Projet collaboratif, 21hrs, M2, Université Pierre-et-Marie Curie Paris 6, France

10.2.2. Supervision

- PhD: Pierre-Henri Tournier, Absorption de l'eau et des nutriments par les racines des plantes : modélisation, analyse et simulation, Univ. Paris VI, February 2015, co-advisors M. Compte and F. Hecht.
- PhD in progress: Alan Ayala, since October 2015 (funded by NLAFFET H2020 project), co-advisors Xavier Claeys and Laura Grigori.
- PhD in progress : Sebastien Cayrols, since October 2013 (funded by Maison de la simulation), advisor Laura Grigori.
- PhD in progress: Hussam Al Daas, since February 2015 (funded by contract with Total), advisor Laura Grigori.
- PhD in progress: Olivier Tissot, since October 2015 (funded by NLAFFET H2020 project), advisor Laura Grigori.
- PhD in progress : Ryadh Haferssas, since October 2013 (funded by Ecole Doctorale, UPMC), advisor F. Nataf
- PhD in progress : Mireille El-HAddad, since March 2014 (Cotuelle l'Université Saint-Joseph de Beyrouth, Liban et UPMC) , advisors F. Hecht and T. Sayah.
- PhD in progress : Guillaume Verger El-HAddad, since Sept. 2013 (funded by ANR Becasim, Université de Rouen), advisors F. Hecht and I. Danaila.

10.2.3. Juries

- Laura Grigori: PhD thesis of Florian Dang, Examiner, president of the jury, Université de Versailles, July 2015.
- Laura Grigori: PhD thesis of Hamza Jeljeli, Examineur, Université de Lorraine, Juillet 2015.
- Xavier Claeys: PhD thesis of Mathieu Lecouvez, Examineur, École Polytechnique, Juillet 2015
- Xavier Claeys: PhD thesis of Simon Marmorat, Examineur, École Polytechnique, Novembre 2015
- Frédéric Hecht: HDR of Laurence Moreau , Rapporteur, UTT, Troyes, june 2015
- Frédéric Hecht: PhD thesis of Arnaud BERTRAND , Rapporteur, Université de Strasbourg, November 2015
- Frédéric Hecht: PhD thesis of Moussa Diédhiou , Examineur, Université de la Rochelle, December 2015

DYOGENE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

- Bartek Blaszczyszyn and Marc Lelarge co-organized Stochastic networks and stochastic geometry conference dedicated to François Baccelli on his 60th birthday; <http://www.di.ens.fr/~blaszczy/FB60/>
- M. Lelarge: Co-organizer, Cargèse fall school on random graphs, with Dieter Mitsche and Pawel Pralat
<http://math.unice.fr/~dmitsche/Fallschool/Fallschool.html>
- M. Lelarge: Co-organizer, Workshop on Community Detection, with Laurent Massoulié
<http://www.msr-inria.fr/conferences-workshops/workshop-on-community-detection-at-institut-henri-poincare/>

10.1.1.1. Chair of conference program committees

Ana Basic: Valuetools 2015 TPC co-chair. <http://valuetools.org/2015/show/home>

10.1.1.2. Member of the conference program committees

- Bartek Blaszczyszyn: WiOpt/SpaSWiN 2015
- Anne Bouillard was a member of the program committee of WiOpt 2015 and Valuetools 2015.
- Ana Basic: ACM Sigmetrics, WiOpt, IEEE SmartGridComm.
- Marc Lelarge: WEIS, WiOpt, WAW.

10.1.2. Journal

10.1.2.1. Member of the editorial boards

- F. Baccelli serves on the editorial boards of: Bernoulli, JAP, AAP et Questa.
- M. Lelarge serves on the editorial boards of: IEEE's Transactions on Network Science and Engineering, Bernoulli Journal and Queueing Systems.

10.1.3. Invited talks

- F. Baccelli gave the following invited lectures: Keynote Lecture, *ISWCS'15*, Brussels, August 2015; Invited lecture at the *Huawei Vision Forum, Paris*, on stochastic geometry for wireless networks, March 2015; Invited lecture at the *EPFL Inria Joint Meeting, Lausanne*, on coverage in cellular networks, January 2015.
- Bartek Blaszczyszyn: WiOpt/SpaSWiN 2015, Simons workshop on Stochastic Geometry and Networks, University of Texas at Austin.
- A. Basic: keynote talk at CaFFEET (California France Forum on Energy Efficiency Technologies); <http://caffet.com/>
- M. Lelarge: The International Symposium on Optimization (ISMP), Pittsburgh (Jul.); CAP2015 : Conférence sur l'Apprentissage automatique, Lille (Jul.); Algotel, Beaunes (Jun.); DALI 2015 - Workshop on Learning Theory, Spain (Apr.); Assemblée Générale du GdR Information Signal Image viSion (ISIS), Lyon (Apr.); Combinatorial and algorithmic aspects of convexity, Paris (Jan.).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Anne Bouillard (Cours) et Ana Busic (TD) **Structures et algorithmes aléatoires** 80heqTD, L3, ENS, France.

Licence : Anne Bouillard (Cours) **Théorie de l'information et du codage** 36 heqTD, L3, ENS, France.

Licence : Anne Bouillard (Cours) **Algorithmique et programmation** 21 heqTD, L3, ENS, France.

Licence : Anne Bouillard (TD) **Systèmes digitaux** 9 heqTD, L3, ENS, France.

Master: Bartek Blaszczyszyn (with Laurent Massoulié), Graduate Course on point processes, stochastic geometry and random graphs (program “Master de Sciences et Technologies”), 45h, UPMC, Paris 6, France.

Master : Bartek Blaszczyszyn (with Laurent Decreasefond), Graduate Course on Spatial Stochastic Modeling of Wireless Networks (master program “Advanced Communication Networks”), 45h, I’X and Telecom ParisTech, Paris.

Master : Anne Bouillard (Cours + TD) **Fondements de la modélisation des réseaux** 18heqTD, M2, MPRI, France

Master: Ana Busic et Marc Lelarge (Cours) et Rémi Varloot (TD) Modèles et algorithmes de réseaux, 50heqTD, M1, ENS, Paris, France.

Master: Ana Busic, Simulation, 9hCours, M2 AMIS, UVSQ, France

Master: Marc Lelarge (Cours), Algorithms for Networked Information, 27heqTD, M2 ACN, Ecole polytechnique

Master: Marc Lelarge (TD), Networks: distributed control and emerging phenomena, 36 heqTD, M1, Ecole polytechnique.

10.2.2. Supervision

HdR : Marc Lelarge, Topics in random graphs, combinatorial optimization, and statistical inference[2], ENS, 23 février 2015.

PhD : Miodrag Jovanovic, Evaluation and optimization of the quality perceived by mobile users for new services in cellular networks, started in January 2012, defended in 2015 advisor B. Blaszczyszyn, co-advisor M.Karray; [1]

PhD in progress : Kumar Gaurav, Convex comparison of network architectures, started in October 2011, advisor B. Blaszczyszyn;

PhD in progress : Christelle Rovetta, Applications of perfect sampling to queuing networks and random generation of combinatorial objects, from December 2013, co-advised by Anne Bouillard and Ana Busic;

PhD in progress : Umar Hashmi, Decentralized control for renewable integration in smartgrids, from December 2015, advisors: A. Busic and M. Lelarge;

PhD in progress: Lennart Gulikers, Spectral clustering, depuis décembre 2014, encadrants: Marc Lelarge et Laurent Massoulié

PhD in progress : Rémi Varloot, Dynamique de Formation des Réseaux, depuis février 2015, encadrants: Marc Lelarge et Laurent Massoulié

PhD in progress: Alexandre Hollocou, Local community detection, depuis décembre 2015, encadrants: Thomas Bonald et Marc Lelarge

10.2.3. Juries

- A. Busic: Examiner for PhD: Pierre-Antoine BRAMERET (ENS Cachan) 2015.
- A. Busic: membre du jury de recrutement CR2 Inria Saclay - Île-de-France.
- A. Busic: membre de la Commission des Emplois Scientifiques du CRI Paris-Rocquencourt
- A. Busic: membre de la Commission de développement technologique (CDT) de Paris-Rocquencourt
- M. Lelarge: External Examiner for PhD: Jean Barbier (ENS) and Hang Zhou (ENS)
- M. Lelarge: Member of the hiring committee for “maître de conférence Probabilités (Université Lyon 1)”

EVA Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Event Organization

10.1.1.1. General Chair, Scientific Chair

- **Pascale Minet**
 1. co-chair with Leila Saidane and Farouk Kamoun of PEMWN 2015, organized in Hammamet, Tunisia, November 2015.
- **Thomas Watteyne**
 1. Co-chair, IETF 6TiSCH standardization working group.
 2. Technical Program Committee Chair and Local Chair, EAI Conference on Interoperability in IoT (InterIoT), Paris, France, October 2016.
 3. General Chair, Second ETSI 6TiSCH plugtests, Paris, France, 2-4 February 2016.
 4. Technical Program Committee Chair, EAI Conference on Interoperability in IoT (InterIoT), part of the IOT360 Summit, Rome, Italy, 28-29 October 2015.
 5. Chair, OpenWSN/6TiSCH Hackathon, Czech Republic, 19 July 2015.
 6. Chair, First ETSI 6TiSCH plugtests, Prague, Czech Republic, 17-18 July 2015.
 7. Program co-chair of the 1st International Workshop on IoT challenges in Mobile and Industrial Systems (IoTSys), in conjunction with MobiSys, Florence, Italy, 18 May 2015.
- **Nadjib Achir**
 1. track chair of the Internet of Things (IoT) track of the Selected Areas in Communications Symposium of IEEE Global Telecommunications Conference 2014
- **Selma Boumerdassi**
 1. chair of the International Workshop on Energy Management for Sustainable Internet-of-Things and Cloud Computing (EMSICC 2015), August 2015.
 2. chair of the International Conference on Mobile, Secure and Programmable Networking (MSPN 2015), June 2015.

10.1.1.2. Organizing Committee Member

- **Paul Muhlethaler**
 1. organized the DGA Inria workshop on Telecommunication and networking “Cloud, cloudlet & MANET” in October 2015.
- **Thomas Watteyne**
 1. Demo Chair, IEEE International Conference on Sensing, Communication and Networking (SECON), London, UK, 27-30 June 2016.
- **Christine Anocq**
 1. member of the organizing committee of the international conference PEMWN 2015

10.1.2. Scientific Events Selection

10.1.2.1. Conference Program Committee Member

- **Paul Muhlethaler**

1. Steering Committee Member of MobileHealth 2015, 5th EAI International Conference on Wireless Mobile Communication and Healthcare, October 14–16, 2015, London, Great Britain
 2. Technical Committee of the fourth International conference on Performance Evaluation and Modeling in Wireless Networks, PEMWN 2015, November 2015, Hammamet , Tunisia.
- **Pascale Minet**
 1. TPC Member CIT 2015, 15th IEEE International Conference on Computer and Information Technology, May 2015,
 2. TPC Member DCNET 2015, 6th International Conference on Data Communication Networking, July 2015,
 3. TPC Member DMEMS 2015, Workshop on design, control and software implementation for distributed MEMS, September 2015.
 4. TPC Member ICN 2015, 14th International Conference on Networks, April 2015.
 5. TPC Member IUCC 2015, the 14th IEEE International Conference on Ubiquitous Computing and Communications, October 2015.
 6. TPC Member PEMWN 2015, 4th International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, November 2015.
 7. TPC Member PECCS 2015, 5th international conference on Pervasive and Embedded Computing and Communication Systems, February 2015.
 8. TPC Member RAWSN 2015, 3rd International Workshop on RFID And Adaptive Wireless Sensor Networks, May 2015.
 9. TPC Member RTNS 2015, 23th International Conference on Real-Time and Network Systems, November 2015.
 10. TPC Member WINCOM 2015, 1st International Conference on Wireless Networks and Mobile Communications, October 2015.
 - **Thomas Watteyne**
 1. TPC Member IEEE International Conference on Communications (ICC), Selected Areas in Communications (SAC), 2015, 2016.
 2. TPC Member International Conference on Embedded Wireless Systems and Networks (EWSN), 2016.
 3. TPC Member IEEE World Forum on Internet of Things (WF-IoT), 2015.
 4. TPC Member International Workshop on Internet of Things, Machine to Machine and Smart Services Applications (IoT), part of International Conference on Collaboration Technologies and Systems (CTS), 2015.
 5. TPC Member IEEE Wireless Communications and Networking Conference (WCNC), 2015.
 6. TPC Member IEEE International Conference on Embedded Software and Systems (ICESS), 2015.
 - **Nadjib Achir**
 1. TPC Member IEEE Global Telecommunications Conference, GLOBECOM 2015;
 2. TPC Member IEEE International Conference on Communications, ICC 20145;
 3. TPC Member Personal, Indoor and Mobile Radio Communications, PIMRC 2015.
 4. TPC Member IEEE Wireless Communications and Networking Conference, WCNC 2015;
 5. TPC Member IEEE Consumer Communications & Networking Conference, CCNC 2015;

6. TPC Member Global Information Infrastructure and Networking Symposium, GIIS 2015.
 7. TPC Member International Conference On Network of the Future, NoF 2015.
- Selma Boumerdassi
 1. TPC Member IEEE Global Telecommunications Conference, GLOBECOM 2015;
 2. TPC Member IEEE International Conference on Communications, ICC 2015;
 3. TPC Member International Workshop on Communicating Objects and Machine to Machine for Mission-Critical Applications, COMMCA 2015;
 4. TPC Member International Conference on Open and Big Data, OBD, 2015;
 5. TPC Member International Conference on New Technologies of Information and Communication, NTIC, 2015;
 6. TPC Member International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, PEMWN, 2015;
 7. TPC Member International Conference on Advances in Computing, Communications and Informatics, ICACCI, 2015;

10.1.3. Journal

10.1.3.1. Editorial Board Member

- **Thomas Watteyne**
 1. Editor, EAI Transactions on Internet of Things since 2015.
 2. Editor, IEEE Internet of Things (IoT) Journal since 2014.
- Nadjib Achir
 1. guest editor of the special issue “Planning and Deployment of Wireless Sensor Networks”, of the International Journal of Distributed Sensor Networks.

