



RESEARCH CENTER

FIELD

Activity Report 2014

# Section Dissemination

Edition: 2015-03-24



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## **ALF Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. Member of the organizing committee*

- Isabelle Puaut is a member of the Executive committee of IEEE Technical Committee on Real-Time Systems
- Isabelle Puaut is member of the Steering committees of ECRTS and WCET conferences.
- Isabelle Puaut is the chair of the RTNS steering committee.
- Isabelle Puaut and Damien Hardy are organizing the Ecole d'été Temps Réel in Rennes in August 2015.
- Sylvain Collange is a member of the organization committee of Rencontres Arithmétiques de l'Informatique Mathématique (RAIM) 2015 in Rennes.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Member of the conference program committee*

- Isabelle Puaut was a member of RTSS 2014, RTAS 2014, RTCSA 2014 and SIES 2014 program committees. She is a member of the RTAS 2015 and WCET 2015 program committees.
- Damien Hardy was a member of RTNS 2014 and WCET 2014 program committees. He is a member of the WCET 2015 program committee.
- André Seznec was a member of the MICRO 2014 top picks committee, a member of SAMOS 2014 program committee and HPCA 2015 committee.
- Erven Rohou was a member of the program committee of DITAM-PARMA 2015
- Pierre Michaud was a member of the program committees of the HPCC 2014 conference and the OMHI 2014 and CBP4 workshops.
- Sylvain Collange was a member of the program committee of the "Conférence en Parallélisme, Architecture et Système"(ComPas) 2014, Neuchâtel, Suisse.

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

- André Seznec is a member of the editorial board of the IEEE Micro.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Master: A. Seznec, P. Michaud, A. Perais, Architecture avancée, 36 hours, M2, Ecole Supérieure d'Ingénieurs de Rennes, France

Master: I. Puaut, D. Hardy, Operating systems - process management, 130 hours, M1, Université de Rennes I, France

Master: I. Puaut, Système d'exploitation gestion mémoire, 39 hours, M1, Université de Rennes I, France

Master: I. Puaut, D. Hardy, Systèmes temps-réel, 69 hours, M1, Université de Rennes I, France

Master: D. Hardy, A. Perais, Systèmes d'exploitation, 44 hours, M1, Université de Rennes I, France

Licence: D. Hardy, Informatique temps-réel, 40 hours, L3, Université de Rennes I, France  
 Master: S. Collange, Programmation parallèle, 22 hours, M1, Université de Rennes I, France  
 Master/PhD: S. Collange, GPU programming, 30 hours, MSc/PhD programs, Universidade Federal de Minas Gerais, Brasil

### 9.2.2. Supervision

PhD in progress: Nabil Hallou, Université Rennes 1, Feb 2013, co-advisors E. Rohou and P. Clauss (EPI Camus Inria Strasbourg)

PhD in progress: Sajith Kalathingal, Université Rennes 1, Dec 2012, co-advisors S. Collange and A. Seznec

PhD in progress: Surya Khizakanchery Natarajan, Université Rennes 1, Jan 2012, advisor A. Seznec

PhD in progress: Hanbing Li, Université Rennes 1, Oct 2012, co-advisors E. Rohou and I. Puaut

PhD in progress: Andrea Mondelli, Université Rennes 1, Oct 2013, co-advisors P. Michaud and A. Seznec

PhD in progress: Bharath Narasimha Swamy, Université Rennes 1, Sept 2011, advisor A. Seznec

PhD in progress: Arthur Perais, Université Rennes 1, Sept 2012, advisor A. Seznec

PhD in progress: Aswinkumar Sridharan, Université Rennes 1, Oct 2013, advisor A. Seznec

PhD in progress: Arjun Suresh, Université Rennes 1, Dec 2012, co-advisors E. Rohou and A. Seznec

### 9.2.3. Dissemination

- Erven Rohou and Damien Hardy taught labs on "Compilation, Optimization, Debug methods" at "Ecole Jeune Chercheurs en programmation" in Rennes, June 2014
- Nabil Hallou presented "Dynamic re-vectorization of binary code", at Huitièmes rencontres de la communauté française de compilation, Jul 2014.
- Emmanuel Riou presented "Padrone: a dynamic binary modification tool" at the Intel Compiler, ARchitecture and Tools conference, at Haifa, Israel, Dec 2014
- Damien Hardy presented "Worst Case Execution Time Estimation and Permanent Faults" in the workshop on Challenges in Mixed Criticality and Real-time and Reliability in Networked Complex Embedded Systems at the Hipeac Computer System Week, May 2014.
- André Seznec and Arthur Perais presented their work on Value Prediction at a seminar at Qualcomm, Raleigh, in February 2014.
- André Seznec presented the work on Value Prediction at Intel, Hillsboro in November 2014.
- Arthur Perais was invited to present its work on Value Prediction at the COMPASS conference, Neufchatel, April 2014, <http://compas2014.unine.ch/>.

### 9.3. Miscellaneous

- Erven Rohou co-advised a MSc. student at the Egypt-Japan University of Science and Technology.
- Erven Rohou is a member of the Inria CDT (Commission du Développement Technologique)
- As "correspondant scientifique des relations internationales" for Inria Rennes Bretagne Atlantique, Erven Rohou is a member of the Inria COST GTRI (Groupe de Travail "Relations Internationales" du Comité d'Orientation Scientifique et Technologique).
- A. Seznec was an elected member of the scientific committee of Inria till November 2014.
- A. Seznec is an elected member of the administration board of Inria since November 2014.

## ANTIQUÉ Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the steering program committee

Jérôme Feret is member of the Steering Committee of the international Workshop on Static Analysis and Systems Biology (SASB).

#### 9.1.1.2. member of the organizing committee

Tie Cheng was a member of the Organizing Committee of EuSprIG 2014.

Antoine Miné was a member of the Organizing Committee of the 5th Workshop on Tools for Automatic Program Analysis (TAPAS 2014), Munich, Germany, 10 September, 2014.

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

Xavier Rival was Co-Chair of the Program Committee of the 15th International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI 2014), San Diego, USA, January 19-21, 2014, [32]).

#### 9.1.2.2. member of the conference program committee

Jérôme Feret was member of the Program Committee of the 15th International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI 2014), San Diego, USA, January 19–21, 2014; of the Program Committee of the Sixth International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO 2014), CHamonix, France, April 20–24, 2014; of the Program Committee of the 10th International Workshop on Developments in Computational Models (DCM 2014), Vienna, Austria, July 13 2014; of the Program Committee of the International Workshop on Verification of Engineered Molecular Devices and Programs (VEMDP 2014), Vienna, Austria, July 17, 2014; of the Program Committee of the 3rd International Conference on Biomedical Engineering and Biotechnology (iCBEB 2014), Beijing, China, August 18–20, 2014. of the Program Committee of the 8th IFIP International Conference on Theoretical Computer Science (TCS 2014), Rome, Italy, September 1–3, 2014; of the Program Committee of the 5th International Workshop on Static Analysis and Systems Biology (SASB 2014), München, Germany, September 10, 2014; of the Program Committee of the 19th International Workshop on Formal Methods for Industrial Critical Systems (FMICS 2014), Florence, Italy, September 11–12, 2014; Jérôme Feret is member of the Program Committee of of the Program Committee of 11th International Workshop on Developments in Computational Models (DCM 2015), Cali, Colombia, October 28, 2015; of the Program Committee of the 7th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO 2015), Rome, Italy, May 24–29, 2015; of the Program Committee of the 24th International Symposium on Logic-based Program Synthesis and Transformation (LOPSTR 2015), Siena, Italy, July 13–15, 2015.

Xavier Rival was member of the Program Committee of the 41st ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2014 PC), San Diego, USA, January 22-24, 2014; of the Program Committee of the 21st International Static Analysis Symposium (SAS 2014), München, Germany, September 11–13, 2014; of the Extended Review Committee of the 42nd ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2015 ERC), Mumbai, India, January 15-17, 2015.

Antoine Miné was member of the Program Committee of the 5th International Workshop on Polyhedral Compilation Techniques (IMPACT'5), Amsterdam, The Netherlands, the 11th International Conference on Integrated Formal Methods (iFM'14), Bertinoro, Italy, 9–11 September 2014, the 11th School on MODelling and VERifying parallel Processes (MOVEP'14), Nantes, France, 7–11 July 2014, and the 8th International Symposium on Theoretical Aspects of Software Engineering (TASE'14), Changsha, China, 1–3 September 2014. Antoine Miné was member of the External Review Committee of the 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'14), Mumbai, India, 11-18 January 2015. Antoine Miné is member of the Program Committee of the 22nd International Static Analysis Symposium (SAS'15), Saint-Malo, France, 9–11 September 2015, and the 9th International Symposium on Theoretical Aspects of Software Engineering (TASE'15), Nanjing, China, 12–14 September 2015.

Caterina Urban is member of the Competition Jury for the 4th Competition on Software Verification (SV-COMP 2015) to be held at TACAS 2015 in London, UK.

#### *9.1.2.3. reviewer*

Arlen Cox was a reviewer for the 21st International Static Analysis Symposium (SAS 2014), München, Germany, September 11–13, 2014.

Jérôme Feret was a reviewer for the 42nd ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2015), Mumbai, India, January 15–17, 2015, and for the 18th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS 2015), London, UK, April 11–18, 2015.

Xavier Rival was a reviewer for the Symposium on Programming Languages Design and Implementation (PLDI 2014), Edimburgh, UK, June 9–11, 2014, and for the AVICPS Workshop, Rome, Italy, December 2, 2014.

Antoine Miné was a reviewer for the 12th Asian Symposium on Programming Languages and Systems (APLAS 2014), Singapore, November 17-19, 2014, the 35th annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI 2015), Edinburgh, UK, 9–11 June 2014, and the 21st International Static Analysis Symposium (SAS 2014), Munich, Germany, September 11–13, 2014.

Caterina Urban was reviewer for the conference Theoretical Computer Science (TCS), Roma, Italy, 1–3 September 2014, and the 26th International Conference on Computer Aided Verification (CAV 2014), Vienna, Austria, 18–22 July, 2014.

### **9.1.3. Journal**

#### *9.1.3.1. member of the editorial board*

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

Antoine Miné is member of the editorial board of The Scientific World Journal and of Conference Papers in Computer Science.

#### *9.1.3.2. reviewer*

In 2014, Jérôme Feret was a reviewer for BMC Systems Biology; Software, Practice and Experience; Transactions on Modeling and Computer Simulation; PLOS Computational Biology; BMC Bioinformatics; and Axioms.

Antoine Miné was a reviewr for the Computer Languages, Systems & Structures journal, the Software and Systems Modeling journal, and the Transactions on Programming Languages and Systems journal.

### **9.1.4. Grants selection**

#### *9.1.4.1. reviewer*

Jérôme Feret was a reviewer for the Swiss National Science Foundation.

### 9.1.5. Participation in Conferences

- CAV: Arlen Cox and Caterina Urban attended the conference on Computer Aided Verification (Vienna, Austria, July 22, 2014). Arlen Cox gave a talk on “QUICr: A Parametric Abstraction Domain for Sets of Numbers”.
- ECCB: Wassim Abou-Jaoudé attended the European Conference on Computational Biology (Strasbourg, France, September, 2014) and gave an invited talk on [8] at the workshop on Logical Modelling and Analysis of Cellular Networks.
- ESOP: Antoine Miné and Caterina Urban attended the 23rd European Symposium on Programming (Grenoble, France); Caterina Urban presented an article [27].
- EuSprIG: Tie Cheng attended the Conference of the European Spreadsheet Risk Interest Group (EuSprIG, July 2014).
- ISOLA: Xavier Rival attended the International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (Corfu, Greece, October 2014), and presented an article [24].
- ITP: Arnaud Spiwack attended the International Conference on Interactive Theorem Proving (ITP 2014, Vienna, July 2014), and presented an article [23].
- JRSIF: Mehdi Bouaziz attended the research day of SIF “De la formation à l’innovation en Informatique”, (Paris, France, September 2014).
- JSTools: Arlen Cox attended the workshop on JavaScript Tools (Uppsala, Sweden, July 28, 2014) and gave a talk on “JSAna with HOO: Automatically Verifying JavaScript Libraries without Client Code”.
- LICS: Patrick Cousot, Jérôme Feret, and Caterina Urban attended the Twenty-Ninth Annual ACM/IEEE Symposium on Logic in Computer Science (LICS 2014, Vienna, July 2014). Patrick Cousot gave an invited talk on [10].
- LSB: Jérôme Feret attended the 5th Workshop on Logic and Systems Biology (LSB 2014, Vienna, July 2014) and gave an invited talk on [16].
- NSAD: Mehdi Bouaziz, Tie Cheng, Arlen Cox, Antoine Miné, Xavier Rival, Antoine Toubhans and Caterina Urban attended the Workshop on Numerical and Symbolic Abstract Domains (NSAD 2014, München, Germany, September 2014).
- OCaml meetup: Mehdi Bouaziz attended the OCaml meetups (Paris, France, September and December 2014). Thibault Suzanne attended an OCaml meetup and gave a talk on “Implémentation d’une structure de données : Hash Array Mapped Tries”.
- POPL: Mehdi Bouaziz, Patrick Cousot, Radhia Cousot, Arlen Cox, Jérôme Feret, Antoine Miné, Xavier Rival and Caterina Urban attended the Symposium on Principles Of Programming Languages (POPL 2014, San Diego, USA); Xavier Rival chaired a session; Caterina Urban presented a poster.
- SAS: Mehdi Bouaziz, Tie Cheng, Patrick Cousot, Arlen Cox, Jérôme Feret, Antoine Miné, Xavier Rival, Antoine Toubhans, Caterina Urban, and Thibault Suzanne attended the Static Analysis Symposium (SAS 2014, München, Germany, September 2014); Xavier Rival chaired a session; Arlen Cox presented an article [14]; Antoine Toubhans presented an article [25]; Caterina Urban presented an article [26].
- SASB: Wassim Abou-Jaoudé and Jérôme Feret attended the Workshop on Static Analysis and Systems Biology (SASB 2014, München, Germany, September 2014). Jérôme Feret presented an article [16].
- TAPAS: Mehdi Bouaziz, Tie Cheng, Patrick Cousot, Arlen Cox, Antoine Miné, Xavier Rival, Antoine Toubhans and Caterina Urban attended the Workshop on Tools for Automatic Program Analysis (TAPAS 2014, München, Germany, September 2014).
- TYPES: Mehdi Bouaziz attended the Types 2014 meeting (TYPES 2014), Paris, France, May 2014).

VEMDP: Jérôme Feret attended the International Workshop on Verification of Engineered Molecular Devices and Programs (VEMDP 2014, Vienna, Austria, July 2014).

VMCAI: Mehdi Bouaziz, Patrick Cousot, Radhia Cousot, Arlen Cox, Jérôme Feret, Antoine Miné, Xavier Rival and Caterina Urban attended the Conference on Verification, Model-Checking and Abstract Interpretation (VMCAI 2014, San Diego, USA); Xavier Rival chaired the conference [32]; Jérôme Feret chaired a session; Antoine Miné presented an article [21].

WODES: Wassim Abou-Jaoudé attended the International Workshop on Discrete Event Systems (WODES 2014, Cachan, France, May 2014).

WST: Caterina Urban attended the 14th International Workshop on Termination and presented an article [30].

### 9.1.6. Seminars and talks

- Wassim Abou-Jaoudé gave some talks on “Logical modeling of T-helper cell differentiation and plasticity” [8] at Instituto Gulbenkian de Ciência (Oeiras, Portugal) in June 2014 and Max Planck Institute for Molecular Genetics (Berlin, Germany) in November 2014.
- Mehdi Bouaziz attended to the Dagstuhl Seminar on Next Generation Static Analysis Tools (Wadern, Germany) in August 2014 and gave two talks on “Introduction to Abstract Interpretation: static analysis and beyond” at the séminaire des doctorants du département d’informatique de l’École normale supérieure (ENS Paris, Paris, France) in November 2014, and at the Séminaire Francilien de Sûreté de Fonctionnement, (École Centrale Paris) in November 2014.
- Arlen Cox gave a talk on “HOO: Heap with Open Objects” at the Dagstuhl Seminar for Scripting Languages and Frameworks: Analysis and Verification (Wadem, Germany) in June 2014, a talk on “Statically Analyzing Object-Manipulating JavaScript Libraries without Client Code” at the Institute for Defense Analysis (Bowie, Maryland, USA) in September 2014, and talks on “JSAna with HOO: Automatically Verifying JavaScript Libraries without Client Code” at Facebook (London, U.K) in August 2014, at Cyberpoint Lab (Baltimore, Maryland, USA) in September 2014, at Apple (Cupertino, California, USA) in November 2014, at Draper Labs (Boston, Massachusetts, USA) in November 2014, and at MathWorks (Natick, Massachusetts, USA) in November 2014.
- Jérôme Feret gave a talk “An algebraic approach for inferring and using symmetries in rule-based models” at the Dagstuhl Seminar on Next Generation Static Analysis Tools (Wadern, Germany) in August 2014 and a talk on “Rule-Based Modeling” at the Dagstuhl Seminar on Multiscale Spatial Computational Systems Biology (Wadern, Germany) in November 2014
- Xavier Rival gave a talk “Towards precise and scalable static analyses” at the 54th IFIP WG 2.4 Group Meeting (Monterey, California, USA) in February 2014, a talk on “Verification of safety critical embedded software” at the Retraite du Département d’Informatique (Belleme, Normandie, France) in May 2014, talks on “Modular Construction of Shape-Numeric Analyzers” at Aarhus University (Aarhus, Denmark) in June 2014, at East China Normal University (Shanghai, China) in July 2014 and at Northern University for Defense Technology (Changsha, China) in July 2014, a talk on “Construction of abstract domains for heterogeneous memory properties” at the Dagstuhl Seminar on Next Generation Static Analysis Tools (Wadern, Germany) in August 2014, and a talk on “Type Verification of Spreadsheet Applications” at the 55th IFIP WG 2.4 Group Meeting (Stellenbosch, South Africa) in November 2014.
- Antoine Toubhans gave a talk on “Composite abstract domains for shape analysis” at the Seminar of the Gallium Group (Inria Paris-Rocquencourt), in September 2014.
- Antoine Miné gave a talk on “ A method to infer inductive numeric invariants inspired from Constraint Programming” at Decision Procedures and Abstract Interpretation (Dagstugh Seminar 14351) in August 2014, a seminar on “Mixing abstract interpretation and constraint programming techniques” at Laboratoire VERIMAG (Grenoble, France) in October 2014, a poster presentation on “The Astrée static analyzer” at Evaluating Software Verification Systems: Benchmarks and Competitions (Dagstugh Seminar 14171) in April 2014.

- Caterina Urban gave a seminar on “Proving Guarantee and Recurrence Temporal Properties by Abstract Interpretation” at University of Udine (Italy) in December 2014, a seminar on “Proving Guarantee and Recurrence Temporal Properties by Abstract Interpretation” at ETH Zurich in November 2014, a seminar “Automatic Inference of Ranking Functions by Abstract Interpretation” at Queen Mary University of London in October 2014, a talk on “Automatic Inference of Ranking Functions by Abstract Interpretation” at Dagstuhl Seminar 14352 “Next Generation Static Software Analysis Tools” in August 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at University College London in June 2014, a seminar on “An Abstract Domain to Infer Ordinal-Valued Ranking Functions” at Inria Rennes, Rennes in May 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at Séminaire du DI ENS in May 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at Inria Paris-Rocquencourt in March 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at IBM Thomas J. Watson Research Center in January 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence:
  - Mehdi Bouaziz, Concepts Informatique (CI2), 22 ETD, L1, Université Paris-Diderot, Paris, France.
  - Mehdi Bouaziz, Intensive training in algorithmics, 35 ETD, Epita, Le Kremlin-Bicêtre, octobre-novembre 2014.
  - Mehdi Bouaziz, Preparation to the International Olympiad in Informatics, 40h ETD, Epita, Le Kremlin-Bicêtre, France.
  - Tie Cheng, Introduction to algorithmics, 36h ETD, L3, École Polytechnique, Palaiseau, France.
  - Jérôme Feret, and Caterina Urban, Mathematics, 40h ETD, 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.
  - Antoine Toubhans, Functional Analysis Class, 34h ETD, L2, Université Pierre et Marie Curie (UPMC), Paris, France.
  - Caterina Urban, Mathematics, 26.5h ETD, Bachelor Program “Frontières du Vivant”, Université Paris Descartes.
  - Thibault Suzanne, Introduction to Programming, 72h ETD, L1, Université Paris Diderot.
- Master:
  - Vincent Danos and Jérôme Feret (with Jean Krivine), Computational Biology, 20h ETD, M1. Interdisciplinary Approaches to Life Science (AIV), Master Program, Université Paris-Descartes, France.
  - 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, East China Normal University, Shanghai, China.

### 9.2.2. Supervision

PhD:

- Arlen Cox, Parametric heap abstraction for dynamic languages libraries, University of Colorado at Boulder (USA), 17 of November 2014, supervised jointly by Bor-Yuh Evan Chang (University of Colorado), Xavier Rival (École Normale Supérieure) and Sriram Sankaranarayana (University of Colorado).

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).
- Arlen Cox, Representing dynamic languages heaps using parametric, modular, container abstract domains, 2013, Xavier Rival, École Normale Supérieure, supervised jointly by Bor-Yuh Evan Chang (University of Colorado), Xavier Rival (École Normale Supérieure) and Sriram Sankaranarayana (University of Colorado).
- Tie Cheng, Static analysis of spreadsheet macros, October 2011, Xavier Rival, École Polytechnique.
- Vincent Laviron, Static Analysis of Functional Programs by Abstract Interpretation, October 2009, Patrick Cousot, École Normale Supérieure.
- 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
- Caterina Urban, Static Analysis of Functional Temporal Properties of Programs by Abstract Interpretation, November 2011, Radhia Cousot and Antoine Miné, École Normale Supérieure.
- Thibault Suzanne, Thread-modular static analysis of concurrent programs in the presence of weak memory models, October 2014, Antoine Miné, École Normale Supérieure.

### 9.2.3. Juries

Jérôme Feret was in the jury of the PhD thesis of Arlen Cox (17 of November 2014, University of Colorado, Boulder, USA). Jérôme Feret was reviewer of the PhD thesis of Peter Kreyßig (to be defended, Friedrich Schiller University, Jena, Germany).

Xavier Rival took part to the jury of the Habilitation Thesis of Francesco Zappa-Nardelli (16th of January 2014, ENS Paris) and to the jury of the Habilitation Thesis of Bertrand Jeannet (27 of March 2014, Université Joseph Fourier, Grenoble).

Antoine Miné is reviewer for the PhD thesis of Vivien Maisonneuve (École des Mines de Paris, February 2015). Antoine Miné was reviewer and in the jury of the PhD thesis of Julien Henry (Université de Grenoble, 13 October 2014).

## 9.3. Popularization

Mehdi Bouaziz gave a course on “Apprendre et enseignement — la programmation informatique des bibliothèques”, Maire de Paris, 12 hours, june-july 2014. Xavier Rival gave a talk on “Safety critical embedded softwares and their verification” at the Ceremony for the “Médailles of Engineering Sciences” in April 2014. Xavier Rival participated to the organization of the “Nuit des Sciences” in June 2014.



## AOSTE Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. general chair, scientific chair

- Julien Deantoni: GeMoc'2014 (workshop) [43]
- Marie-Agnès Peraldi-Frati: CIEL'2014 [35]

#### 9.1.2. Scientific events selection

##### 9.1.2.1. responsible of the conference program committee

- Laurent George: PC co-chair of 19th International Conference on Reliable Software Technologie - Ada-europe'2014, and of Workshop on Mixed Criticality for Industrial Systems (WMCIS'2014)

##### 9.1.2.2. member of conference program committee

- Robert de Simone: EmSoft'2014, FDL'2014, Memocode'2014.
- Yves Sorel: RTNS 2014, DASIP 2014, EMSOFT 2014, ADA-Europe 2014
- Dumitru Potop Butucaru: Memocode'2014, ACSOFT 2014, EsISyn 2014
- Julien Deantoni: CIEL 2014, CAL 2014.

#### 9.1.3. Journal

##### 9.1.3.1. member of the editorial board

Yves Sorel: Traitement du Signal Journal

## 9.2. Teaching - Supervision - Juries

### 9.2.1. 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: Yves Sorel, Optimization of distributed real-time embedded systems, 24H, M2, University Paris Sud

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

Master: Yves Sorel, Specification and formal models for embedded systems, 28H, M2, ENSTA, Paris

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

Master : Julien Deantoni, Encadrement Projet en équipe, 31h, M1, Polytech'Nice

Master : Julien Deantoni, Encadrement Apprentissage, 8h, M1, Polytech'Nice

Master : Julien Deantoni, Architecture machine, 24h, niveau M1, Polytech'Nice, France.

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 : Julien Deantoni, Ingénierie Dirigée par les modèles avancée, 9h, M2 Esprit Tunis, Tunisia.

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, Architecture des ordinateurs, 45h, L3, UNS.

Master: Frédéric Mallet, Programmation Avancée et Design Patterns, 93h, M1, UNS.

Master: Frédéric Mallet, Java pour l'Informatique Industrielle, 24h, M1, UNS.

Master: Frédéric Mallet, Architectures des ordinateurs, 12h, M1, UNS.

Master: Frédéric Mallet, Formal Models for Network-On-Chips, 3h, M2, UNS.

### 9.2.2. Supervision

PhD in progress: Cristian Maxim, Probabilistic Real-Time Systems, University of UMPC-Paris-Sorbonne, co-supervised by Liliana Cucu-Grosjean with Benoit Triquet (Airbus)

PhD: Falou Ndoeye, Multiprocessor real-time scheduling taking into account preemption cost [19]; defended April 2014, supervised by Yves Sorel

PhD: Manel Djemal, *Reconciling performance and predictability on a NoC-based MPSoC using off-line scheduling techniques* [18], EDITE/UPMC, defended June 27th 2014, co-supervised by Alix Munier (UPMC/Lip6) and D. Potop-Butucaru.

PhD: Thomas Carle, *Efficient compilation of embedded control specifications with complex functional and non-functional properties* [16], EDITE/UPMC, defended Oct. 31st 2014, supervised by D. Potop-Butucaru.

PhD in progress: Salah Saidi, *Real-time scheduling for distributed simulation of numerical models*, University of UMPC-Paris-Sorbonne, co-supervised by Nicolas Pernet (IFPEN) and Yves Sorel

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: Ying Lin, *Formal Analysis of polychronous models with MARTE/CCSL*, East China Normal University, started September 2011, supervised by Jing Liu (ECNU), co-supervised by Frédéric Mallet.

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: Yann Bondue, *Towards formal multimodal languages*, UNS, started December 2014, supervised by Julien Deantoni.

**9.2.3. Juries**

- Robert de Simone: PhD examiner of Mariem Abdelmoula (UNS)
- Yves Sorel: PhD examiner of Philippe Thierry (University Paris Est)
- Laurent George: PhD reviewer of Georges-Arnaud KEMAYO (ENSMA Poitiers), Vincent LEGOUT (Telecom ParisTech) and Gurulingesh RARAVI (University of Porto).
- Liliana Cucu-Grosjean: PhD reviewer of Maxime Cheramy (University of Toulouse-INSA) and Vladimir-Alexandru Paun (Ecole Polytechnique, Paris)
- Dumitru Potop Butucaru: PhD examiner of Chan Ngo (Univ. Rennes 1)

## ARIC Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific animation

- Guillaume Hanrot is director of the LIP laboratory (Laboratoire de l'Informatique du Parallélisme) since April 1, 2014. He was deputy director of the LIP before;
- Jean-Michel Muller is co-director of the Groupement de Recherche (GDR) *Informatique Mathématique* of CNRS;
- Gilles Villard has been director of the LIP laboratory until April 1, 2014.

### 9.1.2. Scientific events organisation

#### 9.1.2.1. general chair, scientific chair

Damien Stehlé is a member of the steering committee of the PQCrypto conference series. He is also a member of the steering committee of the Cryptography and Coding French research grouping (C2).

Claude-Pierre Jeannerod is a member of the scientific committee of JNCF (Journées Nationales de Calcul Formel).

#### 9.1.2.2. member of the organizing committee

Bruno Salvy was one of the organizers of a workshop “Challenges in 21st Century Experimental Mathematical Computation”, at ICERM, Providence, Rhode Island.

Nicolas Brisebarre and Jean-Michel Muller organized a one week workshop “Formal Proof, Symbolic Computation and Computer Arithmetic” which took place from February 3 to February 7 (50 participants), in the framework of a whole month devoted to “Mathematical Structures of Computation” in Lyon.

### 9.1.3. Scientific events selection

#### 9.1.3.1. member of the conference program committee

Jean-Michel Muller was a member of the program committees of ASAP'2014 and ARITH'2015.

Damien Stehlé was a member of the program committees of LATINCRYPT'14, PQCrypto'14, and ACISP'14.

Bruno Salvy was a member of the program committee of AofA'2014.

Fabien Laguillaumie was a member of the program committee of Africacrypt'14.

Benoît Libert was a member of the program committee of ACM-CCS'14.

### 9.1.4. Journal

#### 9.1.4.1. member of the editorial board

- Jean-Michel Muller is a member of the editorial board of the *IEEE Transactions on Computers*. He is a member of the board of foundation editors of the *Journal for Universal Computer Science*. He was co-guest editor of a special issue of the journal *Science of Computer Programming* [32].
- Bruno Salvy is a member of the editorial boards of the *Journal of Symbolic Computation*, of the *Journal of Algebra* (section Computational Algebra) and of the collections *Texts and Monographs in Symbolic Computation* (Springer) and *Mathématiques et Applications* (SMAI-Springer).
- Gilles Villard is a member of the editorial board of the *Journal of Symbolic Computation*.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master: Jean-Michel Muller, *Floating-Point Arithmetic and Formal Proof* (8h + coordination of the 24h course), ENS de Lyon.

Master: Nicolas Brisebarre, *Introduction to Effective Approximation Theory* (24h), Hanoi Institute of Mathematics (Vietnam).

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

Master: Vincent Lefèvre, *Arithmétique des ordinateurs* (20h), M2 ISFA (Institut de Science Financière et d'Assurances), Université Claude Bernard Lyon 1.

Professional teaching: Nathalie Revol, *Contrôler et améliorer la qualité numérique d'un code de calcul industriel* (2h30), Collège de Polytechnique.

Master: Fabien Laguillaumie, *Cryptography, Error Correcting Codes*, 150h, Université Claude Bernard Lyon 1.

Master: Damien Stehlé, *Cryptography*, 24h, ENS de Lyon.

Master: Benoît Libert, *Advances cryptographic protocols*, 24h, ENS de Lyon.

Research school: Adeline Langlois, Fabien Laguillaumie, Damien Stehlé, *Chiffrement avancé à partir du problème Learning With Errors* (4h30), École de printemps Codes et Crypto, Université de Grenoble.

Research school: Adeline Langlois, Fabien Laguillaumie, Damien Stehlé, *Chiffrement avancé à partir du problème Learning With Errors* (4h30), École Jeunes Chercheurs en Informatique Mathématique, Université de Caen.

Research school: Damien Stehlé, *Cryptographie reposant sur les réseaux euclidiens* (3h), Colloque Jeunes Chercheurs en Théorie des Nombres.

### 9.2.2. Supervision

PhD : Nicolas Brunie, *Contribution à l'arithmétique des ordinateurs et applications aux systèmes embarqués*, ENS Lyon, May 2014, co-supervised by Florent de Dinechin (and Renaud Ayrignac).

PhD : Adeline Langlois, *Lattice - Based Cryptography - Security Foundations and Constructions*, ENS Lyon, October 2014, supervised by Damien Stehlé.

PhD : Philippe Théveny, *Numerical quality and high performance in interval linear algebra on multi-core Processors*, ENS Lyon, October 2014, supervised by Nathalie Revol.

PhD in progress: Silviu Filip, *Filtroptim : tools for an optimal synthesis of numerical filters*, since September 2013, co-supervised by Nicolas Brisebarre and Guillaume Hanrot.

PhD in progress: Vincent Neiger, *Multivariate interpolation in computer algebra: efficient algorithms and applications*, since September 2013, co-supervised by Claude-Pierre Jeannerod and Gilles Villard (together with Éric Schost (Western University, London, Canada)).

PhD in progress: Marie Paindavoine, *Méthodes de calculs sur des données chiffrées*, since October 2013 (Orange Labs - UCBL), co-supervised by Fabien Laguillaumie (together with Sébastien Canard).

PhD in progress : Antoine Plet, *Contribution à l'analyse d'algorithmes en arithmétique virgule flottante*, since September 2014, co-supervised by Nicolas Louvet and Jean-Michel Muller.

PhD in progress : Valentina Popescu, *Vers des bibliothèques multi-précision certifiées et performantes*, since September 2014, co-supervised by Mioara Joldes (LAAS) and Jean-Michel Muller.

PhD in progress : Serge Torres, *Some tools for the design of efficient and reliable function evaluation libraries*, since September 2010, co-supervised by Nicolas Brisebarre and Jean-Michel Muller.

PhD in progress: Louis Dumont, *Algorithmique efficace pour les diagonales, applications en combinatoire, physique et théorie des nombres*, co-supervised by Alin Bostan (SpecFun team) and Bruno Salvy.

PhD in progress: Sébastien Maulat, *Évaluation efficace et certifiée de fonctions différentiellement finies en précision modérée*, since september 2014, supervised by Bruno Salvy.

PhD in progress: Stephen Melczer, *Effective analytic combinatorics in one and several variables*, co-supervised by George Labahn (U. Waterloo, Canada) and Bruno Salvy.

### 9.2.3. Juries

In 2014, Jean-Michel Muller was vice-chair of the “Comité d’évaluation scientifique mathématiques–informatique théorique” of the ANR (the French national research agency). He participated to the PhD committees for the defenses of Laurent Thévenoux (Univ. Perpignan) and Karim Bigou (Univ. Rennes 1). He participated to the Habilitation committees for the defenses of Christophe Denis (Univ. Perpignan), Sylvie Boldo (Paris Sud Univ.) and David Defour (Univ. Perpignan). He was a member of the Scientific Council of ENS de Lyon until june 2014, and he is a member of the Scientific Council of CERFACS (Toulouse).

Bruno Salvy was a member of the PhD committees of Julien Courtien (Bordeaux), Jules Svartz (UPMC), and Pierre Lairez (École polytechnique).

Nathalie Revol was a member of the PhD committee of Olivier Mullier (École polytechnique). Nathalie Revol was in the hiring committee for junior researchers (CR) of Inria Grenoble - Rhône-Alpes and in the hiring committee for an assistant professor position at Université Paris Sud.

Damien Stehlé was reviewer of the PhD theses of Robert Fitzpatrick (Royal Holloway, UK), Tancrede Lepoint (ENS Paris, Univ. du Luxembourg and CryptoExperts) and Nicola di Pietro (Univ. Bordeaux).

Fabien Laguillaumie was reviewer for the PhD thesis of Alain Patey (Telecom ParisTech). He was part of the HDR committee of Damien Vergnaud (ENS).

Nicolas Louvet was a member of a hiring committee for an associate professor position at the university Montpellier 2.

## 9.3. Invited Conferences

- Damien Stehlé gave an invited talk *Secure lattice codes for the gaussian wiretap channel*, at the Algebra, Codes and Networks symposium, Bordeaux, France, in June 2014;
- Damien Stehlé gave an invited talk *The Learning with Errors problem*, at the Oberwolfach workshop on combinatorial optimization, Oberwolfach, Germany, in November 2014;
- Jean-Michel Muller gave two invited talks, *On the maximum relative error when computing  $x^n$  in floating-point arithmetic* (in Tokyo) and *On complex multiplication and division with an FMA* (in Kyoto), for the conference INVA 2014, Japan, in March 2014;
- Jean-Michel Muller gave an invited talk *Getting tight error bounds in floating-point arithmetic: illustration with complex functions, and the real  $x^n$  function*, at the workshop NSV’2014: Numerical Software Verification, Vienna, in July 2014.
- Bruno Salvy gave an invited talk *Algorithmic variations on linear differential equations* at the MBM2014 day organized in Bordeaux in October when Mireille Bousquet-Mélou received the silver medal of the CNRS. He was also invited to give a talk in Oberwolfach, for their meeting on Enumerative Combinatorics in March, where he talked about *Multiple Binomial Sums*, of which he had given a previous version in February at the “Holonomy days” where he had been invited in Grenoble.

- Nathalie Revol gave invited talks at the workshop “Challenges in 21st Century Experimental Mathematical Computation” at ICERM, Providence, Rhode Island, and at French seminars: CEA-LIST, Inria comité des projets, Aristote.
- Fabien Laguillaumie gave an invited scientific committee talk *Anonymity-oriented Signatures based on Lattices* at the YACC’14 conference, Porquerolles, France, in June 2014.

#### 9.4. Popularization

- Sylvie Boldo (Proval project) and Jean-Michel Muller wrote a popular science paper *Des ordinateurs capables de calculer plus juste* in the journal *La Recherche* [36].
- Nicolas Brisebarre co-organizes scientific conferences, called «Éclats de sciences», at Maison du Livre, de l’Image et du Son in Villeurbanne. Around three conferences take place per year.
- Nathalie Revol gave talks for pupils at collèges and lycées, as an incentive to choose scientific careers: lycée Camille Vernet (Valence, Drôme), lycée Jérémie de la Ville (Charlieu, Loire), lycée Gabriel Fauré (Annecy, Haute-Savoie), collège Jean Renoir (Neuville-sur-Saône, Rhône). During the “Week of mathematics”, she gave a 2-hour talk at lycée de la Côtière (La Boisse, Ain). She gave the inaugural conference of the congress “Math en Jean’s” in Lyon and the conference for the scientific camp “Math C2+” in Montbonnot. She was present for the “Mondial des Métiers” (Eurexpo Lyon, Chassieu, Rhône). For the Science Fair, she gave 2 talks at MMI, ENS de Lyon. In 2014, she met over 1000 pupils.

## ATEAMS Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. General chair, scientific chair

- Jurgen Vinju: General Chair, The 7th International Conference on Software Language Engineering (SLE), Steering committee member SLE.

##### 8.1.1.2. Member of the organizing committee

- Davy Landman: Web chair, The 7th International Conference on Software Language Engineering (SLE).
- Tijs van der Storm: Social Media Chair, The 7th International Conference on Software Language Engineering (SLE); co-organizer Belgium Netherlands Seminar on Software Evolution (BENEVOL'14), co-organizer Software Development Automation'14 (SDA'14).

#### 8.1.2. Scientific events selection

##### 8.1.2.1. Member of the conference program committee

- Paul Klint: WCRE/CSMR ERA 2014.
- Tijs van der Storm: SLE'14, DSLDI'14, SEMS'14, FTJP'14, TTC'14.
- Jurgen Vinju: WCRE/CSMR Tool track.

##### 8.1.2.2. Reviewer

- Tijs van der Storm: PLDI'14.

#### 8.1.3. Journal

##### 8.1.3.1. Member of the editorial board

- Jan van Eijck: Editor of the Journal of Logics and their Applications.
- Paul Klint: Editor Science of Computer Programming, editor Springer LNCS Series on Services Science.
- Jurgen Vinju: co-editor ERCIM news, special issue on Software Quality.

##### 8.1.3.2. Reviewer

- Jan van Eijck: Reviewer for ESSLLI, Journal of Semantics, Journal of Logic and Computation, Fundamenta Informaticae, Synthese, Journal of Philosophical Logic, Journal of Logic, Language and Information, Cambridge University Press.
- Tijs van der Storm: Journal of Software & Systems Modeling, Science of Computer Programming, Computer Languages, Computer Languages, Systems and Structures, Automated Software Engineering.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master : Jan van Eijck, “Software Testing”, 6 EC, Master Programme Software Engineering, Universiteit van Amsterdam, The Netherlands.

Master: Jan van Eijck, “Functional Specification of Algorithms”, 6 EC, Master Programme Logic, Universiteit van Amsterdam, The Netherlands.



Master : Tijs van der Storm, “Software Construction”, 6 EC, Universiteit van Amsterdam, The Netherlands.

### 8.2.2. Supervision

PhD : Jeroen van den Bos, “Gathering Evidence: Model-Driven Software Engineering in Automated Digital Forensics”, Universiteit van Amsterdam, January, 9th, 2014, Paul Klint, Tijs van der Storm.

PhD in progress : Ali Afroozeh, “Advances in GLL Parsing”, 2012, Paul Klint, Jurgen Vinju.

PhD in progress : Pablo Inostroza Valdera, “Modularity in DSL development”, 2013, Paul Klint, Tijs van der Storm.

PhD in progress : Anastasia Izmaylova, “Language Parametric Refactoring”, 2011, Paul Klint, Jurgen Vinju.

PhD in progress : Atze van der Ploeg, “Efficient Abstractions for Visualization and Interaction”, 2011, Paul Klint, Tijs van der Storm.

PhD in progress : Riemer van Rozen, “Model-Driven Game Development”, 2013, Paul Klint, Tijs van der Storm.

PhD in progress : Michael Steindorfer, “Efficient Data Structures for Meta Programming”, 2012, Paul Klint, Jurgen Vinju.

PhD in progress : Jouke Stoel, “Model Driven Infrastructure for Core Banking”, 2014, Jurgen Vinju, Tijs van der Storm.

### 8.2.3. Juries

Jurgen Vinju acted as reading committee member of the PhD of Maartje de Jonge, at TU Delft.

## 8.3. Popularization

Paul Klint:

- De Softwarerevolutie, Valedictory lecture.
- Nemo, Hoe ontstond de eerste computer?
- Nemo/Klokhuis, Hoe ontstond de eerste computer?
- BYOM: Bring Your Own Metrics (EQUA Symposium).
- The Revenge of the Coroutines (SEN Symposium).

Tijs van der Storm:

- Who’s afraid of Object Algebras?, Joy of Coding 2014.
- Hack your DSL with Rascal, CodeGeneration 2014.
- The Rascal Language Workbench, NSPyre, 2014.
- I am plain text, – resistance is futile, Sioux, 2014.
- Rascal: functional programming for source code analysis and transformation, guest lecture at Hogeschool van Arnhem en Nijmegen (HAN).

Jurgen Vinju:

- De allereerste computerprogrammeur Ada Lovelace (1815 - 1852), Kennis van NU (radio appearance).
- Complexe Software, Eindhovens Dagblad.
- De eerste programmeur, VPRO Gids.

Jan van Eijck is member of the Advisory Board (‘Raad van Advies’) of the Artificial Intelligence Curriculum, University of Groningen (since Summer 2013). Paul Klint acts as treasurer of the EAPLS and was directory of the Master Software Engineering at Universiteit van Amsterdam (UvA) until September 1, 2014. He is also board member of the Instituut voor Programmatuur en Algoritmiek (IPA). Tijs van der Storm is head of the internship committee at CWI, co-organizer of the CWI Scientific Meeting and secretary of the CWI works council.

## CAIRN Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Selection

#### 9.1.1.1. Responsible of Conference Program Committee

D. Chillet was Track Chair of the 12th IEEE/IFIP International Conference on Embedded and Ubiquitous Computing (EUC).

O. Sentieys was Track Chair at IEEE NEWCAS.

A. Tisserand is program co-chair of the 22nd IEEE Symposium on Computer Arithmetic (Lyon, 22-24 June 2015).

A. Tisserand was the program co-chair of ComPAS national conference, Conférence d'informatique en Parallélisme, Architecture et Système (Neuchâtel Suisse, 22-25 April 2014).

#### 9.1.1.2. Member of Conference Program Committee

E. Casseau was a member of the technical program committee of SiPS.

D. Chillet was member of the technical program committee of HiPEAC RAPIDO, HiPEAC WRC, MCSoC, DCIS, ComPAS, and DASIP.

M. Gautier was a member of the technical program committee of IEEE WCNC, IEEE PIMRC, IEEE ICCVE, and IARIA COCORA.

C. Wolinski was a member of the technical program committee of IEEE ASAP and DSD.

A. Tisserand was a member of technical program committee of DASIP, IEEE NEWCAS, IEEE PATMOS, and IEEE Reconfig.

O. Sentieys was a member of technical program committee of IEEE/ACM DATE, IEEE FPL, IEEE/ACM ICCAD, ACM ENSSys, ACM SBCCI, IFIP/IEEE VLSI-SoC, FTFC, GRETSI.

### 9.1.2. Journal

#### 9.1.2.1. member of the editorial board

D. Chillet is member of the Editor Board of Journal of Real-Time Image Processing (JRTIP).

O. Sentieys is member of the editorial board of Journal of Low Power Electronics, Advances in Computer Engineering, and International Journal of Distributed Sensor Networks.

A. Tisserand is Associate Editor of IEEE Transactions on Computers. He is a member of the editorial board of the International Journal of High Performance Systems Architecture.

### 9.1.3. Other Scientific Responsibilities

D. Chillet is member of the Board of Directors of Grets Association.

F. Charot, O. Sentieys and A. Tisserand are members of the steering committee of a CNRS spring school for graduate students on embedded systems architectures and associated design tools (ARCHI).

O. Sentieys and A. Tisserand are members of the steering committee of a CNRS spring school for graduate students on low-power design (ECOFAC).

O. Sentieys is a member of the steering committee of the GDR SOC-SIP. He is the chair of the IEEE Circuits and Systems (CAS) French Chapter. In 2013, he was an expert for some scientific organizations (ANR, AERES).

A. Tisserand is co-organizer and president of scientific council of Seminar on Security of Embedded Electronic Systems (IRISA-DGA).

## 9.2. Seminars and Invitations

O. Berder gave an invited lecture at SENSO 2014 conference in Ecole des Mines, Gardanne, France, in October 2014.

O. Berder gave an invited lecture at Common Colloquium GDR Ondes and GDR ISIS in Telecom ParisTech, Paris, in December 2014.

A. Courtay gave an invited talk at the NASA/ESA Conference on Adaptive Hardware and Systems (AHS'14), Leicester, UK, on Dynamically Reconfigurable Embedded FPGA Systems in July 2014.

O. Sentieys gave an invited talk at the 24th International Conference on Field Programmable Logic and Applications (workshop on Self-adaptive heterogeneous many-core based on Flexible Tiles), Munich, Germany, in September 2014 on Runtime Mapping of Hardware Accelerators on the Embedded FPGA Layer.

O. Sentieys gave an invited talk at GreenDays'14 on Domain-Specific Computing Platforms: the Ultimate Energy-Efficiency of Hardware Accelerators.

O. Sentieys gave an invited lecture at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Ottawa, Canada, in January 2014 on FlexTiles: runtime mapping of hardware accelerators on 3D self-adaptive heterogeneous manycore.

A. Tisserand gave an invited lecture at the CNRS ECOFAC 2014 spring school on low power arithmetic circuits.

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

- O. Berder: introduction to signal processing, 38h, ENSSAT (L3)
- O. Berder: microprocessors and digital systems, 30h, ENSSAT (L3)
- O. Berder: wireless communications, 23h, ENSSAT (M2)
- O. Berder: ad hoc networks, 58h, ENSSAT (M1-M2)
- O. Berder: signal processing, 12h, IUT Lannion (L2)
- E. Casseau: signal processing, 16h, ENSSAT (L3)
- E. Casseau: low power design, 6h, ENSSAT (M1)
- E. Casseau: real time design methodology, 24h, ENSSAT (M1)
- E. Casseau: computer architecture, 36h, ENSSAT (M1)
- E. Casseau: system on chip and verification, 10h, Master by Research (SISEA) and ENSSAT (M2)
- E. Casseau: high level synthesis, 12h, Master by Research (SISEA) and ENSSAT (M2)
- S. Derrien: component and system synthesis, 20h, Master by Research (MRI ISTIC) (M2)
- S. Derrien: computer architecture, 12h, ENS Cachan (L3)
- S. Derrien: computer architecture, 24h, ISTIC (L3)
- S. Derrien: introduction to operating systems, 8h, ISTIC (M1)
- S. Derrien: embedded architectures, 48h, ISTIC (M1)
- S. Derrien: high-level synthesis, 6h, ISTIC (M1)
- S. Derrien: software engineering project, 40h, ISTIC (M1)
- F. Charot: processor architecture, 25h University of Science and Technology of Hanoi (M1)
- A. Courtay: processor architecture, 24h, ENSSAT (L3)

- A. Courtay: digital electronics, 32h, ENSSAT (L3)
- A. Courtay: digital system design, 12h, ENSSAT (L3)
- A. Courtay: digital electronics communication interfaces, 68h, ENSSAT (M1)
- A. Courtay: processor architecture, 25h, USTH (M1)
- D. Chillet: embedded processor architecture, 20h, ENSSAT (M1)
- D. Chillet: VHDL, 10h, ENSSAT (M1)
- D. Chillet: multimedia processor architectures, 24h, ENSSAT (M2)
- D. Chillet: advanced processor architectures, 24h, Master by Research (SISEA) and ENSSAT (M2)
- D. Chillet: low-power digital CMOS circuits, 6h, Telecom Bretagne and University of Occidental Brittany (UBO) (M2)
- M. Gautier: electronics, 42h, IUT Lannion (L1)
- M. Gautier: telecommunications, 114h, IUT Lannion (L1)
- M. Gautier: digital communications, 28h, IUT Lannion (L2)
- C. Killian: digital electronics, 37h, IUT Lannion (L1)
- C. Killian: signal processing, 36h, IUT Lannion (L2)
- C. Killian: automated measurements, 40h, IUT Lannion (L2)
- C. Killian: measurement chain, 20h, IUT Lannion (L2)
- C. Killian: embedded systems programming, 12h, IUT Lannion (L2)
- A. Kritikakou: computer architecture, 50h, ISTIC, Univ. Rennes 1 (L3)
- A. Kritikakou: operating systems, 24h, ISTIC, Univ. Rennes 1 (L3)
- R. Rocher: electricity, 16h, IUT Lannion (L1)
- R. Rocher: electronics, 44h, IUT Lannion (L1)
- R. Rocher: telecommunications, 82h, IUT Lannion (L1)
- R. Rocher: signal processing, 12h, IUT Lannion (L2)
- R. Rocher: digital communications, 48h, IUT Lannion (L2)
- P. Scalart: non-linear optimisation, 18h, Master by Research (SISEA) and ENSSAT (M2)
- P. Scalart: parametric modelisation, optimal and adaptive filters, 24h, Master by Research (SISEA) and ENSSAT (M2)
- P. Scalart: source coding, 14h, Master by Research (SISEA) and ENSSAT (M2)
- P. Scalart: cellular networks, 24h, ENSSAT (M2)
- P. Scalart: digital communication systems, 32h, ENSSAT (M1)
- P. Scalart: random signals and systems, 12h, ENSSAT (M1)
- O. Sentieys: digital signal processing, 40h, ENSSAT (M1)
- O. Sentieys: VLSI integrated circuit design, 40h, ENSSAT(M1)
- A. Tisserand: multiprocessor architectures and programming, 20h, ENSSAT and Master by Research (SISEA) (M2)
- A. Tisserand: hardware computer arithmetic operators, 6h, Master by Research (SISEA) (M2)
- B. Vrigneau: electronics, 36h, IUT Lannion (L1)
- B. Vrigneau: telecommunications, 128h, IUT Lannion (L1)
- B. Vrigneau: digital communications, 28h, IUT Lannion (L1)
- C. Wolinski: computer architectures, 92h, ESIR (L3)
- C. Wolinski: design of embedded systems, 48h, ESIR (M1)
- C. Wolinski: signal, image, architecture, 26h, ESIR (M1)
- C. Wolinski: programmable architectures, 10h, ESIR (M1)
- C. Wolinski: component and system synthesis, 10h, Master by Research (MRI ISTIC) (M2)

### 9.3.2. Teaching Responsibilities

C. Wolinski is the Director of ESIR.

P. Quinton is the director of Ecole Normale Supérieure de Rennes.  
 D. Chillet is the Director of Academic Studies of ENSSAT.  
 P. Scalart is the Head of the Electronics Engineering department of ENSSAT.  
 S. Derrien is the responsible of the first year of the Master of Computer Science at ISTIC since Sep. 2012.  
 O. Sentieys is responsible of the "Embedded Systems" branch of the SISEA Master by Research.  
 D. Chillet is the responsible of the ICT Master of University of Science and Technology of Hanoi and also co-responsible of the "Embedded Systems" speciality of this master.

ENSSAT stands for "*École Nationale Supérieure des Sciences Appliquées et de Technologie*" and is an "*École d'Ingénieurs*" of the University of Rennes 1, located in Lannion.

ISTIC is the Electrical Engineering and Computer Science Department of the University of Rennes 1.

ESIR stands for "*École supérieure d'ingénieur de Rennes*" and is an "*École d'Ingénieurs*" of the University of Rennes 1, located in Rennes.

D. Chillet is member of the French National University Council since 2009 in signal processing and electronics (Conseil National des Universités en 61e section).

D. Chillet is member of the Permanent Committee of the French National University Council since November 2011 in signal processing and electronics (Commission Permanente du Conseil National des Universités en 61e section).

A. Tisserand is member of the French National University Council since 2011 in computer science (Conseil National des Universités en 27e section).

### 9.3.3. Supervision

PhD: Ganda-Stéphane Ouedraogo, Automatic Synthesis of Hardware Accelerator from High-Level Specifications in Flexible Radios, Univ. Rennes 1, Dec. 2014, M. Gautier, O. Sentieys

PhD: Aymen Chakhari, Analytical Accuracy Evaluation in Fixed-Point Digital Communication Systems, Oct. 2014, R. Rocher, P. Scalart.

PhD: Amine Didioui, Energy-Aware Transceiver for Energy Harvesting Wireless Sensor Networks, Oct. 2014, O. Sentieys, C. Bernier.

PhD: Matthieu Texier, Dynamic Parallelism Management in Multi-Core Architectures for Mobile Systems, Dec. 2014, O. Sentieys, C. Bernier.

PhD: Trong-Nhan Le, Global Power Management System for Self-Powered Autonomous Wireless Sensor Nodes, Jul. 2014, O. Sentieys, O. Berder.

PhD: Karim Bigou, RNS Hardware Units for ECC, Nov. 2014, A. Tisserand.

PhD: Pramod P. Udupa, Low Complexity, Parallel Algorithms and Scalable Architectures for Real Time Coherent Optical OFDM Systems, Jun. 2014, O. Sentieys.

PhD in progress: Faycal Ait Aoudia, Power Manager Design and Implementation for Wake-Up Radio WSN Nodes, Oct. 2014, O. Berder, M. Gautier.

PhD in progress: Benjamin Barrois, Approximate Computing: a New Paradigm for Energy-Efficient Computing Architectures, Oct. 2014, O. Sentieys.

PhD in progress: Florent Berthier, Study and Design of an Ultra Low Power Asynchronous Core for Sensor Networks, Oct. 2013, O. Sentieys, P. Vivet, E. Beigne.

PhD in progress: Franck Bucheron, Secure Virtualization for Embedded Systems, Oct. 2011, A. Tisserand.

PhD in progress: Gaël Deest, Computing with Errors: Error-Tolerant Machine Code Generation for Unreliable Embedded Hardware, Oct. 2013, S. Derrien, O. Sentieys.

PhD in progress: Ali Hassan El-Moussawi, Performance/Accuracy Trade-Off in Automatic Parallelization for Embedded Many-Core Platforms, Nov. 2012, S. Derrien.

PhD in progress: Gabriel Gallin, Hardware Arithmetic Units and Crypto-Processor for Hyperelliptic Curves Cryptography, Oct. 2014, A. Tisserand, N. Veyrat-Charvillon.

PhD in progress: Christophe Hurliaux, Embedded reconfigurable hardware accelerators with efficient dynamic reconfiguration management, Oct. 2012, O. Sentieys, A. Courtay.

PhD in progress: Quang-Hai Khuat, Real-Time Spatio-Temporal Task Scheduling on 3D Architectures, Oct. 2011, D. Chillet.

PhD in progress: Xuan Chien Le, Indirect Monitoring in Self-Powered Wireless Sensor Networks for Smart Grid and Building Automation, Oct. 2013, O. Sentieys, B. Vrigneau.

PhD in progress: Jiating, Luo, Communication protocol exploration in the context of 3D integration of multiprocessors interconnected by Optical Network-on-Chip with energy constraints, Nov. 2014, D. Chillet, C. Killian, S. Le-Beux.

PhD in progress: Jérémie Métairie, Reconfigurable Arithmetic Units for Secure Cryptoprocessors, Oct. 2012, A. Tisserand, E. Casseau.

PhD in progress: Huu-Van-Long Nguyen, Design and error analysis of robust arithmetic operators for unreliable technologies, Oct. 2014, E. Casseau, A. Tisserand.

PhD in progress: Van-Thiep Nguyen, Energy-efficient MAC protocols for cooperative strategies in Wireless Sensor Networks, Oct. 2013, O. Berder, M. Gautier.

PhD in progress: Viet-Hoa Nguyen, Energy-efficient cooperative techniques for Wireless Body Area Sensor Networks, Nov. 2012, O. Berder, jointly with C. Langlais from Telecom Bretagne.

PhD in progress: Van Dung Pham, Design space exploration in the context of 3D integration of multiprocessors interconnected by Optical Network-on-Chip, Dec 2014, O. Sentieys, D. Chillet, C. Killian, S. Le-Beux.

PhD in progress: Rengarajan Ragavan, Ultra-Low Power Reconfigurable Architectures for Computing and Control in Wireless Sensor Networks, Oct. 2013, O. Sentieys, C. Killian.

PhD in progress: Baptiste Roux, Architectural Exploration of a Low-Power Flexible Radio Embedded on Drones, Oct. 2014, O. Sentieys, M. Gautier.

PhD in progress: Mai-Thanh Tran, Hardware Synthesis of Flexible and Reconfigurable Radio from High-Level Language Dedicated to Physical Layer of Wireless Systems, Oct. 2013, E. Casseau, M. Gautier.

PhD in progress: Zhongwei Zheng, Short-range geolocation algorithms based on distributed multi-sensor processing, Nov. 2012, P. Scalart, jointly with C. Roland from Lab-STICC.

## CAMUS Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

Cédric Bastoul has been co-organizing the HIP3ES 2015 workshop (High Performance Energy Efficient Embedded Systems) held in conjunction with the international conference HiPEAC 2015.

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

Philippe Clauss, Cédric Bastoul and Vincent Loechner have been part of the program committee of IMPACT 2014 (International Workshop on Polyhedral Compilation Techniques), held in conjunction with the international conferences HiPEAC 2014. Philippe Clauss, and Vincent Loechner have been part of the program committee of IMPACT 2015, held in conjunction with HiPEAC 2015.

Vincent Loechner and Cédric Bastoul have been part of the program committee of HIP3ES 2015 workshop (High Performance Energy Efficient Embedded Systems), held in conjunction with the international conference HiPEAC 2015.

Cédric Bastoul has been part of the program committee of PARMA+DITAM 2015 (6th Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures 4th Workshop on Design Tools and Architectures for Multicore Embedded Computing Platforms), held in conjunction with HiPEAC 2015.

#### 9.1.2.2. reviewer

Vincent Loechner has been reviewer for the IMPACT 2015 workshop.

Philippe Clauss has been reviewer for the following conferences: ISMM '14 (International Symposium on Memory Management), IMPACT 2015.

Cédric Bastoul has been reviewer for the following conferences: CGO 2014 (International Conference on Code Generation and Optimization), PARMA 2014 and 2015 (International Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures), IMPACT 2014 (International Workshop on Polyhedral Compilation Techniques), HIP3ES 2015 (International Workshop on High Performance Energy Efficient Embedded Systems).

### 9.1.3. Journal

#### 9.1.3.1. reviewer

Philippe Clauss has been reviewer for the following journals: IEEE Transactions on Computers, ACM Transactions on Programming Languages and Systems (TOPLAS), ACM Transactions on Architecture and Code Optimization (TACO), IEEE Transactions on Parallel and Distributed Systems (TPDS).

Cédric Bastoul has been reviewer for the following journals: Journal of Parallel and Distributed Computing (JPDC), ACM Transactions on Architecture and Code Optimization (TACO), Parallel Computing (ParCo).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Philippe Clauss and Alain Ketterlin did not teach during the first semester of 2014 since they were detached at Inria (*délégation*).

Licence : Vincent Loechner, Operating Systems, 38h, L2, Strasbourg University, France  
 Master : Vincent Loechner, Python Programming, 38h, M1, Strasbourg University, France  
 Master : Vincent Loechner, Parallelism, 15h, M1, Strasbourg University, France  
 Master : Vincent Loechner, Parallel Programming, 32h, M1, Strasbourg University, France  
 Master : Vincent Loechner, Parallel Programming, 30h, M2, Strasbourg University, France  
 Master : Vincent Loechner, Advanced compilation, 8h, M1, Strasbourg University, France  
 Master : Vincent Loechner, Embedded Systems, 32h, M2, Strasbourg University, France  
 Master : Vincent Loechner, Real-time Programming, 22h, M1, Strasbourg University, France  
 Licence : Philippe Clauss, Computer Architecture, 45h, L2, Strasbourg University, France  
 Master : Philippe Clauss, Compilation, 78h, M1, Strasbourg University, France  
 Licence : Cédric Bastoul, System Programming, 49h, L2, Strasbourg University, France  
 Master : Cédric Bastoul, Compiler Design, 48h, M1, Strasbourg University, France  
 Master : Cédric Bastoul, Advanced compilation, 29h, M1, Strasbourg University, France  
 Master : Cédric Bastoul, Parallelism, 20h, M2, Strasbourg University, France  
 Master : Cédric Bastoul, Introduction to Research, 7h, M1, Strasbourg University, France  
 Licence : Éric Violard, Functional Programming, 42h, L2, Strasbourg University, France  
 Licence : Éric Violard, Computer Architectures, 23h, L2, Strasbourg University, France  
 Licence : Éric Violard, Algorithms and Data Structures, 34h, L2, Strasbourg University, France  
 Master : Éric Violard, Compiler Design, 54h, M1, Strasbourg University, France  
 Master : Éric Violard, Semantics, 48h, M1, Strasbourg University, France  
 Master : Éric Violard, Introduction to Research, 6h, M1, Strasbourg University, France  
 Licence : Alain Ketterlin, Computer Networks, 66h, L3, Strasbourg University, France  
 Licence : Alain Ketterlin, Algorithms and Data Structures, 40h, L3, Strasbourg University, France

### 9.2.2. Supervision

PhD in progress : Aravind Sukumaran-Rajam, Enlarging the scope of polyhedral speculative parallelization, November 2012, Philippe Clauss and Alain Ketterlin

PhD in progress : Juan Manuel Martínez Caamaño, Dynamic and flexible generation of parallel loops using a dedicated intermediate representation, November 2013, Philippe Clauss and Philippe Helluy (IRMA lab., University of Strasbourg)

PhD in progress : Jean-François Dollinger, Heterogeneous speculative parallelization, September 2010, Vincent Loechner and Philippe Clauss

PhD in progress : Imen Fassi, Multifor for Multicore, June 2013, Philippe Clauss and Yosr Slama (University El Manar, Tunisia)

PhD in progress : Nabil Hallou, Dynamic binary optimizations, January 2013, Erven Rohou (ALF team) and Philippe Clauss

PhD in progress : Lénaïc Bagnères, Automatic parallelization and optimization for manycore architectures, November 2012, Christine Eisenbeis and Cédric Bastoul

PhD in progress : Alexander Zinenko, Interactive program manipulation, September 2013, Stéphane Huot and Cédric Bastoul



PhD in progress : Yann Barsamian, A Parallel Programming Environment based on the Xfor Control Structure, October 2014, Éric Violard

### 9.2.3. Juries

Philippe Clauss participated to the following PhD juries in 2014:

Date	Candidate	Place	Role
Sept. 22	Michael KRUSE	Univ. Paris Sud	Reviewer
June 20	Pierre ESTERIE	Univ. Paris Sud	Reviewer

Cédric Bastoul participated to the following PhD juries in 2014:

Date	Candidate	Place	Role
November 19	Rachid Habel	École des Mines de Paris	Reviewer

## 9.3. Popularization

Cédric Bastoul participated to the event *Kids University* at the University of Strasbourg in November 2014

Cédric Bastoul prepared activities for *Fête de la Science* at University of Paris-Sud in October 2014

## **CAMEL Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. Steering committee membership*

- Pierrick Gaudry is a member of the steering committee of the ECC (Elliptic Curve Cryptography) conference series.
- Emmanuel Thomé is a member of the steering committee of the ANTS (Algorithmic Number Theory Symposium) conference series (which gathers the program committee chairs and proceedings editors of previous conference editions).

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Conference program committee chairing*

- Jérémie Detrey was program chair for the poster session of the *Conférence en Parallélisme, Architecture et Système* (ComPAS 2014).

#### *9.1.2.2. Conference program committee membership*

- Jérémie Detrey was a member of the program committee of
  - the architecture track of the *Conférence en Parallélisme, Architecture et Système* (ComPAS 2014),
  - the Third International Conference on Cryptology and Information Security in Latin America (Latincrypt 2014).
- Pierrick Gaudry was a member of the program committee of
  - the 18th International Conference on Practice and Theory of Public-Key Cryptography (PKC 2015),
  - the 5th International Workshop on the Arithmetic of Finite Fields (WAIFI 2014).
- Emmanuel Thomé was a member of the program committee of
  - Selected Areas in Cryptography (SAC 2014),
  - the Third International Conference on Cryptology and Information Security in Latin America (Latincrypt 2014).
- Marion Videau was a member of the program committee of
  - Selected Areas in Cryptography (SAC 2014),
  - the 17th Annual International Conference on Information Security and Cryptology (ICISC 2014),
  - the *Symposium sur la sécurité des technologies de l'information et des communications* (SSTIC 2014).

#### *9.1.2.3. Reviewing activities*

- Jérémie Detrey reviewed submissions to
  - the architecture track of the *Conférence en Parallélisme, Architecture et Système* (ComPAS 2014),
  - Selected Areas in Cryptography (SAC 2014),

- the Third International Conference on Cryptology and Information Security in Latin America (Latincrypt 2014),
- the 16th Workshop on Cryptographic Hardware and Embedded Systems (CHES 2014),
- the 6th International Conference on Post-Quantum Cryptography (PQCrypto 2014).
- Pierre-Jean Spaenlehauer reviewed submissions to
  - the 39th International Symposium on Symbolic and Algebraic Computation (ISSAC 2014),
  - Symbolic-Numeric Computation (SNC 2014).
- Hugo Labrande reviewed submissions to
  - Selected Areas in Cryptography (SAC 2014).
- Pierrick Gaudry reviewed submissions to
  - the 20th Annual International Conference on the Theory and Application of Cryptology and Information Security (Asiacrypt 2014),
  - the 12th International Conference on Applied Cryptography and Network Security (ACNS 2014).
- Emmanuel Thomé reviewed submissions to
  - Selected Areas in Cryptography (SAC 2014),
  - the Third International Conference on Cryptology and Information Security in Latin America (Latincrypt 2014),
  - the 33rd Annual International Conference on the Theory and Applications of Cryptographic Techniques (Eurocrypt 2014),
  - the 34rd International Cryptology Conference (Crypto 2014),
  - the 39th International Symposium on Symbolic and Algebraic Computation (ISSAC 2014).
- Marion Videau reviewed submissions to
  - Selected Areas in Cryptography (SAC 2014),
  - the 17th Annual International Conference on Information Security and Cryptology (ICISC 2014),
  - the *Symposium sur la sécurité des technologies de l'information et des communications* (SSTIC 2014).

### **9.1.3. Journal activities**

#### *9.1.3.1. Editorial board membership*

- Pierrick Gaudry is an editor of the journal *Applicable Algebra in Engineering, Communication and Computing*.

#### *9.1.3.2. Reviewing activities*

- Jérémie Detrey reviewed submissions to
  - the IEEE Transactions on Computers (IEEE TC),
  - the Journal of Cryptographic Engineering (JCEN),
  - the ACM Transactions on Mathematical Software (TOMS).
- Pierre-Jean Spaenlehauer reviewed submissions to *Designs, Codes and Cryptography*.
- Paul Zimmermann reviewed submissions to *Mathematics of Computation*, and declined several reviews for open-access and hybrid journals.
- Pierrick Gaudry reviewed submissions to *Finite field and their applications* and *Mathematics of Computation*.

- Emmanuel Thomé reviewed submissions to Designs, Codes, and Cryptography and Security and Communication Networks.

#### **9.1.4. Invited Conferences**

- Pierrick Gaudry gave invited talks at
  - the DLP 2014 workshop, in Ascona (Switzerland, May);
  - the SAC 2014 conference, in Montreal (Canada, August);
  - the *Journées nationales du calcul formel 2014*, in Marseilles (November).
- Emmanuel Thomé gave invited talks at
  - the ECC 2014 conference, in Chennai (India, October);
  - the *Journées nationales du GDR IM 2014*, in Paris (January);
  - the *École de printemps Codage et Cryptographie 2014*, in Grenoble (March);
  - the *Journées de Sécurité des Systèmes d'information*, in Rouen (November).
- Pierre-Jean Spaenlehauer gave invited talks at
  - the *Journées nationales Codage et Cryptographie 2014*, in Les Sept Laux (March);
  - the conference on Effective Moduli Spaces and Applications to Cryptology, in Rennes (June).

#### **9.1.5. Other committees**

- Pierrick Gaudry was a member of
  - the hiring committees for *chargé de recherche* positions in INRIA Nancy – Grand Est, and associate professor positions in Univ. Lorraine and Univ. Montpellier 2.
- Marion Videau was a member of
  - the scientific committee of the CCA seminar (*Codage, Cryptologie, Algorithmes*),
  - the scientific committee of the *Journées Codage et Cryptographie* of GT-C2 of GdR-IM,
  - the LORIA laboratory council (elected),
  - the *Commission des développements technologiques* (CDT) of the INRIA Nancy – Grand Est research center,
  - hiring committee for an associate professor position in Univ. Lorraine,
  - hiring committee for temporary teaching and research attaché (ATER) positions in Univ. Lorraine,
  - hiring committee for teaching contracts for PhD students (DCCE) in Univ. Lorraine,
  - admission committee for student applications for a master degree in informatics in Nancy.
- Paul Zimmermann was a member of
  - the *jury d'admissibilité* for *chargé de recherche 1e classe* and *directeur de recherche 2e classe* positions at Inria, and the *jury d'admission* for *directeur de recherche 2e classe* positions at Inria.

#### **9.1.6. Seminar organization**

##### *9.1.6.1. Caramel seminar*

Ten speakers were invited to our seminar in 2014: Armand Lachand, Pierre-Jean Spaenlehauer, Guillaume Moroz, Irene Márquez-Corbella, Nicholas Coxon, Christian Eder, Andrea Miele, Thomas Richard, Enea Milio, and Sebastian Kochinke.

### 9.1.6.2. Joint security seminar with the university master in informatics

The team is involved with other teams and the university master in informatics in the organization of the security seminar which started in 2013. Fourteen speakers were invited during 2014: Éric Leblond, Philippe Biondi, Eric Jaeger, Pierre-Michel Ricordel, Pascal Urien, Jérôme François, Thomas Voegtlin, Mathieu Cunche, Sébastien Bardin, Gwendall Legrand, Pierrick Gaudry, Sylvain Ruhault, Aline Gouget, and Raphaël Rigo.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### Licence:

Jérémie Detrey, Security of websites, 2 hours, L1, IUT Charlemagne, Nancy, France.

Marion Videau, Introduction to algorithmic and programming, 16 hours, L1, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, Programming methodology in C, 21 hours (lectures and tutorial sessions), L1, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, Introduction to cryptology and information security, 20 hours (lectures and tutorial sessions), L3, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, student supervisor (for about 12 L1 students): 12 hours, L1, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

#### Master:

Marion Videau and Pierrick Gaudry, Supervision of two M1 students for their *Introduction to research* practical course throughout one semester, M1, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, Introduction to cryptology, 12 hours (lectures), M1, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, Introduction to information system security, 24 hours (lectures and tutorial sessions), M1, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, Information system security, 12 hours (lectures and tutorial sessions) and responsibility of coordinating with security seminars, M2, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, Information system security, 21 hours+21 hours (lectures and tutorial sessions), M2, Faculté des sciences et technologies agreement with IGA, Maroc.

Marion Videau, Software validation, verification and certification: 4 hours (tutorial sessions) and responsibility of coordinating external teachers from industry.

Marion Videau and Stéphane Glondu, Supervision of the semester applied project for all M2 students from *parcours Sécurité des Architectures Web*, M2, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, local supervision of M2 students engineering internships in industry, M2, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Marion Videau, head of *parcours Sécurité des Architectures Web*, M2, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

#### Misc.:

Marion Videau, teaching supervisor (*tuteur*), of a PhD student with a teaching contract (DCCE), Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

### 9.2.2. Internships

- David Lucas, Télécom Nancy, “Problème du rang bilinéaire : calcul et recherche de formules optimales”, Apr–Sep 2014, supervised by Jérémie Detrey.
- Théo Karaboghossian, École Normale Supérieure de Cachan, “Nombres premiers à faiblesse cachée pour le problème du logarithme discret”, Jun–Jul 2014, supervised by Pierrick Gaudry.

### 9.2.3. Supervision

#### PhD in progress:

Cyril Bouvier, Algorithmes pour la factorisation d’entiers et le calcul de logarithme discret, since Sep 2012, Paul Zimmermann.

Svyatoslav Covanov, Algorithmes de multiplication : complexité bilinéaire et méthodes asymptotiquement rapides, since Sep 2014, Jérémie Detrey & Emmanuel Thomé.

Laurent Grémy, Analyse et optimisation d’algorithmes de cribles arithmétiques, since Oct 2013, Pierrick Gaudry & Marion Videau.

Hamza Jeljeli, Accélérateurs logiciels et matériels pour l’algèbre linéaire creuse sur les corps finis, since Oct 2011, Emmanuel Thomé.

Hugo Labrande, Calcul effectif d’isogénies entre jacobiniennes de courbes algébriques par une méthode d’analyse complexe, since Sep 2013, Emmanuel Thomé & Michael J. Jacobson, Jr. (Univ. Calgary, Canada).

### 9.2.4. Juries

- Jérémie Detrey was a member of the jury of the ÉNS competitive entrance exam.
- Paul Zimmermann was reviewer and member of the jury for the PhD thesis of Fredrik Johansson (RISC, Linz).
- Pierre-Jean Spaenlehauer was a member of the jury for the PhD thesis of Jules Svartz (EPI POLSYS, Paris).
- Pierrick Gaudry was a reviewer of the PhD thesis of Christophe Tran (Univ. Rennes 1), and a member of the jury for the PhD thesis of Ivan Boyer (Univ. Paris 7).

## 9.3. Popularization

- Jérémie Detrey gave a presentation on the Enigma machine and its cryptanalysis to high-school teachers as part as the “journée EPI-Isn”, where Paul Zimmermann gave a presentation of the Sage computer algebra system.
- Paul Zimmermann animated a “Maths-en-Jeans” group with students from the “collège” Pierre Brossolette in Réhon.
- Pierrick Gaudry gave a presentation at the “journée de l’Association francophone des spécialistes de l’investigation numérique”.
- Marion Videau
  - participated to events on information about university studies for pupils and students (Cap sur l’enseignement supérieur, Portes ouvertes de la faculté des sciences, Oriaction), and about university studies and research to the general public (Sciences en marche),
  - gave a presentation at the “journée de l’Association francophone des spécialistes de l’investigation numérique”.

## CARTE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

The Carte Team has organized a few conferences and workshops in Nancy this year:

- **Journées SDA2 and FRAC 2014**, April.
- JFIN (Journée Française d'investigation numérique), October.
- Botconf'14 (The botnet fighting conference - Second edition), December.

Simon Perdrix organised JIQ'14 (Journées Informatique quantique) in Lyon in November.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Conference program committee membership

- Guillaume Bonfante was in the Program Committee of the conference FPS (Foundations and Practice of Security) and the following workshops: Termgraph (Vienna), Caesar (Rennes), PPREW (New Orleans).
- Mathieu Hoyrup was in the Program Committee of Computability and Complexity in Analysis (CCA) 2014.
- Romain Péchoux was in the Program Committee of DICE 2014 (Developpements in Implicit Computational complExity).
- Simon Perdrix was in the Program Committee of STACS 2014 (Symposium on Theoretical Aspects of Computer Science) and QPL 2014 (Quantum Physics and Logic).

#### 8.1.2.2. Reviewing activities

- Mathieu Hoyrup reviewed articles for LICS 2014, CiE 2014.
- Emmanuel Jeandel reviewed articles for STACS 2015.
- Romain Péchoux reviewed articles for DICE 2014 (Developpements in Implicit Computational complExity), ISMVL 2015 (International Symposium on Multi-Valued Logics), RTA-TLCA 014 (Rewriting Techniques and Applications - Typed Lambda-Calculi and Applications).
- Simon Perdrix reviewed articles for CONCUR'14.

### 8.1.3. Journal

#### 8.1.3.1. Editorial board membership

- Emmanuel Jeandel is in the editorial board of **RAIRO-ITA**.

#### 8.1.3.2. Reviewing activities

- Mathieu Hoyrup reviewed articles for *Theory of Computing Systems*, *Logical Methods in Computer Science*, *Mathematical Structures in Computer Science*.
- Emmanuel Jeandel reviewed articles for *Journal of Computer and System Sciences* and for *Ergodic Theory and Dynamical Systems*.
- Simon Perdrix reviewed articles for *Information Processing Letters*, *Quantum Information & Computation*.

### 8.1.4. Invited Talks

- Jean-Yves Marion gave an invited talk at the Journées Francophones de l'Investigation Numérique (JFIN).
- Emmanuel Jeandel gave an invited talk at the Journées Montoises.
- Simon Perdrix gave an invited talk at the Workshop on Quantum Metrology, Interaction, and Causal Structure 2014 (Tsinghua University, Beijing) and an invited talk at the Chinese Academy of Sciences.

### **8.1.5. Collective Responsibilities**

Isabelle Gnaedig is:

- member of the scientific mediation committee of Inria Nancy - Grand Est,
- researcher social referee at Inria Nancy - Grand Est.

Simon Perdrix is responsible of GT IQ (groupe de travail Informatique quantique) at the CNRS GdR IM (groupe de recherche Informatique Mathématique).