10.1.3.2. Journal Reviewer

- **Paul Muhlethaler**
 1. Reviewer Annals of telecommunications
 2. Reviewer IEEE Transactions on Wireless Communications
 3. Reviewer IEEE Transactions on Vehicular Technology
 4. Reviewer IEEE Transactions on Information Theory
 5. Reviewer International Journal of Distributed Sensor Networks. Hindawi.
- **Pascale Minet**
 1. Reviewer Real-Time Systems
 2. Reviewer International Journal of Distributed Sensor Networks
 3. Reviewer Computer Communications Journal
 4. Reviewer Annals of telecommunications
 5. Reviewer ACM Computing Surveys
- **Thomas Watteyne**
 1. Reviewer Springer Journal of Internet Services and Applications, 2015.
 2. Reviewer IEEE Internet of Things (IoT) Journal, 2015.
 3. Reviewer IEEE Transactions on Industrial Informatics, 2015.
- Nadjib Achir
 1. Reviewer Sensor Networks (MDPI)
 2. Reviewer Wireless Communications and Mobile Computing (Wiley)

3. Reviewer Internet of Things Journal (IEEE)
 4. Reviewer Ad Hoc Networks Journal (Elsevier)
- Selma Boumerdassi
 1. Reviewer Ad Hoc Networks Journal (Elsevier);
 2. Reviewer The journal of Future Generation Computer Systems (Elsevier).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master:

- **Thomas Watteyne** taught an Intensive 1-week course on IoT, with associated hands-on labs. ENSTA ParisTech. Together with Quentin Lampin and Dominique Barthel, 12-18 November 2015.
- **Thomas Watteyne** taught a 3-hour class on “Getting your Hands Dirty With the Industrial IoT”. IoT360 Summer School, Rome, Italy, 27 October 2015.
- **Thomas Watteyne** taught a 1-day crash course on the Industrial IoT, ParisTech, 30 September 2015.
- **Thomas Watteyne** taught a 3-hour class on “Deterministic Wireless Sensor Networks”, Ecole Temps Reel (ETR), with Pascal Thubert, Rennes, France, 28 August 2015.
- **Thomas Watteyne** taught a 1h class on the Silicon Valley at KULAK, Kortrijk, Belgium, 17 March 2015.
- **Thomas Watteyne** taught an Intensive 1-week course on IoT, with associated hands-on labs. ENSTA ParisTech. Together with Quentin Lampin and Dominique Barthel, 19-23 January 2015.
- **Pascale Minet** taught “Déploiement de réseaux de capteurs sans fil : couverture et connectivité” in Master Systèmes et Services pour l’Internet des Objets of the University of Marne-la-Vallée.
- **Pascale Minet** taught Mobile ad hoc networks and wireless sensor networks: medium access, routing and energy efficiency in Master ScTIC (Systèmes complexes, Technologies de l’Information et du Contrôle) of the University of Paris 12.
- **E-learning**
 - **Thomas Watteyne** recorded a MOOC on the Internet of Things (IoT) together Prof. Mischa Dohler from with King’s College London, FutureLearn platform, 3-week course, first course on 23 November 2015. Over 20,000 registered!

10.2.2. Supervision

PhD :

- Ines Khoufi, “Autonomous or assisted deployment by mobile robots of wireless sensor networks: coverage and connectivity issues”, University Pierre et Marie Curie - Paris VI, September 2015, **Pascale Minet** adviser, Anis Laouiti, co-adviser.
- Ines Ben Jemaa, “Multicast communications for cooperative vehicular systems”, Mines ParisTech, December 2014, **Paul Muhlethaler** co-adviser, Nadjib Achir reviewer.

10.2.3. Juries

HdR:

- Kinda Khawam, “Radio resource management in heterogeneous networks”, University of Paris Sud, November 2015, **Pascale Minet** examiner.

- Anis Laouiti, “From mobile ad hoc networks to smart cities”, University of Paris Sud, September 2015, **Pascale Minet** examiner.

PhD:

- Kevin Roussel, “Évaluation et amélioration des plates-formes logicielles pour réseaux de capteurs sans-fil, pour optimiser la qualité de service et l’énergie”, Université de Lorraine, viva 17 December 2015, **Thomas Watteyne** examiner.
- Antonio O. Gonga, “Mobility and Multi-channel Communications in Low-power Wireless Networks”, KTH Electrical Engineering, viva on 14 January 2016, **Thomas Watteyne** examiner.
- Roudy Dagher, “Sur la radionavigation dans les villes intelligentes du futur – Le cas des réseaux de capteurs sans fils”, Inria-Lille, viva 6 October 2015,, **Thomas Watteyne** examiner.
- Georgios Z. Papadopoulos, “Improving Medium Access in Dynamic Wireless Sensor Networks”, ICube lab, University of Strasbourg, 28 September 2015, **Thomas Watteyne** examiner.
- Ons Mabrouk, “Communications opportunistes dans les réseaux de capteurs radio cognitive”, University of La Manouba, ENSI, Tunis, November 2015, **Pascale Minet** examiner.
- Jean-Baptiste Dupe, “Ordonnancement et gestion de ressources pour un système de télécommunications haut débit : optimisation de la bande passante satellite”, University of Toulouse, October 2015, **Pascale Minet** reviewer.
- Rafik Zitouni, “Software defined radio for cognitive wireless sensor networks”, University of Paris Est, October 2015, **Pascale Minet** reviewer.
- Tanguy Ropitault, “Routage et performances dans les réseaux CPL pour le smart grid”, Telecom Bretagne, Juin 2015, **Pascale Minet** reviewer.
- Rana Diab, “HMC-MAC : un protocole MAC hybride et multi-canal pour les réseaux de capteurs sans fil”, Université Blaise Pascal, Clermont-Ferrand, June 2015, **Pascale Minet** reviewer.
- Dimitrios Millioris, “Trend Detection and Information Propagation in Dynamic Social Networks”, Ecole Polytechnique, April 2015, **Paul Muhlethaler** examiner.
- Guangyu Li “Adaptive and Opportunistic QoS-based Routing Protocol in VANETs” University of Paris Saclay July 2015, Paul **Paul Muhlethaler** reviewer.
- Zakia Khalfallah “Underwater Wireless Sensor Network Deployment for Water Pollution Monitoring in Rivers”, UPMC December 2015, **Paul Muhlethaler** examiner.
- Ines Koufi, “Autonomous or assisted deployment by mobile robots of wireless sensor networks: coverage and connectivity issues”, University Pierre et Marie Curie - Paris VI, September 2015, Nadjib Achir reviewer.
- Oussama Stiti, “Étude de l’urbanisation des accès virtuels et stratégie de métamorphose de réseaux ”, University Pierre et Marie Curie - Paris VI, November 2015, Nadjib Achir reviewer.
- El Hadj Malick Ndoeye, “Réseaux de capteurs sans fil linéaires : impact de la connectivité et des interférences sur une méthode d’accès basée sur des jetons circulants”, Université Blaise Pascal, Clermont-Ferrand, June 2015, Nadjib Achir reviewer.
- Sabrina Naimi, “Gestion de la mobilité dans les réseaux Ad Hoc par anticipation des métriques de routage”, Université Paris Sud and ENIT (Tunisia), July 2015, Anis Laouiti reviewer.

10.3. Popularization

10.3.1. Web Presence

- <https://team.inria.fr/eva/>
- <https://twitter.com/InriaEVA>

10.3.2. Demos

- We deployed a 15-mote network at the SolutionsCOP21 expo at the Grand Palais in Paris, held alongside the COP21 meeting, 4-10 December 2015. French President Francois Hollande and Minister of Research Thierry Mandon came by the demo.
- The EVA team organized several demonstrations of wireless sensor networks for undergraduates who visited Inria in February and December 2015.

10.3.3. Talks

- The Rise of the Industrial IoT! Inria-DGA day, Paris, France, 15 October 2015, **Thomas Watteyne**.
- Wireless In the Woods: Monitoring the Snow Melt Process in the Sierra Nevada. “demi-heure de la science” seminar. 3 September 2015, Rocquencourt, France, **Thomas Watteyne**.
- From Smart Dust to 6TiSCH: building the Industrial Internet of Things. 4th International Symposium on Sensor Science (I3S), 13-15 July 2015, Basel, Switzerland, **Thomas Watteyne**.
- Reaching Industrial-class Reliability with a Converged IPv6 Network in the Smart Building. Joint presentation with Pascal Thubert (Cisco). MEITO day on Smart Buildings, 21 May 2015, Rennes, France, **Thomas Watteyne**.
- OpenWSN: Having FUN with TSCH and the IoT-LAB. FUN research team seminar, Inria-Lille, 3 April 2015, Lille, France, **Thomas Watteyne**.
- Determinism in the IoT: the example of 6TiSCH and OpenWSN. IRTF T2TRG meeting, 22 March 2015, Dallas, TX, USA, **Thomas Watteyne**.

10.3.4. Panels

- **Thomas Watteyne** chair, panel on “Sensing and Networking”, Inria@Silicon Valley annual workshop (BIS), 13 May 2015, Berkeley, CA, USA.

10.3.5. In the News

- Article on IPSO CHALLENGE 2015, Inria-Paris Newsletter, 15 December 2015.
- Interview of **Thomas Watteyne** in Smart Insights on “The Internet of Important Things”, Issue 15, number IV, 14 December 2015.
- “Two Inria technologies rewarded at the IPSO Challenge 2015 in San Jose”, FrenchTechHub newsletter, 10 December 2015.
- “Interview: **Thomas Watteyne**, EVA research team and REALMS associate team, presents his research, his collaboration with California and the IPSO Challenge”. Inria@SiliconValley newsletter, October 2015.
- “Two Inria-EVA projects make it to IPSO CHALLENGE semi-finals”, inria.fr, October 2015.
- IPSO Alliance Announces Semi-Finalists for IPSO Challenge 2015, Reuters, August 2015.

10.4. Others

10.4.1. Position held at Inria

Paul Muhlethaler is the scientific director of the DGA-Inria partnership.

GANG Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events selection

10.1.1.1. Chair of conference program committees

ICDCN 2015 – The 16th ACM International Conference on Distributed Computing and Networks, India, January 2015 (Amos Korman was PC co-chair for distributed computing track).

FCT 2015 – 20th International Symposium on Fundamentals of Computation Theory, Poland, August 2015 (Adrian Kosowski was PC co-chair).

NETYS 2015 – The International Conference on Networked Systems, Marocco, May 2015 (Hugues Fauconier was PC co-chair).

10.1.1.2. Member of the conference program committees

ICALP 2015 – 42nd Int. Colloquium on Automata, Languages and Programming, Japan, July 2015 (Pierre Fraigniaud – PC member of track C).

PODC 2015 – 34th ACM Symposium on Principles of Distributed Computing, Spain, July 2015 (Amos Korman – PC member).

SPAA 2015 – 27th ACM Symposium on Parallelism in Algorithms and Architectures, USA, June 2015 (Pierre Fraigniaud – PC member).

WWW 2015 – 24th World Wide Web Conference, Italy, May 2015 (Pierre Fraigniaud – PC Member of Social Networks and Graph Analysis track).

DISC 2015 – 29th Symposium on Distributed Computing, Japan, October 2015 (Amos Korman and Pierre Fraigniaud – PC members).

IPDPS 2015 – 29th IEEE International Parallel and Distributed Processing Symposium, India, May 2015 (Pierre Fraigniaud – PC member).

MFCS 2015 – 40th Int. Symposium on Mathematical Foundations of Computer Science, Italy, August 2015 (Pierre Fraigniaud – PC member).

CIAC 2015 – 8th Int. Conference on Algorithms and Complexity, France, May 2015, (Pierre Fraigniaud – PC member).

EUROPAR 2015 – 21st European Conference on Parallel Computing, Austria, August 2015 (Pierre Fraigniaud – PC member).

SIROCCO 2015 – 22th Colloquium on Structural Information and Communication Complexity, Spain, July 2015 (Adrian Kosowski and Pierre Fraigniaud – PC members).

SSS 2015 – International Symposium on Stabilization, Safety, and Security of Distributed Systems, Canada, August 2015 (Adrian Kosowski – PC member).

NETYS 2015 – The International Conference on Networked Systems, Marocco, May 2015 (Carole Delporte – PC member).

Algotel 2015 – 17eme Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications, France, June 2015 (Carole Delporte – PC member).

10.1.2. Journal

10.1.2.1. Members of editorial boards

Pierre Fraigniaud is member of the editorial boards of Distributed Computing (DC), Theory of Computing Systems (TOCS), Fundamenta Informaticae (FI) and Journal of Interconnection Networks (JOIN).

10.1.3. Invited talks

SIROCCO 2015 – 22th Colloquium on Structural Information and Communication Complexity, Spain, July 2015 (Amos Korman – invited speaker).

ADHOC-NOW 2015 – 14th International Conference on Ad-Hoc Networks and Wireless, special track on Distributed Computing with Mobile Agents, Greece, June/July 2015 (Pierre Fraigniaud – invited speaker).

AAAC 2015 – 8th meeting of Asian Association for Algorithms and Computation, Hiroshima, Japan, May 2015 (Pierre Fraigniaud – invited speaker).

ACBD 2015 – 2nd European Meeting on Algorithmic Challenges of Big Data, Germany, September 2015 (Pierre Fraigniaud – invited speaker).

MARAMI 2015 – Modèles et Analyses Réseau : Approches Mathématiques et Informatiques, 6ème édition, France, September 2015 (Michel Habib – invited speaker).

HaifaGraphWorkshop 2015 – 15th Haifa Workshop on Interdisciplinary Applications of Graph Theory, Combinatorics, and Algorithms, Israel, June 2015 (Michel Habib – invited speaker).

10.1.4. Leadership within the scientific community

Pierre Fraigniaud is Director of LIAFA (Laboratoire d'Informatique Algorithmique : Fondements et Applications, UMR 7089, CNRS et université Paris Diderot), since 2010.

Pierre Fraigniaud is Director of Federation IFP (Fédération d'Informatique Fondamentale de Paris-Diderot, FR 3634, CNRS et université Paris Diderot), since 2014.

Pierre Fraigniaud is Steering Committee member of the key conferences in distributed computing theory: PODC (ACM Symposium on Principles of Distributed Computing, 2010–2013 and 2015–2018) and SPAA (ACM Symposium on Parallelism in Algorithms and Architectures, since 2002).

10.1.5. Research administration

Pierre Fraigniaud has been an elected member of the EATCS (European Association for Theoretical Computer Science) since October 2013.