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Licence :

- Guillaume Bonfante
  - Java, L3, Mines Nancy
- Emmanuel Hainry
  - Operating Systems, 30h, L1, IUT Nancy Brabois
  - Algorithmics, 40h, L1, IUT Nancy Brabois
  - Dynamic Web, 60h, L1, IUT Nancy Brabois
  - Databases, 30h, L1, IUT Nancy Brabois
  - Object Oriented Languages, 12h, L2, IUT Nancy Brabois
  - Complexity, 30h, L2, IUT Nancy Brabois
- Mathieu Hoyrup
  - Programmation en JAVA, 56h, DUT d'informatique 1ère année, IUT Charlemagne, France
- Emmanuel Jeandel
  - Algorithmics and Programming 1, 60h, L1 Maths-Info
  - Algorithmics and Programming 4, 30h, L3 Informatique
  - Modelling Using Graph Theory, 30h, L3 Informatique
  - Networking, 15h, L3 Informatique
- Romain Péchoux
  - Programmation orientée objet, 37,5h, L3, Université de Lorraine, France
  - Programmation orientée objet, 33,5h, L2, Université de Lorraine, France
  - Outils logiques pour l'informatique, 25h, L1, Université de Lorraine, France
  - Bases de données, 42h, L3, Université de Lorraine, France
  - Algorithmic complexity, 30h, L3 MIASHS parcours MIAGE, IGA Casablanca, Marocco.
- Simon Perdrix
  - Structure de données, 72h, DUT d'informatique 1ère année, IUT Charlemagne, France



## Master

- Guillaume Bonfante
  - Modelling and UML, M1, Mines Nancy
  - Video Games, M1, Mines Nancy
  - Semantics, M1, Mines Nancy
  - Safety of Software, M2, Mines Nancy
- Isabelle Gnaedig
  - Design of Safe Software, Coordination of the module, M2, Telecom-Nancy
  - Rule-based Programming, 20h, M2, Telecom-Nancy
- Emmanuel Jeandel
  - Algorithmics and Complexity, M1 Informatique and M1 ENSEM, 30h
  - Combinatorial Optimization, M1 Informatique, 36h.
- Romain Péchoux
  - Mathematics for computer science, 30h, M1 SC
  - Advanced Java, 52,5h, M1 MIAGE
- Simon Perdrix
  - Pépites Algorithmiques — Informatique Quantique, 6h, M1/M2, Ecole des Mines de Nancy.

**8.2.2. Supervision**

PhD in progress: David Cattanéo, Combinatorial Modelization in Quantum Computation and Generalized Cover Problems, started Sept. 2012, Pablo Arrighi (director), Simon Perdrix (co-advisor).

PhD : Hugo Férée, Complexité d'ordre supérieur et analyse récursive, Université de Lorraine, 10 December 2014, Jean-Yves Marion and Mathieu Hoyrup.

PhD in progress: Hubert Godfroy, Semantics of Self-modifying Programs, Jean-Yves Marion.

PhD: Jérôme Javelle, Quantum Cryptography: Protocols and Graphs, June 2nd 2014, Pablo Arrighi (director), Mehdi Mhalla (co-advisor), Simon Perdrix (co-advisor).

PhD in progress: Thanh Dinh Ta, Malware Algebraic Modeling and Detection, started Sept. 2010, Jean-Yves Marion (director) and Guillaume Bonfante (co-advisor).

PhD in progress: Aurélien Thierry, Morphological Analysis of Malware, started Oct. 2011 supervised by Jean-Yves Marion.

**8.2.3. Juries**

Isabelle Gnaedig was a:

- member of the Inria hiring committee for young researchers,
- member of the Telecom-Nancy engineering school admission committee.

Emmanuel Jeandel was in the:

- Selection committee for a research assistant position in Nice (MCF 1313).
- Selection committee for a professor position in Marseille (PR 174).
- Jury of Jérôme Javelle's PhD Defense on "Cryptographie Quantique: Protocoles et Graphes", defended in Université de Grenoble, June 2nd.
- Jury of Benjamin Hellouin de Menibus's PhD Defense on "Asymptotic Behaviour of Cellular Automata: Computation and Randomness", defended in Aix-Marseille Université, September 26th.
- Jury of Bastien Le Gloannec's PhD Defense on "Coloriage du plan discret par jeux de tuiles déterministes", defended in Université d'Orléans, December 12th.

**8.3. Popularization**

Isabelle Gnaedig is member of the scientific vulgarization committee of Inria Nancy - Grand Est. This committee is a choice and guidance instance helping the direction of the center and the person in charge of popularization events to elaborate a strategy, to realize events and to help researchers to get involved in various actions aiming at popularizing our research themes, and more generally computer science and mathematics.

## **CASCADE Project-Team**

# **7. Dissemination**

## **7.1. Promoting Scientific Activities**

### **7.1.1. Scientific Events Organisation**

#### *7.1.1.1. Organisation of Events*

- a weekly seminar is organized: <http://www.di.ens.fr/CryptoSeminaire.html>

#### *7.1.1.2. 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

#### *7.1.1.3. Board of International Organisations*

- Board of the *International Association for Cryptologic Research* (IACR): Michel Abdalla (2013 – 2015), David Pointcheval (2008–2016)

### **7.1.2. Scientific Events Selection**

#### *7.1.2.1. Program Committee Chair*

- Africacrypt – 28-30 May (Marrakesh, Morocco): David Pointcheval, Damien Vergnaud
- WISTP – 30 June-2 July (Heraklion, Greece): David Naccache
- SCN – 3-5 September (Amalfi, Italy): Michel Abdalla

#### *7.1.2.2. Program Committee Member*

- CS2 – 20 January (Amsterdam, Netherlands): David Naccache
- WAHC – 7 March (Rockley, Christ Church, Barbados, West Indies): David Naccache
- PKC – 26-28 March (Buenos Aires, Argentina): Michel Abdalla, Vadim Lyubashevsky
- POST – 5-13 April (Grenoble, France): David Pointcheval
- HOST – 6-7 May (Austin, TX, USA): David Naccache
- ECSaR – 27-31 May (Stanford, USA): David Naccache
- ASIACCS – 3-6 June (Kyoto, Japan): David Naccache
- HASP – 15 June (Minneapolis, MN, USA): David Naccache
- WISTP – 30 June-2 July (Heraklion, Greece): David Pointcheval
- NFSP – 3 July (Madrid, Spain): David Naccache
- IWSEC – 27-29 August (Hirosaki, Japan): Damien Vergnaud
- SCN – 3-5 September (Amalfi, Italy): Damien Vergnaud
- ESORICS – 7-11 September (Wroclaw, Poland): David Naccache
- LATINCRYPT – 17-19 September (Florianopolis, Brazil): Michel Abdalla
- ICDF2C – 18-20 September (Seoul, South Korea): David Naccache
- PQC – 1-3 October (Waterloo, Canada): Vadim Lyubashevsky

- SPACE – 18-22 October (Pune, India): David Naccache
- CANS – 22-24 October (Heraklion, Greece): Itai Dinur
- WNCS – 7-9 November (Dubai, UAE): David Naccache
- PriSec – 3-5 December (Sydney, Australia): David Naccache
- Botconf – 3-5 December (Paris, France): David Naccache
- ASIACRYPT – 7-11 December (Kaoshiung, Taiwan): Itai Dinur
- Indocrypt – 14-17 December (New Delhi, India): David Naccache
- INTRUST – 16-17 December (Beijing, China): David Naccache

### **7.1.3. 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 *Encyclopedia of Cryptography and Security*: David Naccache (editor)
- of *Journal of Computer Security, IOS Press*: David Naccache
- of *Open Journal of Information Security and Applications, SOP*: David Naccache (editor)
- of *Cryptologia* – Taylor & Francis: David Naccache (editor)
- of *Computers & Security* – Elsevier: David Naccache
- of *Information Processing Letters* – Elsevier: David Pointcheval
- of *IEEE Transactions on Information Forensics and Security*: Michel Abdalla
- of *IET Information Security*: Michel Abdalla

Columnist (in charge of the bi-monthly CryptoCorner)

- of the *IEEE Security and Privacy Magazine*: David Naccache

## **7.2. Teaching - Supervision - Juries**

### **7.2.1. Teaching**

- Licence: David Naccache, Introduction to computer science, L1, Univ. Paris II
- Master: David Naccache, Scientific programming through practice, M1, ENS
- Master: David Naccache, 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: Hoeteck Wee, Randomness in Complexity, M2, MPRI
- Master: David Naccache, Computer Security, M2, Univ. Paris II
- Master: David Naccache, Computer Security, M2, Beijing Jiaotong University
- Master: David Naccache, Risk Management, M2, Univ. Paris II
- Master: David Naccache, Computer Forensics, M2, Univ. Paris II
- Master: David Naccache, Computer Security, M2, University of Luxembourg
- Master: David Pointcheval, Cryptography, M2, ESIEA

### 7.2.2. Supervision

- PhD: Tancrède Lepoint, Design and Implementation of Lattice-Based Cryptography, ENS, June 30th, 2014, David Pointcheval
- PhD in progress: Sylvain Ruhault, Randomness in cryptography, from 2011, David Pointcheval & Damien Vergnaud
- PhD in progress: Sonia Belaid, Leakage-resilient cryptography, from 2012, Michel Abdalla
- PhD in progress: Fabrice Ben Hamouda, Leakage of information in cryptography, from 2012, Michel Abdalla & David Pointcheval
- PhD in progress: Diana Maimut, Fully Homomorphic Encryption, from 2012, David Naccache
- PhD in progress: Thomas Prest, Lattice-based cryptography, from 2012, Vadim Lyubashevsky & David Pointcheval
- PhD in progress: Olivier Sanders, Delegation of computations, from 2012, 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: 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

### 7.2.3. Juries

- PhD Robert Künnemann. *On the Analysis of Security APIs and Stateful Protocols* – ENS Cachan – France, January 7th 2014: David Pointcheval
- HdR Emmanuel Prouff. *Analyse des Attaques par Canaux Auxiliaires et Preuves de Sécurité* – Université Pierre et Marie Curie, Paris – France, January 27th 2014: David Pointcheval
- PhD Thomas Peters. *Privacy Enhancing Cryptographic Mechanisms with Public Verifiability* – Université Catholique de Louvain – Belgium, April 2nd 2014: David Pointcheval
- PhD Alain Patey. *Techniques cryptographiques pour l'authentification et l'identification biométriques respectant la vie privée* – Telecom ParisTech – France, May 20th 2014: David Pointcheval (Chair)
- PhD Susan Thomson. *Public-Key Cryptography with Joint and Related-Key Security* – ENS – France, June 18th 2014: Michel Abdalla (Examiner)
- PhD Tancrède Lepoint. *Design and Implementation of Lattice-Based Cryptography* – ENS – France, June 30th 2014: David Naccache, David Pointcheval (Supervisor)

- HdR Damien Vergnaud. *Primitives et constructions en cryptographie asymétrique* – Ecole Normale Supérieure – France, July 1st 2014: Michel Abdalla, David Pointcheval
- PhD Slim Bettaieb. *Signature et identification pour l'anonymat, basées sur les réseaux* – Université de Limoges – France, September 26th 2014: Damien Vergnaud (Reviewer)
- PhD Adeline Langlois. *Lattice-Based Cryptography: Security Foundations and Constructions* – ENS Lyon – France, October 17 2014: Vadim Lyubashevsky (Jury member)
- HdR: Duong Hieu Phan. *Some Advances in Broadcast Encryption and Traitor Tracing* – Ecole Normale Supérieure – France, November 19th 2014: Michel Abdalla, David Pointcheval (Supervisor)
- PhD Cédric Murdica. *Sécurité Physique de la Cryptographie sur Courbes Elliptiques* – Télécom ParisTech – France, February 13th 2014: David Naccache (Supervisor)
- PhD Thomas Souvignet. *L'expertise et la lutte contre la fraude monétaire* Université Panthéon-Assas Paris 2 – France, December 18th 2014: David Naccache (Supervisor)
- PhD Jean-Michel Cioranescu. *Nouvelles contre-mesures pour la protection de circuit intégrés* – Université Panthéon-Sorbonne Paris 1 – France, December 18th 2014: David Naccache (Supervisor)
- PhD Guillaume Bouffard. *A Generic Approach for Protecting Java Card Smart Card Against Software Attacks* Université de Limoges – France, October 10th 2014: David Naccache (Reviewer)
- PhD Emmanuel Volte. *Miroirs, cubes et Feistel dissymétrique* – Université Cergy-Pontoise – France, November 28th 2014: David Pointcheval (Chair)
- PhD Rodolphe Lampe. *Preuves de sécurité en cryptographie symétrique à l'aide de la technique du coupling* – Université de Versailles Saint-Quentin en Yvelines – France, December 2nd 2014: David Pointcheval, David Naccache (Reviewer)

## CASSIS Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

The CNIL (Commission Nationale Informatique et Liberté) has official recommendations in terms of electronic voting<sup>0</sup>. These recommendations influence the design of e-voting systems that are deployed in France. However, some of the recommendations seem a bit outdated and dedicated to particular classes of systems. Even more importantly, the CNIL recommendations focus on vote privacy but do not say much about verifiability. Véronique Cortier, David Galindo, and Stéphane Glondu have formulated new recommendations, submitted to the CNIL. They have met some CNIL members to discuss how to integrate some of the propositions to the new version of the CNIL recommendations that should appear in 2015.

#### 9.1.1. Scientific Events Organisation

##### 9.1.1.1. General Chair, Scientific Chair

Véronique Cortier: FMS 2014, 5th Workshop on Formal Methods for Security.  
 Christophe Ringeissen: UNIF 2014, 28th International Workshop on Unification.

#### 9.1.2. Scientific Events Selection

##### 9.1.2.1. Program Committee Chair

- Steve Kremer: Post 2014, ACM SEC@SAC 2014, GRSRD'15

##### 9.1.2.2. Program Committee Member

- Véronique Cortier: ACNS 2014, CCS 2014, Esorics 2014, FCC-FCS 2014, FoSSaCs 2014, Icalp 2014, Movep 2014, Concur 2015, LICS 2015, POST 2015.
- Christophe Ringeissen: CADE-25, FroCoS 2015.
- Frédéric Dadeau : CSTVA 2014, NFM 2014, QSIC 2014.
- Abdessamad Imine : AICCSA 2014, DEXA 2014, DEXA 2015, ICEIS 2015, DASFAA 2015
- Steve Kremer : ACNS 2014, ICFEM 2014, AsiaCCS 2015, ESORICS 2015, FCS 2015, TGC 2015.
- Michaël Rusinowitch: LATA 2014, CRISIS 2014, STP 2014, GRSRD 2014, TGC 2015, POST 2016.
- Fabrice Bouquet : ICST 2014, MoDeVVa 2014, AMOST 2015

#### 9.1.3. Journal

##### 9.1.3.1. Editorial Board Member

- Véronique Cortier: Information & Computation, Journal of Computer Security.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Summer School:

Fabrice Bouquet, Test techniques and validation for Software, ENVOL 2014, Organized by: CNRS, INRA, VetAgro-Sup and Inria, November 18-21, 2014 (<https://www.projet-plume.org/envol-2014>)

Steve Kremer, Formal Modeling and Automated Analysis of Security Protocols, 14th International School on Foundations of Security Analysis and Design (FOSAD'14)

<sup>0</sup><http://www.cnil.fr/documentation/deliberations/deliberation/accessible/non/delib/249/>

- Master:
  - Fabrice Bouquet, Functional Testing, 18 hours, M2 Computer science, Franche-Comté University, France.
  - Fabrice Bouquet, Artificial Intelligence, 42 hours, M1 Computer science, Franche-Comté University, France.
  - Frédéric Dadeau, Structural testing, 9 hours (ETD), M2 Computer science, Franche-Comté University, France.
  - Alain Giorgetti, Program Proofs, 58 hours, M1 Computer science, Franche-Comté University, France.
  - Alain Giorgetti, Decision Procedures, 13 hours, M2 Computer science, Franche-Comté University, France.
  - Olga Kouchnarenko, Specification, Verification and Validation, 12 hours (ETD), M2 Computer science, Franche-Comté University, France.
  - Olga Kouchnarenko, Security and Components, 10,5 hours (ETD), M2 Computer science, Franche-Comté University, France.
  - Steve Kremer, Security Theory, 24 hours (ETD), M2 Computer science, Lorraine University, France.
  - Abdessamad Imine, Security for XML Documents, 12 hours (ETD), M1, Lorraine University, France.
  - Christophe Ringeissen, Decision Procedures for Software Verification, 24 hours (ETD), M2 Computer science, Lorraine University, France.
  - Laurent Vigneron, Security of information systems, 22.5 hours (ETD), M2 Computer science, Lorraine University, France.
  - Laurent Vigneron, Security of information systems, 24 hours (ETD), M2 MIAGE – Distributed Information Systems, Lorraine University, France.
- Licence:
  - Alain Giorgetti, Logics and Deduction, 52 hours, L2 Computer science, Franche-Comté University, France.
  - Olga Kouchnarenko, Formal Languages, 65 hours (ETD), L3 Computer science, Franche-Comté University, France.
- E-Learning:
  - Fabrice Bouquet, Artificial Intelligence, 78 (ETD), M1 Computer science, Franche-Comté University, France.
  - Fabrice Bouquet, Specification Validation and Test, 39 (ETD), M2 Computer science, Franche-Comté University, France.
  - Alain Giorgetti, Formal Methods, 81 hours, L3 computer science, Franche-Comté University, France.
  - Olga Kouchnarenko, Languages, Specification and Proof, 25 hours (ETD), L3 Computer science, Franche-Comté University, France.
  - Olga Kouchnarenko, Compositional approaches in verification, 18 hours (ETD), M2 Computer science, Franche-Comté University, France.

### **9.2.2. Supervision**

- PhD (defended in 2014):
  - Robert Künnemann, Verification of Security APIs, January 7, Steve Kremer and Graham Steel

Houari Mahfoud, Access Control Models for XML Documents, February 18, Abdessamad Imine and Michaël Rusinowitch

Cyrille Wiedling, Formal analysis of E-voting protocols, November 21, Véronique Cortier

Ivan Enderlin, Test Data Generation for Unit Testing in PHP, July 16, Fabrice Bouquet, Frédéric Dadeau and Alain Giorgetti

Aloïs Dreyfus, Contribution to the efficient model-based verification and testing, October 22, Pierre-Cyrille Héam and Olga Kouchnarenko

Bin Yang, Contribution to a kernel of a symbolic asymptotic modeling software, December 16, Michel Lenczner and Alain Giorgetti

- PhD in progress:

Hadrien Bride, Validation and Reconfiguration of Modal Petri Nets within Constraint Logic Programming, started in October 2013, Olga Kouchnarenko and Fabien Peureux

Maxime Bride, Automated Synthesis and Verification of Security Services, started in October 2014, Michaël Rusinowitch

Rémy Chrétien, Decision procedures of equivalence properties, started in October 2012, Véronique Cortier and Stéphanie Delaune

Jean-Marie Gauthier, Method for validation and simulation of SysML model: Applied on micro-systems, started in October 2012, Fabrice Bouquet, Fabien Peureux and Ahmed Hammad

Richard Genestier, Formal specification and verification of programs generating structured data, started in October 2012, Alain Giorgetti and Olga Kouchnarenko

Bao Thien Hoang, Secure Collaboration in Social Networks, started in April 2011, Abdessamad Imine and Christophe Ringeissen

Jean-Luc Joly, Randomized approaches for validation and verification procedures, started in December 2011, Pierre-Cyrille Héam

Éric Le Morvan, Secure composition of cryptographic protocols, started in October 2013, Véronique Cortier

Huu Hiep Nguyen, Secure Collaboration in Mobile Social Networks, started in November 2013, Abdessamad Imine and Michaël Rusinowitch

Ludovic Robin, Verification of cryptographic protocols using weak secrets, started in October 2014, Steve Kremer

Guillaume Scerri, Symbolic and automatic security proofs in computational models, started in September 2011, Hubert Comon-Lundh and Véronique Cortier

### 9.2.3. Juries

Inria evaluation committee (Véronique Cortier, Steve Kremer, Michaël Rusinowitch)

Vice-president of the Jury Junior Research Position Inria Nancy Grand Est (Véronique Cortier)

Jury Junior Research Position Inria Paris-Rocquencourt (Véronique Cortier)

Preselection Jury for Inria Advanced and Starting Research Positions (Michaël Rusinowitch)

Member of the ANR scientific evaluation committee, challenges 7 and 9 (Olga Kouchnarenko)

Examiner for Guillaume Laville PhD, Besançon, June 27, 2014, *Exécution efficace de systèmes multi-agents sur GPU* (Fabrice Bouquet)

Reviewer for Maxime Fonda PhD, Bourges, May 21, 2014, *Protection obligatoire des serveurs d'application web : application aux processus métiers* (Fabrice Bouquet)



Examiner for Yufang Dan PhD, CITI Lyon (France), Security and self-healability enforcement of dynamic components in a service-oriented system, May 14, 2014 (Frédéric Dadeau)

Examiner for Xiaoping Che PhD, Telecom SudParis (France), Cross-Fertilizing Formal Approaches for Protocol Conformance and Performance Testing, June 26, 2014 (Frédéric Dadeau)

Examiner for Kaim Hossem PhD, LIG Grenoble (France), *Inférence automatique de modèles d'applications web et protocoles pour la détection de vulnérabilités*, December 15, 2014 (Frédéric Dadeau)

Reviewer for Valérie Murat PhD, Rennes, June 26th 2014, Tree automata extensions for the infinite states systems verification (Pierre-Cyrille Héam)

Examiner for Rafik Kheddam PhD, Valence (France), Safety software approaches for RFID systems, April 9, 2014 (Pierre-Cyrille Héam)

Examiner for Sven DeFelice PhD, Marne-la-Vallée, Codeterministic automata and acyclic automata: analysis of algorithm and random generation, July 1, 2014 (Pierre-Cyrille Héam)

Examiner for Maguy Medlej PhD, Besançon, June 30, 2014, Data Management in Periodic Wireless Sensor Networks (Olga Kouchnarenko)

Reviewer for Hikmat Farhat PhD, Toulouse, September 25, 2014, Composition of Services Behavior via Orchestrator Synthesis (Olga Kouchnarenko)

Examiner for Evelyne Contejean HDR, Orsay, June 13, 2014, Facets of Deduction (Michaël Rusinowitch)

Examiner for Myriam Paiola PhD, Paris, May 28, 2014, Verification of Security Protocols with Lists (Michaël Rusinowitch)

Examiner for Joshua Amavi PhD, Orléans, November 28, 2014, *Comparaison et évolution de schémas XML* (Michaël Rusinowitch)

Examiner for Lakhdar Akroun PhD, Clermont-Ferrand, December 8, 2014, Decidability and complexity of simulation preorder for data-centric web services (Michaël Rusinowitch)

Reviewer for Abdelkader Kersani PhD, Grenoble, October 30, 2014, *Preuves par induction dans le calcul de superposition* (Laurent Vigneron)

### 9.3. Popularization

Presentation of security protocols to high school teachers in Computer Science (April 17th, 2014, Véronique Cortier).

## **CELTIQUE Project-Team**

# **7. Dissemination**

## **7.1. Promoting Scientific Activities**

### **7.1.1. Scientific events organisation**

#### *7.1.1.1. general chair, scientific chair*

- EJCP 2014 (École jeunes chercheurs en programmation): Thomas Jensen, Alan Schmitt.

#### *7.1.1.2. member of the organizing committee*

- PLMW 2014 (Programming Languages Mentoring Workshop): Alan Schmitt.

### **7.1.2. Scientific events selection**

#### *7.1.2.1. responsible of the conference program committee*

- GraMSec 2014 (International Workshop on Graphical Models for Security): Barbara Kordy.

#### *7.1.2.2. member of the conference program committee*

- ESOP 2014 (European Symposium on Programming): David Pichardie.
- ITP 2014 (Interactive Theorem Proving): David Pichardie.
- CC 2014 (Compiler Construction): Sandrine Blazy
- VSTTE 2014 (Verified Software: Theories, Tools and Experiments): Sandrine Blazy
- AFADL 2014 (Approches Formelles dans l'Assistance au Développement de Logiciels) : Sandrine Blazy
- WASMAS (Active Security Through Multi-Agent Systems): Barbara Kordy.

#### *7.1.2.3. reviewer*

- ESOP 2014 (European Symposium on Programming): Delphine Demange, Alan Schmitt, Thomas Jensen.
- FLOPS 2014 (Symposium on Functional and Logic Programming): Alan Schmitt.
- ICFP 2014 (International Conference on Functional Programming): Alan Schmitt.
- IFIP SEC 2014 (International Information Security and Privacy Conference): Frédéric Besson, Thomas Jensen.
- ITP 2014 (Interactive Theorem Proving): Delphine Demange.
- LICS 2014 (Logic In Computer Science): Delphine Demange.
- POPL 2014 (Symposium on Principles of Programming Languages): David Pichardie
- PPDP 2014 (Principles and Practice of Declarative Programming): Alan Schmitt.
- PEPM 2015 (Partial Evaluation and Program Manipulation): Thomas Jensen.
- CC 2014 (Compiler Construction): Sandrine Blazy
- VSTTE 2014 (Verified Software: Theories, Tools and Experiments): Sandrine Blazy
- AFADL 2014 (Approches Formelles dans l'Assistance au Développement de Logiciels) : Sandrine Blazy
- POST 2014 (Conference on Principles of Security and Trust): Barbara Kordy.
- TACAS 2014 (International Conference on Tools and Algorithms for the Construction and Analysis of Systems): Barbara Kordy.
- GraMSec 2014 (International Workshop on Graphical Models for Security): Barbara Kordy.

- WASMAS 2014 (Active Security Through Multi-Agent Systems): Barbara Kordy.
- FORTE 2014 ( International Conference on Formal Techniques for Distributed Objects, Components and Systems): Barbara Kordy.
- PRDC 2014 (IEEE Pacific Rim International Symposium on Dependable Computing): Barbara Kordy.
- STM 2014 (International Workshop on Security and Trust Management): Barbara Kordy

### **7.1.3. Journal**

#### *7.1.3.1. reviewer*

- Logical Methods in Computer Science: Alan Schmitt.
- Science of Computer Programming: Alan Schmitt.
- Journal of Computer Security: Sandrine Blazy
- Journal of Formalized Reasoning: Frédéric Besson, Sandrine Blazy.

## **7.2. Teaching - Supervision - Juries**

### **7.2.1. Teaching**

Licence: Delphine Demange, Functional Programming, 70h, L1, Université de Rennes 1 / Istic, France

Licence: Thomas Genet, Software Engineering, 58h, L2, Université de Rennes 1 / Istic, France

Licence: Delphine Demange, Software Engineering, 40h, L2, Université de Rennes 1 / Istic, France

Licence : Sandrine Blazy, Functional programming in OCaml, 30h, L3, Rennes 1, France

Master : Sandrine Blazy, Méthodes Formelles pour le développement de logiciels sûrs, 53h, M1, Rennes 1, France

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

Master : Sandrine Blazy, Mechanised semantics, 15h, M2, Rennes 1, France

Licence : David Cachera, Formal Languages, 36h, L3, ENS Rennes, France

Licence : David Cachera, Logic, 36h, L3, ENS Rennes, France

Licence : David Pichardie, Algorithms, 36h, L3, ENS Rennes, France

Licence : Alan Schmitt, Programmation Fonctionnelle, 37h, L3, Insa Rennes, France

Licence : Barbara Kordy, Formal Languages and Grammars, 36h , L3, INSA Rennes, France

Master : Thomas Genet, Formal Design and Verification, 108h, M1, Université de Rennes 1 / Istic, France

Master : Thomas Genet, Cryptographic Protocols, 24h, M2, Université de Rennes 1 / Istic, France

Master : Frédéric Besson, Compilation, 68h, M1, Insa Rennes, France

Master : Alan Schmitt, Méthodes Formelles pour le développement de logiciels sûrs, 22h, M1, Rennes 1, France

Master : David Cachera, Semantics of Programming Languages, 36h, M1, Université Rennes 1, France

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

Master : David Pichardie, Software Security, 21h, M2, Université Rennes 1, France

Master : David Pichardie, Mechanized Semantics, 15h, M2, Université Rennes 1, France

Master : Thomas Jensen, Static Analysis and Software Security, 20h, University of Copenhagen, Denmark.

Master : Barbara Kordy, Security, 17h, M2, INSA Rennes, France

Master : Barbara Kordy, 4th year Project, 55h, M1, INSA Rennes, France

### **7.2.2. Supervision**

PhD in progress : Martin Bodin, Certified Analyses of JavaScript, 1st september 2012, Thomas Jensen and Alan Schmitt

PhD in progress : Vincent Laporte, Formal verification of static analyses for low level langages, 1st septembre 2012, Sandrine Blazy and David Pichardie

PhD in progress : Yannick Zakowski, Programs Logics for Concurrency, 1st september 2014, David Pichardie and David Cachera

PhD in progress: Pierre Wilke, Low-level memory models for compilers and static analysers, 1st august 1013, Sandrine Blazy and Frédéric Besson

PhD in progress: Yann Salmon, Reachability for Term Rewriting Systems under Strategies, from Sept 2012, Thomas Genet

PhD in progress: David Bühler, Communication between analyses by deductive verification and abstract interpretation, November 2013, Sandrine Blazy and Boris Yakobowski (CEA)

PhD in progress: Stéphanie Riaud, Transformations de programmes pertinentes pour la sécurité du logiciel, septembre 2011, Sandrine Blazy

PhD: Valérie Murat, Tree Automata Extensions for the Verification of Infinite State Systems, Université de Rennes 1, Thomas Genet

PhD: Andre Oliveira Maroneze, Verified Compilation and Worst-Case Execution Time Estimation, Université de Rennes 1, Sandrine Blazy, David Pichardie and Isabelle Puaut

### **7.2.3. Juries**

Thomas Genet, jury member (reviewer) for the PhD defense of Marc Sylvestre, October 2014, University Bordeaux 1

Alan Schmitt, jury member for the PhD defense of Alain Mebsout, September 2014, Laboratoire de Recherche en Informatique

Alan Schmitt, jury member (reviewer) for the PhD defense of Nuno Gaspar, December 2014, Université de Sophia-Antipolis

Thomas Jensen, jury member (reviewer) for the PhD defense of Jael Kriener, March 2014, University of Kent at Canterbury, UK

David Pichardie, jury member (chair) for the PhD defense of Sebastien Chedor, January 2014, University Rennes 1, France

David Pichardie, jury member (examiner) for the PhD defense of Jonathan Protzenko, September 2014, University Paris-Diderot, France

David Pichardie, jury member (chair) for the PhD defense of Hernan Vanzetto, December 2014, University of Lorraine, France

David Pichardie, jury member (chair) for the PhD defense of Radoniaina Andriatsimandefitra Ratsisahanana, December 2014, SUPELEC, France

Sandrine Blazy, jury member (reviewer) for the PhD defense of Vincent Benayoun, May 2014, CNAM, France

Sandrine Blazy, jury member (chair) for the PhD defense of Van Chan Ngo, July 2014, University Rennes 1, France

Sandrine Blazy, jury member (reviewer) for the PhD defense of Etienne Millon, July 2014, University Paris 6, France

Barbara Kordy, jury member, (reviewer) for the PhD defense of Hannes Holm, February 2014, KTH, Sweden.

#### **7.2.4. Juries for competitive selections**

Sandrine Blazy, jury member and external president for the selection of a Maître de Conférences, May 2014, University Paris Sud, France.

Sandrine Blazy, jury member for the selection of a Maître de Conférences, May 2014, INSA de Rennes, France.

Sandrine Blazy, jury member for the selection of a Professeur des Universités, May 2014, University Paris Diderot, France.

Sandrine Blazy, jury member for the final selection of Inria DR (senior researchers) candidates, June 2014, Inria, Paris, France.

Sandrine Blazy, member of the evaluation committee CES 28 of ANR for the competitive selection of ANR projects, June 2014, Paris, France.

Delphine Demange, jury member for the selection of a Maître de Conférences at University of Rennes 1 / ISTIC, May 2014, University of Rennes 1, France.

Delphine Demange, jury member of the Gilles Kahn PhD award committee, December 2014, Inria Paris - Rocquencourt, Antenne Parisienne, France.

### **7.3. Popularization**

- Talk “Bug, Virus, Intrusion, Pirates... So many threats and no defense? Yes... maths.”, Thomas Genet, for high school teachers, ENS Rennes, Oct. 2014.

## COMETE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

Note: In this section we include only the activities of the permanent internal members of Comète.

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

Catuscia Palamidessi is member of:

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

The Organizing Committee of **LICS**, the ACM/IEEE Symposium on Logic in Computer Science. Since 2010.

The Council of **EATCS**, the European Association for Theoretical Computer Science. Since 2005.

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

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

**The IFIP Working Group 2.2** – Formal Description of Programming Concepts. Since 2001.

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

Frank D. Valencia is member of:

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

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

Catuscia Palamidessi:

has served as PC co-chair (together with Erika Ábrahám) of **FORTE 2014**: the 34th IFIP International Conference on Formal Techniques for Distributed Objects, Components and Systems. Berlin, Germany, 3-6 June 2014. Co-located with **DisCoTec 2014**.

is serving as PC chair of **LICS 2015**. 30th Annual ACM/IEEE Symposium on Logic in Computer Science. Kyoto, Japan, 6-10 July 2015.

Frank Valencia:

is serving as PC chair (with Camilo Rueda and Martin Leucker as co-chairs) of **ICTAC 2015**: The 12th International Colloquium on Theoretical Aspects of Computing. Cali, Colombia Oct 29-31 2015. Co-located with **11th International Workshop on Developments in Computational Models DCM 2015**.

is serving as chair of the organising committee (with Camilo Rueda and Martin Leucker as co-chairs) of **ICTAC 2015**: The 12th International Colloquium on Theoretical Aspects of Computing. Cali, Colombia Oct 29-31 2015.

### 8.1.2.2. Member of the conference program committee

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

**ATVA 2015.** The 13th International Symposium on Automated Technology for Verification and Analysis. Shanghai, China, 12-15 October 2015.

**FORTE 2015.** The 35th IFIP International Conference on Formal Techniques for Distributed Objects, Components and Systems. Inria Grenoble, France, 2-4 June 2015.

**TPDP 2015.** Theory and Practice of Differential Privacy London, UK, 18 April 2015.

**QEST 2014.** The 11th International Conference on Quantitative Evaluation of Systems. Florence, Italy, 8-12 September 2014.

**POST 2014.** The 3rd Conference on Principles of Security and Trust. Grenoble, 5-13 April 2014.

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

**PETS 2015:** The 15th Privacy Enhancing Technologies Symposium

**FCS 2015:** Workshop on Foundations of Computer Security

**TPDP 2015:** 1st workshop on the Theory and Practice of Differential Privacy

**QAPL 2015:** 13th Workshop on Quantitative Aspects of Programming Languages

**ICISSP 2015:** 1st International Conference on Information Systems Security and Privacy

**ICFEM 2014:** The 6th International Conference on Formal Engineering Methods

**PETS 2014:** The 14th Privacy Enhancing Technologies Symposium

**HotPETs 2014:** 7th Workshop on Hot Topics in Privacy Enhancing Technologies

**QAPL 2014:** 12th Workshop on Quantitative Aspects of Programming Languages

**APVP 2014:** 5ème Atelier sur la Protection de la Vie Privée

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

**PPDP 2014.** The 16th International Symposium on Principles and Practice of Declarative Programming (PPDP 2014). Canterbury, UK, September 8-10, 2014.

**ICLP DC 2014.** Tenth ICLP Doctoral Consortium. Vienna, Austria, July 20, 2014?

**PPDP 2015.** The 17th International Symposium on Principles and Practice of Declarative Programming (PPDP 2014). Siena, Italy, July 14-16, 2015.

**ICLP DC 2015.** 11th ICLP Doctoral Consortium. Cork, Ireland, 31 August 2015.

### 8.1.2.3. Reviewer

The members of the team reviewed several papers for international conferences and workshops.

## 8.1.3. Journal

### 8.1.3.1. Member of the editorial board

Catuscia Palamidessi is/has been:

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

Member of the Editorial Board of the **Electronic Notes of Theoretical Computer Science**, Elsevier Science.

Member of the Editorial Board of **LIPICs: Leibniz International Proceedings in Informatics**, Schloss Dagstuhl –Leibniz Center for Informatics.

Konstantinos Chatzikokolakis is:

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

#### 8.1.3.2. Reviewer

The members of the team reviewed several papers for international journals.

### 8.1.4. Other Editorial Activities

Catuscia Palamidessi is/has been:

Co-editor of the special issue of [Logical Methods in Computer Science](#) dedicated to selected papers of [DisCoTec 2014](#).

Co-editor (with Franck van Breughel, Elham Kashefi and Jan Rutten) of *Horizons of the Mind. A Tribute to Prakash Panangaden*. [LNCS 8464](#) Springer, 499 pages, 2014.

Co-editor (with Erika Ábrahám) of the proceedings of [FORTE 2014](#). [LNCS 8461](#) Springer, 301 pages, 2014.

Frank D. Valencia has been:

Co-editor of the special issue of [Mathematical Structures in Computer Science](#) dedicated to the 18th International Workshop on Expressiveness in Concurrency. Published on 12 December 2014.

Co-editor of the special issue of [Mathematical Structures in Computer Science](#) dedicated to the 17th International Workshop on Expressiveness in Concurrency. Published on 10 November 2014.

### 8.1.5. Other Activities

#### 8.1.5.1. Invited talks

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

[CONCUR 2014](#) and [TGC 2014](#) (Joint keynote speaker) The 25th Conference on Concurrency Theory and the 9th International Symposium on Trustworthy Global Computing. Rome, Italy, September 2014.

[NWPT 2014](#). The 26th Nordic Workshop on Programming Theory. Halmstad, Sweden October 2014.

#### 8.1.5.2. Participation in other committees

Catuscia Palamidessi has been serving in the following committees:

Member of the Swedish Research Council Committee for Computer Science, 2014. The main duty of this committee is to evaluate and select the grant applications.

Member of the committee for the ACM SIGSAC 2014 Doctoral Dissertation Award for Outstanding PhD Thesis in Computer and Information Security.

Member of the WWTF jury – selection committee for a tenure-track position at the Faculty of Informatics at the Vienna University of Technology. Fall 2014.

President of the selection committee for the [EATCS Best Paper Award](#) at the ETAPS conferences. Since 2006.

Member of the [EAPLS PhD Award](#) committee. Since 2010.

#### 8.1.5.3. Service

Catuscia Palamidessi serves as:

Member of the Comité d’Orientation Scientifique et Technique, Groupe de travail Relation Internationales (COST-GTRI). Since November 2007.

Directrice adjointe du LIX, le Laboratoire d’Informatique de l’Ecole Polytechnique. Since April 2010.

Member of the Comité de These for Mathematics and Computer Science at the École Polytechnique. Since October 2007.

Reviewer for the projects proposal for the program PRIN, sponsored by the Italian MIUR (“Ministero dell’Istruzione, dell’Università e della Ricerca”). Since 2004.



Frank Valencia served as:

President of the Selection Committee for the LIX Postdoctoral Fellowship. May - July 2014.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

PhD : Catuscia Palamidessi has been teaching a course for PhD students, on Quantitative Information Flow and on Differential Privacy at the department of Computer Science of the University of Pisa, Italy. April 2014. Total 20 hours.

Master : Frank D. Valencia has been teaching the masters course "Computability Theory", 60 hours, at the Pontificia Universidad Javeriana de Cali, Colombia. July 27 - Nov 1, 2014.

### 8.2.2. Supervision

PhD (2011-14) **Nicolás E. Bordenabe**. Ecole Polytechnique. Grant Inria/DGA. Co-supervised by Catuscia Palamidessi and Konstantinos Chatzikokolakis.

PhD in progress (2014-) **Michel Guzman**. Ecole Polytechnique. Grant Inria CORDI-S. Co-supervised by Catuscia Palamidessi and Frank D. Valencia.

PhD in progress (2013-) **Salim Percy**. Ecole Polytechnique. Grant Digiteo-Digicosme. Co-supervised by Frank D. Valencia and Stefan Haar.

PhD (2011-14) **Luis Fernando Pino Duque**. Ecole Polytechnique. Grant Inria/DGA. Co-supervised by Catuscia Palamidessi and Frank D. Valencia.

PhD in progress (2012-) **Marco Stronati**. Ecole Polytechnique. Grant EDX Monge. Co-supervised by Catuscia Palamidessi and Konstantinos Chatzikokolakis.

PhD in progress (2011-) **Lili Xu**. Ecole Polytechnique and Chinese academy of Science, Beijing, China. Co-supervised by Catuscia Palamidessi and Huimin Li.

### 8.2.3. Juries

Catuscia Palamidessi has been reviewer for the thesis of the following PhD students:

Xihui Chen (UNI-Lu, L). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Location Assurance and Privacy in Location-based Services*. Advised by Sjouke Mauw. Defended in June 2014.

Meilof Veeningen (TUE, Eindhoven, The Netherlands). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Objective Privacy – Formal analysis of data minimisation in privacy-enhancing protocols*. Advised by Sandro Etalle. Defended in June 2014.

Fabrizio Biondi (ITU, Copenhagen, Denmark). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Markovian Processes for Quantitative Information Leakage*. Advised by Andrzej Wasowski. Defended in May 2014.

Tri Mihn Ngo (University of Twente, Italy). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Qualitative and Quantitative Information Flow Analysis for Multi-threaded Programs*. Advised by University of Twente. Defended in April 2014.

Francesca Pampaloni (IMT, Lucca, Italy). PhD thesis reviewer and member of the committee board at the PhD defense. Title of the thesis: *Quantitative Models of Information Flow: Tuning the Power of the Adversary*. Advised by Michele Boreale. Defended in March 2014.

Frank Valencia has been reviewer for the thesis of the following PhD students:

Laura Titolo (University of Udine, Italy). Title of the thesis: *An Abstract Interpretation Framework for Diagnosis and Verification of Timed Concurrent Constraint Languages*. Advised by Marco Comini. Defended in May 12, 2014.

#### **8.2.4. Other didactical duties**

Catuscia Palamidessi is:

Co-responsible of the Master 2 course on Concurrency since 2003, first at the DEA in Theoretical Computer Science (Paris) and then at the MPRI.

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

Member of the advising committee for the PhD of Andrea Margheri, University of Florence, Italy.

### **8.3. Popularization**

Catuscia Palamidessi has organized the round table “Security & Privacy : challenges of the future digital society” at the **Forum STIC**, University of Paris-Saclay, December 2014.

Konstantinos Chatzikokolakis has been one of the speakers at the above round table.

Konstantinos Chatzikokolakis has given the popularization talk “Protection de la vie privée et anonymat” at the **Journée ISN**, Académie de Créteil, March 2014.

## COMPSYS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organization

#### 9.1.1.1. general chair, scientific chair

Laure Gonnord is co-chair of the “Compilation french community”, with Florian Frandner (ENSTA) and Fabrice Rastello (Inria Corse).

#### 9.1.1.2. member of the organizing committee

Alain Darté was part of the organization (mainly by Lionel Morel, from Insa-Lyon) of the thematic day on the “compilation and execution of streaming programs” in April 2014, see Section 8.1.2 .

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

Alain Darté was program chair of the topic E2 “compilers for Embedded Systems” of the international conference DATE’15 (see <http://www.date-conference.com/group/tpc/members#E>), with Rodric Rabbah (IBM), and program chair of the international workshop IMPACT’15 (see <http://impact.gforge.inria.fr/impact2015/>), with Alexandra Jimborean (Uppsala Univ.).

#### 9.1.2.2. member of the conference program committee

Paul Feautrier was a member of the program committees of the conferences and workshops PECCS’15, PARCO’15, IMPACT’14, and IMPACT’15. Laure Gonnord was a member of the program committee of the WST’14 workshop. Tomofumi Yuki was a member of the program committee of the IMPACT’15 workshop. Alain Darté was member of the program committees of the conferences and workshops IPDPS’14, DATE’14, DATE’15, IMPACT’14, and IMPACT’15.

#### 9.1.2.3. reviewer

In 2014, Christophe Alias has reviewed papers for DATE’15 and MEMOCODE’14. Laure Gonnord has reviewed papers for WST’14, TASE’14, VMCAI’15, and MEMOCODE’14. Tomofumi Yuki has reviewed papers for IMPACT’15. Alain Darté has reviewed papers for MICRO-47 (2014), DATE’15, and IMPACT’15.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

Paul Feautrier is a member of the editorial board of the journals “International Journal of Parallel Programming” and “Parallel Computing”.

#### 9.1.3.2. reviewer

In 2014, Christophe Alias has reviewed papers for ACM TACO (Transactions on Architecture and Code Optimization) and Elsevier IPL (Information Processing Letters). Paul Feautrier has reviewed papers for ACM TOPLAS (Transactions on Programming Languages and Systems) and ACM TODAES (Transactions on Design Automation of Electronic Systems). Tomofumi Yuki has reviewed papers for ACM TOPLAS and ACM TACO. Alain Darté has reviewed papers for ACM TACO and IEEE Transactions on Computers.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence:

- Christophe Alias: Introduction à la compilation, L3, INSA Centre-Val-de-Loire: Spring 2014 (CM+TD=18h).
- Christophe Alias: Architecture des ordinateurs, L2, Université Lyon 1 Claude Bernard: Spring 2014 (TP=15h).
- Christophe Alias: Concours E3A, épreuve informatique MPSI (shepherding/exams): Spring 2014.
- Laure Gonnord: Architecture des ordinateurs, L2, Université Lyon 1 Claude Bernard: Spring 2014 (TD+TP=40h), and Autumn 2014 (Course+TD 40h).

Master:

- Christophe Alias, Compilation avancée (CM 10h), M2, Ecole Normale Supérieure de Lyon.
- Christophe Alias, Compilation (CM 24h), M1, Ecole Normale Supérieure de Lyon.
- Laure Gonnord, Introduction aux systèmes et réseaux (CM/TP 52h), M2 Pro, Université Lyon 1.
- Laure Gonnord, Compilation (TD/TP 24h), M1, Université Lyon 1 Claude Bernard.
- Laure Gonnord, Complexité (TD 15h), M1, Université Lyon 1 Claude Bernard.
- Laure Gonnord, Temps réel (TP 24h), M1, Université Lyon 1 Claude Bernard.
- Laure Gonnord also organized two research schools (24h each) for the M1-ENS students. In 2014, the topic was “Programming embedded systems with synchronous languages” (invited speakers: Julien Forget, Abdoulaye Gamatié, Alain Girault, Nicolas Halbwachs). In 2015, the topic will be “Static analyses in the state-of-the-art compilers” (invited speaker: Fernando Pereira).

E-learning:

- Paul Feautrier has recorded a lecture on the polyhedral model, to be part of a course on auto-parallelization sponsored by the IEEE Computer Society (University of Illinois at Urbana-Champaign, Sept. 5-7) and organized by Hironori Kasahara and David Padua.
- Following the 2013 Spring School on Polyhedral Code Analysis and Optimization organized by Alain Darté, the videos of most courses have been collected and made available in 2014 (see <http://labexcompilation.ens-lyon.fr/polyhedral-school/videos/>). See also Section 8.4.1.2 .

### 9.2.2. Supervision

- PhD in progress: Guillaume Iooss, “Semantic tiling”, started in September 2011, joint PhD ENS-Lyon/Colorado State University, advisors: Christophe Alias and Alain Darté (ENS-Lyon) / Sanjay Rajopadhye (Colorado State University).
- PhD in progress: Alexandre Isoard, “Streaming-related code optimizations”, started in September 2012, advisor: Alain Darté.
- PhD in progress: Maroua Maleej, “Low cost static analyses for compilers”, started in October 2014, advisors: Laure Gonnord and Alain Darté.

### 9.2.3. Juries

Paul Feautrier was a member of the PhD defense committees of Michael Kruse (Orsay, Sept. 26, 2014), entitled “Lattice QCD Optimization and Polytopic Representations of Distributed Memory”, and of Luc Michel (Grenoble, Dec. 18, 2014), entitled “Contributions à la traduction binaire dynamique: support du parallélisme d’instructions et génération de traducteurs optimisés”.

Laure Gonnord was a reviewer for the PhD thesis of Chan N'Go (Rennes, Jul. 2014), entitled "Formal Verification of a Synchronous Data-flow Compiler: From Signal to C".

Alain Darté was member of the PhD defense committee of Romain Brillu (Nantes, Nov. 12, 2014), entitled "Efficient Design and Programming of MPSoC (Multiple Processors System on Chip) Architectures".

### 9.3. Popularization

- Alain Darté was invited to give a long keynote (1h30), as an introduction to polyhedral techniques ("Polyhedral optimizations? Not even scared!" [2]), to the spanish Conference Jornadas Sarteco, the equivalent of the french COMPAS conference, see <http://www.jornadassarteco.org/transparencias-de-las-charlas-invitas/>.
- In Sep. 2014, together with ten other specialists in automatic parallelization, Paul Feautrier recorded a lecture on the "polyhedral model" for a video course on automatic parallelization to be published by the IEEE.
- Paul Feautrier's 1988 "Array Expansion" seminal paper has been selected for the 25th Anniversary Volume of the ACM International Conference on Supercomputing, with 34 other papers, among 1800 papers published from 1987 to 2011. A short "reminescence" paper [13] has been written for the occasion. <http://dl.acm.org/citation.cfm?doid=2591635.2591641>.
- Alain Darté participated to the "Refresh" Inria Rhône-Alpes initiative, for improving the scientific life of the Inria regional center, as well as to the working group on "team management".

## **CONVECS Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. General chair, scientific chair*

- G. Salaün was general chair for SEFM'2014 (*12th International Conference on Software Engineering and Formal Methods*), Grenoble, France, September 1–5, 2014.

#### *9.1.1.2. Member of the organizing committee*

- L. Ye was publicity chair for SEFM'2014. R. Abid and H. Evrard were members of the organizing committee for SEFM'2014.
- W. Serwe was publicity chair for FMICS'2014 (*19th International Workshop on Formal Methods for Industrial Critical Systems*), Florence, Italy, September 11–12, 2014.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Chair of conference program committee*

- G. Salaün was programme committee chair for SEFM'2014.
- F. Lang was programme committee chair for FMICS'2014.

#### *9.1.2.2. Member of the conference program committee*

- G. Salaün was programme committee member for GRAPHITE'2014 (*3rd Workshop on Graph Inspection and Traversal Engineering*), Grenoble, France, April 5, 2014.
- G. Salaün was programme committee member for ORCHOR'2014 (*International Workshop on Service Orchestration and Choreography for the Future Internet*), Anchorage, Alaska, June 30, 2014.
- G. Salaün was programme committee member for WWV'2014 (*International Workshop on Automated Specification and Verification of Web Systems*), Vienna, Austria, July 18, 2014.
- H. Garavel was programme committee member for SEFM'2014.
- G. Salaün was programme committee member for FOCLASA'2014 (*13th International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems*), Rome, Italy, September 6, 2014.
- G. Salaün was programme committee member for FACS'2014 (*11th International Symposium on Formal Aspects of Component Software*), Bertinoro, Italy, September 10–12, 2014.
- R. Mateescu and W. Serwe were programme committee members for FMICS'2014.
- W. Serwe was a program committee member for the track on “Prototyping, Validation, Verification, Modeling and Simulation” of VLSI-SOC'2014 (*22nd IFIP/IEEE International Conference on Very Large Scale Integration*), Playa del Carmen, Mexico, October 6–8, 2014.

#### *9.1.2.3. Reviewer*

- H. Evrard reviewed articles submitted to FOCLASA'2014 and TACAS'2015 (*21th International Conference on Tools and Algorithms for the Construction and Analysis of Systems*).
- F. Jebali reviewed articles submitted to AVOCs'2014 (*14th International Workshop on Automated Verification of Critical Systems*).
- A. Kriouile reviewed articles submitted to SAC-SVT'2015 (*30th ACM/SIGAPP Symposium on Applied Computing — Software Verification Track*).

- F. Lang reviewed articles submitted to TACAS'2015.
- R. Mateescu reviewed articles submitted to AVOCS'2014, SEFM'2014, and TACAS'2015.
- G. Salaün reviewed articles submitted to WETICE-PASCS'2014 (*23rd IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises — Track on Privacy and Accountability for Software and Cloud Services*).
- W. Serwe reviewed articles submitted to AVOCS'2014, DATE'2014 (*Design, Automation & Test in Europe*), and TACAS'2015.
- L. Ye reviewed articles submitted to SEFM'2014, VALID'2014 (*6th International Conference on Advances in System Testing and Validation Lifecycle*), SAC-SVT'2015, and FSEN'2015 (*6th IPM International Conference on Fundamentals of Software Engineering*).

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- H. Garavel is an editorial board member of STTT (*Springer International Journal on Software Tools for Technology Transfer*).
- G. Salaün is an editorial board member of SOCA (*Springer International Journal on Service Oriented Computing and Applications*).

#### 9.1.3.2. Reviewer

- R. Mateescu was reviewer for ACM TECS (*Transactions on Embedded Computing Systems*) and STTT.
- J. I. Requeno was reviewer for IEEE TC (*Transactions on Computers*).
- G. Salaün was reviewer for JLAMP (*Journal of Logical and Algebraic Methods in Programming*), JISA (*Journal of Internet Services and Applications*), IEEE TSE (*Transactions on Software Engineering*), and IJWET (*International Journal of Web Engineering and Technology*).

### 9.1.4. Software Dissemination and Internet Visibility

The CONVECS project-team distributes several software tools: the CADP toolbox (see § 5.1), the TRAIAN compiler (see § 5.2), the PIC2LNT translator (see § 5.3), and the PMC model checker (see § 5.4).

In 2014, the main facts are the following:

- We prepared and distributed twelve successive versions (2014-a to 2014-l) of CADP.
- We were requested to grant CADP licenses for 425 different computers in the world.

The CONVECS Web site <sup>0</sup> was updated with scientific contents, announcements, publications, etc.

By the end of December 2014, the CADP forum <sup>0</sup>, opened in 2007 for discussions regarding the CADP toolbox, had over 320 registered users and over 1570 messages had been exchanged.

Also, five large Petri nets derived from our LNT models were provided as benchmark examples for the 2014 edition of the Model Checking Contest.

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

- The IMCReo tool to reason about QoS in Stochastic Reo connectors [58], [59]
- The Alvis virtual machine to execute formal models in the Alvis language [57]
- The Tomte tool for active learning of Mealy machines [30]
- The Vercors platform for verifying the correct composition of distributed components [52]
- The TLM.open tool connecting SystemC/TLM models to CADP [50]
- The REFINER tool for formal Verification of Model Transformations [65], [66]
- The ELTON development environment for LOTOS specifications [68]

<sup>0</sup><http://convecs.inria.fr>

<sup>0</sup><http://cadp.inria.fr/forum.html>

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

- Model-based specification, implementation and testing of a software bus [61]
- Protocol conformance testing using active learning of Mealy machines [31]
- High-performance fractal coherence [64], [63]
- Verification of models reverse engineered from smart-card readers [34]

### 9.1.5. Awards and Distinctions

H. Garavel is an invited professor at Saarland University (Germany) as a holder of the Gay-Lussac Humboldt Prize.

### 9.1.6. Lectures and Invited Conferences

- H. Garavel gave an invited talk entitled “*Trois décennies de réussite en méthodes formelles*” at the Journées MFDL/MTV2 (*Méthodes Formelles pour le Développement de Logiciels/Méthodes de Test pour la Vérification et la Validation*) held on January 14, 2014 in Grenoble, France.
- H. Garavel and R. Mateescu gave a talk entitled “*Analyse de traces par model checking / Trace Analysis using Model Checking*” at the PIMLIG seminar “*Traces dans tous leurs états*” held on January 22, 2014 in Grenoble, France.
- G. Salaün gave a talk entitled “*On the Verification of Asynchronously Communicating Systems*” on February 18, 2014 in Málaga, Spain.
- G. Salaün gave a talk entitled “*Verification of Asynchronously Communicating Systems*” on October 2nd, 2014 in Clermont-Ferrand, France.
- R. Mateescu gave an invited talk entitled “*Walking Back and Forth in Labelled Transition Systems*” at the GRAPHITE’2014 workshop held on April 5, 2014, in Grenoble, France.
- H. Garavel gave a talk entitled “*Benchmarks and Benchmarking: The Model Checking Contest*” at the 20 years of TACAS workshop and celebration held on April 8, 2014 in Grenoble, France.
- H. Garavel gave a talk entitled “*Real Time without Clocks*” on June 6, 2014 at Saarland University, Saarbrücken, Germany.
- H. Garavel gave a talk entitled “*Reconciling Concurrency Theory with Other Branches of Computer Science*” at the *IFIP WG 1.8 Research Seminar on Open Problems in Concurrency Theory* held on June 18–21, 2014 in Bertinoro (Forlì), Italy.
- R. Mateescu gave an invited talk entitled “*Mu-Calculus Property-Dependent Reductions for Divergence-Sensitive Branching Bisimilarity*” at the WS-FMDS’2014 workshop held on September 2, 2014 in Grenoble, France.
- R. Mateescu gave a talk entitled “*Two Decades of Formal Methods for Industrial Critical Systems*” at the ERCIM 25th anniversary held on October 23–24, 2014, in Pisa, Italy.
- F. Jebali gave a talk entitled “*A Step Towards Reconciling GALS Industrial Design with Formal Verification*” on September 11, 2014 at the 11th LASER Summer School on Software Engineering held on September 7–13, 2014 in Elba Island, Italy.
- F. Lang gave a talk entitled “*Partial Model Checking Using Labelled Transition Systems and Boolean Equation Systems*” to a panel of 1st year students of Ecole Normale Supérieure de Cachan during their visit to the LIG laboratory on December 9, 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

CONVECS is a host team for the computer science master entitled “*Mathématiques, Informatique, spécialité : Systèmes et Logiciels*”, common to Grenoble INP and University Joseph Fourier.



In 2014, we carried out the following teaching activities:

- G. Salaün is co-responsible of the ISI (*Ingénierie des Systèmes d'Information*) department of ENSIMAG since September 1, 2011.
- F. Lang and W. Serwe gave a course on “*Spécification et vérification de systèmes concurrents et temps-réel*” to the third year computer science engineering students of ENSIMAG (18 hours).
- G. Salaün gave a course on “*Programmation orientée-objet*” to the second year computer science engineering students of ENSIMAG (18 hours).
- G. Salaün gave a course on “*Théorie des langages*” to the first year computer science engineering students of ENSIMAG (18 hours).
- R. Oliveira served as a teaching assistant in a course on “*Bases de Données*”, given by Aurélien Faravelon to the first year computer science engineering students of IUT2 (25 hours).
- R. Oliveira served as a teaching assistant in a course on “*Algorithmique et programmation*”, given by Vanda Luengo to the first year computer science engineering students of IUT (40 hours).

### 9.2.2. *Juries*

- G. Salaün was external reviewer for José Antonio Mateo Cortés’s PhD thesis, entitled “*Verification and Validation of Web Service Compositions using Formal Methods*”, defended at Universidad de Castilla La Mancha, Spain, on July 1st, 2014.
- G. Salaün was external reviewer for Diana Allam’s PhD thesis, entitled “*Enforcing Loose Coupling and Substitution Principles in an Object-Oriented Framework for Web Services*”, defended at Ecole des Mines, Nantes, France, on July 10, 2014.
- R. Mateescu was external reviewer for Ala Eddine Ben Salem’s PhD thesis, entitled “*Improving the Model Checking of Stutter-Invariant LTL Properties*”, defended at Université Pierre et Marie Curie, Paris, France, on September 25, 2014.
- G. Salaün was external reviewer for Lakhdar Akroun’s PhD thesis, entitled “*Décidabilité et complexité de la relation de simulation des services Web orientés données*”, defended at Université Blaise Pascal, Clermont-Ferrand, France, on December 8, 2014.
- G. Salaün was external reviewer for Dimitris Vekris’s PhD thesis, entitled “*Vérification de spécifications EB3 à l’aide de techniques de model checking*”, defended at Université Paris-Est Créteil, France, on December 10, 2014.

## 9.3. Popularization

H. Garavel participates to the committee in charge of organizing the Aerospace Valley series of industrial conferences on formal methods. The third conference <sup>0</sup>, devoted to theorem proving, held on February 4 in Toulouse and retransmitted by video-conference in Grenoble, attracted over 100 participants from industry and academia.

The fourth conference <sup>0</sup>, devoted to model checking, held on October 16 in Toulouse and retransmitted by video-conference in Grenoble and Saclay, attracted over 120 participants from industry and academia. H. Garavel gave a talk entitled “*Présentation de l’outil CADP*”. A. Kriouile gave a talk entitled “*Application de CADP à la vérification de matériel*”. R. Mateescu gave a talk entitled “*Introduction au model checking*”.

## 9.4. Miscellaneous Activities

H. Evrard is a member of the council of the MSTII doctoral school.

H. Evrard and G. Salaün are members of the council of the LIG laboratory.

<sup>0</sup><http://www.inria.fr/centre/grenoble/agenda/forum-methodes-formelles2>

<sup>0</sup><http://projects.laas.fr/IFSE/FMF/J4/index.html>

H. Garavel is a member of the LIG commission in charge of preparing candidates selected for recruitment interviews at CNRS.

H. Garavel is a member of the operational committee of the EMSOC cluster (“Embedded System on Chip”) within the Minalogic “*pôle de compétitivité mondial*”.

H. Garavel was a reviewer for various ongoing ANR (*Agence Nationale de la Recherche*) pre-propositions and projects evaluated in 2014.

F. Lang is a member of the “*commission du développement technologique*”, which is in charge of selecting R&D projects for Inria Grenoble - Rhône-Alpes.

E. Léo and W. Serwe are members of the “*comité de centre*” of Inria Grenoble - Rhône-Alpes.

R. Mateescu is the correspondent of the “*Département des Partenariats Européens*” for Inria Grenoble - Rhône-Alpes.

G. Salaün is a member of the scientific council of Grenoble INP (*Conseil scientifique de l’institut*).

G. Salaün is a member of the MSTIC council of Grenoble-Alpes University (*Conseil de pôle MSTIC*).

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

F. Lang is (together with Laurent Lefèvre from the AVALON Inria project-team) correspondent in charge of the Inria Activity Report at Inria Grenoble - Rhône-Alpes.

## CRYPT Team

## 6. Dissemination

### 6.1. Promoting Scientific Activities

#### 6.1.1. Scientific events organisation

##### 6.1.1.1. General chair, scientific chair

- Xiaoyun Wang was General Chair of the 10th China International Conference on Information Security and Cryptology (Inscrypt 2014) in Beijing (China), from December 13 to 15, 2014.

##### 6.1.1.2. Member of the organizing committee

- Phong Nguyen was an organizer of the LIAMA France-China 50 Workshop, in May 2014, in Paris (France).

#### 6.1.2. Scientific events selection

##### 6.1.2.1. Chair of conference program committee

- the 33rd IACR Eurocrypt Conference (EUROCRYPT 2014) [22]: Phong Nguyen.

##### 6.1.2.2. Member of the conference program committee

- Eleventh Algorithmic Number Theory Symposium ANTS-XI (August 6 ? 11, 2014, Korea): Phong Nguyen.

##### 6.1.2.3. Reviewer

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

#### 6.1.3. Journal

##### 6.1.3.1. Member of the editorial board

- 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

## 6.2. Teaching - Supervision - Juries

### 6.2.1. Teaching

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

PhD: Phong Nguyen, Introduction to Lattice Algorithms, 3h, EPFL Winter School, Switzerland.

### 6.2.2. Supervision

PhD: Wei Wei, New Transference Theorems on Lattices Possessing Gaps, Tsinghua, June 2014, Xiaoyun Wang

PhD: Feng Zhang, Theory, Algorithm and Applications for Solving SVP and CVP in Lattices, CAS, Summer 2014, Yanbin Pan

### 6.2.3. Juries

PhD: Wei Wei, New Transference Theorems on Lattices Possessing Gaps, Tsinghua, June 2014, Xiaoyun Wang (supervisor)

PhD: Chenggang Wu, Property Testing and Related Problems, Tsinghua (Institute for Interdisciplinary Information Sciences), June 2014, Phong Nguyen (Jury member)

PhD: Feng Zhang, Theory, Algorithm and Applications for Solving SVP and CVP in Lattices, CAS, Summer 2014, Yanbin Pan (supervisor)

### **6.3. Popularization**

Phong Nguyen gave several invited talks:

- [17] at the First NTU-VIASM Workshop on Discrete Mathematics, in Vietnam.
- at the 2014 CTIC-IIS Theory of Cryptography workshop, in China.
- at the Mathematical Workshop of the Chinese Association for Cryptologic Research, in China.

## DEDUCTEAM Exploratory Action

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, scientific chair

Catherine Dubois was a general chair of the GDR GPL national days, and the AFADL'14, CAL'14, and CIEL'14 conferences, organized at *Cnam* in Paris.

#### 8.1.1.2. Member of the organizing committee

David Delahaye was a member of the organizing committee of the GDR GPL national days, and the AFADL'14, CAL'14, and CIEL'14 conferences, organized at *Cnam* in Paris.

Olivier Hermant and Florian Rabe organized the 2nd KWARC-Deducteam workshop in Bremen, Germany (May 2014).

Gilles Dowek is a member of the steering committees of RTA and TLCA. Catherine Dubois is the chair of the steering committee of TAP.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

Gilles Dowek has been the PC chair of RTA-TLCA.

David Delahaye and Catherine Dubois were co-chairs of the SETS'14 workshop (affiliated to ABZ'14).

David Delahaye was a co-chair of the  $\forall X.XII$ '14 workshop (affiliated to VSL'14).

Catherine Dubois was a co-chair of the F-IDE'14 workshop (affiliated to ETAPS'14). She was also a PC co-chair of the AFADL'2014 national conference.

#### 8.1.2.2. Member of the conference program committee

Olivier Hermant was member of the program committee of the RTA-TLCA 2014 conference (July 2014).

#### 8.1.2.3. Reviewer

Frédéric Blanqui reviewed a paper submitted to the post-proceedings of TYPES'14.

Alejandro Díaz-Caro reviewed a paper submitted to the FSTTCS'14 conference.

Ronan Saillard reviewed a paper submitted to the RTA'14 conference.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

David Delahaye is a member of the editorial board of the Global Journal of Advanced Software Engineering (GJASE).

#### 8.1.3.2. Reviewer

David Delahaye reviewed one paper for the Global Journal of Advanced Software Engineering (GJASE) and one paper for the Requirements Engineering (RE) journal.

Alejandro Díaz-Caro reviewed a paper submitted to Elsevier's "Science of Computer Programming" journal.

Olivier Hermant reviewed a paper submitted to the journal "Theoretical Computer Science".

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

CPGE: Simon Cruanes, Mathématiques-Informatiques en MPSI, 64 HETD, MPSI, Lycée Saint-Louis, France.

Licence : Raphaël Cauderlier, Eléments de programmation 2, 63 HETD, L1, UPMC, France.

Licence: Ali Assaf, Algorithmique et programmation, 36 HETD, L3, Ecole Polytechnique, France.

Licence: Ali Assaf, Les bases de la programmation et de l'algorithmique, 36 HETD, L3, Ecole Polytechnique, France.

Licence : Alejandro Díaz-Caro, Mathématiques 2, 18 HETD, L1, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Méthodologie de la mesure en sciences humaines, 48 HETD, L1, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Statistiques et probabilités, 18 HETD, L2, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Probabilités, 36 HETD, L2, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Probabilités, 36 HETD, L2, Université Paris-Ouest Nanterre La Défense, France.

Licence: Ronan Saillard, Programmation Orientée Objet en Java, 27 HETD, Telecom ParisTech, France.

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

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

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

Master: Guillaume Burel, Systèmes et langages formels, 17.5 HETD, M1, ENSIIE, France

Master: Guillaume Burel, Compilation, 33.25 HETD, M1, ENSIIE, France

Licence: Guillaume Burel is in charge of the 4th, 5th, and 6th semesters of the engineering degree at ENSIIE.

Licence: Pierre Halmagrand, Initiation à la Programmation en JAVA, 48.75 HETD, L1, CNAM, France

Master: Pierre Halmagrand, Initiation à la Méthode B, 53.7 HETD, M2, CNAM, France

Master: Gilles Dowek has given invited classes at Supelec, Centrale, INSA-Lyon.

### 8.2.2. Supervision

PhD : Kim-Quyen Ly, Automated verification of termination certificates [11], University Joseph Fourier, Grenoble, 9 October 2014, Jean-François Monin and Frédéric Blanqui.

PhD in progress : Ronan Saillard, Systèmes de Types Modulo, Oct 2012, Olivier Hermant and Pierre Jouvelot.

PhD in progress : Pierre Halmagrand, “Automated Deduction Modulo”, from Oct. 2013, David Delahaye, Olivier Hermant, and Damien Doligez.

PhD in progress : Guillaume Bury, “SMT Modulo”, Oct. 2014, David Delahaye.

PhD in progress : Ali Assaf, Interoperability of Proof Systems, Oct. 2012, Gilles Dowek and Guillaume Burel.

PhD in progress : Simon Cruanes, Automated reasoning modulo theories, August 2012, Gilles Dowek and Guillaume Burel.

PhD in progress : Kailiang Ji, Model Checking and Automated Theorem Proving, October 2012, Gilles Dowek.

### 8.2.3. Juries

David Delahaye reviewed the PhD thesis of Hernán Vanzetto, supervised by Stephan Merz and Kaustuv Chaudhuri, and defended in Dec. 2014 in Nancy.

David Delahaye was part of the HDR jury of Stéphane Lengrand, defended in Dec. 2014 at École Polytechnique in Palaiseau.

Gilles Dowek has been part of the HDR committee of Philippe Malbos.

Catherine Dubois reviewed the HDR thesis of Oum-El-Kheir Aktouf, defended in July 2014 in Valence.

### **8.3. Popularization**

Gilles Dowek is the president of the scientific board of the “Société Informatique de France” (SIF).

Gilles Dowek is a member of the scientific board of “La Main à la Pâte”.

Raphaël Cauderlier, Simon Cruanes, Pierre Halmagrand et Ronan Saillard ont participé à l’animation du stand Inria au Salon Culture et Jeux Mathématiques les 24 et 25 mai

Ali Asaf, Raphaël Cauderlier, Simon Cruanes et Pierre Halmagrand ont participé à l’animation du stand Inria lors de la Fête de la Science les 9 et 10 octobre 2014 à Paris

Gilles Dowek has given a talk at Mathenjeans.

Alejandro Díaz-Caro is member of the scientific board of “Ensemble”, a journal of the Maison Argentina at Cité Universitaire in Paris, ISSN 1852–5911.

## DICE Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events selection

Stéphane Grumbach is a member of a Scientific Committee on journalism and public welfare in the digital age at the College des Bernardins in Paris.

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

Licence : Stéphane Frénot, Stéphane Grumbach: Twitter, Facebook et le Web2.0, Module INSA Lyon, automne 2014

Master : Stéphane Grumbach, L'intermédiation et l'économie des ressources, cours dans le cadre du Master Biosciences, UE Sciences et Société, ENS Lyon, décembre 2014

INSA, Stéphane Frénot, Agility: A 32 hours optional course on agile software development presenting both iterative (SCRUM) and stream based approaches (LEAN IT). M1. (since 2011)

INSA, Stéphane Frénot, Innovating Project: Supervising 250 hours student project aim at managing innovating projects. Each student group leads its own subject during one semester. All projects and organizational details are publicly available here: <http://tc-pi.fr> M1 (Since 2006)

INSA, Stéphane Frénot, Learn Other Languages: The aim of the course is to improve one's skills in current state-of-the-art programming and discover different ways to develop using mainly web-oriented programming languages. M1 (Since 2013)

Stéphane Grumbach, L'Economie des données, Webinaire, as part of the lecture Economie du Web, ENS Lyon, Université de Montréal, Enssib, Nov 2014

#### 8.2.2. Supervision

Robert Riemann, decentralized voting, Sept 2014

Etienne Brodu, DataFlow compilation from JavaScript, Jan 2013

Manuel Selva, Dynamic dataflow for embedded system, Nov 2011, with Lionel Morel (Socrate Inria team)

Marie-Ange Lebre, Service oriented computing in cars, Jan 2011, with Frederic Le Mouel (Dynamid CITI team)

Rocha Goya, Smart OS for smart ambient devices, Sept 2011, with Frederic Le Moueil (Dynamid CITI team)

#### 8.2.3. Juries

Hu Zeng, Auto-configuration, Supervision et Contrôle d'Entités Physiques par l'intermédiaire de Réseaux de Capteurs et Actionneurs, Advisor, Jan 2014

Dan Yufang, Security and self-healability enforcement of dynamic components in a service-oriented system, Advisor, may 2014

Nicolas Haderer, APISENSE : une plate-forme répartie pour la conception, le déploiement et l'exécution de campagnes de collecte de données sur des terminaux intelligents, examiner, 5 nov 2015



Jigar Solanki, Approche génerative conjointe logicielle-matérielle au développement du support protocolaire d'applications réseaux, reviewer, 27 Nov 2014

### 8.3. Popularization

- Stéphane Frénot and Stéphane Grumbach have been invited speakers to the BlendWebMix conference in Lyon end of October. This event of two days unites actors from different fields in the web domain, i.e. programmers, entrepreneurs, designers and scientists. Two contributions have been programmed for DICE to speak about digital and geographical territories, and about big data and intermediation platforms.
- The annual German-speaking conference DNP14 in Vienna (Austria) is a two-day event to discuss topics related to data, networks and politics and has taken place this year in September. Robert Riemann was giving a talk to introduce the concept of the C3PO project and illustrate its possibilities of application.
- Metroscope aims at being a leading Internet Observatory. It holds an annual workshop. Aurélien Faravelon presented DICE's works on intermediation at the 2014 edition.
- Séminaire Pint Of Science, Lyon, Google, Twitter, BitTorrent et BitCoin : les données, objets de toutes les convoitises <http://www.pintofscience.fr/#!lyon/ci18>, 21 Mai 2014
- Rencontres CNRS Journées citoyen CNRS, poitiers, invitation to a seminar at school about Big Data, 17-19 Oct 2014, <http://www.cnrs.fr/sciencesetcitoyens/>
- Panel Big Data, Open Data : enjeux démocratiques, colloque Le monde après Snowden, Assemblée nationale, Paris, 13-14 mars 2014
- La France dans le paysage mondial de l'intermédiation, Audition publique au Sénat, Mission commune d'information "Nouveau rôle et nouvelle stratégie pour l'Union européenne dans la gouvernance mondiale de l'Internet", Paris, 11 Febr 2014
- Les enjeux du numérique présentés aux députés, avec la délégation Inria, et le groupe d'études Internet et société numérique de l'Assemblée nationale, Paris, 21 janvier 2014

### 8.4. Invited talks

- Introduction aux algorithmes, Séminaire Journalisme et bien commun à l'heure des algorithmes, Collège des Bernardins, Paris, 16 Dec 2014
- Les données et la sécurité, Panel Les villes intelligentes, Universités de la sécurité, AN2V, Lyon, 4-5 Dec 2014
- L'intermédiation et l'économie des ressources, cours dans le cadre du Master Biosciences, UE Sciences et Société, ENS Lyon, Dec 2014
- Data is power, Panel The power of data and the internet of things, Global Forum, Geneva, 17-18 Nov 2014
- L'Economie des données, Webinaire, dans le cours Economie du Web, ENS Lyon, Université de Montréal, Enssib, Nov 2014
- "Big Data as a Resource – Political And Geopolitical Issues At Stake", Conference on Smart Data for Government, London, 23-24 Sept, 2014
- Les enjeux de l'information, Congrès de l'Union Française des Métiers de l'Événement, UNIMEV, Lille 2-4 Jul 2014
- Panel "Data Centers, Open Data, Big Data", 5th European Summit on the Future Internet, Luxembourg, 12-13 June 2014
- "The Power of Intermediation and the Geopolitical Challenge", The Diplomacy and Diversity Fellowship, a Humanity in Action program, Paris, 11 Jun 2014
- L'économie de l'intermédiation, Les grandes conférences du LIG, Grenoble, 15 May 2014

- Les données, nerf de la guerre, Journée IXXI sur la révolution numérique et la gouvernance, Lyon, 4 Apr 2014
- Les grandes plateformes de données, enjeux politiques et géopolitiques ? Institut des sciences de la communication, ISCC, Paris, 25 Mar 2014
- Panel on Big Data, Swiss STS meeting, Collecting, Organizing, Trading Big Data, University of Lausanne, 20-22 Febr 2014

## **DREAMPAL Team**

## **8. Dissemination**

### **8.1. Promoting Scientific Activities**

#### **8.1.1. Scientific events organisation**

##### *8.1.1.1. member of the organizing committee*

F. Guyomarch, P. Marquet and S. Meftali are members of the ComPAS organizing committee. This conference will take place in Lille in 2015.

F. Guyomarch and S. Meftali are members of the Archi organizing committee. This summer school will take place in Lille in 2015.

R. Ben Atitallah is a member of the Green Days@Rennes organizing committee. The scientific event was held in Rennes, July 2014.

#### **8.1.2. Scientific events selection**

##### *8.1.2.1. responsable of the conference program committee*

S. Meftali is responsible of the ComPAS conference program committee. This conference will take place in Lille in 2015.

##### *8.1.2.2. member of the conference program committee*

F. Guyomarch is a member of the ComPAS program committee.

V. Rusu is a member of the WRLA2014 program committee.

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Licence : Philippe Marquet, Introduction to Computer Science, 15h, Secondary Education Teacher Training, Université Lille 1, France

Licence : Philippe Marquet, System Programming, 60h, L3, Université Lille 1, France

Master: Philippe Marquet, Design of Operating System, 60h, M1, Université Lille 1, France

Master: Philippe Marquet, Web of Things: Embedded System Programming, 20h, M1, Université Lille 1, France

Master: Philippe Marquet, Parallel and Distributed Programming, 24h, M1, Université Lille 1, France

Master: Philippe Marquet, Introduction to Innovation and Research, 15h, M2, Université Lille 1, France

Licence : Samy Meftali, Architecture des ordinateurs, 75h, L2, UFR IEEA, Université Lille 1, France

Licence : Samy Meftali, Programmation du matériel, 40h, L3, UFR IEEA, Université Lille 1, France

Master: Samy Meftali, Architectures évoluées des ordinateurs, 80h, M1, UFR IEEA, Université Lille 1, France

Master: Samy Meftali, Vérification des SoC, 16h, M2, UFR IEEA, Université Lille 1, France

Licence : Jean-Luc Dekeyser, Architecture des ordinateurs, 80h, L2, UFR IEEA, Université Lille 1, France

Master: Jean-Luc Dekeyser, Architectures évoluées des ordinateurs, 105h, M1, UFR IEEA, Université Lille 1, France

Licence : F. Guyomarch, Algorithmique et programmation, 144h, L1, IUT-A (Univ. Lille 1)

Licence : F. Guyomarch, Modélisation et théorie des langages, 64h, L2, IUT-A (Univ. Lille 1)

Licence : F. Guyomarch, Modélisation mathématique, 28h, L2, IUT-A (Univ. Lille 1)

Licence : Rabie Ben Atitallah, Introduction to Computer Architecture and Operating System, 36h, L2, Université de Valenciennes et du Hainaut-Cambrésis, France

Licence : Rabie Ben Atitallah, Algorithms and Language C Programming, 48h, L2, Université de Valenciennes et du Hainaut-Cambrésis, France

Master: Rabie Ben Atitallah, Tools for Embedded System Design, 32h, M2, Université de Valenciennes et du Hainaut-Cambrésis, France

Master: Rabie Ben Atitallah, Development and Compilation of Embedded Application, 32h, M2, Université de Valenciennes et du Hainaut-Cambrésis, France

Master : V. Rusu, Architecture avancée des ordinateurs, 42h, M1, UFR IEEA, (Univ. Lille 1)

Master : V. Rusu, Spécification et vérification de logiciels , 27h, M1, UFR IEEA, (Univ. Lille 1)

### 8.2.2. Supervision

PhD : A. Arusoai, *A Generic Framework for to Symbolic Execution*, Univ. Iasi (Romania), Sept 2014. Supervisors: D. Lucanu, V. Rusu.