Pierre Fraigniaud has been a jury member of the ERC for Starting Grants (in 2013 and 2015; shadow committee member in 2014 and 2016).

Michel Habib has been a member of the NSERC evaluation committee for Computer Science (February 2015, Ottawa, Canada).

Michel Habib has been chair of the AERES evaluation committee for the LaBRI (Bordeaux, January 2015).

Pierre Fraigniaud was a member of the jury for the 2015 Edsger W. Dijkstra Prize in Distributed Computing (previously committee member in 2010 and president in 2011).

Adrian Kosowski has been acting in the Polish Academy of Sciences as elected member of Young Scientists Academy (2012–2016) and member of the Committee for Computer Science (2015–2018).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Carole Delporte and Hugues Fauconnier, Algorithmique distribuée avec mémoire partagée, 6h, M2, Université Paris Diderot

- Master: Hugues Fauconnier, Cours programmation répartie, 33h, M2, Univ. Paris Diderot
- Master: Carole Delporte, Cours et TP Protocoles des services internet, 44h, M2, Univ. Paris Diderot
- Master: Carole Delporte, Cours Algorithme réparti, 33h, M2, Univ. Paris Diderot
- Master: Carole Delporte and Hugues Fauconnier, Protocoles Réseaux, 72h, M1, Université Paris Diderot
- Licence: Carole Delporte and Hugues Fauconnier, Sécurité informatique, 36h, L3, Univ. Paris Diderot
- Licence: Hugues Fauconnier, Programmation objet et interfaces graphiques, 48h, L2-L3, EIDD
- Licence: Boufkhad Yacine, Algorithmique et Informatique, 132h, L1, IUT de l'Université Paris Diderot
- Licence: Boufkhad Yacine, Programmation Orientée Objet, 60h, L2, IUT de l'Université Paris Diderot
- Master: Pierre Fraigniaud, Algorithmique avancée, 24h, Ecole Centrale
- Master: Pierre Fraigniaud, Algorithmique parallèle et distribuée, 24h, Ecole Centrale
- Master: Adrian Kosowski, Communication and Routing, 4h, M1, ENSEIRB-MATMECA
- Master: Adrian Kosowski, Randomization in Computer Science: Games, Networks, Epidemic and Evolutionary Algorithms, 24h, M1, École Polytechnique
- Master: Pierre Fraigniaud and Adrian Kosowski, Algorithmique distribuée pour les réseaux, 24h, M2, Master Parisien de Recherche en Informatique (MPRI)
- Master: Fabien de Montgolfier and Michel Habib, Grand Réseaux d'Interaction, 44h, M2, Univ Paris Diderot
- Licence: Fabien de Montgolfier, Introduction à la programmation, 26h, L1, Univ Paris Diderot
- Licence: Fabien de Montgolfier, Programmation avancée (bio-informatique), 26h, L3, Univ. Paris Diderot
- Master: Fabien de Montgolfier, Algorithmique avancée (bio-informatique), 26h, M1, Univ Paris Diderot
- Licence: Fabien de Montgolfier, Systèmes et Réseaux, 52h, L3, Ecole d'Ingénieurs Denis Diderot
- Licence: Michel Habib, Algorithmique, 45h, L, ENS Cachan
- Master: Michel Habib, Algorithmique avancée, 24h, M1, Univ. Paris Diderot
- Master: Michel Habib, Mobilité, 33h, M2, Univ. Paris Diderot
- Master: Michel Habib, Méthodes et algorithmes pour l'accès à l'information numérique, 16h, M2, Univ. Paris Diderot
- Master: Michel Habib, Algorithmique de graphes, 12h, M2, Univ. Paris Diderot
- Licence: Pierre Charbit, Introduction a la Programmation, 30h, L1, Université Paris Diderot, France
- Licence: Pierre Charbit, Automates finis, 52h, L2, Université Paris Diderot, France
- Licence: Pierre Charbit, Types de Données et Objet, 52h, L1, Université Paris Diderot, France
- Master: Pierre Charbit, Programmation, 60h, M2Pro PISE, Université Paris Diderot, France
- Master: Pierre Charbit, Algorithmique de Graphes, 18h, M2 MPRI, Université Paris Diderot, France

E-learning

Carole Delporte and Hugues Fauconnier were involved in the project SPC "informatique en ligne" (1 year, approved in June 2015), which consisted in preparing video sequences related to Bachelor level courses at Paris VII university.

10.2.2. Supervision

HdR: Amos Korman on the topic of “Distributed Decision and Distributed Biological Algorithms”, Université Paris Diderot, November 2015.

PhD: François Durand was an Inria engineer hired by Gang under a contract with Alcatel-Lucent Bell Labs France. He obtained his PhD last September [1], under the subject “Towards Less Manipulable Voting Systems”.

PhD: The Dang Huynh (co-advised by Laurent Viennot and Fabien Mathieu) was a PhD Cifre with Alcatel-Lucent Bell Labs France. He obtained his PhD in June 2015 [2], under the subject “Extension of PageRank and application to social networks.” He now works in the industry on related topics.

PhD in progress: Leonardo Linguaglossa (co-advised by Laurent Viennot, Fabien Mathieu and Diego Perino, both from Bell Labs / Alcatel-Lucent / Nokia).

PhD in progress: Simon Collet (co-advised by Amos Korman and Pierre Fraigniaud). Title of thesis is: "Algorithmic Game Theory Applied to Biology". Started September 2015.

PhD in progress: Lucas Boczkowski (co-advised by Amos Korman and Iordanis Kerenidis). Title of thesis is: "Computing with Limited Resources in Uncertain Environments". Started September 2015.

PhD in progress: Laurent Feuilloley (advised by Pierre Fraigniaud). Title of thesis is: "Synchronous Distributed Computing". Started September 2015.

Foreign PhD co-supervision in progress: Alkida Balliu and Dennis Olivetti (PhD students of Gianlorenzo D'Angelo at L'Aquila University and Gran Sasso Science Institute) have Pierre Fraigniaud as their foreign co-supervisor since September 2015. They are expected to undertake a 6-month research visit to the team in 2016.

10.2.3. *Juries*

Laurent Viennot was reviewer for the PhD thesis of Dimitrios Miliouris on “Trend detection and information propagation in dynamic social networks” at Ecole Polytechnique (May 2015).

Laurent Viennot was co-advisor for the PhD thesis of The Dang Huynh on “Extension de PageRank et application aux réseaux sociaux” at UPMC (April 2015).

Hugues Fauconnier participated as a jury member in the PhD defense of Lena Kanellou on “Structures de données pour des architectures multi-cœur actuelles et de futures architectures many-cœur” at Univ Rennes (December 2015).

Hugues Fauconnier was a reviewer for the PhD thesis of Giuseppe Di Luna “On deterministic counting in anonymous dynamic networks” at University Sapienza in Rome (May 2015).

Pierre Fraigniaud was reviewer for the PhD thesis of Adi Shklarsh on “Modeling Bacteria-Inspired Smart Swarms ” at Tel Aviv University (2015).

Michel Habib participated as a jury member in the PhD defense of Brahim Neggazi on “Self-stabilizing algorithms for graph parameters”, Université Claude Bernard Lyon I (May 2015).

Michel Habib was a reviewer for the PhD thesis of Sid Ali Selmane on “Détection et analyse de communautés”, Université Lumière Lyon 2 (May 2015).

Michel Habib participated as a jury member in the PhD defense of Stephen Gray on “Subgraph Epimorphisms: Theory and Application to Model Reductions in Systems Biology”, Université Paris Diderot (June 2015).

Michel Habib participated as a jury member in the PhD defense of Ronan Hamon on “Analyse de réseaux temporels par des méthodes de traitement du signal”, Laboratoire de Physique, ENS Lyon (September 2015).

Michel Habib was a reviewer for the HDR of Mathieu Liedloff on “Algorithmes exponentiels pour l'étiquetage, la domination et l'ordonnancement”, Orléans (December 2015).

Michel Habib was a reviewer for the HDR of Mamadou Kante on “Studying graphs: structure via rank-width, and listing of minimal dominating sets”, Clermont-Ferrand (December 2015).

Amos Korman participated as a jury member in the PhD defense of Jara Uitto, at ETH Zurich.

Adrian Kosowski was a reviewer for the PhD thesis of Krzysztof Turowski on “The analysis of algorithmic properties of the skeleton graph coloring problem” at the Gdansk University of Technology (May 2015).

10.3. Popularization

Michel Habib has contributed a text [41] to the “Encyclopedia of Algorithms”, providing a unifying and historical overview of graph searching problems and algorithms.

MIMOVE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Valérie Issarny is co-chair of the BIS'15 workshop, which is the yearly workshop organized by Inria@SiliconValley to present the state of scientific collaborations and to work on proposals for future ambitious joint projects. BIS'2015 in particular featured a one-day International Conference on Digital Assets, Data Philanthropy and Public Benefit, entitled "Who Owns the Data", which was co-organized with CITRIS, with the support of EIT Digital.

9.1.1.2. Chair of technical program committee

- Nikolaos Georgantas is co-chair of the ARM'15 international workshop.
- Valérie Issarny is co-PC chair of the New Idea track of ESEC/FSE'15.

9.1.1.3. Member of technical program committee

- Nikolaos Georgantas is PC member of the following international conferences: 3PGCIC'15, Aml'15, SOSE'15, DATA'15, ICSOFT-EA'15, ICSOFT-PT'15, ANT'15, WETICE'15, CBSE'15, SAC'16;
- Nikolaos Georgantas is PC member of the following international workshops: SCART'15, Projects Showcase event at STAF'15, SERENE'15, SESoS'15;
- Valérie Issarny is PC member of the following international conferences: Coordination'15&16, ESSOS'14, FASE'15-17, FSE'14, ICDCS'15-16, IFIPTM'15, ISPN'15, Middleware'15&16, SEAMS'14.

9.1.2. Journal

9.1.2.1. Member of editorial board

- Nikolaos Georgantas is associate editor of the International Journal of Ambient Computing and Intelligence (IJACI);
- Valérie Issarny is associate editor of the Springer JISA Journal of Internet Services and Applications.

9.1.2.2. Guest editor of special issue

- Nikolaos Georgantas is co-guest editor of the Thematic Series on the Internet of Things of the Springer JISA Journal of Internet Services and Applications.

9.1.3. Invited talks

- Valérie Issarny gave a keynote at Formal Methods 2015.

9.1.4. Scientific expertise

- Valérie Issarny is member of the IFSTTAR Scientific Council & "Commission d'évaluation des chercheurs";
- Valérie Issarny is member of the GDR GPL scientific council;
- Valérie Issarny is elected member of the *Commission d'Evaluation Inria*;
- Nikolaos Georgantas is member of the Inria PhD scholarship, Inria postdoc scholarship and Inria professor leave (*Délégation*) scholarship selection committees at Inria Paris-Rocquencourt.

9.1.5. Research administration

- Valérie Issarny is scientific coordinator of Inria@Silicon Valley and CityLab@Inria;
- Nikolaos Georgantas is member of the PhD monitoring committee at Inria Paris-Rocquencourt.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

E-learning

Valérie Issarny is co-author and coordinator, and Animesh Pathak is co-author, of the MOOC entitled “Smart Cities: Technology and Societal Challenges”, which is provided via the FUN platform. The MOOC (in French) provides a high-level introduction to digital technologies underlying the design and development of smart cities. The course is composed of 5 weeks, each featuring from 5 to 8 sequences. Valérie Issarny and Animesh Pathak are authors of 5 and 4 sequences, respectively. The first edition of the MOOC is played in January 2016.

Class teaching

Master: Nikolaos Georgantas, “Pervasive Service Oriented Computing” as part of “Architectures orientées services”, 9 hours (équivalent TD), niveau M2, University of Versailles Saint-Quentin en Yvelines, France.

9.2.2. Supervision

In 2015 and beginning 2016, the following students successfully defended their PhD:

Benjamin Billet, *Data Stream Management System for the Future Internet of Things*, defended in March 2015, UVSQ-EDSTV, advised by Valérie Issarny;

Emil Andriescu, *Synthèse et déploiement dynamiques de protocoles de médiation pour l'interopérabilité dans les environnements collaboratifs nomades*, defended in February 2016, UPMC-EDITE, CIFRE Inria-Ambientic, advised by Valérie Issarny and Roberto Speicys-Cardoso (Ambientic).

Additionally, the following PhD thesis is currently in progress at the MiMove team:

Georgios Bouloukakis, *Runtime adaptation of middleware connectors for emergent mobile systems*, started October 2013, UPMC-EDITE, advised by Nikolaos Georgantas and Valérie Issarny.

Also, Valérie Issarny is co-advising with Ansgar Radermacher from CEA-LISE, the PhD thesis of Amel Belaggoun on *Adaptabilité et reconfiguration des systèmes temps-réel embarquées*; this is a PhD from UPMC-EDITE with the research being undertaken at CEA-LISE.

9.2.3. Juries

Nikolaos Georgantas was external reviewer for the PhD thesis of Amleto Di Salle, *Automated Synthesis of Service Choreographies*, defended in April 2015, Univ. of L'Aquila, Italy, advised by Prof. Paola Inverardi and Dr. Marco Autili;

Nikolaos Georgantas was examiner for the PhD thesis of Mourad Amziani, *Modeling, Evaluation and Provisioning of Elastic Service-based Business Processes in the Cloud*, defended in June 2015, Télécom SudParis and Université d'Evry Val Essonne, France, advised by Prof. Samir Tata and Dr. Tarek Melliti.

Valérie Issarny was reviewer for the PhD thesis of Dimitrios Miloris, *Trend Detection and Information Propagation in Dynamic Social Networks*, defended in April 2015, Ecole Polytechnique, France, advised by Philippe Jacquet and Paul Mühlethaler.

MUSE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Program chair of the 5th PhD School on Traffic Monitoring and Analysis (TMA), 2015.

9.1.1.2. Member of the organizing committees

- R. Teixeira, Workshop co-chair of ACM SIGCOMM 2015.