PhD in progress : H. Krichene, *SCAC : Modèle d'exécution générique faiblement couplé pour les architectures massivement parallèle sur puce*, March 2011, Philippe Marque & Jean-Luc Dekeyser

PhD in progress : W. Chouchene, *Partial reconfiguration model for dynamic and massively parallel architecture : towards 3D FPGAs*, 01/10/2013, Jean-Luc Dekeyser, Rabie Ben Atitallah and Samy Meftali

PhD in progress : K. Ali, *Massively parallel dynamically reconfigurable architecture for real-time vidéo processing applications*, 01/10/2013, Jean-Luc Dekeyser, Rabie Ben Atitallah

PhD in progress : V. Viswanathan, *Parallel and Dynamic reconfigurable computing system*, 01/02/2012, Jean-Luc Dekeyser and Rabie Ben Atitallah

PhD in progress : V. Craciun, *Hardware monitoring*, Sept 2014, F. Guyomarch and D. Lucanu.

### 8.2.3. Juries

Doctorat de Amel Khiar, Virtualisation des communications au sein d'une plateforme hétérogène et reconfigurable dynamiquement, Université de Cergy Pontoise, 5 novembre 2014, Samy Meftali (examinateur).

Doctorat de Ferial Ben Abdallah, Modeling and Formal Verification of Power Management for the Design of Systems-on-Chip, Université de Valenciennes, 12 décembre 2014, Samy Meftali (examinateur).

## 8.3. Popularization

Philippe Marquet is vice-president of the *Société informatique de France*, the French learned society in computer science.

Philippe Marquet is involved in scientific popularization and co-animates the group of people interested in science popularization within the Inria Lille - Nord Europe Research Center. He is also a member of the group for networking about computer science popularization inside Inria.

He organizes and participates to the visit of classrooms on the Inria Plateau at EuraTechnologies, promoting interactions between the scientific community and secondary school students and their teachers. He organizes and/or animates events with children and/or adults in order to initiate them to code via Scratch or to computer science via unplugged activities (Poitiers, February 2014; Paris, October 2014; Inria Lille, December 2014).

Philippe Marquet is a member of the editorial board of 1024, the new bulletin of the *Société informatique de France* that aims at showing informatics, science and technology, in all its dimensions. 1024 targets a wide audience, from high school students to researcher, including anyone interested in computer science.

Hana Krichene participated in a contest "my thesis in 180 seconds", March 2014 - University Lille 1. The aim of the competition is to present the PhD student researches in simple terms in 3 minutes, with a clear, concise and convincing presentation to a diverse audience.

## **ESTASYS Exploratory Action**

### **8. Dissemination**

#### **8.1. Promoting Scientific Activities**

##### **8.1.1. Scientific events organisation**

###### *8.1.1.1. General chair, Scientific chair*

- Axel Legay has been tutorial chair for the *European Joint Conferences on Theory and Practice of Software (ETAPS)*

###### *8.1.1.2. Member of the organizing committee*

- Axel Legay was a member of the organization committee for the *European Joint Conferences on Theory and Practice of Software (ETAPS)*

##### **8.1.2. Scientific events selection**

###### *8.1.2.1. Responsible of the conference program committee*

- Axel Legay has been the Program Chair for *Formal Modelling and Analysis of Timed Systems* conference
- Axel Legay has been the Program Chair for *From Programs to Systems – The Systems Perspective in Computing* workshop organized in honour of Joseph Sifakis
- Axel Legay has been the Program Chair for *Software Product Line Analysis Tools* workshop

###### *8.1.2.2. Member of the conference program committee*

- Axel Legay was PC member of MEMOCODE, FORMATS, FORMALIZE, SPLC, ASE, FACS, FORTE.
- Louis-Marie Traonouez was PC member of FORMATS
- Rudolf Fahrenberg was PC member of MFCS

##### **8.1.3. Journal**

###### *8.1.3.1. Member of the editorial board*

- Axel Legay is a member of the editorial board of the newly created journal for masterminding changes (FOMACS).

##### **8.1.4. Teaching**

###### **Software Verification**

Axel Legay: Software Verification, 40 hours, Royal Holloway, University of London

Axel Legay: Modélisation et Vérification Formelle par Automates, 12 hours, University of Rennes 1.

Rudolf Fahrenberg: Modélisation et Vérification Formelle par Automates, TP 12 hours, University of Rennes 1.

Louis-Marie Traonouez: Verification et Test des Systemes Embarques, 20 hours, ESIR Rennes.

##### **8.1.5. Supervision**

PhD : Cyrille Jegourel, Rare event techniques for Statistical Model checking, Novembre 2011, Axel Legay

##### **8.1.6. Juries**

Axel Legay has been a member of the PhD jury for Hoa Lee (Trento), Maxime Cordy (Namur), and Cyrille Jegourel (Rennes).

## **GALAAD2 Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. Member of the organizing committee*

Evelyne Hubert was invited to organize the workshop *Symbolic Analysis* at the conference Foundation of Computational Mathematics in Montevideo (December 2014).

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Member of the conference program committee*

Evelyne Hubert was a member of the program committee of the ACM conference ISSAC 2014 in Kobe (July 2014).

Bernard Mourrain was a member of the program committee of the ACM conference SNC 2014 in Shanghai (July 2014).

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

Evelyne Hubert is an associate editor of the Journal of Symbolic Computation (since 2007).

Bernard Mourrain is an associate editor of the Journal of Symbolic Computation.

#### *9.1.3.2. Reviewer*

Laurent Busé wrote reviews for the ISSAC 2014 conference and for the following journals: Graphical Models, Linear Algebra and its Applications, Foundations of Computational Mathematics, Transactions on Visualization and Computer Graphics, Computer Aided Geometric Design, Journal of Algebra, Expert Systems with Applications, Proceedings of the London Mathematical Society, Journal of Symbolic Computation and Vietnam Journal of Mathematics. He also wrote reviews for the NSA Mathematical Sciences Grant Program.

Evelyne Hubert wrote reviews for the Journal of Symbolic computation, the Foundation of Mathematical Computing journal, the Journal of Pure and Applied Algebra, Mathematics of Computations, Plos One, Theoretical Computer Science, and for the conference proceedings of ISSAC and SNC. She was also part of the selection committee for Fulbright grants.

Bernard Mourrain wrote reviews for the followings journals: Journal of Symbolic computation, Foundation of Mathematical Computing journal, Journal of Pure and Applied Algebra, Linear Algebra and its Applications, Applicable Algebra in Engineering, Communication and Computing, Computer Aided Geometric Design, Theoretical Computer Science, Computing Surveys, SIAM Journal on Matrix Analysis and Applications, and for the conference proceedings of ISSAC and SNC, MTNS.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Licence: Mathieu Collowald, Maths (Exercices), 25h ETD, L1 SV, University of Nice-Sophia Antipolis.

Licence: Mathieu Collowald, Discrete maths (Exercices), 18h ETD, L1 I, University of Nice-Sophia Antipolis.

Licence: Mathieu Collowald, Algebra1 (Exercices), 40h ETD, L1 I, University of Nice-Sophia Antipolis.

Licence: Mathieu Collowald, Algebra2 (Exercices), 40h ETD, L1 I, University of Nice-Sophia Antipolis.

Licence: Marta Abril Bucero, Statistiques (Exercices), 20h ETD, L2 I, University of Nice-Sophia Antipolis.

Licence: Marta Abril Bucero, Analyse (Exercices), 40h ETD, L2 PC, University of Nice-Sophia Antipolis.

Master : Laurent Busé, Curves and Surfaces, 66h ETD, M1, EPU of the university of Nice-Sophia Antipolis.

Master : Laurent Busé, Elimination matrices for geometric modeling, 40h ETD, M2, math department of the university of Nice-Sophia Antipolis.

Master : Laurent Busé, Elimination matrices and applications, 18h ETD, M2, math department of the university of Buenos Aires, Argentina.

Master: Bernard Mourrain, Algorithmique des Courbes et Surfaces, M2 ACSYON, Limoges. 6h.

Doctoral courses: Bernard Mourrain, Effective Algebraic Geometry and Applications. Central European University, Budapest. 12h.

Doctoral courses: Bernard Mourrain, Sparse modelling, tensor decomposition, algorithms and applications. Summer School on An Interdisciplinary Approach to Tensor Decomposition, Trento Italy. 6h.

### 9.2.2. Supervision

PhD : Marta Abril Bucero, Moment matrices, real algebraic geometry and polynomial optimization, supervised by Bernard Mourrain, university of Nice-Sophia Antipolis, defended December 12th.

PhD in progress: Elisa Berrini, Parametric modeling for ship hull deformation and optimization. CIFRE with MyCFD. Started in January 2014. Supervised by Bernard Mourrain.

PhD in progress : Mathieu Collowald, Integral representation of shapes for feature conservation or extraction, started in 2011, supervised by Evelyne Hubert.

Laurent Busé supervised :

- The master thesis of Danny Schmitt, “Représentations matricielles des courbes et hypersurfaces rationnelles”, university of Nice-Sophia Antipolis,
- Anna Karasoulou, 3 months during its PhD thesis at the university of Athens under the supervision of I. Emiris, “Discriminant of a symmetric homogeneous polynomial”.
- Jingjing Shen, co-supervised with P. Alliez, 3 months during its PhD thesis at Cambridge under N. Dodgson, “Isotropic triangle meshing of nurbs models”.

### 9.2.3. Juries

Laurent Busé was a reviewer and a member of the PhD committee of Yacine Bouzidi, “Résolution de systèmes bivariés et topologie de courbes planes” under Sylvain Lazard and Marc Pouget, defended March 18th 2014 at the university of Lorraine (Inria Nancy), France.

Laurent Busé was a member of the PhD committee of Claire Tête, “Profondeur, dimension et résolutions en algèbre commutative: quelques aspects effectifs” under Lionel Ducos, defended October 21st 2014 at the university of Poitiers, France.

Laurent Busé was a reviewer and a member of the PhD committee of Kamran Lamei, “Fonction de Hilbert non standard et nombres de Betti gradués des puissances d’idéaux” under Marc Chardin, defended December 18th 2014 at the university Paris 6, France.

Bernard Mourrain was a reviewer and member of the PhD committee of Jeremy Veysset, “Anisotropic mesh adaptation and stabilized finite elements methods for solving conjugate heat transfers and turbulent flows” supervised by E. Hachem and Th. Coupez, September 29th, Mines ParisTech.

Bernard Mourrain was a reviewer and member of the PhD committee of Heidi Dahl, “Improved blends between primitive surface” under the supervision of Rimvydas Krasauskas, October 23th, University of Oslo.

Bernard Mourrain was a reviewer and member of the PhD committee of Jules Svartz, “Résolution des Systèmes Polynomiaux de Dimension Zéro” under the supervision of J.C. Faugère, October 30th, University Pierre et Marie Curie, Paris.



Bernard Mourrain was supervisor and member of the PhD committee of the PhD thesis of Marta Abril-Bucero, “Moment matrices, real algebraic geometry and polynomial optimization”, December 12th, University of Nice-Sophia Antipolis.

## GALLIUM Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

Maxime Dénès was member of the organizing committee for the First International Workshop on Coq for Programming Languages (**CoqPL 2015**), co-located with POPL'15 in Mumbai, India.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Chair of the conference program committee

Xavier Leroy co-chaired the program committee of the ACM SIGPLAN 2015 conference on Certified Proofs and Programs (**CPP'15**), which will take place in January 2015 in Mumbai, India, colocated with POPL'15.

#### 9.1.2.2. Member of the conference program committee

- **ALENEX 2015** (Algorithm Engineering & Experiments): Umut Acar was a member of the program committee.
- **ECOOP 2014** (European Conference on Object-Oriented Programming): Mike Rainey was a member of the artefact evaluation committee.
- **ESOP 2015** (European Symposium on Programming): Umut Acar was a member of the program committee.
- **Eurosys 2015** (European Conference on Systems Research and Development): Pierre-Évariste Dagand was a member of the shadow program committee.
- **POPL 2015** (42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages): Umut Acar and François Pottier were members of the program committee; Xavier Leroy was a member of the external review committee.
- **CoqPL 2015** (Workshop on Coq for Programming Languages): Maxime Dénès and Xavier Leroy were members of the program committee.
- **MLW 2015** (ACM SIGPLAN ML Family Workshop): Didier Rémy was a member of the program committee.
- **WGP 2014** (Workshop on Generic Programming): Pierre-Évariste Dagand was a member of the program committee.

#### 9.1.2.3. Reviewer

In 2014, members of Gallium reviewed approximately 95 papers submitted to international conferences and 15 papers submitted to international workshops.

### 9.1.3. Journals

#### 9.1.3.1. Member of the editorial board

- **Communications of the ACM**: Xavier Leroy is on the editorial board for the Research Highlights column.
- **Journal of Automated Reasoning**: Xavier Leroy is a member of the editorial board.
- **Journal of Functional Programming**: François Pottier is a member of the editorial board.
- **Journal of Formalized Reasoning**: Xavier Leroy is a member of the editorial board.

#### 9.1.3.2. Reviewer

In 2014, members of Gallium reviewed 4 journal submissions.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: Umut Acar and Mike Rainey, “Introduction to parallel computing with PAsL”, 15h, L2, University of Puerto Rico, USA.

Licence: Jacques-Henri Jourdan, “Langages de programmation et compilation” 46h, L3, École Normale Supérieure, France.

Licence: François Pottier, “Algorithmique et programmation” (INF431), 13h30, L3, École Polytechnique, France.

Licence: Gabriel Scherer, “IP1: Introduction to computer science and programming using Java”, 42h, L1, University Paris Diderot, France.

Licence: Gabriel Scherer, “IP1: Introduction to computer science and programming using C”, 42h, L3, University Paris Diderot, France.

Master: Xavier Leroy and Didier Rémy, “Functional programming languages”, 15h + 20h, M2R MPRI, University Paris Diderot/ENS Paris/ENS Cachan/Polytechnique, France.

Master: Luc Maranget, “Semantics, languages and algorithms for multi-core programming”, 9h, M2 MPRI, University Paris Diderot/ENS Paris/ENS Cachan/Polytechnique, France.

Master: François Pottier, “Compilation” (INF564), 13h30, M1, École Polytechnique, France.

### 9.2.2. Supervision

PhD: Çağdas Bozman, “Profilage mémoire d’applications OCaml”, Ecole Polytechnique, defended on 16 Dec 2014, supervised by Michel Mauny (ENSTA), Pierre Chambart (OCamlPro), and Fabrice Le Fessant (Inria).

PhD: Julien Cretin, “Erasable coercions: a unified approach to type systems” [11], École Polytechnique, defended on 30 Jan 2014, supervised by Didier Rémy.

PhD: Jonathan Protzenko, “Mezzo: a typed language for safe effectful concurrent programs” [12], U. Paris Diderot, defended on 29 Sep 2014, supervised by François Pottier.

PhD in progress: Arthur Guillon, “Concurrent realizability and program verification for weak memory computers”, U. Paris Diderot, started September 2014, interrupted January 2015, supervised by Luc Maranget and Jade Alglave (Microsoft Research Cambridge).

PhD in progress: Pierre Halmagrand, “Dédution Automatique Modulo”, CNAM, since September 2013, supervised by David Delahaye (CNAM), Damien Doligez (Inria), and Olivier Hermant (Mines ParisTech).

PhD in progress: Gabriel Scherer, “Term inference: proof search for singleton inhabitants”, U. Paris Diderot, since October 2011, supervised by Didier Rémy.

PhD in progress: Jacques-Henri Jourdan, “Formal verification of a static analyzer for critical embedded software”, U. Paris Diderot, since September 2012, supervised by Xavier Leroy.

Pre-PhD ENS year: Thomas Williams, “Putting ornaments into practice”, since September 2014, supervised by Didier Rémy.

### 9.2.3. Juries

Damien Doligez was a member of the Ph.D. jury of Çağdas Bozman, ENSTA ParisTech, Palaiseau, December 2014.

Xavier Leroy chaired the PhD committee of André Maroneze, University Rennes 1, June 2014.

Xavier Leroy was a member of the committees for the PhD awards of ACM SIGPLAN and of the GDR GPL (*Génie de la Programmation et du Logiciel*).

#### **9.2.4. Collective responsibilities**

Damien Doligez chaired the *Commission des actions de développement technologiques* of Inria Paris-Rocquencourt until Oct 2014.

Xavier Leroy is *vice-président du comité des projets* of Inria Paris-Rocquencourt and appointed member of Inria's *Commission d'Évaluation*. He participated in the following Inria hiring and promotion committees: *jury d'admissibilité CR2 Saclay; jury d'admissibilité DR2; promotions CR1; promotions DR1 and DR0*.

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.

Didier Rémy is deputy scientific director of Inria, in charge of the fields Algorithmics, Programming, Software and Architecture.

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.

### **9.3. Popularization**

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

Jacques-Henri Jourdan manned a stand at “Salon Culture & Jeux Mathématiques”, in Paris.

Since 2012, the Gallium team publishes a research blog at <http://gallium.inria.fr/blog/>, edited by Gabriel Scherer. This blog continued its activity in 2014, with 23 posts from 5 different authors.

## **GCG Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. Member of the organizing committee*

- Fabrice Rastello: Publication chair ACM/IEEE CGO 2015
- Fabrice Rastello: Steering committee Journées française de la compilation

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Member of the conference program committee*

- Fabrice Rastello: ACM/IEEE CGO 2014, ACM/IEEE CGO 2015

#### *9.1.2.2. Reviewer*

- Fabrice Rastello: Springer CC 2014

### **9.1.3. Journal**

#### *9.1.3.1. Reviewer*

- Fabrice Rastello: ACM TACO, Elsevier ParCo

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Master : Fabrice Rastello (external intervention), Programming Languages and Compiler Design, 4.5 hours, M1 of international MoSIG, UJF, Grenoble, France

Master : Fabrice Rastello (with Christophe Alias and Florent de Dinechin), Advanced Compilation, 15 hours, M1/M2, ENS Lyon, France

Post-doctoral : Fabrice Rastello, SSA based compiler design, 6 hours, CRI, Yaounde Cameroun

### **9.2.2. Supervision**

- PhD in progress: Duco van Amstel, Scheduling and optimization for memory locality of dataflow programs on many-core processors, April 1st 2013, advised by Fabrice Rastello and Benoit Dupont-de-Dinechin
- PhD in progress: Diogo Sampaio, Profiling Guided Hybrid Compilation, October 8 2013, advised by Fabrice Rastello
- PhD in progress: François Gindraud, Semantics and compilation for a data-flow model with a global address space and software cache coherency, January 1st 2013, advised by Fabrice Rastello and Albert Cohen.
- PhD in progress: Venmugil Elango, Dynamic Analysis for Characterization of Data Locality Potential, September 2010, advised by Fabrice Rastello and P. Sadayappan.

### **9.2.3. Juries**

- Feng Li, Reviewer, 20th of Mai, Compiling for a multithreaded dataflow architecture: algorithms, tools, and experience, Doctorat de l'UPMC EDITE
- Kevin Pouget, Jury, 3rd of February, Programming-Model Centric Debugging for Multicore Embedded Systems, MSTII, Grenoble

## GEOMETRICA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

Monique Teillaud co-organized the “Workshop on Geometric Structures with Symmetry and Periodicity”, part of the Computational Geometry Week 2014, with Ileana Streinu (Smith College, Northampton, MA), in Kyoto University, Japan, June 8-9. [http://www-sop.inria.fr/geometrica/events/wocg14-symmetry\\_and\\_periodicity/](http://www-sop.inria.fr/geometrica/events/wocg14-symmetry_and_periodicity/)

Jean-Daniel Boissonnat organized the first GUDHI workshop in Sophia Antipolis, October 27-29. <https://project.inria.fr/gudhi/first-gudhi-workshop/>

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

Olivier Devillers was program co-chair of 2014 Symposium on Computational Geometry.

#### 9.1.2.2. member of the conference program committee

Monique Teillaud, European Symposium on Algorithms, ESA, <http://algo2014.ii.uni.wroc.pl/esa/>

#### 9.1.2.3. member of the steering committee

Jean-Daniel Boissonnat is a member of the steering committee of the international conference on Curves and Surfaces.

Monique Teillaud is a member of the Steering Committee of the European Symposium on Algorithms (ESA).

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

Jean-Daniel Boissonnat is a member of the Editorial Board of *Journal of the ACM*, *Discrete and Computational Geometry*, *Algorithmica*, *Journal on Computational Geometry*, *International Journal on Computational Geometry and Applications*.

Frédéric Chazal is a member of the Editorial Board of *SIAM Journal on Imaging Sciences*, *Graphical Models* and *Discrete and Computational Geometry*.

Olivier Devillers is a member of the Editorial Board of *Graphical Models*.

Monique Teillaud is a member of the Editorial Boards of CGTA, *Computational Geometry: Theory and Applications*, and of IJCGA, *International Journal of Computational Geometry and Applications*.

M. Yvinec is a member of the editorial board of *Journal of Discrete Algorithms*.

Monique Teillaud and Mariette Yvinec are members of the CGAL editorial board.

### 9.1.4. Inria committees

Frédéric Chazal was a member of the recruitment committee of Inria Saclay (vice-chair).

Monique Teillaud was a member of the Inria Evaluation Committee until August.

She was a member of the national Inria DR2 interview committee and the local CR2 interview committees in Nancy and Lille.

She was also a member of the Advanced and Starting “Research Positions” interview committees.

Monique Teillaud was a member of the local Committee for Technologic Development until her move to Nancy.

She was also a member of the local committee for transversal masters.

### 9.1.5. National committees

Jean-Daniel Boissonnat was a member of the Conseil de l'AERES (Agence d'Evaluation de la Recherche et de l'Enseignement Supérieur).

Frédéric Chazal was a member of the Comités d'évaluation scientifique "Mathématiques et Informatique Théorique" of the ANR.

### 9.1.6. Web site

M. Teillaud is maintaining the Computational Geometry Web Pages <http://www.computational-geometry.org/>, hosted by Inria Sophia Antipolis until November. This site offers general interest information for the computational geometry community, in particular the Web proceedings of the Video Review of Computational Geometry, part of the Annual Symposium on Computational Geometry.

### 9.1.7. Geometrica seminar

The seminar featured presentations by the following scientists:

Omri Azencot (Technion) : An Operator Approach to Tangent Vector Field Processing

Mirela Ben Chen (Technion - Israel Institute of Technology) : Can Mean-Curvature Flow be Modified to be Non-singular?

Benjamin Burton (University of Queensland) : Untangling knots using combinatorial optimisation

A. Chiara de Vitis (Pavia) : Geometrical and Topological Descriptors for Protein Structures

C. Couprie (Courant Institute) : Graph-based Variational Optimization and Applications in Computer Vision

J. Demantke (IGN) : Geometric Feature Extraction from LIDAR Point Clouds and Photorealistic 3D Facade Model Reconstruction from Terrestrial LIDAR and Image Data

Kyle Heath (Stanford University) : Image Webs: Discovering and using object-manifold structure in large-scale image collections

N. Mitra (UCL London) : Computational Design Tools for Smart Models Synthesis

P. Machado Manhães de Castro (UFPE, Brasil) : Invariance for Single Curved Manifolds

Natan Rubin (Freie Universität Berlin) : On Kinetic Delaunay Triangulations: A Near Quadratic Bound for Unit Speed Motions

D. Salinas (Gipsa Lab, Grenoble) : Using the Rips complex for Topologically Certified Manifold Learning

Régis Straubhaar (Université de Neuchâtel) : Numerical optimization of an eigenvalue of the Laplacian on a domain in surfaces

Jian Sun (Mathematical Sciences Center, Tsinghua University) : Rigidity of Infinite Hexagonal Triangulation of Plane

Anaïs Vergne (Télécom ParisTech) : Algebraic topology and sensor networks

Yuan Yao (School of Mathematical Sciences, Peking University) : The Landscape of Complex Networks

H. Zimmer (Aachen) : Geometry Optimization for Dual-Layer Support Structures

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master : J.D. Boissonnat, C. Maria, M. Yvinec, *Algorithmic Geometry of Triangulations*, 24h, International Master Sophia Antipolis.

Master : S. Oudot, *Computational Geometry: from Theory to Applications*, 18h, École polytechnique.

Master : S. Oudot, *Geometric Methods for Data Analysis*, 12h, École Centrale Paris.

Master: Jean-Daniel Boissonnat, Frédéric Chazal *Computational Geometric Learning*, 24h, Master MPRI, Paris.

M. Teillaud, *Génération de maillages dans la bibliothèque CGAL*, in the framework of a training course for young researchers (PhD students and master students on environmental sciences) on modelling, organized by ECCOREV, 3h, Aix-en-Provence.

### 9.2.2. Supervision

HDR: Steve Oudot, Persistence Theory: From Quiver Representations to Data Analysis [14], Université Paris-Sud, November 26th 2014.

PhD : Clément Maria, Algorithms and Data Structures in Computational Topology [13], Université de Nice Sophia Antipolis, October 28, 2014, Jean-Daniel Boissonnat.

PhD: Ross Hemsley, Probabilistic methods for the analysis of algorithms on random tessellations [12], Université de Nice Sophia Antipolis, December 16, 2014, Olivier Devillers.

PhD: Mickaël Buchet, Topological and geometric inference from measures [11], Université Paris XI, December 2014, Frédéric Chazal and Steve Oudot.

PhD in progress: Thomas Bonis, Topological persistence for learning, started on December 2013, Frédéric Chazal.

PhD in progress: Mathieu Carrière, Topological signatures for geometric shapes, started in November 2014, Steve Oudot.

PhD in progress: Ruqi Huang, Algorithms for topological inference in metric spaces, started on December 2013, Frédéric Chazal.

PhD in progress: Eddie Amaari, A statistical approach of topological Data Analysis, started on Sept. 2014, Frédéric Chazal (co-advised with Pascal Massart).

PhD in progress : Rémy Thomasse, Smoothed complexity of geometric structures and algorithms, started December 1st 2012, Olivier Devillers.

PhD in progress : Mael Rouxel-Labbé, Anisotropic Mesh Generation, started October 1st, 2013, Jean-Daniel Boissonnat and Mariette Yvinec.

PhD in progress : Alba Chiri de Vitis, Computational Geometry in High Dimensions, started February 2014. Jean-Daniel Boissonnat and David Cohen-Steiner.

### 9.2.3. Juries

Monique Teillaud was a member of the HDR defense committee of Francis Lazarus (univ. Grenoble).

Monique Teillaud was a member of the PhD defense committee of Yacine Bouzidi (Univ. de Lorraine).

Monique Teillaud was a member of the PhD defense committee (member of the three-member advisory committee) of Vissarion Fisikopoulos (Univ. Athens, Grece).

Monique Teillaud was a member of the PhD defense committee of Arnaud de Mesmay (École Normale Supérieure).



Jean-Daniel Boissonnat was a member of the HDR defense committees of Q. Mérigot and S. Oudot.

Frédéric Chazal was a member (reviewer) of the PhD defense of Arnaud de Mesmay (Ecole Normale Supérieure de Paris).

Frédéric Chazal was a member of the PhD defense of Clément Levrard (Université Paris-Sud).

Steve Oudot was a member of the PhD defense of Clément Maria (Université Nice Sophia Antipolis).

Marc Glisse was a member of the PhD defense committee of Octavio Razafindramanana, Université François Rabelais de Tours.

#### **9.2.4. Internships**

Thomas Bonis, image and shape classification using persistent homology (F. Chazal)

François Godi, Computing the bottleneck distance for persistence diagrams (Jean-Daniel Boissonnat)

Venkata Yamajala, Equating the witness and the Delaunay complexes (Jean-Daniel Boissonnat)

Chunyuan Li, Persistence-based object recognition (F. Chazal and M. Ovsjanikov)

Eddie Aamari, topological Data Analysis (F. Chazal)

Mathieu Carrière, local topological signatures for shapes (S. Oudot)

### **9.3. Popularization**

Thomas Bonis and Mathieu Carrière presented the *Photomaton 3d* at the *Fête de la Science* in October 2014. This animation consists in scanning a volunteering person in 3d using a Kinect and dedicated software, then illustrating the concepts of 3d shape comparison, retrieval and matching.

## GRACE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

- D. Augot is member of the committee of the **CCA** seminar on coding and cryptology. This seminar regularly attracts around 30 participants.
- J. Nielsen, with L. de Feo, organized a Digiteo event **CLIC** related to J. Nielsen's Ditigeo funding **IDEALCODES**. This non-recurrent event attracted 30 participants.

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- D. Augot was a member of the WAIFI 2014 programm committee (International Workshop on the Arithmetic of Finite Fields, Gebze, Turkey)

### 9.1.3. Reviewer

- D. Augot was a reviewer for ITW (Information Theory Workshop) 2015.
- B. Smith was a reviewer for Eurocrypt 2014, CRYPTO 2014, PKC (Public Key Cryptography) 2014, and ANTS (Algorithmic Number Theory Symposium) 2014.

### 9.1.4. Journal

#### 9.1.4.1. member of the editorial board

- D. Augot is member of the editorial board of the *RAIRO - Theoretical Informatics and Applications*, a Cambridge journal published by EDP Sciences.
- D. Augot is member of the editorial board of the *International Journal of Information and Coding Theory*, InderScience publishers.

#### 9.1.4.2. reviewer

- D. Augot was reviewer for
  - *Designs, Codes and Cryptography*;
  - *Discrete Mathematics*.
  - *IEEE Transactions in Information Theory*;
- A. Couvreur was reviewer for
  - *Design, Codes and Cryptography*;
  - *Finite Fields and Their Applications*;
  - *IEEE Transactions on Communication*;
  - *Journal of Symbolic Computation*.
- B. Smith was a reviewer for
  - *Designs, Codes and Cryptography*
  - *Mathematics of Computation*
  - *ETRI Journal*

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### Master

- D. Augot, Error-correcting codes and applications to cryptography, 6h00, level M2, MPRI, France.
- A. Couvreur, Error-correcting codes and applications to cryptography, 12h, level M2, MPRI, France.
- A. Couvreur is *Chargé d'enseignement* at the École Polytechnique for the academic year 2014-2015.
- A. Couvreur gave a one-week crash course in cryptology at the university of Masuku (Franceville, Gabon). Level M1.
- B. Smith, Algorithmes arithmétiques pour la cryptologie, 13.5h (equiv TD), level M2, MPRI, France.
- F. Morain, Algorithmes arithmétiques pour la cryptologie, 9h (equiv TD), M2, level M2, MPRI, France.
- B. Smith, Cryptologie, 18h (equiv TD), M1, École polytechnique, France
- F. Morain, 9 lectures of 1.5h, 3rd year (M1) course “cryptology” at École polytechnique.
- F. Levy-dit-Vehel, “Cours de Cryptographie”, 30h. (equiv TD), 3rd year (M1), ENSTA ParisTech, France.

#### Licence

- F. Morain 10 lectures of 1.5h, 1st year course “Introduction à l’informatique” (INF311) at École polytechnique (L3). Responsibility of this module (350 students).
- B. Smith Introduction à l’informatique, 40h (equiv TD), L3, École polytechnique, France course “Introduction à l’informatique” (INF311) at École polytechnique (L3).
- A. Couvreur Introduction à l’informatique, 40h (equiv TD), L3, École polytechnique, France course “Introduction à l’informatique” (INF311) at École polytechnique (L3).
- A. Couvreur Les bases de la programmation et de l’algorithmique, 32h (equiv TD), M1, École polytechnique, France course (INF411) at École polytechnique (M1).
- F. Levy-dit-Vehel, “Mathématiques discrètes pour la protection de l’information”, 24h. (equiv TD), 2nd year (L3), ENSTA ParisTech, France.

#### E-learning

I. Márquez-Corbella, with D. Augot’s help, is currently preparing a MOOC on *code-based cryptology*. This MOOC is intended for an audience of M2 or PhD students who are interested in this sub-branch of cryptology. This can bring in students from coding theory, cryptology, or even physicists interested in post-quantum cryptography. N. Sendrier and M. Finiasz will complement and bring scientific authority to these lectures, by addressing more advanced topics. This bilingual MOOC (Spanish and English) is planned to be open in March, with a five week duration. It is supported by the Inria MOOC Lab, and will be hosted on the platform FUN.

### 9.2.2. Supervision

- D. Augot, advised two students, Gaspard Ferey and Sylvain Colin, for a “Projet personnel en laboratoire”, whose object of study was attacks on code-based cryptosystems and their relation to the Chor-Rivest cryptosystem. 12h, level M1, Polytechnique, France.
- A. Couvreur advised one student, Alexander Schaub, for a “Projet personnel en laboratoire” on an oblivious transfer protocol using a noisy channel. 12h, level M1, Polytechnique, France.

- A. Couvreur advised the Masters thesis of Elise Barelli (Master Cryptis, University of Limoges). 6 month internship, level M2.
- B. Smith supervised Charlotte Scribot's Masters thesis (Master P7). 6 month internship, level M2.
- B. Smith co-supervised the third year of Cécile Gonçalves' PhD project.
- F. Levy-dit-Vehel supervised Julien Lavauzelle's end of ENSTA studies internship (level M2), 5 months.

### 9.2.3. Juries

- D. Augot was a member of Maurice Denise's PhD committee, for her defense "Codes correcteurs quantiques pouvant se décoder itérativement", June 26th.
- D. Augot was a member of Nicolás Bordenabe's PhD committee, for his defense "Measuring Privacy with Distinguishability Metrics: Definitions, Mechanisms and Application to Location Privacy", September 12th.
- D. Augot was a reviewer of Clément Pernet's HDR thesis "High Performance and Reliable Algebraic Computing", and member of his defense committee, November 21st.
- A. Couvreur is a member of the jury of the *agrégation de mathématiques*.
- B. Smith was a member of Ivan Boyer's PhD jury, for his defense "Variétés abéliennes et jacobiennes de courbes hyperelliptiques, en particulier à multiplication réelle ou complexe", January 24th.
- B. Smith was a member of Jean-Christophe Zapalowicz's PhD jury for his defense "Sécurité des générateurs pseudo-aléatoires et des implémentations de schémas de signature à clé publique", November 21st.

## 9.3. Invitations to seminars and conferences

- D. Augot made a presentation, "Décodage des codes de Reed-Solomon et logarithme discret dans les corps finis", at the Cryptography Seminar of Université de Rennes I, March 21st
- D. Augot made a presentation for the Secret project-team at Inria Rocquencourt "Bitcoin hors-sol", November 13th.
- A. Couvreur was an invited speaker at *Journées Codage et Cryptographie*, Grenoble in march 2014.
- A. Couvreur has been invited to give a talk at regular seminars in Rennes, Caen, University Paris 6, University Paris 8 and Bordeaux.
- B. Smith was an invited speaker at *YACC 2014*, Porquerolles, June 2014.
- B. Smith was an invited speaker in the *Computational Number Theory* workshop at *FOCM 2014*, Montevideo, Uruguay, December 2014.
- B. Smith was an invited speaker at the inaugural *MCrypt Workshop*, Les Deux Alpes, August 2014.
- B. Smith was an invited speaker at *DLP2014* (Theoretical and Practical Aspects of the Discrete Logarithm Problem), Ascona, Switzerland, May 2014.
- B. Smith gave a talk in the regular *PolSys* seminar at UPMC, March 2014.

## 9.4. Popularization

- D. Augot made a presentation "Quand  $1 \oplus 1$  égal 0" at Lycée Albert Einstein, Sainte-Geneviève-des-Bois, May 19th.
- J. Piantant was one of the presenters for Inria's stand at « **Bouge la Science** » at Supélec.
- A. Couvreur gave a conference "Les mathématiques pour protéger l'information" for the pupils of Collège Moreau in Monthléry (91).

## 9.5. Institutional commitment

- A. Couvreur is an elected member of Saclay's *comité de centre*.
- A. Couvreur was a member of the commission for the recruitment of post-doc researchers in 2014 at LIX in the programm Qualcomm-Carnot.
- A. Couvreur is the *jeune chercheur référent* for the *commission de suivi doctoral* of Inria Saclay.
- D. Augot was a member of RTRA Digiteo program committee.
- D. Augot is a member of LIX's *conseil de direction*.
- D. Augot is a member of the *conseil de l'école doctorale en informatique de Paris-Sud*
- D. Augot is the vice-head of Inria's *comité de suivi doctoral*
- D. Augot is a member of LIX's *conseil de laboratoire*
- D. Augot and B. Smith were reviewers for ANRT CIFRE fundings.
- F. Morain, J. Pieltant and B. Smith are elected members of the *Conseil de Laboratoire* of the LIX.
- F. Morain is vice-head of the Département d'informatique of Ecole Polytechnique.
- F. Morain represents École polytechnique in the committee in charge of *Mention HPC* in the *Master de l'université Paris Saclay*.
- B. Smith is a *Correspondant* for International Relations at Saclay.
- B. Smith is a member of the COST-GTRI.
- B. Smith is a member of the teaching committee of the Department of Computer Science of the École polytechnique.

## **HYCOMES Team**

# **8. Dissemination**

## **8.1. Promoting Scientific Activities**

### **8.1.1. Scientific events selection**

#### *8.1.1.1. Member of the conference program committee*

Benoît Caillaud has served on the program committee of the ACSD 2014 conference

#### *8.1.1.2. Reviewer*

Benoît Caillaud has been reviewing for the ACSD 2014, ACC 2014, CONCUR 2014, DATE 2014 and TACAS 2015 conferences.

### **8.1.2. Journal**

#### *8.1.2.1. Reviewer*

Benoît Caillaud has been reviewing for the following journals: ACM Transactions on Embedded Computing, Acta Informatica and Emperical Software Engineering.

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Master : Benoît Caillaud has taught an invited course on hybrid systems modeling in the first year master curriculum in computer science of ENS Rennes. This was a joint course with Marc Pouzet, representing a total of 27 hours EqTD.

### **8.2.2. Supervision**

PhD in progress : Ayman Aljarbouh, Accelerated simulation of hybrid systems, started December 2013, supervised by Benoît Caillaud

PhD in progress : Guillaume Baudart, Time-based protocols for LTTA, started December 2013, co-supervised by Albert Benveniste and Marc Pouzet (Parkas Inria project-team, ENS, Paris).

## LFANT Project-Team

## 7. Dissemination

### 7.1. Promoting Scientific Activities

#### 7.1.1. Scientific events organisation

##### 7.1.1.1. member of the organizing committee

The team helped organising the **Colloque Jeunes Chercheurs en Théorie des Nombres**, which took place in Bordeaux on 11/06/2014–13/06/2014.