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

- R. Teixeira, Co-chair of the program committee of ACM CoNEXT 2015.
- V. Christophides, Area Chair for “Semi-structured, Web, and Linked Data Management” in the 18th International Conference on Data Engineering (ICDE’16), Bali, Indonesia 2016 (internationalscienceindex.org/event/2016/10/bali/ ICDE)
- V. Christophides, Workshop co-chair of the 2nd International Workshop on Preservation of Evolving Big Data, co-located with EDBT 2016 with G. Papastefanatos and S. Viglas March 15, 2016 Bordeaux, France (www.diachron-fp7.eu/2nd-diachron-workshop.html)

9.1.2.2. Member of the conference program committees

- R. Teixeira, ACM IMC 2015
- V. Christophides, Int’l Conference on Information and Knowledge Management (CIKM) 2015
- V. Christophides, Int’l Conference on Extending Database Technology (EDBT) 2016

9.1.2.3. Reviewer

- A.-K. Pietilainen, CHI 2016

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- R. Teixeira, Editor of IEEE/ACM Transactions on Networking (Feb. 2011 – Feb. 2015)

9.1.4. Invited talks

- R. Teixeira, “HostView: Measuring Internet quality of experience on end-hosts”, Journée thématique - Métrologie des réseaux - de la DGA, Rennes, November 2015.
- R. Teixeira, “UCN user study”, panelist at ACM SIGCOMM workshop on crowdsourcing and crowdsharing of (big) Internet data, London, August 2015.
- R. Teixeira, “HostView: Measuring Internet quality of experience on end-hosts”, Princeton University, USA, July 2015.
- R. Teixeira, “HostView: Measuring Internet quality of experience on end-hosts”, Journée du Conseil scientifique de l’Afnic, Paris, July 2015.
- R. Teixeira, “Home network diagnosis”, Workshop of “Aux frontières du système” of the “Conférence d’informatique en Parallélisme, Architecture et Système”, Lille, June, 2015.
- R. Teixeira, “Measuring Internet Experience from Home Networks”, invited talk, Workshop on Active Internet Measurements, San Diego, USA, April, 2015.

- R. Teixeira, “Home network performance diagnosis”, Microsoft Research Devices and Networking Summit, Paris, May 2015.
- R. Teixeira, “Home network performance diagnosis”, workshop on Information and Communication Systems and their application to vertical sectors, Montevideo, Uruguay, March 2015.
- R. Teixeira, “Fathom: A Browser-based Network Measurement Platform”, invited talk at Federal University of Rio de Janeiro, Brazil, March 2015.

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9.1.5. Leadership within the scientific community

- R. Teixeira, Vice-chair of ACM SIGCOMM (since Jun. 2013).
- R. Teixeira, chair of the ACM SIGCOMM Industrial Liaison Board.
- R. Teixeira, member of the steering committee of the ACM Internet Measurement Conference (since Nov. 2009)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Renata Teixeira, “Methodology for research in networking”, 10h eqTD, M2, UPMC, France.

Master: Timur Friedman, Renata Teixeira, “Network Metrology”, 24h CM, M2, UPMC, France. Created this new master’s level class.

E-learning

Mooc: Timur Friedman, Renata Teixeira, “Network Metrology”, preparation of a five-week Mooc to start in May 2016 in the platform FUN, supported by Inria.

9.2.2. Supervision

PhD: Nelly Vouzoukidou (October 2011-September 2015): “Continuous top-k Queries over Real-time Web Streams” University Pierre et Marie Curie (UPMC). Advisors: B. Amann and V. Christophides

PhD in progress:

- Sara el Aouad, “Improving the quality of recommendation using semi-structured user feedback”, May 2014, advisors: C. Diot and R. Teixeira
- Diego da Hora, “Crowdsourced Home Network Diagnosis”, February 2014, advisors: C. Diot and R. Teixeira
- Giuseppe Scavo, “Exploiting Network Content-awareness to provide novel added value services”, November 2013 advisors: Z. Ben-Houidi and R. Teixeira
- Sofia Kleisarchaki (October 2013-now): “Temporal Analytics of the Social Web” cotutelle between University of Crete & University of Joseph Fourier - Grenoble. Advisors: S. Amer-Yahia and V. Christophides)
- Vassilis Efthimiou (February 2013-now): “Entity resolution in the Web of Data” University of Crete. Advisor: V. Christophides

9.2.3. Juries

V. Christophides: member of the supervision committee of the Ph.D. Thesis of Charalampos Nikolaou, Univ. of Athens, 2015

RAP Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events selection

7.1.1.1. Member of the conference program committees

- *Philippe Robert*, Caching in Wireless Networks Conference (2015)

7.1.2. Journal

7.1.2.1. Member of the editorial boards

- *Nicolas Broutin* is member of the steering committee of the international meeting on analysis of algorithms (AofA).
- *Philippe Robert* is Associate Editor of the Book Series “Mathématiques et Applications” edited by Springer Verlag and Associate Editor of the journal “Queueing Systems, Theory and Applications”.

7.1.3. Invited talks

- *Cédric Bourdais, Sarah Eugene, Philippe Robert and Wen Sun* have been invited to the Young European Queueing Theorists (YEQT'9) workshop in Eindhoven in November 2015.

7.1.4. Conferences

- *Nicolas Broutin* has given lectures at annual meeting of the ALEA working group of the GDR-IM, the workshop GRAAL that took place at IHES, at the workshop organized in honor of Svante Janson's 60's birthday in Sweden, and the workshop on geometric networks at the Symposium on Computational Geometry that was held in Eindhoven. He gave a plenary lecture at the conference on analysis of algorithms that was held in Strobl in June. He has also exposed his results at the probability seminar in Grenoble, the seminar of algorithmic and combinatorial geometry at IHP, and at the probability seminar of the NYU-ECNU Math institute in Shanghai.
- *Christine Fricker and Guilherme Thompson* participated to ITC 27 (International Teletraffic Congress) in Ghent in September 2015.
- *Renaud Dessalles, Philippe Robert and Wen Sun* gave talks at INFORMS Applied Probability Conference in July 2015 in Istanbul.
- *Philippe Robert* gave a talk at the department of mathematics at the University of Novosibirsk, in October 2015.

7.1.5. Scientific expertise

- *Christine Fricker* is member of the jury of agrégation.
- *Philippe Robert* is member of the scientific council of EURANDOM.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Master : *Nicolas Broutin* Master Parisien de Recherche en Informatique (MPRI), in the course 2.15 on Analysis of Algorithms.

Master: *Nicolas Broutin*, Analysis of Algorithms, NYU Shanghai.

Master: *Philippe Robert*, Master, Probabilités et Applications, UPMC.

Master: *Philippe Robert*, Communication Networks, University of Novosibirsk, 12h.

7.2.2. Juries

- *Nicolas Broutin* has been a member of the committee for the PhD thesis of Daphné Dieuleveut (U Orsay).
- *Philippe Robert* has been reviewer of HDR document by Nidhi Hegde.

REGAL Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Luciana Arantes was scientific co-chair of the 16th Simposio em Sistemas Computacionais de Alto Desempenho
- Pierre Sens was general-chair of **EDCC 2015** conference.

9.1.1.2. Member of the organizing committees

- Luciana Arantes was organisation chair of **EDCC 2015** conference.
- Sébastien Monnet was finance chair for **EDCC 2015** conference.
- Franck Petit is member of the steering committee of SSS (International Symposium on Stabilization, Safety, and Security of Distributed Systems) conference.
- Pierre Sens is member of the steering committee of SBAC-PAD (International Symposium on Computer Architecture and High Performance Computing) conference.
- Marc Shapiro is a member of the Steering Committee of the Principles and Practice of Consistency for Distributed Data (PaPoC).
- Marc Shapiro is a member of the Steering Committee of the Int. Conf. on the Principles of Distributed Systems (OPODIS).

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

- Marc Shapiro chairs the 2016 Franco-American Doctoral Exchange Programme (FADEX).

9.1.2.2. Member of the conference program committees

- Luciana Arantes was a PC member of the 15th IFIP Distributed Applications and Interoperable Systems Conference (DAIS 2015); The 26th IEEE International Symposium on Software Reliability Engineering (ISSRE 2015); the 17th IEEE International Conference on High Performance Computing and Communications (HPCC 2015); The 14th IEEE International Symposium on Network Computing and Applications (NCA 2015); The 27th International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2015); The Eighth International Conference on Dependability (DEPEND 2015).
- Swan Dubois was member of the program committee of 17th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2015).
- Sébastien Monnet is PC member of 30th and 31st ACM/SIGAPP Symposium On Applied Computing - track Operating Systems (SAC 2015 and 2016); French conference on parallelism, architecture and system (Compas 2015); 14th workshop on Network and Systems Support for Games (NetGames 2015) and 16th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CC-Grid 2016).
- Pierre Sens was member of the program committee of 4rd IEEE/SAE International Conference on Connected Vehicles and Expo (ICCVE 2015); Europar 2015; 30th IEEE International Parallel and Distributed Processing Symposium (IPDPS'2016).
- Marc Shapiro was a member of the External Programme Committee for the Int. Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2016).

- Marc Shapiro is PC member of W. on Planetary-Scale Distributed Systems (W-PSDS) 2015; member of the Middleware 2015 conference.

9.1.2.3. Reviewer

- Swan Dubois reviewed papers for the ACM Symposium on Principles of Distributed Computing (PODC 2015), the International Conference on Networked Systems (NETYS 2015), and the Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications (AlgoTel 2015).
- Sébastien Monnet was external reviewer for the 30th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2016).

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Franck Petit was invited editor with Michel Raynal for a special issue on Distributed Computing into TCS (Journal of Theoretical Computer Science)—Vol. 561. Also, he belongs to the editorial board of the Scientific World Journal and the Journal of Discrete Mathematics.
- Pierre Sens is associated editor of International Journal of High Performance Computing and Networking (IJHPCN).

9.1.3.2. Reviewer - Reviewing activities

- Luciana Arantes reviewed papers for the Journal of Parallel and Distributed Computing (JPDC).
- Swan Dubois reviewed papers for the Journal of Parallel and Distributed Computing (JPDC), Computer Networks (COMNET), and Theoretical Computer Science (TCS).
- Sébastien Monnet reviewed a paper for the IEEE Transactions on Parallel & Distributed Systems (TPDS 2016).

9.1.4. Invited talks

Pierre Sens gave the following invited talks:

- ICL Innovative Computing Laboratory - University of Tennessee, October 2015
- Maimonide seminar - Herzilya, Israel, November 2015.

Marc Shapiro gave the following invited talks:

- Royal Holloway London University, May 2015.
- Universidade Nova de Lisboa, May 2015.
- W. on Chemistry of Concurrent and Distributed Programming II, Agadir, Morocco, May 2015.
- CurryOn, Prague, July 2015.
- Workshop on Large-Scale Distributed Systems (LADIS), Monterey CA USA, Oct. 2015.
- CodeMesh, London, Nov. 2015.

9.1.5. Scientific expertise

Swan Dubois was member of the scientific committee for the assistant professor position n°1642 at University Paris-Sud.

Pierre Sens served on the jury for the "Prix de thèse Gilles Kahn" (SIF - Académie des Sciences).

Pierre Sens also chaired the selection committees for an assistant professor position at Grenoble University.

9.1.6. Research administration

- Pierre is Member of the scientific council of UPMC and officer at UPMC Vice Presidency of Research and Innovation.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Julien Sopena is Member of "Directoire des formations et de l'insertion professionnelle" of UPMC Sorbonne Universités, France

Master: Julien Sopena is responsible of Computer Science Master's degree in Distributed systems and applications (in French, SAR), UPMC Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, Oliver Marin, Sébastien Monnet, Franck Petit, Pierre Sens, Advanced distributed algorithms, M2, UPMC Sorbonne Universités, France

Master: Maxime Lorrillere, Julien Sopena, Linux Kernel Programming, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Sébastien Monnet, Pierre Sens, Julien Sopena, Operating systems kernel, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, System distributed Programming, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, Franck Petit, Distributed Algorithms, M1, UPMC Sorbonne Universités, France

Master: Sébastien Monnet, Julien Sopena, Client-server distributed systems, M1, UPMC Sorbonne Universités, France

Licence: Pierre Sens, Luciana Arantes, Julien Sopena, Principles of operating systems, L3, UPMC Sorbonne Universités, France

Licence: Swan Dubois, Sébastien Monnet, Introduction to operating systems, L2, UPMC Sorbonne Universités, France

Licence: Mesaac Makpangou, C Programming Language, 27 h, L2, UPMC Sorbonne Universités, France

Ingénieur 4ème année : Marc Shapiro, Introduction aux systèmes d'exploitation, 22 h, M1, Polytech UPMC Sorbonne Universités, France.

9.2.2. Supervision

PhD: Raluca Diaconu, "Passage à l'échelle pour les mondes virtuels," UPMC, 01/23/2015, Joaquin Keller (Orange lab), Sébastien Monnet, Pierre Sens.

PhD: Lokesh Gidra, "Ramasse-miettes pour les machines virtuelles sur les processeurs multicoeurs," UPMC, 09/28/2015, Gaël Thomas, Marc Shapiro, Julien Sopena.

PhD: Karine Pires, "Diffusion et Transcodage à Grande Échelle de Flux Vidéo en Direct," UPMC, 03/31/2015, Gwendal Simon, Sébastien Monnet, Pierre Sens.

PhD: Maxime Véron, "Arbitrage décentralisé pour les jeux massivement parallèles," UPMC, 09/25/2015, Olivier Marin, Sébastien Monnet, Pierre Sens.

PhD: Marek Zawirski, "Cohérence à terme fiable avec des types de données répliquées," UPMC, 01/14/2015, Marc Shapiro.

PhD in Progress: João Paulo de Araujo, "L'exécution efficace d'algorithmes distribués dans les réseaux véhiculaires", funded by CNPq (Brésil), since Nov.2015, Pierre Sens and Luciana Arantes.

PhD in progress : Antoine Blin, "Execution of real-time applications on a small multicore embedded system", since April 2012, Gilles Muller (Whisper) and Julien Sopena, CIFRE Renault

PhD in progress: Marjorie Bournat, “Gathering in robot networks”, UPMC, since Sep. 2014, Swan Dubois, Franck Petit, Yoann Dieudonné (University of Picardy Jules Verne)

PhD in progress: Damien Carver, “HACHE : Horizontal Cache cHorEgraphy – Toward automatic resizing of shared I/O caches.”, UPMC, CIFRE, since Jan. 2015, Sébastien Monnet, Pierre Sens, Julien Sopena, Dimitri Refauvelet (Magency).

PhD in Progress: Florent Coriat, "Géolocalisation et routage en situation de crise" since Sept 2014, UPMC, Anne Fladenmuller (NPA-LIP6) and Luciana Arantes.

PhD in progress: Rudyar Cortes, “Un Environnement à grande échelle pour le traitement de flots massifs de données,” UPMC, funded by Chile government, since Sep. 2013, Olivier Marin, Luciana Arantes, Pierre Sens.

PhD in progress: Lyes Hamidouche, “Data replication and data sharing in mobile networks”, UPMC, CIFRE, since Nov. 2014, Sébastien Monnet, Pierre Sens, Dimitri Refauvelet (Magency).

PhD in progress: Denis Jeanneau, “Problèmes d’accord et détecteurs de défaillances dans les réseaux dynamique,” UPMC, funded by Labex Smart, since Oct. 2015, Luciana Arantes, Pierre Sens.

PhD in progress: Mohamed Hamza Kaaouachi, “Autonomic Distributed Environments for Mobility”, UPMC/Chart-LUTIN (Labex SMART), Franck Petit, Swan Dubois, and François Jouen (Chart).

PhD in progress: Maxime Lorrillere, “A kernel cooperative cache for virtualized environments”, UPMC, Sébastien Monnet, Julien Sopena, Pierre Sens.

PhD in progress: Mahsa Najafzadeh, UPMC, funded by Inria competitive grant (Cordi-S), since Nov. 2012, Marc Shapiro.

PhD in progress: Yoann Péron, “Development of an adaptive recommendation system”, UPMC/Makazi, Franck Petit, Patrick Gallinari, Matthias Oehler (Makazi).

PhD in progress: Alejandro Z. Tomsic, UPMC, funded by SyncFree, since Feb. 2014, Marc Shapiro.

PhD in progress: Guillaume Turchini, “Scalable platform for massively multiplayer online games..”, UPMC, since Sep. 2015, Sébastien Monnet.

PhD in progress: Tao Thanh Vinh, UPMC, CIFRE, since Feb. 2014, Marc Shapiro, Vianney Rancurel (Scality).

PhD in progress: Gauthier Voron, “Big-Os : un OS pour les grands volumes de données,” UPMC, since Sep. 2014, Gaël Thomas, Pierre Sens.

Master 1 : Mohamed Bekthaoui, “Cliques maximales dans les TVGs”, ENS Lyon, Swan Dubois.

9.2.3. *Juries*

Franck Petit was the reviewer of:

- T. Langner, PhD ETHZ, Zurich, Suisse. (Advisor: R. Watenhoffer)
- M. Djibril Faye, PhD LIP, ENS Lyon. (Advisor: E. Caron)
- M. Khaled, PhD MIS, Amiens. (Advisors: V. Villain and F. Levé)

Franck Petit was Chair of :

- D. Bonnin, PhD LaBRI, Bordeaux. (Advisors: C. Travers and Y. Métivier)
- M. Véron, PhD LIP6, Paris. (Advisors: P. Sens, O. Marin, and S. Monnet)

Pierre Sens was the reviewer of:

- G. Da Costa, HDR IRIT, Toulouse
- V. Marangozova, HDR LIG, Grenoble
- G. Fedak, HDR LIP, Lyon
- P. Li, PhD Bordeaux (Advisors: R. Namyst, E. Brunnet)
- R. Leroy, PhD LIFL - Maison de la Simulation, (Advisor: N. Melab)
- T. Martsinkevich, PhD LRI (Advisor: F. Cappello)
- M. Antoine, PhD Univ. Nice (Advisor: F. Baude)
- C. Gómez-Calzado, PhD Univ. San Sebastian, Spain (Advisor: M. Larrea)
- J. De la Houssaye, PhD Univ. Évry (Advisor: F. Pommereau)
- F. Zanon Boito, PhD LIG (Advisors: Y. Denneulin, P. Naveaux)
- A. El Rheddane, PhD LIG (Advisor: N. de Palma)

Pierre Sens was Chair of the defense committees of:

- S. Monnet, HDR LIP6, Paris
- D. Conan, HDR Télécom Sud Paris, Evry
- R. Angarita, PhD Dauphine, Paris (Advisor: M. Rukoz)
- X. Han, PhD Télécom Sud Paris, Evry (Advisor: N. Crespi)
- R. Farahbakhsh, Han, PhD Télécom Sud Paris, Evry (Advisor: N. Crespi)
- D. Yang, PhD Télécom Sud Paris, Evry (Advisor: D. Zeghlache)
- H. Xiong, PhD Télécom Sud Paris, Evry (Advisor: D. Zeghlache)
- L. Guo, PhD LIP6, Paris, (Advisor: G. Muller)

Marc Shapiro was a reviewer on the defense committee of Mehdi Ahmed-Nacer (Nancy).

Sébastien Monnet was member of the defense committee of Amadou Diarra, Phd Grenoble university, Grenoble (Advisor: V. Quema).

9.3. Popularization

Sébastien Monnet is responsible for the **Science Festival at UPMC for the LIP6**.

Sébastien Monnet and Julien Sopena animated an activity during the Science Festival 2015.

WHISPER Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

Gilles Muller was a member of the organizing committee of the Programming Language and Operating Systems workshop (PLOS). He was the sponsor co-chair and the grant co-chair of the EuroSys conference.

Julia Lawall was the publicity co-chair of the EuroSys conference.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

Julia Lawall was a member of the program committee for the following conferences that took place in 2015: Automated Software Engineering (ASE), EuroSys, IEEE International Conference on Distributed Computing System (ICDCS), International Conference on Software Maintenance and Evolution (ICSME, ERA track), and OOPSLA.

Gilles Muller was a member of the program committee for the following conferences that took place in 2015: European Dependable Conference (EDCC), Dependable Systems and Network (DSN), Timely Results In Operating Systems (TRIOS). He was also a member of the program committee for the upcoming Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2016).

Gilles Muller was a member of the EuroSys 2015 PhD prize R. Needham award.

Pierre-Évariste Dagand was a member of the EuroSys 2015 shadow program committee and member of the program committee of the Programming Languages and Operating Systems (PLOS) workshop.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

Julia Lawall is a member of the editorial board of Science of Computer Programming.

10.1.3.2. Reviewer - Reviewing activities

Julia Lawall reviewed an article for the journal Empirical Software Engineering and an article for the journal Computer Languages, Systems & Structures.

Pierre-Évariste Dagand reviewed an article for the Journal of Computer Programming and an article for Computer Surveys.

10.1.4. Invited talks

Julia Lawall gave an invited talk on “Analysis and Manipulation of Linux Kernel Source Code using Coccinelle” at the 15th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM, <http://www.ieee-scam.org/2015/>).

Julia Lawall gave an invited talk on “Coccinelle for the Working Programmer” at Curry On (<http://www.curry-on.org/>)

Julia Lawall was invited to give several presentations on Coccinelle at Intel, in Portland, Oregon, in June 2015.

Gilles Muller was invited to give a talk at the NICTA Summer school in Sydney in January 2015, and at the FuDiCo IV workshop in Cornell in October 2015 on his joint work with Renault on mixing real-time and best effort applications on an embedded multicore processor.

Pierre-Évariste Dagand gave an invited talk at the EuroSys program committee meeting on the subject of certified binary parsing, in Cambridge, UK, in January 2015.

10.1.5. Leadership within the scientific community

Julia Lawall is a member of the IFIP TC2 working group WG2.11, on Program Generation. She participated in the WG2.11 meetings in January and November, 2015.

Gilles Muller is a member of the IFIP 10.4 working group on Dependable Computing and Fault Tolerance. He participated in the meetings in January and July, 2015. He gave a talk during the July meeting on his joint work with Renault on mixing real-time and best effort applications on an embedded multicore processor.

10.1.6. Scientific expertise

Julia Lawall served on selection committees for a professor position at UPMC, a professor position at Rennes, and an assistant professor position at the University of Copenhagen. Julia Lawall also served on the jury for the Prix Inria (Grand Prix Inria – Académie des sciences, Prix Inria - Académie des sciences du jeune chercheur, and Prix de l'innovation Inria – Académie des sciences – Dassault Systèmes), and on the Inria national commission for selecting young engineer positions (ADT).

10.1.7. Research administration

Julia Lawall was a Member at Large of the SIGPLAN Executive Committee, for a three-year term ending in June 2015.

Gilles Muller is a member of the steering committee of the EuroSys conference.

Gilles Muller is representing Inria in the Sorbonne Universités advisory committee for research. He is a member of the project committee board of the Inria Paris Center and a member of the Paris committee for allocating post-doc, PhD and sabbatical.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master/Doctorat : Pierre-Évariste Dagand, **Algorithms**, 60 hours, University of Cape Coast, Ghana

10.2.2. Supervision

Julia Lawall and Gilles Muller co-supervised the PhD work of Valentin Rothberg and Peter Senna Tschudin.

Julia Lawall serves as the external supervisor of Krishna Narasimhan, a PhD student at Goethe University, Frankfurt, supervised by Christoph Reichenbach.

Gilles Muller is the supervisor of the PhD work of Antoine Blin who is supported by a CIFRE grant with Renault.

Pierre-Évariste Dagand and Julia Lawall co-supervised the bachelor's internship of Arthur Blot.

PhD : Florian David, Efficient and Precise Monitoring of Java Locking algorithms on multicore architectures, Université Pierre et Marie Curie, 8 juillet 2015, Gilles Muller and Gaël Thomas

10.2.3. Juries

Julia Lawall was a member of the PhD jury of Shaowei Wang at Singapore Management University.

Gilles Muller was a reviewer of the PhD of Inti Yulien Gonzalez Herrera at the University of Rennes1, a reviewer of the PhD of Amadou Diara at the University of Grenoble, and a reviewer of the PhD of Julien Tanguy at the University of Nantes.

Gilles Muller was a member of the HDR jury of Vincent Gramoli at the Université Pierre et Marie Curie.

10.3. Popularization

Julia Lawall presented a tutorial on Coccinelle at the 2015 KVM Forum in Seattle, Washington, USA in August 2015 (“Getting Started with Coccinelle (KVM edition)”, <http://kvmforum2015.sched.org/>)

Julia Lawall organized a Development Tools Tutorial microconference at the 2015 Linux Plumbers Conference in Seattle, Washington, USA in August 2015 (<http://linuxplumbersconf.org/2015/ocw/events/LPC2015/tracks/423>). She also gave a talk “Introduction to Coccinelle” at that event.

Julia Lawall served on the program committee for the joint Linuxcon Linux Plumbers session at Linuxcon 2015, and on the program committee of the 17th Real Time Linux Workshop (industry workshop).

Julia Lawall served as a mentor for the Linux kernel in the Outreachy internship program for women and other underrepresented groups in winter and summer 2015 (<https://www.gnome.org/outreachy>). She also served as the Linux kernel coordinator for the Outreachy internship program, and organized panel presentations about the program at LinuxCon North America in Seattle, Washington, USA in August 2015 (<http://events.linuxfoundation.org/events/archive/2015/linuxcon-north-america>), and at LinuxCon Europe in Dublin, Ireland in October 2015 (<http://events.linuxfoundation.org/events/archive/2015/linuxcon-europe>).

Julia Lawall participated in the Linux Kernel developer panel at LinuxCon Europe in Dublin, Ireland in October 2015 (<http://events.linuxfoundation.org/events/archive/2015/linuxcon-europe>).

ALPAGE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- Laurence Danlos is co-chair of the TALN conference which will be held in Paris in July 2016.

10.1.1.2. Member of organizing committees

- Marie Candito has co-organised (with Jihno Choi and Yannick Versley) the 6th Workshop on Statistical Parsing of Morphologically Rich Languages (SPMRL 2015) in Bilbao, Spain
- Benoît Sagot is the co-organiser (with Olivier Bonami) of the workshop on Computational methods for descriptive and theoretical morphology (CMDTM) to be held during the 17th International Morphology Meeting (IMM 2016) in Vienna, Austria

10.1.2. Scientific events selection

10.1.2.1. Member of conference program committees or reviewer

- Marie Candito has served as reviewer or member of the program committee for the following events: ACL 2015, EMNLP 2015, LAW 2015, DEPLING 2015, RECITAL 2015
- Mathieu Constant has served as member of the program committee for the following events: PARSEME 6, LREC 2016
- Benoit Crabbé has served as a reviewer or member of the program committee for the following events: TALN 2015, RECITAL, DepLing, EMNLP.
- Laurence Danlos has served as a reviewer or member of the program committee for the following events: LREC, TALN
- Corentin Ribeyre has served as a reviewer or member of the program committee for the following event: EMNLP 2015
- Laurent Romary has served as member of the program committee for the following events: LT4VarDial, CMLC-3 (co-located with Corpus Linguistics 2015), SLSP 2015, LREC 2016, DH Conference
- Benoît Sagot has served as a reviewer or member of the program committee for the following events: TALN 2015, LAW 2015, LREC 2016, CMDTM workshop of IMM 2016
- Djamé Seddah has served as a reviewer or member of the program committee for the following events: ACL 2015, CONLL 2015, TLT 2015, LAW 2015, SPMRL 2015
- Éric Villemonte de La Clergerie has served as a reviewer or member of the program committee for the following events: EPIA'15, IJCAI'15, Depling'15, LREC 2016

10.1.3. Journals

10.1.3.1. Member of the editorial boards

- Laurence Danlos has served as a member of the editorial board of the journal *TAL*.
- Laurent Romary is co-editor of the overlay Journal of Data Mining and Digital Humanities and for the DH Commons journal

10.1.3.2. Reviewer - Reviewing activities

- Marie Candito has served as a reviewer for the following journals: Language Resources and Evaluation, Traitement Automatique des Langues
- Benoit Crabbé has served as a reviewer for the following journal: Journal of Language Modelling.
- Laurence Danlos has served as a reviewer for the following journal: Traitement Automatique des Langues
- Laurent Romary has been reviewing for the Language Resources and Evaluation Journal Special Issue on Replicability and Reproducibility of Language Technology Experiments, the Journal on Computing and Cultural Heritage
- Benoît Sagot has served as a reviewer for the following journals: Journal of Language Modeling, Language Resources and Evaluation, Traitement Automatique des Langues
- Djamé Seddah has served as a reviewer for the following journals: Journal of Linguist Modeling, TALLIP (Transactions on Asian and Low-Resource Language Information Processing)
- Éric Villemonte de La Clergerie has served as reviewer for the following journals: Journal of Language Modelling, Language Resource and Evaluation