#### 7.1.2. Scientific events selection

##### 7.1.2.1. member of the conference program committee

Andreas Enge was a member of the programme committee for the *Elliptic Curve Cryptography* 2014 conference in Chennai, India.

Sorina Ionica was a member of the program committee for the *Latincrypt* 2014 conference.

#### 7.1.3. Journal

##### 7.1.3.1. member of the editorial board

K. Belabas acts on the editorial board of *Journal de Théorie des Nombres de Bordeaux* since 2005 and of *Archiv der Mathematik* since 2006.

H. Cohen is an editorial board member of *Journal de Théorie des Nombres de Bordeaux*; he is an editor for the Springer book series *Algorithms and Computations in Mathematics (ACM)*.

J.-M. Couveignes is a member of the editorial board of the *Publications mathématiques de Besançon* since 2010.

A. Enge is an editor of *Designs, Codes and Cryptography* since 2004.

#### 7.1.4. Other scientific activities

##### 7.1.4.1. Invited talks

- D. Robert was invited to give a talk on “Pairings on abelian varieties and the Discrete Logarithm Problem” for the Discrete Logarithm Problem Conference in May 2014 at Ascona, Switzerland
- D. Robert was invited to give a talk on “Isogenies between abelian varieties” for the Effective moduli spaces and applications to cryptography conference in June 2014 at Rennes
- D. Robert was invited to give a talk on “Optimal pairings on abelian varieties” for the Elliptic Curve Cryptography conference in October 2014 at Chennai, India
- H. Ivey-Law was invited to give a talk on “Arithmetic on Jacobians of Relative Curves” for the Number Theory Meets Geometry conference in November 2014 at Kaiserslautern, Germany
- A. Enge has given an invited talk on “Abelian varieties and theta functions for cryptography” at the 4th International Cryptology and Information Security Conference at Putrajaya, Malaysia
- A. Enge has given an invited talk on “Class invariants for Abelian surfaces” at the workshop Computational Number Theory of Foundations of Computational Mathematics in Montevideo, Uruguay

##### 7.1.4.2. Seminar

The following external speakers have given a presentation at the LFANT seminar, see

<http://lfant.math.u-bordeaux1.fr/index.php?category=seminar>

- Frédérique Oggier (NTU, Singapour): “Le codage pour le stockage distribué de données”
- Hartmut Monien (Physikalisches Institut der Universität Bonn): “Zeta values, random matrix theory and Euler-MacLaurin summation” and “Calculating rational coverings for subgroups of  $PSL_2(\mathbb{Z})$  efficiently”
- Nicolas Delfosse (Montreal): “Une introduction au calcul quantique tolérant aux fautes”
- Eduardo Friedman (Universidad de Chile): “Cône de Shintani et degré topologique”
- John Boxall (Caen): “Heuristiques sur les variétés abéliennes adaptées à la cryptographie à couplage”
- Pınar Kılıçer (Leiden+IMB): “The class number one problem for genus-2 curves”
- Bertrand Maury (Paris-Sud): “Arbre bronchique infini et entiers dyadiques”
- Emmanuel Thomé (Nancy): “Un algorithme quasi-polynomial de calcul de logarithme discret en petite caractéristique”
- Oriol Serra (UPC, Barcelone): “Algebraic Removal Lemma”
- Amalia Pizarro-Madariaga (Valparaíso): “Estimations for the Artin conductor”
- Alina Dudeanu (EPFL): “Computing a Velu type formula for rational cyclic isogenies between isomorphism classes of Jacobians of genus two curves that are defined over a finite field.”
- Gaetan Bisson (University of French Polynesia): “On polarised class groups of orders in quartic CM-fields”
- Kamal Khuri Makdisi (American University of Beirut): “Moduli interpretation of Eisenstein series”
- Kamal Khuri Makdisi (American University of Beirut): “On divisor group arithmetic for typical divisors on curves”
- Chloe Martindale (University of Leiden / IMB): “An algorithm for computing Hilbert modular varieties”
- Dimitar Jetchev (EPFL): “Euler systems from special cycles on unitary Shimura varieties and arithmetic applications”
- Alain Couvreur (Inria and LIX, École Polytechnique): “Une attaque polynomiale du schéma de McEliece basé sur les codes de Goppa "sauvages".”

#### 7.1.4.3. Research administration

K. Belabas is vice-head of the Math Institute (IMB). He also leads the computer science support service (“cellule informatique”) of IMB and coordinates the participation of the institute in the regional computation cluster PlaFRIM.

He is an elected member of “commission de la recherche” in the academic senate of Bordeaux University.

J.-P. Cerri is an elected member of the scientific council of the Mathematics Institute of Bordeaux (IMB) and responsible for the bachelor programme in mathematics and informatics.

Since January 2011, J.-M. Couveignes is involved in the *GDR mathématiques et entreprises* and in the *Agence pour les mathématiques en interaction avec l'entreprise et la société*.

A. Enge is the head of the COST-GTRI, the Inria body responsible for the scientific evaluation of the international partnerships of the institute.



## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Summer school: A. Enge, Complex multiplication of elliptic curves and Pairings on elliptic curves, 6h, Putrajaya, Malaysia

Master: K. Belabas, Computer Algebra, 90h, M2, Université de Bordeaux

Master: K. Belabas, Computational number theory, 50h, M2, Université de Bordeaux

Master: K. Belabas, Number theory, 24h, M1, Université de Bordeaux

Licence: K. Belabas, C2i, 24h, L1, Université de Bordeaux

Licence: Jean-Paul Cerri, Codes et cryptologie, 34.67h, TD niveau L1, Université de Bordeaux

Licence: Jean-Paul Cerri, Algèbre 4, 50.67h, TD niveau L3, Université de Bordeaux

Licence: Jean-Paul Cerri, Cryptographie et Arithmétique, 24h, Cours niveau L3, Université de Bordeaux

Master, Jean-Paul Cerri, Arithmétique, 36h, Cours niveau M1, Université de Bordeaux

Encadrement, Jean-Paul Cerri, Encadrement d'un projet tuteuré (L3) et d'un TER (M1), Université de Bordeaux

Master: J.-M. Couveignes, Algorithms for public key cryptography, 40h, M2, Université Bordeaux, France;

Master: J.-M. Couveignes, Algorithms for number fields, 40h, M2, Université Bordeaux, France;

Licence : E. Milio, Topologie et Fonctions de plusieurs variables, 36 heures, niveau L2, université de Bordeaux site Victoire, France

Master: Sorina Ionica, Encadrement de 3 projets master (M2 CSI), Université de Bordeaux.

### 7.2.2. Supervision

PhD: Aurel Page, *Méthodes explicites pour les groupes arithmétiques*, [12], supervised by K. Belabas and A. Enge, defended 07/2014

PhD: Nicolas Mascot, *Computing modular Galois representations* [11], supervised by K. Belabas and J.-M. Couveignes, defended 07/2014

PhD in progress: Enea Milio, *Isogénies entre surfaces abéliennes*, University Bordeaux, supervised by A. Enge and D. Robert

PhD in progress: Pınar Kılıçer, *Topics in complex multiplication*, Universities Bordeaux and Leiden, supervised by A. Enge and M. Streng

PhD in progress: Chloë Martindale, *Isogeny graphs*, Universities Bordeaux and Leiden, supervised by A. Enge and M. Streng

### 7.2.3. Juries

D. Robert was a member of the committee for the PhD defense of Christophe Tran in Rennes (December 2013).

A. Enge was a referee for the PhD of Nicole Sutherland, University of Sydney, entitled “Algorithms for Galois extensions of Global Function Fields”.

## 7.3. Popularization

K. Belabas gave a lecture to present Bhargava’s works (2014 Fields medal) to high school teachers during the “Journée de l’IREM d’Aquitaine” (11/2014, about 100 attendants).

A. Enge has presented “Les maths au service du secret (et de sa découverte!)” during the Math en Jeans congress held in Bordeaux in April 2014, for an audience of highschool pupils aged 12 to 17.

He has spoken on “Mathematik für (und gegen!) das Geheimnis” in an event in July at Gymnasium Leopoldinum, Detmold, Germany, to an audience comprised of pupils aged 12 to 18 and of mathematics teachers.

At the GNU Hacker’s Meeting 2014 in München, Germany, he has presented a tutorial on “GnuPG key signing”.

## **MARELLE Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events selection**

#### *9.1.1.1. Member of the conference program committee*

Benjamin Grégoire was member of the program committee for the conference TCS (Theoretical Computer Science), which was held on September 1-3 in Roma, Italy.

Yves Bertot was member of the programm committee for the conference ITP (Interactive Theorem Proving), which was held July 14-17 in Vienna, Austria and for the workshop UITP (User Interfaces for Theorem Provers), which was on held on July 17th in Vienna, Austria.

Laurent Théry was member of the programm committee for the conferences ITP (Interactive Theorem Proving) and UITP (User Interfaces for Theorem Provers) in Vienna (see above) and for the workshop ACL2 (International Workshop on the ACL2 Theorem Prover and its Applications), which was held July 12-13 in Vienna, Austria.

#### *9.1.1.2. Reviewer*

Members of the team reviewed papers for the conferences CPP (Certified Programs and Proofs), CCS (ACM Conference on Computer and Communication Security), CSF (Computer Security Foundations), Types (Types for Proofs and Programs),.

### **9.1.2. Journal**

#### *9.1.2.1. Member of the editorial board*

Laurent Théry was a special issue editor for Mathematics in Computer Science, "Special Focus on Formal Proofs for Mathematics and Computer Science".

#### *9.1.2.2. Reviewer*

Members of the team reviewed papers for the journals JFP (Journal of Functional Programming), TOPLAS (Transactions on Programming Languages and Systems), MSCS (Mathematical Structures in Computer Science), JFR (Journal of Formalized Reasoning), TCS (Journal of Theoretical Computer Science), AMAI (Annals of Mathematics and Artificial Intelligence), and SCP (Science of Computer Programming).

#### *9.1.2.3. Evaluation of funded grants*

Laurence Rideau evaluated a grant proposal for the Digiteo laboratory (based in Saclay).

Yves Bertot evaluated a grant proposal for the European Research Conclil (consolidator grants).

Laurent Théry evaluated a grant proposal for the French Research Agency (ANR).

## **9.2. Participation in scientific events**

### **9.2.1. Keynotes, tutorials, and invited talks**

Yves Bertot gave an invited talk at the conference CICM (Conference on Intelligent Computer Mathematics) in Coimbra, Portugal, in July.

Laurent Théry, Laurence Rideau, and Yves Bertot gave invited talks at the workshop "Mathematical Structures of Computation", special week on "Formal Proof, Symbolic Computation and Computer Arithmetic", in Lyon, France, in February.

Yves Bertot gave talks at the University of Edinburgh in June, at the NASA Ames research center in California, in June, at SRI in California, in June, at the University of Aveiro in July, and at the University of Tokyo in September. He also attended the ACM Award ceremony in San Francisco, California, in June.

### 9.3. Teaching - Supervision - Juries

#### 9.3.1. Teaching

Licence : Laurence Rideau, "programming and algorithms", 50 hours, Lycée Masséna, Nice, France.

Master : Yves Bertot, "software verification and computer proof", 21 hours, Master, Université de Nice, France.

Master : Laurent Théry, "introduction to Coq", 3 hours, Ecole des Mines de Paris, France.

Doctorate : Yves Bertot, Formal proofs in coq, 10 hours, NII Shonan, Japan

Doctorate : Benjamin Grégoire, Proofs in Easycrypt, 9 hours, Inria, France

#### 9.3.2. Supervision

PhD : Guillaume Cano, "Intéraction entre algèbre linéaire et analyse en mathématiques formelles", Université de Nice, 4 avril 2014, supervised by Yves Bertot [19].

#### 9.3.3. Juries

Yves Bertot was examiner with written report duty for the thesis of Pierre Boutillier (Université de Paris-Diderot, France, February 18th), external examiner for the thesis of Phil Scott (university of Edinburgh, Scotland, June 4th), and examiner with written report duty for the Habilitation of Sylvie Boldo (Université de Paris-Sud, France, October 6th).

Laurent Théry was examiner for the thesis of Anders Mörtberg (Chalmers University, Sweden, December 12th), This thesis was partially supervised by Cyril Cohen.

#### 9.3.4. Community service

- José Grimm is a member of the comité de centre, the committee where representatives of personnel and management discuss questions of daily life at the level of the Sophia-Antipolis Méditerranée center, he also participates in a commission on continued training and a commission on hygiene, safety, and working conditions. This activity involves around 12 meetings per year.
- Benjamin Grégoire is a member of the *committee of users of information technology* (CUMI). This activity involves monthly meetings where problems in using the IT infrastructure are debated between researchers and engineers.
- Laurent Théry is a member of the *comité de développement technologique* (in English, technological development committee), the committee that oversees the allocation of software engineers on experimental software and platform development.
- Laurent Théry is a member of the committee that provides advice to the center director concerning the attribution of grants for doctoral students, post-doctoral researchers, and invited professors.
- Yves Bertot is the chairman of the *Coq Steering committee*. Benjamin Grégoire was a member of this committee until October and has been replaced by *Enrico Tassi*. These task imply continuous monitoring of the evolution of Coq, the relations with users, and participating in strategic decisions.
- Yves Bertot was deputy scientific director for the Sophia Antipolis méditerranée research center until August. This task implies meetings approximately every fortnight with the center director, the scientific director, and the director of administrative services for the center, together with frequent meetings with researchers from any domain in the center and monthly meetings at the national level as part of the evaluation committee. Yves Bertot still participate to the evaluation committee at national level.

### 9.4. Popularization

Laurent Théry presented his researcher work to three different classrooms during the event "semaine des maths", in March.

## MEXICO Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, Scientific chair

- Serge Haddad was co-chair for workshop and tutorials for 34th Int. Conf. on Application and Theory of Petri nets (ATPN), Tunis, Tunisia

#### 9.1.1.2. Member of the organizing committee

- Paul Gastin co-organized the Dagstuhl seminar on "Quantitative Models: Expressiveness, Analysis, and new applications", January 19 to 24, see <http://www.dagstuhl.de/en/program/calendar/semhp/?semnr=14041>.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- Serge Haddad was a member of the program committees of
  - FOR-MOVES (associated with ICSOC 2014),
  - 22nd International Conference on Real Time Networks and Systems (RTNS 2014), Versailles, France,
  - 8th International Workshop on Verification and Evaluation of Computer and Communication Systems (VECOS 2014), Bejaia, Algeria,
  - PNSE 2014,
  - 12th IFAC - IEEE International Workshop on Discrete Event Systems (WODES), Cachan, France
- Stefan Haar was a member of the program committees of PNSE 2014 and ETFA 2014. He will be co-chairing the PC of ACSD 2015 (Brussels) and be a member of the PC for ICTAC 2015.
- Thomas Chatain was a member of the program committee of ACSD 2014 and will be a member of the PC of ACSD 2015.
- Stefan Schwoon was a member of the PC of ICATPN 2014 and will be in the PCs for ICATPN 2015 and SPIN 2015.
- Benedikt Bollig was a member of the scientific committee of the workshop INFINITY' 14, co-located with FSTTCS' 14.

#### 9.1.2.2. Reviewer

- Benedikt Bollig was a reviewer for AFL' 14, DLT' 14, TACAS' 14, FOSSACS' 14, ICALP' 14, CSL-LICS' 14, CONCUR' 14, MFCS' 14, TIME' 14, FSTTCS' 14.
- Stefan Haar was a reviewer for CDC 2014 and ACC 2015.
- Stefan Schwoon was a reviewer for the conferences POST, CSL-LICS, and ICALP in 2014.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- Paul Gastin is on the advisory boards of *Journal of Automata, Languages and Combinatorics* and of the EATCS Springer Book series *Monographs in Theoretical Computer Science* and *Texts in Theoretical Computer Science*.

- Serge Haddad was Editor of one edition of the TOPNOC journal (LNCS 8910).
- Stefan Haar is an associate editor for the *Journal of Discrete Event Dynamic systems*.

#### 9.1.3.2. Reviewer

- Benedikt Bollig was a reviewer for *ACM Transactions on Computational Logic, Theoretical Computer Science*, and *Acta Informatica*.
- Stefan Haar was a reviewer for *Automatica, Journal of Computer and System Sciences, IEEE Transactions on Automatic Control*, and *Information Systems*
- Thomas Chatain was a reviewer for *International Journal of Foundations of Computer Science* and *ACM Transactions on Embedded Computing Systems*.
- Stefan Schwoon acted as reviewer for the journals *Fundamenta Informaticae* (several occasions), *TOPLAS*, and *TECS* in 2014.
- Paul Gastin and Serge Haddad are regularly reviewers for many international conferences and journals.

Serge Haddad was also a member of the AERES evaluation committee of the VERIMAG laboratory in 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Note: We only list here the teaching activities of researchers, not the courses of full-time teachers in the team.

#### Master

Benedikt Bollig and Paul Gastin, Non-Sequential Theory of Distributed Systems, 24 heures de cours, M2, ENS de Cachan

### 9.2.2. Supervision

#### PhD :

- Benoît Barbot, *Acceleration for Statistical Model Checking* [11]; ENS Cachan, Defence on November 20, 2014. Supervisor : Serge Haddad and Claudine Picaronny.
- Aiswarya Cyriac, *Verification of Communicating Recursive Programs via Split-width* [12], ENS Cachan, Defence on January 28, 2014; Supervisors: Paul Gastin and Benedikt Bollig
- Hernán Ponce de León, *Testing Concurrent Systems Through Event Structures* [13], ENS Cachan, Defence on November 7, 2014; Supervisor: Stefan Haar, Co-supervisor: Delphine Longuet (U Paris SUD)

#### PhD in progress :

- Simon Theissing, *Supervision for Multi-Modal Transport Systems*, since September 2013, Supervisor Stefan Haar
- Salim Perchy (Ecole Polytechnique), *D-spaces*, since November 2013, Supervisor Stefan Haar, Co-Supervisor Franck Valencia (Note : S. Perchy belongs to the COMETE team, not MEXICO).

### 9.2.3. Juries

- Paul Gastin was the president of the PhD examination board of Vincent Carnino, U. Paris-Est, december 5, 2014.
- Stefan Haar was a reviewer of the theses of Sébastien CHEDOR at University of Rennes 1 and of Kari KÄHKÖNEN at Aalto University, Finland.
- Serge Haddad was a reviewer of the thesis of Ariane Piel defended in October 2014 at U. Paris-Nord (Villetaneuse), and of the thesis of Mouhamadou Tafsir Sakho at U. Orléans in December 2014. He also was a member of the PhD juries of Thomas Husja (UPMC, october 2014).
- Stefan Schwoon was a reviewer for the theses of Stanislav Böhm (University of Ostrava, Czechia) and Ala Eddine Ben Salem (Université Paris 6).

## 9.3. Popularization

- Stefan Haar gave a talk entitled "Revèle tes défauts" on fault diagnosis in the popularization series "Unithé ou café" of Inria Saclay-Idf, on February 7, 2014.

## MUTANT Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events selection

#### 8.1.1.1. Chair of conference program committee

Jean-Louis Giavitto was co-chair of the SCW 2014 the Spatial COmputing Workshop, co-located with AAMAS, May 2014, Paris.

#### 8.1.1.2. Member of the conference program committee

Jean-Louis Giavitto has participated in the program committee of the following workshop and conferences: BIPC special track at 8th International Conference on Bio-inspired Information and Communications Technologies - BICT 2014, December, 2014, Boston, MA, USA; MeCBIC 2014 7th Workshop on Membrane Computing and Biologically Inspired Process Calculi, September 2014, Bucharest, Romania; SASO Eighth IEEE International Conference on Self-Adaptive and Self-Organizing Systems - London, September 2014; JIM 2014 Journée d'informatique Musicale - Bourges - mai 2014; Journées nationales du GDR GPL 2014, juin 2014, CNAM Paris.

Florent Jacquemard has participated in the program committee of the 6th International Symposium on Symbolic Computation in Software Science (SCSS 2014) and the conférence Journées d'informatique Musicale (JIM 2014).

#### 8.1.1.3. Reviewer

The members of the team regularly participate as reviewers for IEEE ICASSP, ACM Multimedia Conferences, Sound and Music Computing, International Computer Music Conference (ICMC), Digital Audio Effects Conference (DAFx), European Joint Conferences on Theory and Practice of Software (ETAPS), Federated Logic Conference (FLoC, federating CADE, LICS, RTA), and more.

### 8.1.2. Journal

#### 8.1.2.1. Member of the editorial board

Jean-Louis Giavitto is the redactor-in-chief of TSI (Technique et Science Informatiques) published by Lavoisier.

#### 8.1.2.2. Reviewer

The members of the team are regular reviewers for IEEE Transactions on topics related to Machine Learning in Signal Processing (IEEE TSALP, TPAMI, Multimedia journals), Theoretical Computer Science related journals (TCS, MFCS, LMCS, JLAP, IPL), and Computer Music related journals (CMJ, JNMR).

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- Licence : Clement Poncelet, Environnement de développement, 40h, L3, UPMC, France.
- Licence : Clement Poncelet, Ateliers de Recherche Encadrée - ARE, 20h, L1, UPMC, France.
- Licence : José Echeveste, Structures discrètes, 30h, L3, UPMC, France.
- Licence : Arshia Cont, Sound Engineering and New Technologies - Paris Superior Conservatory, 2h/week.

### 8.2.2. Supervision

- PhD in progress: 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.

### 8.2.3. *Juries*

Jean-Louis Giavitto was reviewer of the Habilitation of Arnaud Banos (Sorbonne – Paris I, Pour des pratiques de modélisation et de simulation libérées en géographie et SHS) and examiners for two PhDs: Mariem Miladi (SupMeca, Modélisation géométrique et mécanique pour les systèmes mécatroniques) et Adrien Basso-Blandin (Université d’Evry, Conception d’un langage dédié à la conception de fonctions biologiques de synthèse par compilation de spécifications comportementales).

Arshia Cont has acted as Reporter for two Habilitation juries in 2014, for Cédric Févotte (University of Nice) on Non-Negative Matrix Factorization and Its Applications, and for Brunno Bossis (University of Rennes 2) on Musicological Tools for analysis of Live Electronic Music.

### 8.2.4. *Institutional commitment*

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.

Florent Jacquemard is member of the IFIP WorkingGroup 1.6 on Term Rewriting.

Arshia Cont is the director of *Research/Creativity Interfaces* at Ircam, in charge of coordinating scientific and artistic activities of the institution and dissemination of its software and community through Ircam Forum.

Arshia Cont is board member of ICMA (International Computer Music Association) since 2014.

## 8.3. Popularization

Arshia Cont was invited to a **TEDx Talk** in October 2014 on *Human-Computer Musicianship* that attracted more than 12 thousand podcasts according to organisers.

Arshia Cont was invited to participate in CNRS’s 2nd edition of “Les Fondamentales” Science and Society event in Grenoble, in a session dedicated to **Science and Music on the same Score**.

Arshia Cont was invitee to the BFM Business Program on *Future of Sound*.

Arshia Cont was featured in the June Edition of *Usbek et Rica* magazine.

MuTant team participated in the 2014 edition of *Futur en Seine* festival and showcased **collaboration with Orchestre de Paris** in a public event.

Article on Antescofo by Arshia Cont in the December 2014-January 2015 edition of the popular science magazine “Dossier de La Recherche”.

José Echeveste, Arshia Cont and Jean-Louis Giavitto participated to the colloquium “La musique en temps réel” in the festival Musica, Strasbourg, september 2014.

Jean-Louis Giavitto participated to the colloquium “Le calcul et le temps, colloque de philosophie de l’informatique” Université Jean Moulin (Lyon 3), novembre 2014. He was invited on several seminars outside computer sciences: EPFL - ArchiZoom, “computational morphogenesis” in the context of the architecture exhibition “Animal ?” (april 2014); the elmlalfructidor art school in Chalons, “space and the formalization of musical processes” (april 2014); CNSMD Lyon and the Ecole Normale Lyon, “Du temps écrit au temps produit” with Julia Blondeau (april 2014); CISEC (club Inter-associations – AAAF, SEE, SIA – des Systèmes Embarqués Critiques), “Temps Réel en musique : Antescofo” (Toulouse June 2014).

Florent Jacquemard participated to the Inria seminar “1/2 hour of science” in July 2014, with a talk on Testing and Verification of interactive music systems.

## PAREO Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events selection

#### 8.1.1.1. Conference program committee membership

Horatiu Cirstea:

- PC member of RuleML 2014 (International RuleML Symposium on Rule Interchange and Applications).
- Steering committee of RULE.

Sergueï Lenglet:

- PC member of WPTE'14 (Workshop on Rewriting Techniques for Program Transformations and Evaluation)

Pierre-Etienne Moreau:

- PC member of TERMGRAPH'2014 (8th International Workshop on Computing with Terms and Graphs)
- PC member of WRLA'2014 (10th International Workshop on Rewriting Logic and its Applications)

Sorin Stratulat:

- PC member of CISIS 2014 (7th International Conference on Computational Intelligence in Security for Information Systems)
- PC member of IAS 2014 (10th International Conference on Information Assurance and Security)
- PC member of SYNASC 2014 (16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing)

#### 8.1.1.2. Reviewing activities

Horatiu Cirstea:

- Reviewer for ESOP'2014, ICTAC'2014, LOPSTR'2014

Sergueï Lenglet:

- Reviewer for CSL-LICS'2014, RTA-TLCA'2014, FOSSACS'2015

Pierre-Etienne Moreau:

- Reviewer for TERMGRAPH'2014, WASDETT'2014

### 8.1.2. Journal

#### 8.1.2.1. Editorial board membership

Pierre-Etienne Moreau:

- Advisory Board of Science of Computer Programming, software track

#### 8.1.2.2. Reviewing activities

Horatiu Cirstea:

- Reviewer for Journal of Symbolic Computation

Sergueï Lenglet:

- Reviewer for Fundamenta Informaticae and HOSC (Higher-Order and Symbolic Computation)

Pierre-Etienne Moreau:

- Reviewer for Electronic Proceedings in Theoretical Computer Science (EPTCS)



Sorin Stratulat:

- Reviewer for Journal of Symbolic Computation

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence: Sergueï Lenglet, teaching at IUT Charlemagne, first year and second year students.

Licence: Horatiu Cirstea, Responsible for the first year of the Licence in Computer Science, Université de Lorraine.

Licence: Pierre-Etienne Moreau, Responsible of the course “Introduction to Algorithms and Programming” (<http://www.depinfonancy.net/s5/tcs13>), first year at Mines-Nancy (150 students), Université de Lorraine.

Master: Horatiu Cirstea, Responsible for the Master speciality “Logiciels: Théorie, méthodes et ingénierie”, Université de Lorraine.

Master: Pierre-Etienne Moreau, Head of the Computer Science Department at Mines Nancy, Université de Lorraine.

Doctorate: Pierre-Etienne Moreau, Implementing Term Rewriting, International School on Rewriting, Valparaíso, Chile.

### 8.2.2. Supervision

PhD: Jean-Christophe Bach, A formal Island for qualifiable model transformations, Université de Lorraine, September 12th 2014, Pierre-Etienne Moreau

PhD in progress: Duy Duc Nguyen, Aided design of multi-physics and multi-scale systems based on asymptotic methods, Horatiu Cirstea (co-supervised with Michel Lenczner and Federic Zamkotsian)

PhD in progress: Amira Henaïen, Certification du raisonnement formel porté sur des systèmes d’information critiques, November 2010, Sorin Stratulat (co-supervised with Maurice Margenstern)

### 8.2.3. Juries

Horatiu Cirstea:

PhD committee of Julien Ferté, reviewer, “Régularité et contraintes de descendance, équations algébriques+”, Marseille 2014

PhD committee of Hernan Vanzetto, examiner, “Automatisation des preuves et synthèse des types pour la théorie des ensembles dans le contexte de TLA+”, Nancy 2014

PhD committee of Bin Yang, reviewer, “Contribution to a kernel of a symbolic asymptotic modeling software”, Besançon 2014

Pierre-Etienne Moreau:

PhD committee of Jean-Christophe Bach, supervisor, “Un îlot formel pour les transformations de modèles qualifiables”, Nancy 2014

PhD committee of Faiez Zalila, reviewer, “Methods and Tools for the Integration of Formal Verification in Domain-Specific Languages”, Toulouse 2014

PhD committee of Cyrille Wiedling, examiner, “Formal Verification of Advanced Families of Security Protocols: E-Voting and APIs”, Nancy 2014

Sorin Stratulat:

PhD committee of Abdelkader Kersani, examiner, “Preuves par induction dans le calcul de superposition”, Grenoble 2014

### **8.3. Popularization**

Jean-Christophe Bach participated to scientific mediation by proposing several activities to demonstrate the *algorithmic thinking* at the core of the Computer Science without requiring any computer or even electric devices. These activities are the first part of the CSIRL (Computer Science In Real Life) project which aims to popularize computer science and to initiate children, school students and non-scientists into this domain.

Pierre-Etienne Moreau gave two lectures about “Robotics and Programming” in the ISN course (Informatique et Science du Numérique), in order to help professors of “classes de terminale” to teach this discipline. He organized a three day course about “Algorithms, Programming and Databases” in order to help professors of “classes préparatoires aux grandes écoles” to teach this discipline.

Pierre-Etienne Moreau is member of the national committee for Inria “Médiation Scientifique”. He also participated to “Fête de la Science 2014” at Mines Nancy.

## **PARKAS Project-Team**

## **8. Dissemination**

### **8.1. Promoting Scientific Activities**

#### **8.1.1. Scientific events organisation**

##### *8.1.1.1. General chair, scientific chair*

Albert Cohen was the general chair of PPOPP 2015, and will be the general chair of PLDI 2017 (associated with ECRC).

#### **8.1.2. Scientific events selection**

##### *8.1.2.1. Chair of conference program committee*

Albert Cohen was the program chair of CC 2014, the TPC chair of the DAC 2014 ESS1 subcommittee, and the program chair of ARCS 2015.

##### *8.1.2.2. Member of the conference program committee*

Albert Cohen was a member of the PC of PLDI 2014, of the ERC of PLDI 2015 and PACT 2015, of the ERC of ASPLOS 2014, PPOPP 2014 and ICS 2014.

Marc Pouzet was a member of the PC of DAC (Design Automation Conference) 2014, EOOLT (Equation-Based Object-Oriented Modeling Languages and Tools) 2014, AFADL (Approches Formelles dans l'Assistance au Développement de Logiciels) 2014.

Francesco Zappa Nardelli was a member of the PC of PPOPP (Principles and Practice of Concurrent Programming) 2014 and ESOP (European symposium on programming) 2014.

#### **8.1.3. Journal**

##### *8.1.3.1. Member of the editorial board*

Albert Cohen is an associate editor of ACM TACO and IJPP (Springer).

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

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+14h, M2, MPRI: Ecole normale supérieure and Université Paris Diderot, France

Master : M. Pouzet & T. Bourke: "Synchronous Systems" (M2), Lectures and TDs, ENS, France

Licence: A. Cohen, "Components of a Computing System Introduction to Computer Architecture and Operating Systems" (L3), 44h, École Polytechnique, France

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

Licence : M. Pouzet: "Operating Systems" (L3), Lectures, ENS, France.

Licence : J. Vuillemin & T. Bourke, "Digital Systems", Lectures and TDs, ENS, France

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

### **8.2.2. Supervision**

HdR : F. Zappa Nardelli, Reasoning between programming languages and architectures, ENS, January 2014

PhD : F. Li, Compiling for a multithreaded dataflow architecture: algorithms, tools, and experience. Université Pierre et Marie Curie - Paris VI, May 2014

PhD in progress : Guillaume Baudart, 2nd year, supervised by T. Bourke and M. Pouzet

PhD in progress : Adrien Guatto, 4th year, supervised by T. Bourke and A. Cohen and M. Pouzet

PhD in progress : Robin Morisset, 2nd year, supervised by F. Zappa Nardelli

M2 Internship : Ulysse Beaugnon (MPRI), supervised by A. Cohen and M. Pouzet.

M2 Internship : Basile Clement (MPRI), supervised by A. Cohen and M. Pouzet.

### **8.2.3. Juries**

- Albert Cohen was a reviewer in the PhD thesis committees of Jarryd Beck (2015, U. New South Wales, Australia), Pranav Tendulkar (2014, U. Grenoble), Cedric Nugteren (2014, T. U. Eindhoven, The Netherlands).
- Albert Cohen was a president in the PhD thesis committees of Sofiane Lagraa (2014, U. Grenoble), Bruno Bodin (2014, UPMC).
- Albert Cohen was examiner in the PhD thesis committee of Victor Lomüller (2014, U. Grenoble).
- Marc Pouzet was president of the Jury for the habilitation of Anne Bouillard, April 8, 2014.
- Marc Pouzet was jury member of the PhD. thesis of Arlen Cox, University of Colorado, Boulder, November 17, 2014.
- Marc Pouzet was member of the committee for the AERES evaluation of the Lab. of SupAero (ISAE), Toulouse, Nov. 2014.
- Marc Pouzet was member of the Prix de thèse du GDR GPL (Génie de la Programmation et du Logiciel).

## **8.3. Popularization**

T. Bourke hosted a tutorial by Makarius Wenzel at ENS Ulm on the Isabelle proof assistant.

## **PARSIFAL Project-Team**

# **8. Dissemination**

## **8.1. Promoting Scientific Activities**

### **8.1.1. Scientific events organisation**

#### *8.1.1.1. General chair, scientific chair*

K. Chaudhuri and L. Straßburger co-chaired the 3rd International Workshop on Structures and Deduction (SD), which was associated with the Federated Logic Colloquium (FLoC) and part of the Vienna Summer of Logic (VSL 2014), Vienna, Austria.

D. Miller was a PC chair for the Joint Meeting of the 23rd EACSL Annual Conference on Computer Science Logic (CSL14) and the 29th ACM/IEEE Symposium on Logic in Computer Science (LICS14), 14-18 July, Vienna.

#### *8.1.1.2. Member of the organizing committee*

K. Chaudhuri was Publicity co-chair for CSL-LICS 2014.

### **8.1.2. Scientific events selection**

#### *8.1.2.1. Member of the conference program committee*

K. Chaudhuri was on the Program Committees of:

30th International Conference on Logic Programming (ICLP)

4th ACM-SIGPLAN Conference on Certified Programs and Proofs (CPP)

9th International Workshop on Logical Frameworks and Meta-languages: Theory and Practice (LFMTP)

3rd International Workshop on Linearity

D. Ilik was on the Program Committee of the 16th International Symposium on Principles and Practice of Declarative Programming (PPDP 2014), Canterbury, United Kingdom.

D. Miller was on the Program Committee of WoLLIC 2014: Workshop on Logic, Language, Information and Computation, Valparaiso Chile, 1-4 September.

L. Straßburger was the Program Committee of the 18th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS).

#### *8.1.2.2. Reviewer*

S. Graham-Lengrand was a reviewer for the following conferences:

International Joint Conference on Automated Reasoning (IJCAR 2014)

Conferences on Intelligent Computer Mathematics (CICM 2014).

L. Straßburger was reviewer for the following conferences:

7th International Joint Conference on Automated Reasoning (IJCAR 2014)

41st International Colloquium on Automata, Languages and Programming (ICALP 2014)

Joint meeting of the 23rd EACSL Annual Conference on Computer Science Logic and the 29th Annual ACM/IEEE Symposium on Logic in Computer Science (CSL-LICS 2014)

F. Lamarche was a reviewer for the following conferences:

Joint International Conferences, Rewriting Techniques and Applications, Typed Lambda Calculus and Applications (RTA - TLCA 2014)

18th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS).

D. Ilik was a reviewer for the following conferences:

16th International Symposium on Principles and Practice of Declarative Programming (PPDP 2014), Canterbury, United Kingdom

18th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS 2015)

20th Conference "Types for Proofs and Programs" (TYPES 2014)

24th European Symposium on Programming (ESOP 2015)

Joint International Conferences, Rewriting Techniques and Applications, Typed Lambda Calculus and Applications (RTA - TLCA 2014)

### **8.1.3. Journal**

#### *8.1.3.1. Editor-in-chief*

D. Miller was Editor-in-Chief of the ACM Transactions on Computational Logic.

#### *8.1.3.2. Member of the editorial board*

S. Graham-Lengrand was guest editor for the special issue on computational logic in honour of Roy Dyckhoff, in the *Journal of Logic and Computation* (2014) [29]

D. Miller is on the editorial board of the following journals: *ACM Transactions on Computational Logic*, *Journal of Automated Reasoning* (Springer), *Theory and Practice of Logic Programming* (Cambridge University Press), and *Journal of Applied Logic* (Elsevier).

#### *8.1.3.3. reviewer*

S. Graham-Lengrand was a reviewer for the following journals:

Logic Journal of the IGPL (OUP)

Information and Computation (Elsevier)

Acta Informatica (Springer)

Theoretical Computer Science (Elsevier).

L. Straßburger was reviewer for the following journals:

Archive for Mathematical Logic (Springer)

ACM Transactions on Computational Logic (ACM-ToCL)

F. Lamarche was reviewer for the following journal:

Annals of Pure and Applied Logic (Elsevier).

D. Ilik was reviewer for the following journals:

Logic Journal of the IGPL (OUP)

Mathematical Reviews (MathSciNet)

Theoretical Computer Science (Elsevier)

Zentralblatt MATH

D. Miller was reviewer for the *Studia Logica* journal.

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Licence: K. Chaudhuri, “*INF 321 : Les principes des langages de programmation*”, 40 hours eq. TD, L3, Ecole polytechnique, France

Licence: S. Graham-Lengrand, “*INF431: Algorithmique et programmation*”, 50 hours eq. TD, L3, Ecole Polytechnique, France.

Licence: S. Graham-Lengrand, “*INF412: Les bases de la programmation et de l’algorithmique*”, 32 hours eq. TD, L3, Ecole Polytechnique, France.

Master: S. Graham-Lengrand, “*INF551: Computer-aided reasoning*”, 36 hours eq. TD, M1, Ecole Polytechnique, France.

Master: S. Graham-Lengrand, “*Curry-howard correspondence for classical logic*”, 12 hours eq. TD, M2, Master Parisien de Recherche en Informatique, France.

Master: D. Miller, “*MPRI 2-1: Logique linéaire et paradigmes logiques du calcul*”, 12 hours, M2, Master Parisien de Recherche en Informatique, France.

### **8.2.2. Supervision**

PhD: Hernán Vanzetto, “*Automatisation des preuves et synthèse des types pour la théorie des ensembles dans le contexte de TLA<sup>+</sup>*”, Université de Lorraine, 4 Dec 2014; supervised by Stephan Merz (Inria Lorraine) and K. Chaudhuri

PhD in progress: Sonia Marin, 1 Nov 2014, supervised by L. Straßburger and D. Miller

PhD in progress: Roberto Blanco, Zakaria Chihani, and Quentin Heath, supervised by D. Miller

### **8.2.3. Juries**

L. Straßburger was external reviewer and jury member for the PhD of Roman Krenický, University of Manchester, UK. Defence date: April 28, 2014.

S. Graham-Lengrand was a jury member for the PhD of Luis Pino Duque, École Polytechnique, France. Defence date: September 25, 2014.

D. Miller was a reporter for the following two PhD theses: Taus Brock-Nannestad (IT University of Copenhagen, 12 September 2014) and Thanos Tsouanas (ENS Lyon, 2 July 2014).

## PL.R2 Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Collective responsibilities

Pierre-Louis Curien was a member of the Conseil Scientifique of the INSII (CNRS), until September 2014. He is also a member of the Conseil Scientifique of CIRM (since June 2013).