10.1.4. Invited talks

- Chloé Braud has given an invited talk on 09/03/2015 at Copenhagen University, Lowlands team (Denemark)
- Benoit Crabbé has given two invited talk on 20/04/2015 and 21/04/2015 at Université de Genève, CLCL group and department of Linguistics (Switzerland)
- Corentin Ribeyre has given an invited talk on 31/08/2015 at Université de Genève, CLCL group (Switzerland)
- Laurent Romary gave an introductory talk for the launch of the Maltese chapter of DARIAH in Valetta, Malta on 03/09/2015
- Laurent Romary gave an introductory talk for the launch of the Serbian chapter of DARIAH in Belgrade, Serbia on 10/12/2015, in the presence of the Ministry of Culture and Ministry of Higher Education and Research of Serbia
- Laurent Romary has given a keynote at the DiXiT Convention week on 17/09/2015 in The Hague, Netherlands (hal-01254365)
- Laurent Romary has given a keynote at the Spanish DH conference in Madrid, Spain on 06/10/2015
- Laurent Romary has given an invited talk on 24/09/2015 at the 1st Workshop on Digital Humanities in Prag, Czech Republic
- Benoit Crabbé has given an invited talk on 5/11/2015 at the Institut fuer Sprache und Information at Heinrich-Heine Universitaet Duesseldorf
- Laurent Romary has given an invited talk on 16/11/2015 at the Intangible Cultural Heritage and Innovation Symposium in Berlin (ITN DCH network)
- Laurent Romary gave the welcoming talk for the launch of the Digital Humanities Laboratory at the University of Warsaw on 10/12/2015
- Laurent Romary was invited to the final panel of the 10 year anniversary of the HAL-SHS portal on 18/12/2015
- Éric Villemonte de La Clergerie has given an invited talk on 09/07/2015 at Montpellier (LIRMM).
- Éric Villemonte de La Clergerie has given an invited talk and participated to a panel during the colloquium "Technologies pour les Langues Régionales de France" organized by DGLFLF (Meudon, February 19-20, 2015).
- Éric Villemonte de La Clergerie has given a talk and participated to a panel on "Humains, Algorithmes et data-sciences" during the GFII forum (Paris, December 7-9th 2015)

10.1.5. Leadership within the scientific community

10.1.5.1. Involvement in international initiatives

- Djamé Seddah is playing a key role in the SPMRL initiative that was initiated during the IWPT'09 conference organised in Paris by Alpage, which involves several leading international teams. As a result, Alpage members have served as programme co-chair or member of all editions of the successful SPMRL Workshop and Shared Task series hosted successively by NAACL-HLT (2010), IWPT (2011), ACL (2012) [103], EMNLP (2013) [104], CoLing (2014) and IWPT (2015). Djamé Seddah also served as a co-editor of a special issue of *Computational Linguistics* on this topic [108].
- Alpage is involved in the ISO subcommittee TC 37/SC 4 on “Language Resource Management”. Éric Villemonte de La Clergerie has participated in various ISO meetings as an expert, in particular on morpho-syntactic annotations (MAF), feature structures (FSR & new FSD), and syntactic annotations (SynAF) [48]. Within the same subcommittee, Laurent Romary is the convenor of the working group on lexical resources (WG4).
- Éric de La Clergerie is the Secretary of SIGParse, the Association for Computational Linguistics (ACL) Special Interest Group in natural language parsing.
- Mathieu Constant is a member of the International Advisory Board of SIGFSM, the Association for Computational Linguistics (ACL) Special Interest Group in Finite-State Methods.
- Laurent Romary heads the Board of Directors of the European Research Infrastructure Consortium DARIAH established by the European Commission to coordinate Digital Humanities infrastructure activities in Europe.
- Laurent Romary is member of the TEI Archiving, Publishing, and Access Service (TAPAS) project advisory board
- Laurent Romary is member of the International Advisory board of the Belgrade Center for Digital Humanities
- Mathieu Constant serves as a member of the Management Committee and as a substitute member of the Steering Committee of the European COST action PARSEME

10.1.5.2. Involvement in national initiatives

- Alpage has many responsibilities within the LabEx EFL. Until February 2015, Benoît Sagot served as head of the research strand on language resources, and was therefore a member of the Governing Board and of the Scientific Board; since then, he is deputy head of this research strand, and therefore deputy member of both boards; Marie Candito is deputy head of the research strand on computational semantics; Benoît Crabbé is deputy head of the research strand on experimental grammar; Laurence Danlos is a member of the Scientific Board of the LabEx EFL, representing Alpage;
- Benoît Sagot is in charge of the scientific and technical aspects of the development of the future Corpus de Référence du Français (French Reference Corpus), a project initiated and funded by the Institut de Linguistique Française;
- Benoît Sagot is a member of the scientific board of the consortium Corpus Écrits, which belongs to the TGIR Huma-Num;
- Benoît Sagot is a member of the executive board of the Institut de Linguistique Française, a CNRS federation of research teams involved in French linguistics;
- Laurent Romary is the leader of the scientific committee of the EquipEx Ortolang, of which Benoît Sagot is also a member.
- Laurent Romary is chairman of the scientific council of ABES (Agence Bibliographique de l'Enseignement Supérieur)
- Laurent Romary is also member of several scientific committees: Labex ‘Les passes dans le présent’ (PasP), ABES (Agence Bibliographique de l'Enseignement Supérieur, chair), OpenAIRE 2020 Advisory Board, OpenEdition (UMS Cleo)

- Laurent Romary is the Inria scientific advisor for Scientific and Technical Information, in charge in particular of the Open Access strategy.

10.1.5.3. Other activities for the scientific community

- Éric de La Clergerie and Benoît Sagot have served as project reviewers for ANR
- Benoît Sagot and Djamé Seddah are elected board members of the French NLP society (ATALA)
- Laurence Danlos and Benoît Sagot are members of the Permanent Committee of the TALN conference organised by ATALA

10.1.6. Scientific expertise

- Laurent Romary has advised the European Patent Office for the specification of their model for representing the patent information, based on recommendations by the TEI (Text Encoding Initiative). This model is now used for representing a database containing 200 million documents associated with over 2 billion of individual annotations.
- Éric Villemonte de La Clergerie has participated to several AFNOR meetings in relation with ISO TC37SC4 “Language Resource Management”

10.1.7. Research administration

10.1.7.1. University duties

- Lucie Barque is deputy director of the Linguistic department at Université Paris Nord
- Laurence Danlos is a member of the Scientific Committee of the Linguistics UFR of University Paris Diderot, which she chairs since 2014.
- Laurence Danlos is the deputy chair of the Doctoral School for Linguistic Sciences (École Doctorale de Sciences du Langage).
- Benoit Crabbé and Laurence Danlos are members of the Administrative board of the UFR of Linguistics of University Paris Diderot.
- Marie Candito is deputy director of the UFR of Linguistics.
- Within the Computational Linguistic curriculum at Université Paris–Diderot (L3 to M2), Laurence Danlos is in charge of the M2 and coordinates the whole curriculum, and Benoit Crabbé is in charge of the L3 year.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Lucie Barque, Sémantique lexicale, 22,5 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Lucie Barque, Phonétique, 22,5 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Lucie Barque, Dictionnaires électroniques, 22,5 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Lucie Barque, Syntaxe et sémantique, 22,5 heures en équivalent TD, niveau L3, Université Paris 13, France

Licence: Lucie Barque, Introduction aux sciences du langage, 22,5 heures en équivalent TD, niveau L3, Université Paris 13, France

Licence: Marie Candito, Linguistique de corpus, 28 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Licence: Marie Candito, Probabilités et statistiques pour le TAL, 28 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Licence: Maximin Coavoux, Programmation 2, 28 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Licence: Benoit Crabbé, Introduction à la programmation, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Laurence Danlos, Introduction au TAL, 32 heures en équivalent TD, niveau L3, Université Paris-Diderot, France

Licence: Corentin Ribeyre, TD d'Algorithmique, 24 heures en équivalent TD, niveau L3, Université Paris 7 Diderot, France

Master: Lucie Barque, Ressources lexicales pour le TAL, 24 heures en équivalent TD, niveau M2, Université Paris 13, France

Master: Timothée Bernard, Phonétique (TD), 12 heures en équivalent TD, niveau M1, Université Paris Diderot, France

Master: Timothée Bernard, Langages formels (TD), 24 heures en équivalent TD, niveau M1, Université Paris Diderot, France

Master: Marie Candito, Analyse sémantique automatique du langage naturel, 14 heures en équivalent TD, niveau M2, Université Paris Diderot, France

Master: Marie Candito, Traduction automatique, 51 heures en équivalent TD, niveau M1, Université Paris Diderot, France

Master: Marie Candito, Apprentissage automatique pour le TAL, 60 heures en équivalent TD, niveau M1, Université Paris Diderot, France

Master: Maximin Coavoux, Approches probabilistes du TAL (TD), 24 heures en équivalent TD, niveau M1, Université Paris Diderot, France

Master: Benoit Crabbé, Linguistique empirique et expérimentale, 24 heures en équivalent TD, niveau M2, Université Paris Diderot, France.

Master: Laurence Danlos, Discours: Analyse et génération de textes, 32 heures en équivalent TD, niveau M2, Université Paris-Diderot, France

Master: Marianne Djemaa, Sémantique Computationnelle (TD), 24 heures en équivalent TD, niveau M1, Université Paris 7, France

Master: Corentin Ribeyre, TD de Langages Formels, 24 heures en équivalent TD, niveau M1, Université Paris 7 Diderot, France

Master: Benoît Sagot, Analyse syntaxique du langage naturel, 28 heures en équivalent TD, niveau M1, Université Paris 7, France

10.2.2. Supervision

PhD in progress: Timothée Bernard, "Analyse discursive et factualité", started in September 2015, supervised by Laurence Danlos (supervisor) and Philippe de Groote (co-supervisor)

PhD: Marion Baranes, "Normalisation de textes bruités", started in January 2012, supervised by Laurence Danlos (supervisor) and Benoît Sagot (co-supervisor), defended on 23 October 2015

PhD: Valérie Hanoka, "Extraction et Structuration de Terminologie Multilingue", started in January 2011, supervised by Laurence Danlos (supervisor) and Benoît Sagot (co-supervisor), defended on 6 July 2015

PhD: Emmanuel Lassalle, "Structured learning for coreference resolution: a joint approach", Université Paris-Diderot, started in October 2010, supervised by Laurence Danlos (supervisor) and Pascal Denis (co-supervisor), defended on 11 May 2015

PhD: Chloé Braud, "Analyse discursive : les relations implicites", Université Paris-Diderot, started in October 2011, supervised by Laurence Danlos (supervisor) and Pascal Denis (co-supervisor), defended on 18 December 2015

PhD: Quentin Pradet, “Annotations en rôles sémantiques du français en domaine spécifique”, Université Paris-Diderot, started in October 2011, supervised by Laurence Danlos (supervisor) and Gael de Calendar (co-supervisor), defended on 6 February 2015

PhD: Isabelle Dautriche, “Exploring early syntactic acquisition: a experimental and computational approach”, started in September 2012, supervised by Anne Christophe (LSCP, supervisor) and Benoit Crabbé (co-supervisor), defended on 18/09/2015

PhD in progress: Raphael Salmon, “Implémentation d’un système de génération à base de contraintes”, Université Paris-Diderot, started in October 2013, supervised by Laurence Danlos (supervisor) and Alain Kaeser (co-supervisor)

PhD in progress: Marianne Djemaa, “Création semi-automatique d’un FrameNet du français”, started in October 2012, supervised by Marie Candito

PhD in progress: Corentin Ribeyre, “Vers la syntaxe profonde pour l’interface syntaxe-sémantique”, started in November 2012, supervised by Laurence Danlos (supervisor), Djamé Seddah (co-supervisor) and Éric Villemonte de La Clergerie (co-supervisor). from data driven approaches to graph based approaches.

PhD in progress: Maximin Coavoux, “Représentations continues pour l’analyse syntaxique et sémantique automatique”, started in September 2015, supervised by Benoit Crabbé.

10.2.3. *Juries*

- Mathieu Constant served as a reviewer (*rapporteur*) in the PhD defense committee of Seyed Abolghasem Mirroshandel. Title: Towards Less-Supervision in Dependency Parsing. University: Aix-Marseille Université. PhD supervisor: Alexis Nasr. Defense date: 10 December 2015.
- Laurence Danlos and Benoît Sagot served as a member in the PhD defense committee of Valerie Hanoka, respectively as supervisor and co-supervisor. Title: Extraction et complétion de terminologie multilingue. University: Université Paris-Diderot. Defense date: 6 July 2015.
- Laurence Danlos and Benoît Sagot served as a member in the PhD defense committee of Marion Baranes, respectively as supervisor and co-supervisor. Title: Normalisation automatique de textes bruités. University: Université Paris-Diderot. Defense date: 23 October 2015.
- Éric Villemonte de La Clergerie served as a member in the PhD defense committee of Jérôme Kirman. Title: Mise au point d’un formalisme syntaxique de haut niveau pour le traitement automatique des langues. PhD supervisors: Sylvain Salvati and Lionel Clément. Defense date: November 4th 2015 (Bordeaux)
- Éric Villemonte de La Clergerie served as a member in the mid-term PhD defense committee of Suzanne Mpouli. Title: Automatic Detection and Analysis of Figurative Similes in Literary Texts. PhD Supervisor: Jean-Gabriel Ganascia. Defense date: July 9th 2015 (Paris)
- Éric Villemonte de La Clergerie served as a reviewer for the PhD dissertation of Daniel Fernández-González. Title: Improvements to the performance and applicability of dependency parsing. PhD supervisors: Manuel Vilares Ferro and Carlos Gómez-Rodríguez. University of Coruña (Spain)

RITS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

Vicente Milanés Montero: advisory Committee Chair at the 2015 2nd International Conference on Computer Engineering (ICOCE 2015), Dubai, UAE October 17-18 2015.

Fawzi Nashashibi: Member of the steering committee at the 1st International Workshop on Vehicular Networking and Intelligent Transportation Systems (VENITS) at the 12th IEEE CNCC'2015 conference, January 9 - 12 2015, Las Vegas, Nevada USA.

10.1.1.2. Member of the organizing committees

Fawzi Nashashibi was member of the organizing committee of the IEEE ARSO'15 (International Workshop on Advanced Robotics and its Social impacts).