### 7.1.2. Editorial activities

Pierre-Louis Curien is co-editor in chief of Mathematical Structures in Computer Science.

Frédéric Loulergue is a member of the editorial board of Scalable Computing: Practice and Experience, and Technique et Science Informatiques.

Hugo Herbelin, Pierre Letouzey and Matthieu Sozeau are co-editors of the post-proceedings of the conference TYPES 2014 which was held in Paris in May.

### 7.1.3. Program committees and organising committees

Alexis Saurin has been a PC member of GaLoP 2014 (International Workshop on Games and Logic for Programming) which took place during ETAPS 2014 in Grenoble, as well as FSTTCS 2014, which took place in Mumbai in December. He is in the PC of WoC 2015, the workshop on continuations, affiliated with ETAPS.

Alexis Saurin is member of the Education committee of the ACM Special Interest Group on Logic (SIGLOG, <http://siglog.hosting.acm.org>).

Hugo Herbelin, Pierre Letouzey and Matthieu Sozeau co-organised and co-chaired the TYPES'14 conference in Paris in May.

Yves Guiraud and Philippe Malbos were among the organisers of the 5-week programme Mathematical Structures of Computation, held in Lyon in January-February 2014, and supported by the Labex MILYON. They were also organisers of the second week, Algebra and Computation, while Pierre-Louis Curien and Hugo Herbelin organised the first week, Recent Trends in Type theory.

Yves Guiraud is in the organising committee and PC co-chair of Higher-Dimensional Rewriting and Applications (HDRA), a workshop of the International Conference on Rewriting, Deduction and Programming (RDP) 2015.

Pierre-Louis Curien, Hugo Herbelin and Paul-André Melliès were the organisers of the IHP trimester Semantics of proofs and certified mathematics (cf. highlights). They also organised a spring school at CIRM preceding the trimester, in April 2014.

Pierre-Louis Curien and Hugo Herbelin are members of the steering committee of the conference Typed Lambda Calculi and Applications (TLCA).

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

Frédéric Loulergue is a member of the steering committee of the international symposium on High-Level Parallel Programming and Applications (HLPP), he is a member of the program committee of the International Conference on Computational Science (ICCS'15).

Yann Régis-Gianas, Pierre Letouzey, Matthieu Sozeau are the organisers of the “Ecole de Printemps d’Informatique Théorique 2015” about proof of programs. This school has been accepted as a “Ecole Thématique” of the CNRS.



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

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

#### **7.1.4. Jury participation**

Alexis Saurin has been a member of the Jury for LMFI Master.

Yann Régis-Gianas has been a member of the “Comité de Sélection” for an assistant professor position at the University of Paris Sud.

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

Matthieu Sozeau has been a member of the Student Research Competition Jury at ICFP 2014 in Gothenburg.

#### **7.1.5. Invited talks**

P.-L. Curien gave an invited talk at the workshop “Algebra and Computation” in Lyon (mentioned above).

J.-J. Lévy wrote a paper for P.-L. Curien’s Festschrift Volume, entitled “On the length of Standard Reductions in the Lambda Calculus” [2] (corresponding to his talk back in September 2013 in Venice at the anniversary meeting in his honour).

P.-L. Curien and J.-J. Lévy participated to Luca Cardelli’s Festschrift at Microsoft Research in Cambridge, UK (September 8-9). They gave talks entitled “Around formal parametricity” and “Simple Proofs for Simple Programs”, respectively.

J.-J. Lévy participated to Matthew Hennessy’s Festschrift at IMD in Lucca, Italy (October 15-16). He gave a talk on “Simple Proofs for Simple Programs”.

J.-J. Lévy and A. Saurin participated to “Les Journées LAC (Logique, Algèbre, Calcul)” in Chambéry, France (November 20-21). They gave talks on “Simple Proofs for Simple Programs” and “On the dependencies of logical rules”, respectively.

J.-J. Lévy participated to “The 2nd Locali workshop” between Institute of Software, Chinese Academy of Sciences and Inria/Paris 7 (November 24-26). He gave a talk on “Simple Proofs for Simple Programs”.

M. Sozeau gave an invited talk on “Universe Polymorphism: Subtyping and unification” at the XIXth Agda meeting in Paris (May 2014).

L. Patey has been invited to give a talk at the Workshop on Computability Theory 2014, at a special session of the conference Computability in Europe 2015 and to a Dagstuhl Seminar 2015.

#### **7.1.6. Presentation of papers**

Philippe Malbos has presented [31] at IWC 2014.

Marc Lasson has presented [24] at MFPS 2014.

Hugo Herbelin has presented his joint work with Danko Ilik on the computational content of Gödel’s completeness theorem at the workshop PSC 2014.

Matthieu Sozeau has presented [27] at ITP 2014 and [28] at UNIF 2014.

Ludovic Patey received the best student paper award for his paper about dichotomy theorems and an extended version of his paper submitted to the Computability journal has been accepted.

#### **7.1.7. Other presentations**

Yann Régis-Gianas gave a talk about Coq at the PPS-LIAFA “pedagogical” meeting.

Frédéric Loulergue gave a short talk at JFLA’15 and a talk at the International Symposium on Symbolic and Numeric Algorithms for Scientific Computing SYNASC’14 (Timisoara).

Matthieu Sozeau gave talks on the development of Coq at the Coq Workshop in Vienna (July 2014) and at the CoqPL workshop in Mumbai (Jan 2015). He also gave a talk on generalised rewriting strategies at TYPES 2014 and at the Coq Workshop.

### 7.1.8. Talks in seminars

Lourdes González gave a talk on “Incrémentalité dans le calcul” during the Journées PPS, September 2014.

Marc Lasson gave talks about parametricity for dependent types at the TYPES 2014 workshop, at the journées nationales du GDR IM 2014, and the following team seminars: séminaire LCR, LIPN, Paris 13; séminaire Logique et Interactions, Institut de Mathématiques de Marseille; séminaire d’équipe ACADIE, IRIT Toulouse. He also presented his plugin during a Coq working group held in Paris.

Eric Finster gave a talk on Homotopy Type Theory at the “Notions of Identification” seminar at L’équipe ERC Philosophy of Canonical Quantum Gravity, Paris 7 and a talk entitled “Opetopic Diagrams as a Language for Higher Categorical Proofs” at the IHP Trimester in Paris.

Alexis Saurin gave a talk in PARSIFAL seminar at LIX on dependency and correctness of proof-nets.

Matthieu Sozeau gave a talk at the Deducteam seminar at Inria (place d’Italie) on the formalisation of the groupoid model of type theory.

Pierre-Louis Curien gave a seminar talk at the University of Talca (Chile) on “Revisiting the categorical interpretation of type theory” (March).

### 7.1.9. Attendance to conferences, workshops, schools,...

Lourdes González attended TYPES 2014 in Paris and the IHP trimester “Semantics of proofs and certified mathematics”.

Marc Lasson attended TYPES 2014 in Paris, the IHP trimester, and the Homotopy Type Theory Workshop held at the Mathematical Institute, University of Oxford, in November 2014.

Frédéric Loulergue attended SYNASC 2014 in September (Timisoara), and the JFLA’15 in Val d’Ajol.

Eric Finster attended the IHP Trimester in Paris, and the Homotopy Type Theory Workshop at Oxford.

Alexis Saurin and Matthieu Sozeau attended JFLA 2014, the IHP trimester, Types 2014 and FLOC 2014.

Matthieu Sozeau attended the Heidelberg Laureate Forum in September 2014 and ICFP’14.

### 7.1.10. Groupe de travail *Théorie des types et réalisabilité*

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

Internal speakers this year were Eric Finster on Higher Dimensional Syntax and Ludovic Patey on an Introduction to reverse mathematics. The external speakers were Jean-Baptiste Jeannin (CMU), Matthias Puech (McGill University), Sylvain Schmitz (ENS Cachan), Timothy Bourke (Inria and ENS), Cătălin Hrițcu (Inria), Pierre-Evariste Dagand (Inria), Carsten Schürmann (ITU Copenhagen), Conor McBride (Strathclyde University), Nicolas Pouillard (IT University of Copenhagen, Denmark), Alois Brunel (LIPN).

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Licence: Lourdes González has a temporary research and teaching position (A.T.E.R) at University Paris 7 for the academic year 2014–2015. During the first semester (Sep-Dec 2014) she was in charge of TP (Travaux pratiques, 24 hours) on the subject “Principes de fonctionnement des machines binaires” (L1).

Licence: Étienne Miquey was in charge of TP (Travaux pratiques, 24 hours) in the course “Introduction à la programmation” (L1) at University Paris 7 during the first semester 2014/15.

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).

Master: Alexis Saurin taught, jointly with Christine Tasson, a Master 2 course in “Logique Mathématique et Fondements de l’Informatique” (LMFI), Université Paris Diderot, entitled “Lambda-calcul: des abstractions aux applications”. He taught about 30H. In addition, Saurin chairs LMFI M2 from september 2013.

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

MOOC: In collaboration with Roberto Di Cosmo and Ralf Treinen, Yann Régis-Gianas wrote a proposal for a MOOC about the OCaml programming language. The proposal has been accepted and the course is in preparation.

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

Master: Matthieu Sozeau taught an introductory course on software verification to M2 Pro students at University Paris 7 during the first semester (Lectures + Practical Works, 20h).

### **7.2.2. Supervision**

Internship: Alexis Saurin has supervised the L3 internship of Paul Fermé.

Internship: Alexis Saurin has supervised the M1 internship of Simon Lunel.

Internship: Alexis Saurin has supervised, with David Baelde, the M2 internship of Amina Doumane.

Internship: Yann Régis-Gianas has supervised the M2 internship of Thibaut Girka.

Internship: Yann Régis-Gianas has supervised the M2 internship of Thomas Refis.

Internship: Yann Régis-Gianas has supervised the M1 internship of Grégoire Duchêne.

Internship: Yann Régis-Gianas has supervised the M1 internship of Alexandre Ly.

Internship: Matthieu Sozeau has supervised the M2 internship of Philipp Haselwarter.

PhD in progress: Lourdes del Carmen González Huesca, Un langage de tactiques typées pour Coq, December 2011, supervised by Hugo Herbelin and Yann Régis-Gianas.

PhD in progress: Guillaume Claret, Programmation avec effets en Coq, September 2012, supervised Hugo Herbelin and Yann Régis-Gianas.

PhD in progress: Pierre-Marie Pédrot, Logique linéaire et types dépendants, september 2012, supervised by Alexis Saurin and Hugo Herbelin.

PhD in progress: Thibaut Girka, Sémantique différentielle, October 2014, supervised by Roberto DiCosmo and Yann Régis-Gianas.

PhD in progress: Cyrille Chenavier, Méthodes algébriques pour la réécriture linéaire, supervised by Yves Guiraud and Philippe Malbos.

PhD in progress: Maxime Lucas, Résolutions polygraphiques cubiques et théorie de Garside, supervised by Yves Guiraud and Pierre-Louis Curien.

PhD in progress: Jovana Obradović, Langages pour la description de différentes sortes d’opérades, supervised by Pierre-Louis Curien.

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

PhD in progress: Étienne Miquey, Réalisabilité classique et effets de bords, September 2014, supervised by Hugo Herbelin and Alexandre Miquel.

### 7.2.3. *Juries*

Pierre-Louis Curien was president of the thesis juries of Aloïs Brunel (Univ. Paris 13), Guillaume Jaber (Univ. Nantes), Valentin Blot (ENS Lyon), and Marc Bagnol (Univ. Marseille).

Pierre-Louis Curien was president of the habilitation jury of Philippe Malbos (Univ. Lyon 1).

He is a referee for the habilitation theses of Olivier Serre (LIAFA), Russ Harmer (ENS Lyon), and Paul-André Melliès.

Frédéric Loulergue was president of the thesis juries of Hélène Coullon (Univ. Orléans), Mouhamadou Sakho (Univ. Orléans) and Nader Khammassi (ENSTA Bretagne) ; referee for the theses of Nuno Gaspar (Univ. Nice), Nader Khammassi (ENSTA Bretagne) and Charif Mahmoudi (Univ. Paris-Est Créteil) ; supervisor of the thesis of Thomas Pinsard (Univ. Orléans).

## 7.3. Popularization

Pierre-Louis Curien wrote the editorial of a special “hors série” issue of the information letter of The Fondation Sciences Mathématiques, entitled “Des preuves et des programmes”, may 2014. He wrote an introductory article “Formalisation mathématique, certification logicielle, même combat!” in the journal *Gazette des Mathématiciens* 142, 83-86 (octobre 2014).

Lourdes González-Huesca and Étienne Miquey took part in the animation of the “Fête de la Science” event at the University Paris 7.

Étienne Miquey took part in the animation of several activities about mathematics in elementary 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 the “Fête de la Science” event for the computer science department of the University Paris 7.

Yann Régis-Gianas and Pierre Letouzey took part in the “Salon Culture et Jeux mathématiques” at Saint Sulpice, Paris.

Yann Régis-Gianas gave several conferences about “What is programming?” in elementary and high schools of Paris.

## POLSYS Project-Team

# 8. Dissemination

## 8.1. POLSYS seminar

Our seminar hosted over twenty invited speakers in 2014.

<http://www-polsys.lip6.fr/Seminar/index.html>

## 8.2. Promoting Scientific Activities

### 8.2.1. Scientific events organisation

#### 8.2.1.1. member of the organizing committee

Dongming Wang was involved in the organization of the following conferences

- Third International Seminar on Program Verification, Automated Debugging and Symbolic Computation (PAS 2014) (Vienna, Austria, July 17-18, 2014).
- Software for Geometry at the 4th International Congress on Mathematical Software (ICMS 2014) (Seoul, Korea, August 5-9, 2014).

### 8.2.2. Scientific events selection

#### 8.2.2.1. member of the conference program committee

Ludovic Perret was member of the program committee of the following conference:

- Eurocrypt 2014 is the 33rd Annual International Conference on the Theory and Applications of Cryptographic Techniques (11 ? 15 May 2014 Copenhagen, Denmark)

Mohab Safey El Din was member of the program committee of the following conferences:

- 39-th Symposium on Symbolic and Algebraic Computation (ISSAC 2014) (Kobe, Japan, July 23-25, 2014)
- ACM Symbolic-Numeric Computation Conference (SNC 2014) (Shanghai, China, July 28-31, 2014)

Jean-Charles Faugère and Ludovic Perret were involved in a special Issue of the Journal Of Symbolic Computation (JSC) devoted to Mathematical and Computer Algebra Techniques in Cryptology.

Jean-Charles Faugère was member of the program committee of the following conferences:

- 39-th Symposium on Symbolic and Algebraic Computation (ISSAC 2014) (Kobe, Japan, July 23-25, 2014)
- The IACR International Conference on Practice and Theory of Public-Key Cryptography (PKC'2015)
- The thirteenth conference MEGA (University of Trento, Italy)

Elias Tsigaridas was member of the program committee of the following conferences:

- ACM Symbolic-Numeric Computation Conference (SNC 2014) (Shanghai, China, July 28-31, 2014)

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

- 6th International Symposium on Symbolic Computation in Software Science (SCSS 2014) (Gammarrh, Tunisia, December 7-11, 2014),
- 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2014) (Timisoara, Romania, September 22-25, 2014),
- 12th International Conference on Artificial Intelligence and Symbolic Computation (AISC 2014) (Sevilla, Spain, December 11-13, 2014),
- 10th International Workshop on Automated Deduction in Geometry (ADG 2014) (Coimbra, Portugal, July 9-11, 2014).

### 8.2.3. Journal

#### 8.2.3.1. member of the editorial board

Ludovic Perret is member of the editorial board of Designs, Codes and Cryptography published by Springer.

Mohab Safey El Din is member of the editorial board of Journal of Symbolic Computation (published by Academic Press/Elsevier, London).

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),
  - Book Series on Mathematics Mechanization (published by Science Press, Beijing),
  - Book Series on Fundamentals of Information Science and Technology (published by Science Press, Beijing).
- Member of the International Advisory Board for the Communications of JSSAC (Japan Society for Symbolic and Algebraic Computation) (published by JSSAC).
- Editor for the Book Series in Computational Science (published by Tsinghua University Press, Beijing).

### 8.2.4. Invited Talks

Jean-Charles Faugère was invited talk at:

- Workshop on Polynomials over Finite Fields - Barcelona - Centre de Recerca Matemàtica (CRM) - Spain
- Computational Nonlinear Algebra - Computational Nonlinear Algebra (ICERM) - Providence - USA
- Main lecture - Journées Nationales de Calcul Formel

Guénaél Renault was invited speaker for the following international conferences:

- Espaces de modules effectifs et application à la cryptographie (June 10-13, 2014, Rennes, France)
- 18th Workshop On Elliptic Curve Cryptography (October 8-10, 2014, Chennai, India)

Mohab Safey El Din was invited talk at:

- Workshop *Solving Polynomial Equations* as part of the *Algorithms and Complexity in Algebraic Geometry* program, Simons Institute, Berkeley, Oct. 2014.
- Special track on *Algebraic techniques in polynomial optimization*, IFORS, Barcelona, Spain, July, 2014.
- *Real Algebraic Geometry With A View Toward Systems Control and Free Positivity*, Oberwolfach, Germany, April, 2014.

## 8.3. Teaching - Supervision - Juries

### 8.3.1. Teaching

Jérémy Berthomieu had the following teaching activities:

Master : Modélisation et résolutions numérique et symbolique de problèmes *via* les logiciels MAPLE et MATLAB, 54 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Algèbre linéaire et applications, 35 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Introduction à la Sécurité, 32 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction au Calcul Scientifique, 40 heures équivalent TD, niveau L2, Université Pierre-et-Marie-Curie, France

Jean-Charles Faugère had the following teaching activities:

Master : Résolution de systèmes polynomiaux, 12 heures équivalent TD, niveau M2, MPRI

Ludovic Perret had the following teaching activities:

Master : Résolution de systèmes polynomiaux, 12 heures équivalent TD, niveau M2, MPRI

Master : Responsable Introduction à la sécurité, 96 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Responsable Complexité, 48 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction à l'Algorithmique, niveau L2, Université Pierre-et-Marie-Curie, France

Licence : Responsable en L2 du parcours informatique-mathématiques appliquées (PIMA), niveau L2, Université Pierre-et-Marie-Curie, France

Guénaël Renault had the following teaching activities:

Master : Co-responsable de la spécialité SFPN du master d'informatique, Université Pierre-et-Marie-Curie, France

Master : Responsable Cryptologie Avancée et Appliquée, 50 heures équivalent TD, niveau M2, Université Pierre-et-Marie-Curie, France

Master : Responsable Sécurité et Canaux Auxiliaires, 12 heures équivalent TD, niveau M2, Université Pierre-et-Marie-Curie, France

Master : Responsable Modélisation des attaques et des menaces, 25 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Responsable Algèbre linéaire et applications, 25 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Responsable Introduction à la cryptologie, 40 heures équivalent TD, niveau L3, Université Pierre-et-Marie-Curie, France

Mohab Safey El Din had the following teaching activities:

Master : Résolution de systèmes polynomiaux, 30 heures équivalent TD, niveau M2, Université Pierre-et-Marie-Curie, France

Master : Modélisation et résolutions numérique et symbolique de problèmes *via* les logiciels MAPLE et MATLAB, 21 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction à la Cryptologie, 20 heures équivalent TD, niveau L3, Université Pierre-et-Marie-Curie, France

### 8.3.2. Supervision

PhD : Jules Svartz, Résolution de Systèmes polynomiaux structurés de Dimension zéro, Université Pierre-et-Marie-Curie (Univ. Paris 6), 30 Oct. 2014, Jean-Charles Faugère

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

PhD in progress : Simone Naldi, Exact algorithms for rank defects in linear matrices, Sept. 2012, Didier Henrion and Mohab Safey El Din

PhD in progress : Frédéric Urvoy de Portzamparc, Algebraic Cryptanalysis and Physical Attacks in Code-Based Cryptography, Fev. 2012, Jean-Charles Faugère and Ludovic Perret

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

PhD in progress : Rina Zeitoun, Coppersmith's Algorithm and Applications in Cryptology, Jan. 2011, Jean-Charles Faugère and Guénaël Renault

### 8.3.3. Juries

Jen-Charles Faugère

member of the HDR committee of Guillaume Chèze

member of the HDR committee of Frederic Chyzac

member of the HDR committee of Clement Pernet

member of the PhD committee of Ruixian Renaud as the president of the committee.

member of the PhD committee of Jules Svartz as a an examiner.

Mohab Safey El Din was:

member of the PhD committee of Marta Abril Bucerro as a reviewer;

member of the PhD committee of Pierre Lairez as a reviewer;

member of the PhD committee of Jules Svartz as a an examiner.

member of the PhD committee of Sébastien Tavenas as a reviewer;

## 8.4. Popularization

Guénaël Renault was invited speaker for the workshop *Fabriquer le Hazard du forum Science, Recherche et Société* (May 22, 2014) organized by the newspapers Le Monde et La Recherche.



## POSTALE Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

Marc Baboulin Member of Steering Committee of ACM High Performance Computing Symposium (HPC'14), Tampa, Florida, April 13-16, 2014.

Marc Baboulin organizer of the workshop "Linear least squares and applications", 19th International Linear Algebra Society Conference (ILAS 2014), Seoul, South Korea, Aug. 06-09, 2014.

Marc Baboulin organizer of the minisymposium "Randomized algorithms in parallel matrix computations" at the SIAM Conference on Parallel Processing for Scientific Computing, Portland (OR), USA, Feb. 18-21, 2014.

Christine Eisenbeis IJPP (International Journal on Parallel Programming) editorial board.

Christine Eisenbeis comité d'organisation du colloque "Recherche et démocratie", 21-22 mai 2014, Orsay, (<http://www.centre-dalembert.u-psud.fr/archives-colloques/2014-recherche-scientifique-et-democratie/>).

Christine Eisenbeis 5th Workshop on applications for multi-core architectures, October 22-23, 2014, University Pierre et Marie Curie, Paris, France

Joël Falcou Membre du comité français de normalisation des langages C et C++ (JTC1/SC22/WG21) auprès de l'AFNOR depuis janvier 2011

Joël Falcou Co-chair of the C++NOW conference on C++ <http://cppnow.org/>

Joël Falcou Organizer and co-chair of the 2014 Workshop on Programming Models for SIMD/Vector Processing <https://sites.google.com/site/wpmvp2014/home>

Joël Falcou Membre fondateur du *User Group C++ francophone* (<http://www.meetup.com/User-Group-Cpp-Francophone/>)

Lionel Lacassagne reviewer for JRTIP and Eurasip Signal journals

Lionel Lacassagne co-chairman of the "Visual Scene Analysis on Hybrid Multicore" special session at DASIP 2014.

Lionel Lacassagne Program Committee member of DASIP 2014.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master : Christine Eisenbeis, coordinatrice du module "Optimisations et compilation" du M2 recherche NSI ("Nouveaux systèmes informatiques") de l'université Paris-Sud 11. 3 heures de cours.

Master: M. Baboulin and J. Falcou teach in "Calcul Haute Performance" of M2 recherche NSI of University Paris Sud 11.

Lionel Lacassagne: Master 2 Research "Nouveau Systemes Informatique" (NSI) and Master 2 "Systemes Embarqués et Traitement de l'Information" (SETI). Computer Architecture: optimisations for multicore and SIMD processors.

Polytech 5th year: M. Baboulin and J. Falcou teach the "Parallel Computing" class.

### 8.2.2. Supervision

PhD in progress: Ian Masliah, Automatic code generation in high-performance computing numerical libraries, University Paris Sud 11, Supervisors: M. Baboulin and J. Falcou

PhD in progress: Antoine Tran Tan, Automatic task-based code generation by C++ meta-programming, University Paris-Sud 11, Supervisor: Joël Falcou

PhD in progress: Adrien Rémy, Solving dense linear systems on accelerated multicore architectures, University Paris Sud 11, Supervisors: M. Baboulin and B. Rozoy

PhD in progress: Yushan Wang, Numerical simulations of incompressible fluid flows on heterogeneous parallel architectures, University Paris Sud 11, Supervisors: M. Baboulin and O. Le Maître

PhD in progress: Lénaïc Bagnères, université Paris-Sud 11, supervisors: Cédric Bastoul and Christine Eisenbeis

PhD defended, december 2014: Alessandro Leite, université Paris-Sud 11, supervisors: Alba de Melo (university of Brazilia), Claude Tadonki (CRI, école des Mines de Paris), Christine Eisenbeis

PhD defended, september 2014, Michael Kruse, Polytopic memory layout optimization, université Paris-Sud 11, supervisor: Christine Eisenbeis

PhD in progress: Jason Lambert, Interactive Non-Destructive Testing algorithm on SIMD multicore processors and GPU. CEA List/Disc funding, université Paris-Sud 11, supervisor: Lionel Lacassagne

### 8.2.3. Juries

- Marc Baboulin, Thèse de Viviana Siless (08/07/2014). Fonction exercée: président du jury
- Marc Baboulin, HDR de Christophe Denis (04/07/2014). Fonction exercée: rapporteur
- Marc Baboulin, Thèse de Jesus Camacho Rodriguez (25/09/2014). Fonction exercée: président du jury
- Marc Baboulin, HDR de Sylvie Boldo (06/10/2014). Fonction exercée: président du jury
- Marc Baboulin, Thèse de Philippe Théveny (31/10/2014). Fonction exercée: président du jury
- Marc Baboulin, Thèse de Vincent Reverdy (12/11/2014). Fonction exercée: examinateur
- Christine Eisenbeis, membre du jury de la thèse de Michael Kruse, "Lattice QCD Optimization and Polytopic Representations of Distributed Memory", vendredi 26 septembre 2014, université Paris-Sud
- Christine Eisenbeis, membre du jury de la thèse de Alessandro Ferreira Leite, "A User-Centered and Autonomic Multi-Cloud Architecture for High Performance Computing Applications", mardi 2 décembre 2014, université Paris-Sud
- Lionel Lacassagne, membre du jury de la thèse de Haixiong Ye, "Impact of High Level Transforms on High Level Synthesis: application to signal and image processing", ST Microelectronics funding, 20 mai 2014, université Paris-Sud

## 8.3. Popularization

Christine Eisenbeis est membre du conseil scientifique des programmes du centre d'Alembert, Centre Interdisciplinaire d'Étude de l'Évolution des Idées, des Sciences et des Techniques (CIEEIST), de l'université Paris-Sud. À ce titre, elle a fait partie du comité d'organisation du colloque "Recherche et démocratie", 21-22 mai 2014, Orsay, (<http://www.centre-dalembert.u-psud.fr/archives-colloques/2014-recherche-scientifique-et-democratie/>). Lors de l'animation "Livres au marché" de Malakoff, le 23 novembre 2014, elle a présenté, avec Jean-Pierre Archambault, le livre d'enseignement en terminale de l'ISN (Informatique et Sciences du Numérique) (principal auteur Gilles Dowek).

## PRIVATICS Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing and program committee

Claude Castelluccia : PETs' 14, WISEC 2014, AFP 2014.

Mathieu Cunche : WISEC 2014 (publicity chair).

Cédric Lauradoux : Journées C2.

Daniel Lemetayer: CPDP 2014, AFP 2014.

Marine Minier : SAR-SSI 2014

Vincent Roca : SAR-SSI 2014.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

Claude Castelluccia : WISEC 2014.

Marine Minier : CIS 2014.

#### 8.1.2.2. Member of the conference program committee

Mathieu Cunche : WCNC 2014, APVP 2014, ICISSP 2015.

Cédric Lauradoux : Wisec 2014, SDTA 2014, CCSW 2014, Wisec 2015, Journées C2.

Vincent Roca : SPACOMM 2014, SNDS 2014

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Undergraduate course : Vincent Roca, On Wireless Communications, 12h, L1, Polytech' Grenoble, France.

Undergraduate course : Vincent Roca, On Network Communications (24h), L1, IUT-2 (UPMF University) Grenoble, France.

Undergraduate course : Marine Minier, Probabilities, 80h, L3, INSA-Lyon, France.

Undergraduate course : Marine Minier, Signal Processing, 20h, L3, INSA-Lyon, France.

Undergraduate course : Marine Minier, Analysis, 20h, L3, INSA-Lyon, France.

Undergraduate course : Marine Minier, Introduction to Cryptography, 10h, L3, INSA-Lyon, France.

Undergraduate course : Marine Minier, Information Theory, 10h, L3, INSA-Lyon, France.

Undergraduate course : Marine Minier, Computer Architecture, 20h, L3, INSA-Lyon, France.

Undergraduate course : Marine Minier, Computer Security, 20h, L3, IUT-Lyon, France.

Undergraduate course : Mathieu Cunche, Introduction to computer science, 120h, L1, INSA-Lyon, France.

Undergraduate course : Cédric Lauradoux, Advanced Topics in Security, 20h, L3, ENSIMAG, France.

Master : Cédric Lauradoux, Introduction to Cryptology, 30h, M2, University of Grenoble, France.

Master : Claude Castelluccia, Advanced Topics in Security, 20h, M2, Ensimag/University of Grenoble, France.

Master : Claude Castelluccia, Advanced Topics in Security, 15h, M2, Ensimag/INPG, France.

Master : Marine Minier, Security for wireless networks, 20h, M2, INSA-Lyon, France.

Master : Mathieu Cunche, Wireless Security, 2h, M2, INSA-Lyon, France.

### **8.2.2. Supervision**

PhD in progress : Jagdish Acharya, Mobile devices and operating systems from a privacy point of view, October 2013, Vincent Roca and Claude Castelluccia.

PhD in progress : Thibaud Antignac, New solutions for a better privacy, September 2011, Daniel Le Métayer.

PhD in progress : Jessye Dos Santos, Wireless physical tracking, October 2013, Cédric Lauradoux and Claude Castelluccia.

PhD in progress : Amrit Kumar, Privacy and multiparty computation, November 2013, Cédric Lauradoux.

PhD in progress : Vincent Primault, Privacy and geolocated services, November 2013, Cédric Lauradoux.

PhD in progress : Gael Thomas, Algebraic Automata in Symetric Cryptography, November 2011, Marine Minier.

PhD in progress : Célestin Matte , Système d'observation des flux humains via Wi-Fi respectueux de la vie privée, October 2014, Marine Minier et Mathieu Cunche.

Intern (M2): Célestin Matte, Identification and Analysis of Privacy issues in the Wi-Fi technology (01/2014 - 07/2014)

Intern (M2): Pierre Brunisholz, OFDM decoding on a Virtex (02/2014- 09/2014)

Intern (M2): Emmanuel Poirier, Privacy preserving Wi-Fi tracking (02/2014-08/2014)

Intern (M1): Julia Reboul, Solving a Symmetric Key Cryptographic Problem with Constraint Programming (03/2014 - 08/2014)

Intern (M1): Pierre Rouverol, Study of Radio-Frequency tracking Technologies" (03/2014 - 08/2014)

### **8.2.3. Juries**

HdR : Vincent Roca, Codes AL-FEC et protocoles de diffusion robuste de contenus : composants pour des services performants et passant à l'échelle, Toulouse, 19/06/2014, Claude Castelluccia.

HdR : Sebastien Gams, Respect de la vie privée dans la société de l'information, Rennes, 23/06/2014, Daniel Le Métayer.

PhD : Minh-Dung Tran, Privacy challenges in Online Targeted Advertising, Université de Grenoble, 13/11/2014, Claude Castelluccia.

PhD : Gwenaelle DEJULYS, Analysis of entropy accumulators for cryptographic RNGs, Université de Grenoble, 18/12/2014, Cédric Lauradoux.

PhD : Lukasz Olejnik, Internet Tracking and Profiling, Université de Grenoble, 30/12/2015, Claude Castelluccia.

PhD : Abdelberi Chaabane, Threats against privacy on Internet: evaluation and solutions, Université de Grenoble, 22/05/2014, Claude Castelluccia.

PhD : Ferdaouss Mattoussi, Design and optimization of AL-FEC codes: the GLDPC-Staircase codes, Université de Grenoble, 13/02/2014, Vincent Roca and Claude Castelluccia.

PhD : Guillaume Smith, Enabling Private Real-Time Applications by Exploiting the Links Between Erasure Coding and Secret Sharing Mechanisms, Université de Toulouse, 04/12/2014, Vincent Roca.

PhD : Amira Bradai, Secured trust and reputation system : analysis of malicious behaviors and optimization, Université Pierre et Marie Curie, Paris 6, 29/09/2014, Vincent Roca.

PhD : Raphaël Jamet, Protocols and Models for the Security of Wireless Ad-Hoc Networks , Université de Grenoble, 03/11/2014, Marine Minier.

### 8.3. Popularization

Interview of Mathieu Cunche on Radio Canada in the chronicle of Janic Tremblay, 3rd February 2014.

Interview of Mathieu Cunche on Radio France Inter in “Journal de 18h”, February 28th 2014.

Seminar of Mathieu Cunche “ Je sais tout sur vous grâce au Wi-Fi! ” Séminaire sur la Confiance Numérique at Clermont Ferrand, March 6th, 2014.

Interview of Mathieu Cunche on Radio France Info in “Tout comprendre” chronicle, March 18th, 2014.

Interview of Mathieu Cunche in Ouest-France news-paper, May 10th, 2014.

Participation of Mathieu Cunche to the TV show "Le Monde en Face" on France 5, June 17th, 2014.

Participation of Mathieu Cunche to the round table “ Numériquement vôtre ” at Futur en Seine, June 14h, 2014.

Seminar of Mathieu Cunche “ Internet: Vie privée, Surveillance et Censure ” at St-Génis Les Ollières, December 20th, 2014.

Seminar of Cédric Lauradoux “ Identifiants et guesswork ” Séminaire sur la Confiance Numérique at Clermont Ferrand, January 9th, 2014.

Seminar of Cédric Lauradoux “ Identifiants et guesswork ” Séminaire sur la Confiance Numérique at Clermont Ferrand, January 9th, 2014.

Seminar of Cédric Lauradoux “ Déni de Service Algorithmique ”, Journées Sécurité des Systèmes d’informations at Rouen, November 13th, 2014.

Seminar of Cédric Lauradoux “ L’Internet des Objets et l’Internet des identifiants ”, Colloque Sécurité de l’Internet des Objets (chaire de cyberdéfense et cybersécurité Saint-Cyr – Sogeti – Thalès) at Rouen, September 19th, 2014

Interview of Vincent Roca and Mathieu Cunche, “ Comment brouiller sa trace dans les réseaux ? ” Sciences et Avenir, issue 809, July 2014.

Interview of Vincent Roca, “ Spécial Grenoble : portrait de trois chercheurs ”, Le Point édition régionale, issue 2195, October 9th, 2014.

Editorial of Claude Castelluccia and Vincent Roca, “ Mobilitics Saison 2: les smartphones et leurs apps sous le microscope de la CNIL et d’Inria ”, La lettre Innovation et Prospective de la CNIL, issue 8, December 2014.

Seminar of Vincent Roca, “ Vie privée et Smartphone : le projet Mobilitics Inria/CNIL ”, DAFP-RAF Inria meeting, Paris, October 16th, 2014.

Seminar of Vincent Roca, “ Vie privée et Smartphone : le projet Mobilitics Inria/CNIL ”, organized by the Guilde des Utilisateurs d’Informatique Libre du Dauphiné (GUILDE), Grenoble, November 4th, 2014.

Short TV subject with Vincent Roca, “ Applications mobiles : de vrais espions ? ”, ARTE X:enius magazine, September 1st, 2014. [http://www.arte.tv/guide/fr/051090-010/x-enius?vid=051090-010\\_PLUS7-F](http://www.arte.tv/guide/fr/051090-010/x-enius?vid=051090-010_PLUS7-F)

Press conference, organized by CNIL in association with Inria, “ Vie privée et smartphones : les nouveaux résultats du projet Mobilitics Inria-CNIL ”, December 15th, 2014.

Seminar of Daniel Le Métayer, at the Cybersecurity Forum (ETH Zurich), 2014.

Participation of Daniel Le Métayer to a panel on privacy by design at the Annual Privacy Forum (APF 2014, Athens).

Participation of Daniel Le Métayer to Panel on at Computers Privacy and Data Protection (CPDP 2014 – Brussels).

Nomination of Daniel Le Métayer at the Commission of the French Parliament “Commission de réflexion et de propositions ad hoc sur le droit et les libertés à l’âge du numérique.”

Organization of a seminar on privacy for the COERLE (Inria) by Claude Castelluccia and Daniel Le Métayer, November 2014.

## **PROSECCO Project-Team**

## **8. Dissemination**

### **8.1. Promoting Scientific Activities**

#### **8.1.1. Scientific events organisation**

##### *8.1.1.1. General chair, scientific chair*

- PROSECCO organized and hosted the **The Joint EasyCrypt-F\*-CryptoVerif School 2014** from Nov 24-28. The main organizers were Catalin Hritcu, Karthikeyan Bhargavan, and Pierre-Yves Strub. The school attracted over 75 participants and was primarily funded by the ERC Starting Grant CRYSP, with supporting funds from CryptoForma, MSR-Inria, and CryptoSense. The school's website is at [https://wiki.inria.fr/prosecco/The\\_Joint\\_EasyCrypt-F\\*-CryptoVerif\\_School\\_2014](https://wiki.inria.fr/prosecco/The_Joint_EasyCrypt-F*-CryptoVerif_School_2014)
- PROSECCO hosted the **IETF TLS Working Group Interim Meeting** from October 21-22. The main organizers were Alfredo Pironti and Karthikeyan Bhargavan. The meeting involved a dozen members of industry and academia and discussed the detailed design of the next version of TLS. The meeting's website is at [https://wiki.inria.fr/prosecco/IETF\\_TLS\\_Interim\\_October\\_2014](https://wiki.inria.fr/prosecco/IETF_TLS_Interim_October_2014)

#### **8.1.2. Scientific events selection**

##### *8.1.2.1. Chair of conference program committee*

- ASA workshop – July 2014, Vienna, Austria: Graham Steem

##### *8.1.2.2. Member of the conference program committee*

- ETAPS HotSpot – April 2014, Grenoble, France: Bruno Blanchet
- IEEE CSF – July 2014, Vienna, Austria: Bruno Blanchet
- ACM CCS – November 2014, Scottsdale AZ, USA: Graham Steel
- ETAPS POST – April 2014, Grenoble, France: Graham Steel
- PPDP – September 2014, Canterbury, UK: Chantal Keller
- ACNS – June 2014, Lausanne, Switzerland: Catalin Hritcu
- FCS-FCC 2014 – July 2014, Vienna, Austria: Catalin Hritcu, Benjamin Smyth
- IEEE CloudCom – December 2014, Singapore: Benjamin Smyth

##### *8.1.2.3. Reviewer*

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

#### **8.1.3. Journal**

##### *8.1.3.1. Member of the editorial board*

Associate Editor

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

##### *8.1.3.2. Reviewer*

- Members of Prosecco reviewed papers for many major journals including ACM TOPLAS, ACM TISSEC, Journal of Computer Security, etc.