10.1.2. Scientific events selection

10.1.2.1. Chair of conference program committees

Fawzi Nashashibi was the Chair of the Special Sessions Committee at the IEEE ARSO 2015 (International Workshop on Advanced Robotics and its Social impacts) workshop, 1-3 June 2015, Lyon, France.

10.1.2.2. Member of the conference program committees

Vicente Milanés Montero: member of the International technical committee and of "Los 20 Valientes" committee of IEEE-ITSC 2015; member of the International Program Committee (IPC) in the IEEE International Conference on Vehicular Electronics and Safety 2015 and in the IEEE/TRB ICCVE 2015 (the International Conference on Connected Vehicles & Expo).

Fawzi Nashashibi: member of the Awards Committee of the IEEE International Conference on Intelligent Transportation Systems (ITSC'15), September 15-18 2015, Las Palmas, Spain.
IPC member of the IEEE ARSO 2015.

Member of the scientific committee of the JNRR (French conference on Robotics Research), October 21-23 2015, Cap Hornu, France.

Oyunchimeg Shagdar: technical program committee member of the International Workshop on Vehicular Networking and Intelligent Transportation Systems (VENITS 2015), program committee member of the IEEE International Conference on Advanced Information Networking and Applications (AINA 2016).

Anne Verroust-Blondet: technical program committee member of MMEDIA 2015.

10.1.2.3. Reviewer

Jean-Marc Lasgouttes: Intelligent Vehicles Symposium (IV2015).

Pierre Merdrignac: IEEE International Conference on Intelligent Transportation Systems (ITSC 2015), IEEE International Conference on Vehicular Electronics and Safety (ICVES 2015).

10.1.3. Journal

10.1.3.1. Member of the editorial boards

Guy Fayolle: associate editor of the journal Markov Processes and Related Fields.

Vicente Milanés Montero: editor-in-chief of Journal of Computer and Communications, associate Editor of Journal of Intelligent Transportation and Urban Planning and guest Editor SI of Electronics journal on Intelligent and Cooperative Vehicles, April 2015.

Fawzi Nashashibi: associate editor of IEEE Transactions on Intelligent vehicles.

Oyunchimeg Shagdar: associate editor of Wiley International Journal of Communication Systems.

10.1.3.2. Reviewer - Reviewing activities

Guy Fayolle: PTRF, MPRF, QUESTA, IEEE-IT, JSP, AMS Mathematical Reviews.

Jean-Marc Lasgouttes: Journal of Applied Probability.

G rard Le Lann: IEEE Communications Letters.

Vicente Milan s Montero: Journal of Dynamic Systems, Measurement and Control, Sensors, IEEE Intelligent Transportation Systems Magazine, etc.

Fawzi Nashashibi: Journal Transportation Research Part C, IJRR, IEEE Transactions on Instrumentation and Measurement, IEEE Robotics and Automation Magazine, IEEE Transactions on ITS, IEEE Transaction on Intelligent Vehicles, IEEE Robotics and Autonomous Systems, IEEE Transactions on Robotics; IEEE International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), IEEE Multisensor Fusion Integration (MFI), IEEE Intelligent Transportation Systems Conference (ITSC), IEEE Int. Symposium on Intelligent Vehicles (IV).

Michel Parent: Journal of Intelligent Transportation Systems, Transportation Research Board Journal.

Joshu  P rez Rastelli: IEEE Robotics and Automation Magazine, Ad Hoc Networks, Mathematics and Computers in Simulation, Information Sciences, Dyna, Revista Bimestral de Ingenier a Multidisciplinar, Robotics, Electronics, IEEE Intelligent Transportation Systems Magazine.

Oyunchimeg Shagdar: the IEEE Wireless Communications magazine.

Anne Verroust-Blondet: Pattern Recognition, Science Magazine.

10.1.4. Invited talks

Guy Fayolle was invited speaker and session Chairman at the Symposium Honouring Professor Erol Gelenbe, Imperial College, London 21st – 24th September 2015. He presented the paper [44].

G rard Le Lann: "Safe Fully Automated Driving on Roads and Highways: Pie in the Sky or Future Reality?", SystemX Seminar, Palaiseau, October 20, 2015.

Fawzi Nashashibi was an invited at the ITS World Congress, Topic 6: Automated Roads, Automated Management, Automated Driving, Session II08 - "What's the science inside the autonomous vehicle", October 8, 2015, Bordeaux, France.

10.1.5. Scientific expertise

Guy Fayolle is scientific advisor at the Robotics Laboratory of Mines ParisTech. He has been working in particular on the COVADEC project (type FUI/FEDER 15), which deals with the implementation of ADAS (Advanced Driver Assistance Systems).

Vicente Milan s Montero: reviewer for UAE national projects.

Fawzi Nashashibi: expert/reviewer of Dutch and Portuguese National projects.

Anne Verroust-Blondet: expert/reviewer for the French National Research Agency ("Blanc" programme of ANR) and for the Italian Ministry of Cultural Heritage and Activities (JPI Cultural Heritage program).

10.1.6. Research administration

Guy Fayolle is a member of the working group IFIP WG 7.3.

Fawzi Nashashibi is a member of the international Automated Highway Board Committee of the TRB (AHB30).

Michel Parent is a member of ISO TC184 SC2 (Service Robots) and of ISO TC204 WG14 on the standards for driving assistance and full automatic driving.

Anne Verroust-Blondet is the scientific correspondent of the European affairs and of the International relations of Inria Paris-Rocquencourt. She is member of the COST-GTRI committee at Inria.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Fawzi Nashashibi, "Programmation avancée", 84h, L1, Université Paris-8 Saint-Denis, France

Licence: Guillaume Tréhard, "C++ programming language", 20h, L1, DUT Génie Electrique et Informatique Industrielle, IUT Chartres, France

Master: Jean-Marc Lasgouttes, "Analyse de données", 59.5h, second year of Magistère de Finance (M1), University Paris 1 Panthéon Sorbonne, France

Master: Fawzi Nashashibi, "Programmation C++/OpenGL", 16h, 2nd year (MAREVA), Mines ParisTech, France

Master: Fawzi Nashashibi, "Synthèse d'images", 12h, M2, INT Télécom SudParis

Master: Fawzi Nashashibi, "Détection d'obstacle et fusion multicapteurs", 4h, M2, INSA de Rouen

Master: Joshué Pérez Rastelli, "Robotique et contrôle temps réel", 15h, M1, Leonard Da Vinci University -l'ESILV- (La Defense, France), Apr-May 2015.

Master: Joshué Pérez Rastelli, "Standards for Automobiles", 30 h, M2, François Rabelais University (Tours, France), François Rabelais University (Tours, France), Feb-March 2015.

Master: Joshué Pérez Rastelli, "Digital environment and road -ITS applications-", 32.5 h, M2, Feb-March 2015.

Master: Oyunchimeg Shagdar, "Nouvelles technologies de communication", 32h, M2, University Versailles Saint-Quentin, France.

Master: Guillaume Tréhard, "C++ programming language", M1, 20h, Paris 8 University, France

Master: Vicente Milanés Montero and Anne Verroust-Blondet, "Le véhicule autonome. Présentation des recherches de l'équipe-projet RITS", 1.5 h, 2nd year, Ecole des Ponts ParisTech, France, Sept. 2015.

10.2.2. Supervision

PhD : Pierre Merdrignac, "Système coopératif de perception et de communication pour la protection des usagers vulnérables", Mines ParisTech, October 2015, supervisor: Fawzi Nashashibi, co-supervisor: Oyunchimeg Shagdar.

PhD : Sofiene Mouine, "Identification d'espèces végétales par une description géométrique locale d'images de feuilles", Télécom ParisTech, April 2015, supervisor: Anne Verroust-Blondet, co-supervisor: Itheri Yahiaoui.

PhD : Zahraa Yasseen, "Garment Design and Shape description for Sketch-Based Applications", Télécom ParisTech, June 2015, supervisor: Anne Verroust-Blondet, co-supervisor: Ahmad Nasri.

PhD in progress : Mohammad Abu Alhoul, "Communications par lumière visible et communications radio pour La Conduite Automatique", Mines ParisTech, September 2013, supervisor: Fawzi Nashashibi, co-supervisor: Oyunchimeg Shagdar.

PhD in progress : Zayed Al-Sayed, "Système de localisation redondant en environnement extérieur ouvert pour véhicule urbain automatique", Télécom ParisTech, October 2014, supervisor: Anne Verroust-Blondet, co-supervisor: Guillaume Bresson.

PhD in progress : Younes Bouchaala, "Utilisation de la communication véhicule-à-véhicule pour l'amélioration de la sécurité sur la route", Université de Versailles, October 2014, supervisor: Paul Muhlethaler, co-supervisor: Oyunchimeg Shagdar.

PhD in progress : David Gonzalez Bautista, "Contrôle coordonné et planification dynamique des trajectoires pour un système de transport cybernétique en milieu urbain instrumenté", Mines ParisTech, January 2014, supervisor: Fawzi Nashashibi, co-supervisor: Joshué Pérez-Rastelli.

PhD in progress : Fernando Garrido, "Optimal trajectory generation for autonomous vehicles in smart cities", Mines ParisTech, November 2014, supervisor: Fawzi Nashashibi, co-supervisor: Joshué Pérez-Rastelli.

PhD in progress : Mohamed Yassine Maddouri, "Intégration multi-sensorielle multi-capteurs pour la protection des personnes vulnérables", January 2015, supervisor: Abelaziz Bensrhair, co-supervisor: Fawzi Nashashibi.

PhD in progress : Francisco Navas Matos, "Synthesis of stable control algorithms for dynamic multi-input plants", Mines ParisTech, October 2015, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés Montero.

PhD in progress : Dinh-Van Nguyen, "Wireless sensor networks for indoor mapping and accurate localization for low speed navigation in smart cities", Mines ParisTech, December 2015, supervisor: Fawzi Nashashibi, co-supervisor: Eric Castelli.

PhD in progress : Carlos Eduardo Flores Pino, "Analysis and design of cooperative systems for trains of green cars", Mines ParisTech, December 2015, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés Montero.

PhD in progress : Guillaume Trehard, "Gestion des intersections pour la conduite urbaine autonome", Mines ParisTech, October 2012, supervisor: Fawzi Nashashibi, co-supervisor: Evangeline Pollard.

10.2.3. *Juries*

Fawzi Nashashibi was a reviewer of the following HDR defense:

Jean-Philippe LAUFFENBURGER, "Vers l'autonomie des véhicules routiers : de la commande des systèmes à la perception de l'environnement", Université de Haute-Alsace, Mulhouse, defended on December 7th, 2015.

Fawzi Nashashibi was a reviewer of the following PdD thesis defense:

Alan ALI, "Modélisation et commande d'un convoi de véhicules urbains", Ecole Centrale de Nantes, September 21, 2015.

José Miguel VILCA-VENTURA, "Safe and Flexible Hybrid Control Architecture for the Navigation in Formation of a Group of Vehicles", Université Blaise Pascal-Clermont II, October 26, 2015.

Nawal ALIOUA, "Extraction et analyse des caractéristiques faciales: Application à l'hypovigilance chez le conducteur", Université de Normandie (INSA de Rouen) & Université Mohamed V du Maroc, March 23, 2015.

Wenjie LU, "Contribution à la Localisation de Véhicules Intelligents à partir de Marquages Routiers", Université de Paris Sud Orsay, February 9, 2015.

Fawzi Nashashibi was a reviewer and member of the GdR Robotique PhD thesis Award Committee. He reviewed 2 PhD thesis.

Anne Verroust-Blondet was a reviewer of the following PhD thesis defense:

Nicolas Chérin, "Modélisation géométrique à partir de croquis", Université de Haute-Alsace, Mulhouse, defended on September 23, 2015.

10.3. Popularization

As part of the week of mathematics organized by the Ministry of Education, which theme this year was “les mathématiques nous transportent”, Jean-Marc Lasgouttes presented the transportation-related research at Inria, as well of some simple traffic jam models.

Fawzi Nashashibi participated to the "Rencontres Inria Industrie" organized by Inria@SiliconValley on the topic of "Smart City and Mobility". He gave a speech on "On-demand transportation system for sustainable mobility in smart cities", May 11, San Francisco, USA.

Fawzi Nashashibi participated to a round table organized by La Recherche and Le Monde on "The vehicle of the future: which car in 10 years ?" at Arts-et-Métiers, May 28, Paris, France.

Fawzi Nashashibi participated to the round table on "Ethical and legal questions in robotics" at the 1st National day on "Ethics of digital research" organized by the CERNA at the Mines Telecom Institute, June 15, 2015, Paris, France.

Fawzi Nashashibi organized with Christian Laugier the round table on "Intelligent Mobility" at the joint Innorobo/IEEE ARSO'15 workshop day, July 2, Lyon, France.

Fawzi Nashashibi gave a presentation on "How does the climate change affect mobility and transportation ?" at Solution COP21 exhibition, Paris, December 2015. (Video Link: <http://www.dailymotion.com/video/x3h8vpm>)

SMIS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organization

9.1.1.1. General chair, scientific chair

- Philippe Pucheral: Co-founder of the bi-annual French Summer School 'Masses de Données Distribuées' and co-organizer of this school in 2016
- Benjamin Nguyen: Organizer and chair of 'Atelier sur la Protection de la Vie Privée' (APVP) in 2015

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Philippe Pucheral: EDBT'15, MOBIWIS'15, DATA'15, BDA'15
- Luc Bouganim: EDBT'15, EDBT'16
- Nicolas Ancaux: BDA'15, Int. Conference on Sustainable Energy and Environmental Engineering (SEEE'15)
- Benjamin Nguyen: BDA 2015, ACOMP'15, ECML-PKDD'15, EDA 2015
- Iulian Sandu Popa: MOBILWARE 2015, IEEE Mobile Cloud 2016, APVP 2015

9.1.2.2. Reviewer

- Iulian Sandu Popa: EDBT'15, ACM SIGSPATIAL'15

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Nicolas Ancaux: Area Editor of the VLDB Journal (since 2015)
- Benjamin Nguyen: Member of the editorial committee of TSI (Techniques et Sciences Informatiques), French Journal, Eds. Lavoisier since 2012

9.1.3.2. Reviewer - Reviewing activities

- Iulian Sandu Popa: ACM Transactions on Storage 2015

9.1.4. Invited talks

- Invited tutorial: Towards an Era of Trust in Personal Data Management, Tutorial at ADBIS'15 conference, N. Ancaux, B. Nguyen, I.Sandu Popa, 2015
- Invited talk: Gestion de données personnelles respectueuse de la vie privée. "1/2 heure de science", N. Ancaux, June 2015
- Invited talk: Gestion de données embarquées dans des calculateurs sécurisés, une solution pour la protection des données personnelles ?, Journée ASF, COMPAS conference, L. Bouganim, June 2015
- Invited talks and demonstrations: PlugDB: towards the Secure Personal Cloud. Smart City & Mobility Innovations, Cities, IoT and Analytics mobility, RII, San Francisco, N. Ancaux, 2015

9.1.5. Research administration

- Philippe Pucheral: Member of the HDR committee of the STV doctoral school (UVSQ) since 2014

- Philippe Pucheral: Philippe Pucheral: Member of the steering committee of the ED STIC doctoral school of University Paris-Saclay, 'Data, Knowledge and Interactions' committee (about 250 PhD students) since 2014
- Luc Bouganim: Co-president of the Inria 'Emplois Scientifiques' commission (includes PhD grant, Post-Doc and Délégation attributions), 2015
- Nicolas Ancaux: Co-director of the 'Privacy and digital identity' WG at Digital Society Institute (DSI), since January 2015
- Nicolas Ancaux: President of the 'Comité de Suivi Doctoral' (CSD) at Inria Paris-Rocquencourt, since 2015
- Nicolas Ancaux: Member of Commission de Developpement Technologique (CDT) at Inria Rocquencourt since 2012
- Benjamin Nguyen: Director of Digital Affairs (INSA CVL)
- Benjamin Nguyen: Member of the Executive Committee of INSA CVL

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Philippe Pucheral, responsible of the DataScale master, courses in M1 and M2, UVSQ, France

Master: Nicolas Ancaux, Courses on database internal mechanisms and database security, 80, in Master1 and Master2 (AFTI, Orsay) and in engineering school (ENSTA ParisTech, Telecom Paristech)

Master : Luc Bouganim, Bases de données, 39, niveau M2, CFA AFTI/UVSQ, France

Master : Luc Bouganim, Systèmes d'information Privacy by Design, 30, niveau M2, ENSIIE, France

Master : Luc Bouganim, Sécurité des bases de données, 15, niveau M2, Télécom ParisTech, France

Licence : Iulian Sandu Popa, Fondaments de l'informatique, 37, niveau L1, UVSQ, France

Licence : Iulian Sandu Popa, Initiation aux bases de données, 66, niveau L2, UVSQ, France

Master : Iulian Sandu Popa, Bases de données relationnelles, 60, niveau M1, UVSQ, France

Master : Iulian Sandu Popa, Mécanismes internes des bases de données, M2, niveau M2, UVSQ, France

Master : Iulian Sandu Popa, Sécurité des bases de données, 9, niveau M2, UVSQ, France

Master : Iulian Sandu Popa, Projet bases de données, 27, niveau M2, UVSQ, France

Master : Benjamin Nguyen, Databases, IA, Security, 192, INSA CVL, France

9.2.2. Supervision

PhD : Cuoc-Quong To, Privacy-Preserving Query Execution using Tamper Resistant Hardware : Design and Performance Considerations, UVSQ, Octobre 2015, Benjamin Nguyen and Philippe Pucheral

PhD : Mathias Bjorling, Operating System Support for High-Performance Solid State Drives, IT University of Copenhagen, August 2015, Philippe Bonnet and Luc Bouganim

PhD : Niv Dayan, Modelling and Managing SSD Write Amplification, IT University of Copenhagen, August 2015, Philippe Bonnet and Luc Bouganim

PhD in progress : Saliha Lallali, A Scalable Search Engine for the Personal Cloud, October 2012, Nicolas Ancaux, Philippe Pucheral, and Iulian Sandu Popa

PhD in progress : Dai Hai Ton That, Efficient Management and Secure Sharing of Mobility Traces, November 2012, Iulian Sandu Popa and Karine Zeitouni (UVSQ)

PhD in progress : Paul Tran Van, Partage de documents sécurisé dans le Cloud Personnel , October 2014, Nicolas Anciaux and Philippe Pucheral

PhD in progress : Chao Chen, A Pivacy-by-Design Middleware for Urban-scale Mobile Crowdsensing, December 2015, Nicolas Anciaux and Valérie Issarny (MiMOVE)

PhD in progress : Axel Michel, Secure Distributed Computations, October 2015, Benjamin Nguyen and Philippe Pucheral

9.2.3. *Juries*

Philippe Pucheral: member of the PhD jury of Benjamin Billet (UVSQ, 19/03/2015)

Benjamin Nguyen: Reviewer of the PhD of Regina PAIVA MELO MARIN (Supélec Rennes, 7/9/2015)

Benjamin Nguyen: Reviewer of the PhD of Maria Laura NECULA MAAG (Université Pierre et Marie Curie (Paris-VI), 8/4/2015)

Benjamin Nguyen: President of the PhD jury of Mouhamadou Lamine BA (Telecom ParisTech, 30/3/2015)

9.3. Popularization

- Round table: Privacy & Personal Data. Who owns the data? International Conference on Digital Assets, Data Philanthropy, and Public Benefit, CITRIS, Inria, EIT ICT Labs, San Francisco. N. Anciaux, 2015
- General public (large audience magazines, television, videos): Gestion sécurisée de données personnelles. 1024 - Bulletin de la Société Informatique de France, numéro 5, pp. 17-41, N. Anciaux and B. Nguyen, 2015
- Institutions, decision makers and industrials: Présentation du Pôle Vie Privée de l'ISN (DSI), Cabinet de Mme Axelle Lemaire, Secrétaire d'Etat chargée du numérique, Ministère de l'économie, Paris, N. Anciaux and L. Bouganim, May 2015
- Round table: Peut-on être seul maître de son espace numérique ? Comprendre et construire la société numérique. Conférence de l'Institut de la Société Numérique (ISN/DSI), Hôtel Potocki, Paris, N. Anciaux, March 2015
- Round table: P. Pucheral, "Données personnelles, approche interdisciplinaire". Busines Convention on Big Data, Campus HEC, 24-25 Nov. 2015

WILLOW Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- J. Sivic is a program co-chair of IEEE International Conference on Computer Vision (ICCV), 2015.

10.1.1.2. Member of the organizing committees

- Workshop co-organizer, THUMOS Challenge 2015: Action Recognition with a Large Number of Classes, in conjunction with CVPR'15, Boston, USA (Ivan Laptev).

10.1.2. Scientific events selection

10.1.2.1. Area chairs

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015 (I. Laptev, J. Ponce).
- International Conference on Computer Vision (ICCV), 2015 (I. Laptev).

10.1.2.2. Member of the conference program committee

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015 (R. Arandjelović, P. Bojanowski, M. Cho, J. Sivic).
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016 (R. Arandjelović, P. Bojanowski, G. Cheron, M. Cho, S. Kwak, J. Sivic).
- International Conference on Computer Vision (ICCV), 2015 (R. Arandjelović, P. Bojanowski, M. Cho, J. Sivic).
- ACM Multimedia 15 doctoral consortium (R. Arandjelović).
- 29th Conference on Artificial Intelligence (AAAI), 2015 (I. Laptev).
- International Conference on Learning Representations, 2015 (J. Sivic).

10.1.3. Journals

10.1.3.1. Member of the editorial board

- International Journal of Computer Vision (I. Laptev, J. Ponce, J. Sivic).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (I. Laptev).
- Foundations and Trends in Computer Graphics and Vision (J. Ponce).
- Image and Vision Computing Journal (I. Laptev).
- I. Laptev and J. Sivic co-edit a special issue on "Video representations for visual recognition" in the International Journal of Computer Vision.
- J. Sivic co-edits a special issue on "Advances in Large-Scale Media Geo-Localization" in the International Journal of Computer Vision.

10.1.3.2. Reviewer

- International Journal of Computer Vision (M. Cho).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (R. Arandjelović, P. Bojanowski, M. Cho, S. Kwak).
- IEEE Transactions on Circuits and Systems for Video Technology (P. Bojanowski, B. Ham).
- IEEE Transactions on Image Processing (B. Ham).

- IEEE Signal Processing Letters (B. Ham).
- Computer Vision and Image Understanding (M. Cho).
- Elsevier Neurocomputing (B. Ham).
- EURASIP Journal on Image and Video Processing (B. Ham).

10.1.4. Others

- J. Sivic is senior fellow of the Neural Computation and Adaptive Perception program of the Canadian Institute of Advanced Research
- R. Arandjelović obtained the Best reviewer award at International Conference on Computer Vision (ICCV), 2015

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master : J. Ponce, “Introduction to computer vision”, M1, Ecole normale supérieure, 36h.
- Master : I. Laptev, J. Ponce and J. Sivic (together with C. Schmid, Inria Grenoble), “Object recognition and computer vision”, M2, Ecole normale supérieure, and MVA, Ecole normale supérieure de Cachan, 36h.
- Master : I. Laptev, J. Ponce and J. Sivic (together with Z. Harchaoui and J. Mairal, Inria Grenoble and F. Bach), Cours PSL-ITI - Informatique, mathématiques appliquées pour le traitement du signal et l’imagerie, 20h.
- Doctorat : I. Laptev gave a tutorial at the 9th Russian Summer School in Information Retrieval (RuSSIR), St Peresburg, August 2015, 5h.

10.2.2. Supervision

PhD : Mathieu Aubry, “Visual recognition and retrieval of 3D objects and scenes”, graduated in 2015, J. Sivic and D. Cremers (TU Munich).

PhD : Vincent Delaitre, “Modeling and recognition of human-object interactions”, graduated in 2015, I. Laptev and J. Sivic.

PhD in progress : Gül Varol, “Deep learning methods for video interpretation”, starting in Oct 2015, I. Laptev, C. Schmid.

PhD in progress : Julia Peyre, “Learning to reason about scenes from images and language”, starting in Oct 2015, C. Schmid, I. Laptev, J. Sivic.

PhD in progress : Jean-Baptiste Alayrac, “Structured learning from video and natural language”, started in 2014, I. Laptev, J. Sivic and S. Lacoste-Julien.

PhD in progress : Piotr Bojanowski, “Learning to annotate dynamic video scenes”, started in 2012, I. Laptev, J. Ponce, C. Schmid and J. Sivic.

PhD in progress : Rafael Sampaio de Rezende, started in 2013, J.Ponce.

PhD in progress : Guilhem Chéron, “Structured modeling and recognition of human actions in video”, started in 2014, I. Laptev and C. Schmid.

PhD in progress : Théophile Dalens, “Learning to analyze and reconstruct architectural scenes”, starting in Jan 2015, M. Aubry and J. Sivic.

PhD in progress : Vadim Kantorov, “Large-scale video mining and recognition”, started in 2012, I. Laptev.

PhD in progress : Maxime Oquab, “Learning to annotate dynamic scenes with convolutional neural networks”, started in Jan 2014, L. Bottou (MSR), I. Laptev and J. Sivic.

PhD in progress : Guillaume Seguin, “Human action recognition using depth cues”, started in 2010, I. Laptev and J. Sivic.

PhD in progress : Matthew Trager, “Projective geometric models in vision”, started in 2014, J. Ponce and M. Hebert (CMU).

PhD in progress : Tuang Hung VU, “Learning functional description of dynamic scenes”, started in 2013, I. Laptev.

10.2.3. *Juries*

PhD thesis committee:

- Vincent Buso, Université Bordeaux I, France, 2015 (I. Laptev).
- Danila Potapov, Université Grenoble Alpes, France, 2015 (I. Laptev, rapporteur).
- Thomas Pfister, University of Oxford, UK, 2015, (I. Laptev, external examiner)
- Xi Chen, Aalto University, Finland, 2015 (I. Laptev, rapporteur).

Other:

Member of the PSL Research Council, 2012- (J. Ponce).

Member of Inria Commission de developpement technologique (CDT), 2012- (J. Sivic).

10.3. Invited presentations

- R. Arandjelović, Invited talk, DeepMind, London, United Kingdom, October 13, 2015
- M. Cho, Invited talk, Postech, Pohang, South Korea, November 30, 2015
- I. Laptev, Amazon, Seattle, USA, Nov, 2015.
- I. Laptev, Deep Video Workshop, Santa Cruz, USA, Nov, 2015.
- I. Laptev, EHES, Paris, France, Nov 16 - 18, 2015.
- I. Laptev, Keynote Speaker, NCCV, Sept. 14-15, Lunteren, The Netherlands, 2015.
- I. Laptev, Institute for Computer Graphics and Vision TU Graz, Austria, July, 2015.
- I. Laptev, DALI Workshop, La Palma, Spain, April 2015.
- I. Laptev, Bauman Moscow State Technical University, Moscow, Russia, April 2015.
- I. Laptev, CVPR’15 Area Chair Workshop, Boston, MA, USA, March 2015.
- I. Laptev, GDR-ISIS, Paris, France, March, 2015.
- I. Laptev, Deep Learning Summit, San Francisco, USA, Jan. 2015.
- J. Ponce, IAS Workshop on Functoriality in Geometric Data, Hong Kong, April 2015.
- J. Ponce, ORASIS Workshop, Amiens, June 2015.
- J. Ponce, Optimization in Machine learning, vision and image processing Workshop, Toulouse, October 2015.
- J. Ponce, SAMSUNG DMC, Seoul, Korea, October 2015.
- J. Ponce, 12th International Conference on Ubiquitous Robots and Ambient Intelligence, Goyang City, Korea, October 2015.
- J. Ponce, International Conference in Big Data and Information Analytics, Xi’an, China, October 2015.
- J. Ponce, Xi’an Jiaotong University, Xi’an, China, October 2015.
- J. Ponce, Software and Digital Humanities Workshop, Paris, November 2015.
- J. Ponce, Algorithms for Human-Robot Interaction, Berkeley, USA, November 2015.
- J. Ponce, Distinguished speaker, Faculty of Engineering, Hong Kong University, December 2015.
- J. Sivic, Invited talk, the CIFAR workshop, Montreal, December 2015.
- J. Sivic, Invited talk, the Workshop on Visual Place Recognition in Changing Environments, CVPR 2015.
- J. Sivic, Invited talk, the Aristote seminar on scientific computing for smart cities, 2015.
- J. Sivic, Invited talk, the High Visual Computing seminar, 2015.
- J. Sivic, Talk at Inria ComDir, 2015.