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Master: Bruno Blanchet, Cryptographic protocols: formal and computational proofs, 18h equivalent TD, master M2 MPRI, universit  Paris VII, France

Doctorat: Bruno Blanchet, course on CryptoVerif, joint EasyCrypt-F\*-CryptoVerif school, Paris, France

Master: Karthikeyan Bhargavan, Cryptographic protocols: formal and computational proofs, 18h 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, course on F\*, joint EasyCrypt-F\*-CryptoVerif school, Paris, France

Doctorat: Graham Steel, 3 teaching hours in Venice Ca' Foscari on Security APIs

Doctorat: Benjamin Smyth, Electronic Voting: Introduction, privacy and verifiability definitions, and examples @ CryptoBG'14, Bulgaria

### 8.2.2. Supervision

- PhD: Miriam Paiola  
*Verification of cryptographic protocols with lists of unbounded length*, defended on May 28, 2014, supervised by Bruno Blanchet
- 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

### 8.2.3. Juries

- Cyrille Wiedling – Ph.D. – Nov. 21, 2014 – Universit  de Lorraine  
*Formal Verification of Advanced Families of Security Protocols: E-Voting and APIs*  
Bruno Blanchet (reviewer)
- Guillaume Scerri – Ph.D. – Jan. 29, 2015 – ENS Cachan  
*Proofs of security protocols revisited*  
Bruno Blanchet (reviewer)
- Bart van Delft – Licentiate – Mar. 14, 2014 – Chalmers University  
Karthikeyan Bhargavan (discussion leader)

## 8.3. Popularization

### 8.3.1. Seminars

- Graham Steel: invited talks at FCS-FCC 2014 (Vienna)
- Graham Steel: invited keynote at Grande Region security day (Saarbrucken).
- Bruno Blanchet: invited talk at the Dagstuhl seminar “The synergy between programming languages and cryptography”.
- Karthikeyan Bhargavan: invited talk at the IETF TLS Working Group to discuss the Triple Handshake Attack (London)
- Karthikeyan Bhargavan: invited talk at the Dagstuhl seminar “The synergy between programming languages and cryptography”.



- Karthikeyan Bhargavan: invited talk at Les Journées Scientifiques Inria in Lille
- Karthikeyan Bhargavan: invited panelist at Security Standardization Research workshop in Surrey UK
- Karthikeyan Bhargavan: invited keynote at Santa's Crypto Workshop 2014 (Prague)
- Antoine Delignat-Lavaud: briefing at BlackHat USA on "The BEAST Wins Again: Why TLS Keeps Failing to Protect HTTP"
- Catalin Hritcu: invited keynote at Grande Region security day (Saarbrücken).
- Catalin Hritcu: seminar at Groupe de travail LTP du GDR GPL
- Catalin Hritcu: seminar at Groupe de travail Théorie des types et réalisabilité

### **8.3.2. Vulnerability Reports**

- Karthikeyan Bhargavan, Antoine Delignat-Lavaud, and Alfredo Pironti reported the so-called Triple Handshake attacks on TLS implementations leading to security updates to all major web browsers: Google Chrome (CVE-2013-6628), Mozilla Firefox (CVE-2014-1491), Internet Explorer (CVE-2014-1771), Apple Safari (CVE-2014-1295), as well as to non-browser TLS libraries such as Oracle JSSE (CVE-2014-6457) and RSA BSAFE (CVE-2014-4630). For more details, see <http://secure-resumption.com>
- Antoine Delignat-Lavaud reported virtual host confusion attacks on a number of web servers, leading to security updates to the Akamai content delivery network, Dropbox, Bugzilla, as well as the NGINX web server. His results were presented at BlackHat USA and are summarized at <http://bh.ht.vc>
- Karthikeyan Bhargavan reported state machine attacks on major TLS libraries, such as OpenSSL (CVE-2014-3572), NSS, JSSE, CyaSSL, and SecureTransport, leading to security updates in all these libraries.

## SECRET Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- 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>;
- J.-P. Tillich served as a scientific organizer of the International workshop on quantum LDPC codes, July 14-16, Waterloo (Canada).
- WCC 2015 to be held in Paris, April 13-17, 2015, is organized by the project-team. The organizing committee is composed of A. Canteaut, G. Leurent, M. Naya Plasencia.

#### 9.1.1.2. member of the organizing committee

- QCrypt 2014: September 1-5, Paris (France): A. Leverrier.
- 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 the conference program committee

- 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 committee

- FSE 2014: March 2-5, 2014, London, UK (A. Canteaut);
- Africacrypt 2014: May, 28-30, 2014, Marrakech, Morocco (M. Naya-Plasencia);
- Eurocrypt 2014: May, 11-15, 2014, Copenhagen, Denmark (M. Naya-Plasencia);
- YACC 2014: June, 9-14, 2014, Porquerolles, France (N. Sendrier, J.-P. Tillich);
- ACNS 2014: June 10-13, 2014, Lausanne, Switzerland (A. Canteaut);
- SAC 2014: August 14-15, 2014, Montréal, Canada (A. Canteaut, M. Naya-Plasencia);
- Crypto 2014: August 17-21, 2014, Santa Barbara, USA (M. Naya-Plasencia);
- SCN 2014: September 3-5, 2014, Amalfi, Italy (G. Leurent);
- WAIFI 2014: September 26-28, 2014 (J.-P. Tillich);
- PQCrypto 2014: October 1-3 2014, Waterloo, Canada (N. Sendrier, J.-P. Tillich);
- Latincrypt 2014: September, 17-19, 2014, Florianópolis, Brazil (N. Sendrier);
- SETA 2014: November 24-28, 2014, Melbourne, Australia (P. Charpin);
- Asiacrypt 2014: December 7-11, 2014, China (M. Naya-Plasencia);
- Indocrypt 2014: December 14-17, 2014, New Delhi, India (A. Canteaut).
- 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);
- 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), March 24-28, 2014, Les Sept Laux, France, (M. Naya-Plasencia, J.-P. Tillich).

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- *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.

### 9.1.4. Other responsibilities in the national community

- 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 served on the selection committee for “Directeurs de recherche (DR2)” at Inria;
- A. Canteaut served on the selection committee for “chargés de recherche” at the Paris-Rocquencourt Inria research center;
- N. Sendrier served on the selection committee for “chargés de recherche” at the Sophia Antipolis - Méditerranée Inria research center;
- A. Canteaut served on the selection committee for promotion to the position of associate professor at DTU (Denmark);
- A. Canteaut served on the selection committee for promotion to the position of associate professor at ISI Kolkata (India);
- J.-P. Tillich is in charge of “Formation par la recherche” for the Paris-Rocquencourt Inria center.
- A. Chailloux served on the jury for the 2014 Gilles Kahn thesis prize, November 2014, Paris.

### 9.1.5. Invited talks

- A. Canteaut, *Chiffrements à bas coût : comment chiffrer et déchiffrer avec des opérations similaires*, Journées Nationales du GDR Informatique Mathématique, Paris, France, January 2014.
- A. Chailloux, *Parallel repetition of entangled games via the superposed information cost*, Quantum Information Processing - QIP 2014, Barcelona, Spain, February 2014.
- A. Chailloux, *Parallel repetition of entangled games via the superposed information cost*, Asian Quantum Information Science Conference - AQIS 2014, Tokyo, Japan, August 2014.
- M. Naya Plasencia, *On Lightweight Block Ciphers and Their Security*, Indocrypt 2014, New Delhi, India, December 2014.
- N. Sendrier, *QC-MDPC-McEliece: A public-key code-based encryption scheme based on quasi-cyclic moderate density parity check codes*, Workshop “Post-Quantum Cryptography: Recent Results and Trends”, Fukuoka, Japan, November 3-4, 2014.
- 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, NJ, USA, January 12-16, 2015.
- J.P. Tillich, *Recent attacks on McEliece schemes based on Goppa codes*, Yet Another Conference on Cryptography - YACC 2014, Porquerolles Island, France, June 2014;
- J.P. Tillich, *Turning error-reducing quantum turbo codes into error-correcting codes*, Third International Conference on Quantum Error Correction - QEC 14, Zurich, Switzerland, December 2014.

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

- G. Leurent, *New Generic Attacks on Hash-based MACs*, Dagstuhl Seminar 14021 - Symmetric Cryptography, Dagstuhl, Germany, January 2014.
- A. Leverrier, *A combinatorial approach to contextuality*, Meeting on Reliability, Security and Quality Assurance, Bordeaux, France, September 2014.
- A. Chailloux, *Strong connections between quantum encodings, non-locality and quantum cryptography*, Dimension Witness workshop - DIMWIT 2014, Sopot, Poland, June 2014.
- A. Chailloux, *Parallel repetition of entangled games via the superposed information cost*, Workshop on quantum games, Berkeley, U.S.A., February 2014.
- A. Chailloux, *Parallel Repetition of Free Entangled Games: Simplification and Improvements*, PCQC inaugural meeting, Paris, France, August 2014.
- A. Chailloux, *Parallel Repetition of Free Entangled Games: Simplification and Improvements*, Theory Seminar of UAB, Barcelona, Spain, November 2014.

## 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 cryptography*, 11 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 several summer schools for PhD students:

- *Design and security of cryptographic algorithms and devices for real-world applications*, Sibenik, Croatia, June 1-6, 2014: A. Canteaut and M. Naya-Plasencia.
- *Post-Quantum Cryptography Summer School*, Waterloo, Ontario, Canada, September 29-30, 2014: N. Sendrier.

### 9.2.2. Supervision

PhD: Marion Bellard, *Influence of the mapping in the reverse-engineering of a communication systems*, University Pierre-et-Marie Curie, January 30, 2014, supervisor: N. Sendrier

PhD: Grégory Landais, *Implementations of code-based cryptosystems and of their cryptanalyses*, University Pierre-et-Marie Curie, September 18, 2014, supervisor: N. Sendrier

PhD: Denise Maurice, *Quantum error-correcting codes with an efficient decoding algorithm*, University Pierre-et-Marie Curie, June 26, 2014, supervisor: J.-P. Tillich

PhD: Valentin Suder, *Differential properties of permutations and applications in symmetric cryptography*, University Pierre-et-Marie Curie, November 5, 2014, supervisor: P. Charpin

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

PhD in progress: Joëlle Roué, *Security analysis of block ciphers*, since September 2012, supervisor: A. Canteaut

PhD in progress: Audrey Tixier, *Recovering turbo-codes and LDPC codes*, since October 2013, supervisor: J.P. Tillich

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

### 9.2.3. Juries

- Marion Bellard, *Influence of the mapping in the reverse-engineering of a communication system*, University Pierre-et-Marie Curie, January 30, 2014, committee: N. Sendrier (supervisor) and J.-P. Tillich;
- Nathan Walk, *Continuous Variable Quantum Communication*, The University of Queensland, Australia, March 2014, A. Leverrier (reviewer).
- Florian Caullery, *Polynomials over finite fields for cryptography*, Université Aix-Marseille, May 28, 2014, A. Canteaut (chair);
- Denise Maurice, *Quantum error-correcting codes with an efficient decoding algorithm*, University Pierre-et-Marie Curie, June 26, 2014, committee: J.-P. Tillich (supervisor);
- Deng Tang, *Boolean functions for stream and block-ciphers*, Université Paris 8, July 1, 2014, A. Canteaut (chair);
- Anna Pappa, *Quantum cryptographic primitives in realistic scenarios*, Télécom ParisTech, July 10, committee: J.-P. Tillich;
- Gregory Landais, *Implementations of code-based cryptosystems and of their cryptanalyses*, University Pierre-et-Marie Curie, September 18, 2014, committee: N. Sendrier (supervisor) and J.-P. Tillich;
- Valentin Suder, *Differential properties of permutations and applications in symmetric cryptography*, Université Pierre et Marie Curie, November 5, 2014, P. Charpin (supervisor), A. Canteaut;
- François Arnault, *Contributions in discrete mathematics and cryptographic applications* (Habilitation), University of Limoges, November 12, 2014, committee: J.-P. Tillich (reviewer);
- Marion Candau, *Non Abelian convolutional codes*, University de Bretagne Occidentale, December 9, 2014, committee: J.-P. Tillich (reviewer);
- Gaétan Murat, *Weakly structured error correcting codes for the rank metric with applications to cryptography*, University of Limoges, December 9, 2014, committee: J.P. Tillich (reviewer).
- S. Raizada, *Some Results On Analysis And Implementation Of HC-128 Stream Cipher*, ISI Kolkata (India), January 2015, A. Canteaut (reviewer).

## 9.3. Popularization

- Anne Canteaut has been invited to give the annual Computer Science Talk for the new students at Ecole Polytechnique, Palaiseau, June 2014 [79].

## SPADES Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- Sophie Quinton was PC co-chair and organizing committee member of the *First Workshop on Formal Methods for Timing Verification* (FMTV'14).
- Alain Girault was PC co-chair and co-organizer of the *Second Workshop on Reconciling Performance with Predictability* (RePP'14), which took place on March 5th 2014, in Grenoble, France.
- Alain Girault was co-chair and co-organizer of the *Workshop on Synchronous Programming* (SYNCHRON'14), which took place in December 2014 in Aussois, France.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Participation in conference steering committees

- Jean-Bernard Stefani is the current chair of the Steering Committee of the *IFIP FORTE* conference series, and a member of the Steering Committee of the *DisCoTec* federated conference series.

#### 9.1.2.2. Participation in conference program committees

- Pascal Fradet served in the program committees of the *13th International Conference on Modularity* (MODULARITY'14) and of *Journées Francophones des Langages Applicatifs* (JFLA'14).
- Gregor Goessler served in the program committees of the *17th International Symposium on Component-Based Software Engineering* (CBSE'14) and *Design, Automation, and Test in Europe* (DATE'14).
- Sophie Quinton served in the program committees of the *26th Euromicro Conference on Real-Time Systems* (ECRTS'14), *34th IFIP International Conference on Formal Techniques for Distributed Objects, Components and Systems* (FORTE'14) and *12th IEEE International Symposium on Parallel and Distributed Processing with Applications* (ISPA'14) conferences as well as the *First International Workshop on Multi-Objective Many-Core Design* (MOMAC'14) and *2nd International Workshop on Mixed Criticality Systems* (WMC'14) workshops and the Work-in-Progress session of ECRTS'14.
- Alain Girault served on the program committees of the *International Conference on Design and Test in Europe* (DATE'14), the *Design Automation Conference* (DAC'14), the *International Symposium on Industrial Embedded Systems* (SIES'14), and the *International Conference on Pervasive and Embedded Computing and Communication Systems* (PECCS'14).

#### 9.1.2.3. Reviewer

- Gregor Goessler reviewed articles for CDC'14, POST'14, and TACAS'14.
- Sophie Quinton reviewed an article for the *51th Design Automation Conference* (DAC'14).

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- Jean-Bernard Stefani is a member of the editorial board of *Annals of Telecommunications*.
- Alain Girault is a member of the editorial board of the *EURASIP Journal on Embedded Systems*.

#### 9.1.3.2. Reviewer

- Jean-Bernard Stefani reviewed articles for *Theoretical Computer Science*.

- Gregor Goessler reviewed articles for *Science of Computer Programming* and *ACM Transactions on Embedded Computing Systems*.
- Sophie Quinton reviewed articles for *ACM Transactions on Embedded Computing*, *ACM Transactions on Design Automation of Electronic Systems* and *Real-Time Systems*.
- Alain Girault reviewed articles for *IEEE Trans. on Parallel and Distributed Systems* and *ACM Trans. on Design Automation of Electronic Systems*

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Supervision

PhD in progress: Vagelis Bebelis, “Boolean Parametric Data Flow. Modeling - Analyses - Implementation”, Grenoble University, since 12/2011, co-advised by Pascal Fradet and Alain Girault.

PhD in progress: Dmitry Burlyaev, “Specification and synthesis of fault-tolerant circuits”, Grenoble University, since 12/2011, co-advised by Pascal Fradet and Alain Girault.

PhD in progress: Yoann Geoffroy, “Towards a general causality analysis framework”, Grenoble University, since 10/2013, advised by Gregor Goessler.

### 9.2.2. Juries

- Alain Girault was president of the PhD defense jury of Pranav Tendulkar (University Grenoble Alpes).
- Alain Girault was president of the PhD defense jury of Christian von Essen (University Grenoble Alpes).
- Alain Girault was referee for the computer science PhD thesis of Guillaume Aupy (ENS-Lyon).
- Jean-Bernard Stefani was president of the jury for Bertrand Jeannet’s HDR defense (University Grenoble Alpes).
- Jean-Bernard Stefani was rapporteur for Helene Martorell’s PhD defense (Toulouse University)

## SPECFUN Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. member of the organizing committee

- A. Bostan has served in the organizing committee of the JNCF 2014, the annual meeting of the French computer algebra community.

#### 9.1.2. Scientific events selection

##### 9.1.2.1. member of the conference program committee

- A. Bostan has served in the program committee of the SYNASC 2014 international conference.
- A. Bostan is part of the Scientific advisory board of the MEGA conference series.
- A. Mahboubi has served in the program committee of the ITP 2014 and CICM/Calculemus 2014 international conferences.

##### 9.1.2.2. reviewer

- A. Bostan has served as reviewer for the ISSAC 2014 and SYNASC 2014 conferences.
- F. Chyzak has served as reviewer for the conference Calculemus 2014.
- A. Mahboubi has served as reviewer for the NFM 15 and CPP 15 international conference, and for the JFLA 2015 national conference.
- C. Tankink has served as reviewer for the ITP 2014 international conference.

#### 9.1.3. Journal

##### 9.1.3.1. reviewer

- A. Bostan has served as reviewer for the Journal of Symbolic Computation and for the American Mathematical Monthly.
- F. Chyzak has served as reviewer for the Journal of Algebra.
- A. Mahboubi has served as reviewer for the Journal of Automated Reasoning.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Master : A. Bostan, *Algorithmes efficaces en calcul formel*, 12h, M2, MPRI, France
- Master : F. Chyzak, *Algorithmes efficaces en calcul formel*, 12h, M2, MPRI, France
- Master : A. Mahboubi, *Assistants de preuves*, 6h, M2, MPRI, France
- Doctorat : A. Mahboubi, Lecturer at the *Summer School Méthodes Algorithmiques et Applications en Géométrie Algébrique Réelle et Théorie des Nombres*, 4.5h, a CIMPA School at AIMS (M'Bour, Sénégal)
- Doctorat : A. Mahboubi, Lecturer, 12h at the *NII Shonan School on Coq*, at Shonan (Japan)
- Research School : A. Mahboubi, Lecturer, 6h, at the *Introductory school to the IHP special semester on semantics of formal proofs and certified mathematics*, CIRM (Marseille, France)

### 9.2.2. Supervision



- HdR: F. Chyzak, *The ABC of Creative Telescoping: Algorithms, Bounds, Complexity*, University Paris-Sud 11, April 14, 2014 [1]
- PhD: P. Lairez, *Périodes d'intégrales rationnelles : algorithmes et applications*, École Polytechnique, November 12, 2014, supervised by A. Bostan and B. Salvy [2]
- PhD in progress: A. Barillec, *Asymptotique automatique certifiée des fonctions spéciales*, École Polytechnique, started in September 2013, supervised by F. Chyzak and A. Mahboubi
- PhD in progress: L. Dumont, *Algorithmique efficace pour les diagonales, applications en combinatoire, physique et théorie des nombres*, École Polytechnique, started in September 2013, supervised by A. Bostan and B. Salvy
- PhD in progress: Th. Sibut-Pinote, *Calcul numérique et démonstrations mathématiques : de la rigueur à la preuve formelle*, started in September 2014, supervised by A. Mahboubi
- Master : A. Mahboubi has supervised the Master 2 internship of Thomas Sibut-Pinote (ÉNS Lyon).

### 9.2.3. Juries

- A. Bostan has served as a jury member of the French *Agrégation de Mathématiques – épreuve de modélisation, option C*.

## 9.3. Keynote talks

- A. Mahboubi has given an invited lecture at the joint CSL-LICS conference, part of the Vienna Summer of Logic 2014.
- A. Mahboubi has given an invited lecture at the “Leçons de Mathématiques et d’Informatique d’Aujourd’hui” colloquium in Bordeaux.

## 9.4. Popularization

- A. Mahboubi has written an article [16] for the popular science website “Images de Mathématiques”, in the context of a partnership of this website with the Bourbaki seminar.
- A. Mahboubi has given a talk at the popular science event “Nuit des Sciences, Ébullitions” <http://www.nuit-sciences.ens.fr/> at École Normale Supérieure, on June 6th 2014.
- A. Mahboubi has been interviewed by Ph. Pajot in the magazine *La Recherche*, November 2014.
- A. Mahboubi has given a “Science Break” talk, at Supélec, on December 10th 2014, an event organized by La Diagonale Paris-Saclay, part of la Fondation de Coopération Scientifique Campus-Paris-Saclay.

## SUMO Project-Team

# 9. Dissemination

## 9.1. Administrative duties

Éric Badouel is secretary of the Permanent Committee of CARI, co-Director of LIRIMA, and the Scientific Manager for Africa and Middle-East region at Inria DRI.

Nathalie Bertrand is secretary and committee member of Gilles Kahn PhD prize.

Éric Fabre is the co-director of the joint research lab of Alcatel-Lucent Bell Labs France and Inria, together with Olivier Audouin on Bell Labs' side. This lab has currently five active joint research teams. Éric Fabre is also member of the Scientific Committee of the joint lab of Alstom and Inria.

Blaise Genest is member of the *Comité de Centre* of Inria Rennes, and of the CNRS CRFP of Bretagne.

Loïc Hérouët was member of the hiring committee a associate professor at INSA Rennes. Loïc Hérouët is currently *réfèrent chercheur* (advisor) for Inria Rennes sharing this responsibility with Christine Morin.

Thierry Jéron is member of the IFIP Working Group 10.2 on Embedded Systems. He is vice-chairman of the project committee of Inria Rennes - Bretagne Atlantique. He gave an invited lecture on "Model-based conformance test generation for timed systems" at WODES'2014. He was member of 3 committees to hire Inria junior scientists (CR2 at Lille and Saclay and CR1)

## 9.2. Promoting Scientific Activities

### 9.2.1. Scientific events organisation

#### 9.2.1.1. general chair, scientific chair

Nathalie Bertrand is an elected steering committee member for the international conference QEST (Quantitative Evaluation of Systems).

Thierry Jéron was member of the steering committee of Movep 2014 in Nantes (July 2014).

Hervé Marchand is member of the IFAC Technical Committees (TC 1.3 on Discrete Event and Hybrid Systems) since 2005. He is member of the steering committee of MSR (Modélisation de systèmes réactifs).

### 9.2.2. Scientific events selection

#### 9.2.2.1. chair/member of conference program committee

Éric Badouel has served in the Programme Committee of BPM'2014 Demos and CARI'2014.

Nathalie Bertrand was PC co-chair of QAPL'14 with L. Bortolussi. She was on the program committee of workshops PRUV'14 and QAPL'14, and of the international conferences QEST'14, TACAS'14.

Loïc Hérouët was member of the program committee of SAM'2014.

Thierry Jéron was PC member of ICTSS 2014, PECCS 2014, SAC-SVT 2014, TAP 2014, WODES 2014, and the forthcoming TAP 2015.

Hervé Marchand was PC member of the WODES conference and IFAC World Congress in 2014 and PC member of the forthcoming DCDS 2015 conference.

### 9.2.3. Journal

#### 9.2.3.1. reviewer

Éric Badouel is reviewer for AMS (MathSciNet) and reviewed papers for Science of Computer Programming, Fundamenta Informaticae, Theoretical Computer Science, and Transaction on Petri Nets and Other Models of Concurrency.

Nathalie Bertrand has written reviews for Logical Methods in Computer Science, Information Processing Letters, Information and Computation.

Éric Fabre is a regular reviewer for the Ministry of Education and Research, through the Credit Impot Recherche program (support to industrial research through tax reductions). He reviewed for several journals and conferences: Automatica, Journal of discrete event dynamical systems, CDC, ACC,...

Hervé Marchand was this year reviewer for Automatica and Journal of discrete event dynamical systems.

Thierry Jérón was reviewer for Annals of telecommunications, Evolving Systems, Science of Computer Programming and Software Testing, Verification and Reliability.

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

#### Christophe Morvan

License: Compilation, System, Advanced Algorithmics Université de Paris-Est, Marne-la-Vallée, France.

#### Nathalie Bertrand

Agreg: Responsible of computer science organization, 16h (eq. TD), M2, Ecole Normale Supérieure de Rennes, France.

#### Loïc Hérouët

Licence: JAVA programming, 35h, INSA Rennes, France.

Agreg: Algorithms, M2, ENS Rennes, France.

Master: Initiation to research, M1, ENS Rennes, France.

#### Éric Fabre

Master: "ASR: introduction to distributed systems and algorithms," 12h (eq. TD), M2, Univ. Rennes 1, France.

Master: "Information theory," 30h (eq. TD), M1, Ecole Normale Supérieure de Rennes, France.

Master: Preparation of Agrégation, 6h (eq. TD), M1, Ecole Normale Supérieure de Rennes, France.

Master: Initiation to research, 12h (eq. TD), M1, ENS Rennes, France.

Licence : "Information theory for computer scientists," 4.5h (eq. TD), L3, Ecole Normale Supérieure de Cachan, France.

### 9.3.2. Supervision

HdR: Christophe Morvan, Familles de graphes de présentation finie, propriétés et applications, Université de Paris-Est Marne-La-Vallée, 19 novembre 2014.

PhD: Sébastien Chédor, *Diagnostic, opacité et test de conformité pour des systèmes récursifs*, Université Rennes 1, 7th january 2015, supervised by Thierry Jérón and Christophe Morvan.

PhD: Mohamadou Lamine Diouf, *Opacité des artefacts d'un système workflow*, Rennes I University and University Cheikh Anta Diop (UCAD) in Dakar, 10th October 2014, supervised by Éric Badouel.

PhD in progress: Srinivas Pinisetty, *Runtime validation of critical control-command systems*, started in December 2011, supervised by Thierry Jérón and Hervé Marchand. Defense scheduled 23rd of January 2015.

PhD in progress: Bruno Karelavic, *Approximated analysis for checking Stochastic Models and Games*, started in November 2012, supervised by Blaise Genest and Wieslaw Zielonka.

PhD in progress : Paulin Fournier, *Parameterized verification of networks of probabilistic processes*, started in september 2012, supervised by Nathalie Bertrand and Thierry Jérón.

PhD in progress: Mathieu Pichene, Stochastic models to model apoptosis, started in December 2014, supervised by Blaise Genest.

PhD in progress: Karim Kecir, *Supervision of urban railway systems with advanced regulation techniques*, starting early 2015 (currently in pre-thesis period before a CIFRE convention is agreed by the ANRT), supervised by Loïc Hérouët.

### 9.3.3. Juries

Nathalie Bertrand was member of the private and public PhD defenses committee of Aaron Bohy, *Antichain based algorithms for the synthesis of reactive systems*, Université Mons, Belgium, 30/05/2014 and 10/06/2014.

This year, Thierry Jérôme has been:

- member of the PhD defense jury of Axel Belinfante, *JTorX: Exploring Model-based Testing*, University of Twente, Netherlands, 18/09/2014.
- member and president of the PhD defense jury of Hernan Ponce de Léon, *Testing concurrent systems through event structures*, LSV, ENS Cachan, 7/11/2014.
- member and president of the PhD defense jury of Anaïs Guignard, *Validation fonctionnelle de contrôleurs logiques: contribution au test de conformité et à l'analyse en boucle fermée*, Lurpa, ENS Cachan, 4/12/2014.

Éric Fabre participated to the Habilitation committee (HDR) of Samy Abbes, University Paris Diderot (Paris 7), "Asynchronous Probabilistic Processes," Sept. 2014.

## TASC Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- **Gilles Chabert**: Organization of a workshop on constraints, intervals and geometry in Mine de Nantes on June 2014 (<http://ibex-lib.org/workshop-23-06-14>).
- **Éric Monfroy**: Co-chair of the **ACM SAC CSP**. tracks 2014 and 2015.
- **Thierry Petit**: Chairman of the 10th Edition of JFPC conference, June 11-13 2014, Angers, **JFPC 2014**.

#### 9.1.1.2. member of the organizing committee

- **Éric Monfroy**: Member of the organizing committee of **JFPC 2014**.

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- **Nicolas Beldiceanu**: Member of the senior program committee of **CP 2014**.
- **Nicolas Beldiceanu**: Member of the program committee of **CPAIOR 2014**.
- **Nicolas Beldiceanu**: Member of the program committee of **CPAIOR 2015**.
- **Nicolas Beldiceanu**: Member of the program committee of **IJCAI 2015**.
- **Xavier Lorca**: Member of the program committee of JFPC 2015 (in Bordeaux).
- **Xavier Lorca**: Member of the program committee of **IJCAI 2015**.
- **Éric Monfroy**: Member of the program committee of **EvoCOP 2015**.
- **Thierry Petit**: Member of the program committee of **CPAIOR 2014**.
- **Thierry Petit**: Member of the program committee of **IEEE-ICTAI 2014** (Special track on SAT-CSP).
- **Thierry Petit**: Member of the program committee of **ECAI 2014**.
- **Charles Prud'homme**: Member of the program committee of **JFPC 2014**.
- **Florian Richoux**: Member of the Program Committee of **LION 9**.
- **Florian Richoux**: Member of the Program Committee of **SAC 15**.
- **Florian Richoux**: Member of the program committee of **JFPC 2014**.
- **Charlotte Truchet**: Member of the program committee of **ParSearchOpt 2014**.
- **Charlotte Truchet**: Member of the program committee of **JFPC 2014**.

#### 9.1.2.2. reviewer

- **Nicolas Beldiceanu** reviewer at **AAAI 2014**.
- **Gilles Chabert** reviewer at **SIAM Journal of Scientific Computing**.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- **Nicolas Beldiceanu**, **Constraints** (Springer).
- **Thierry Petit**, **Constraints** (Springer).
- **Florian Richoux**, **Encyclopedia of Computer Graphics and Games** (Springer).

### 9.1.3.2. reviewer

- **Xavier Lorca**: Reviewer for **Constraints (Springer)**.
- **Éric Monfroy**: Reviewer for IEEE TEC (Elsevier).
- **Éric Monfroy**: Reviewer for Information Sciences (Elsevier).
- **Florian Richoux** reviewer at **journal IEEE Transactions on Computational Intelligence and AI in games**.
- **Florian Richoux** reviewer at **Annals of Mathematics and Artificial Intelligence, Springer**.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master: **Nicolas Beldiceanu**, Constraint (**Master ORO**), 30h, M2, Nantes University, France.

Master: **Nicolas Beldiceanu**, Logic Programming, 32h, M2, Mines Nantes, France.

Master: **Nicolas Beldiceanu**, Gipad end project, 8h, M2, Mines Nantes, France.

Licence: **Nicolas Beldiceanu**, Programming with Java, 42h, L3, Mines Nantes, France.

Licence: **Nicolas Beldiceanu**, IPIPIP project, 12h, L1, Mines Nantes, France.

Master: **Gilles Chabert**, Non-linear programming, 20h, M2, Mines Nantes, France.

Master: **Gilles Chabert**, Non-linear optimization, 20h, M1, Mines Nantes, France.

Master: **Gilles Chabert**, Non-linear optimization, 24h, M1, Nantes University, France.

Licence: **Gilles Chabert**, Variational calculus, 12h, L3, Mines Nantes, France.

Licence: **Gilles Chabert**, Numerical methods, 21h, L3, Mines Nantes, France.

Licence: **Gilles Chabert**, Numerical methods, 15h, L3, Mines Nantes, France.

Licence: **Gilles Chabert**, Supervisions of projects, 66h, L3, Mines Nantes, France.

**Gilles Chabert**, Member of the selection committee for a position of associate professor at **ISTIA** (Angers University).

Master: **Xavier Lorca**, Head of the major of the Master in Engineering, Computer Science for Decision Support, M2, Mines Nantes, France.

Master: **Xavier Lorca**, Graph Theory, Algorithms, 22h, M1, Mines Nantes, France.

Master: **Xavier Lorca**, Artificial Intelligence and Constraint Programming, 22h, M2, Mines Nantes, France.

Master: **Xavier Lorca**, IT System and Software Development, 45h, M2, Mines Nantes, France.

Master: **Xavier Lorca**, Decision support systems, 45, M2, Mines Nantes, France.

Master: **Xavier Lorca**, Supervisions of projects, L2, M1, M3, Mines Nantes, France.

Licence: **Éric Monfroy**, Responsible of the L2 in Computer Science, Nantes University, France.

Licence and Master: **Éric Monfroy**, Responsible of the pole "Fondements Théoriques", CS Department, Nantes University, France.

Licence: **Éric Monfroy**, Algorithm 2, 16h, L2, Nantes University, France.

Licence: **Éric Monfroy**, Logic, 40h, L2, Nantes University, France.

Licence: **Éric Monfroy**, Language theory, 96h, L3, Nantes University, France.

Licence: **Éric Monfroy**, Computer architecture, 40h, L3, Nantes University, France.

Master: **Éric Monfroy**, supervision of 5 M2-MIAGE students (alternants), M2, Nantes University, France.

Master: **Éric Monfroy**, seminar about problem modelisation (ORO Master), 2, M2, Nantes University, France.

Master: **Thierry Petit**, Director of the Combinatorial Optimization degree, GIPAD, M2, Mines Nantes, France.

Master: **Thierry Petit**, Director of the Artificial Intelligence and Constraint Programming degree, GIPAD, M2, Mines Nantes, France.

Master: **Thierry Petit**, Discrete optimization, 9h, M2, Mines Nantes, France.

Master: **Thierry Petit**, Constraint Programming in **CHOCO**, 20h, M2, Mines Nantes, France.

Licence: **Thierry Petit**, Data structures, 20h, L2, Mines Nantes, France.

Licence: **Thierry Petit**, Java Programming, 40h, L2, Mines Nantes, France.

Licence: **Thierry Petit**, HMI, 13h, L2, Mines Nantes, France.

Licence: **Thierry Petit**, FIL project supervisor, 12h, L2, Mines Nantes, France.

Licence: **Thierry Petit**, IPIPIP project, 12h, L1, Mines Nantes, France.

Licence: **Thierry Petit**, Introduction to Constraint Programming, 4h, L2, Worcester Polytechnic Institute, USA.

Master: **Florian Richoux**, Constraint Programming, 12h, M2, University of Nantes, France.

Master: **Florian Richoux**, Prediction of Parallel Speed-ups for Las Vegas Algorithms, 2h, M2, University of Tokyo, Japan.

Licence: **Florian Richoux**, Design Patterns in Object-Oriented Programming, 86h, L3, University of Nantes, France.

Licence: **Florian Richoux**, Algorithm and Data Structures, 45h, L2, University of Nantes, France.

Licence: **Charlotte Truchet**, Algorithms and Programming, 46h, L1, University of Nantes, France.

Master: **Charlotte Truchet**, Local Search, 10h, M2, Mines Nantes.

### **E-learning**

Pedagogical resources: **Nicolas Beldiceanu**, global constraint course, exercises (available in two formats: pdf and interactively on the web) M2, [http://imedia.emn.fr/global\\_constraints\\_course/](http://imedia.emn.fr/global_constraints_course/)

### **9.2.2. Supervision**

PhD: Bruno Belin, Interactive conception of sustainable urban environments with constraints, Nantes University, November 27, 2014, **Charlotte Truchet**, **Marc Christie**, **Frédéric Benhamou**.

PhD: Jean-Guillaume Fages, Graph Theory in Constraint Programming, Theory and application to several graph covering problems, Nantes University, October 23, 2014, **Xavier Lorca**, **Nicolas Beldiceanu**.

PhD: **Charles Prud'homme**, Controlling Propagation and Search within a Constraint Solver, Nantes University, February 28, 2014, **Xavier Lorca**, **Narendra Jussien**, **Rémi Douence**.

PhD in progress: Anicet Bart, Mixed Constraint Solving, October 2014, **Charlotte Truchet**, **Éric Monfroy**.

PhD in progress: Alban Derrien, Constraint propagation with limited time complexity, October 2012, **Thierry Petit**, **Nicolas Beldiceanu**.

PhD in progress: Gilles Madi Wamba, Integrating time automata and constraint programming for modeling vm assignment in a data centre, October 2014, **Nicolas Beldiceanu**, **Didier Lime**, **Oliver H. Roux**.

PhD in progress: Ignacio Sala Donoso, Packing curved shapes, May 2013, **Gilles Chabert**, **Nicolas Beldiceanu**.

PhD in progress: Nicolás Sebastián Gálvez Ramírez, CP for Software Engineering, November 2014, **Éric Monfroy**, co-tutelle with Chile also involving Carlos Castro, Frédéric Saubion.

PhD in progress: Alejandro Reyes Amaro, New parallel algorithms for combinatorial optimization, October 2013, [Florian Richoux](#), [Éric Monfroy](#).

### 9.2.3. Juries

- [Nicolas Beldiceanu](#), Member of the committee of the HdR of [Xavier Lorca](#), Élément de flexibilité et d'efficacité en programmation par contraintes, (Nantes University, November 6, 2014).
- [Nicolas Beldiceanu](#), Member of the committee of the HdR of [Thierry Petit](#), Concilier expressivité et efficacité en programmation par contraintes, (Nantes University, December 4, 2014).
- [Nicolas Beldiceanu](#), Member of the PhD committee of the thesis of Jean-Guillaume Fages, Graph Theory in Constraint Programming, Theory and application to several graph covering problems, (Nantes University, October 23, 2014).
- [Frédéric Benhamou](#), Member of the PhD committee of the thesis of Bruno Belin, Interactive conception of sustainable urban environments with constraints, (Nantes University, November 27, 2014).
- [Gilles Chabert](#), Member of the PhD committee of the thesis of Aymeric Bethencourt, Interval Analysis for swarm localization. Application to underwater robotics. (ENSTA Bretagne, September 30, 2014).
- [Xavier Lorca](#), Member of the PhD committee of the thesis of Jean-Guillaume Fages, Graph Theory in Constraint Programming, Theory and application to several graph covering problems, (Nantes University, October 23, 2014).
- [Xavier Lorca](#), Member of the PhD committee of the thesis of Charles Prud'homme, Controlling Propagation and Search within a Constraint Solver, (Nantes University, February 28, 2014).
- [Charlotte Truchet](#), Member of the PhD committee of the thesis of Bruno Belin, Interactive conception of sustainable urban environments with constraints, (Nantes University, November 27, 2014).
- [Éric Monfroy](#), Member of the HDR committee of the Habilitation thesis of [Xavier Lorca](#), Élément de flexibilité et d'efficacité en programmation par contraintes, (Nantes University, November 6, 2014).
- [Éric Monfroy](#), Member of the HDR committee of the Habilitation thesis of [Adrien Goeffon](#), Modèles d'abstraction pour la résolution de problèmes combinatoires, (Angers University, November 17, 2014).
- [Éric Monfroy](#), Member of the HDR committee of the Habilitation thesis of [Thierry Petit](#), Concilier expressivité et efficacité en programmation par contraintes, (Nantes University, December 4, 2014).
- [Éric Monfroy](#), Member of the PhD committee of the thesis of Xavier Dupont, (Caen University, December 18, 2014).
- [Éric Monfroy](#), Member of the Magister committee of the Magister thesis of N. Galvez, (UTFSM, Chile, November 19, 2014).

## 9.3. Popularization

- A user guide is now available for [CHOCO](#): 164 pages describing how to use [CHOCO](#), together with a new website, see <http://www.choco-solver.org>. The next topics on the way will include:
  - Dealing with strong consistencies.
  - Designing an even more efficient free search strategy.
  - Providing a light explanation framework.
- Within the context of the [global constraint catalog](#):
  - On-line interactive exercises completed (see [http://imedia.emn.fr/global\\_constraints\\_course/](http://imedia.emn.fr/global_constraints_course/)).
  - Effort for providing more [TikZ](#) illustrations has been continued (about 1000 figures are currently available and 60 figures remain to be redesigned to [TikZ](#)) by [Nicolas Beldiceanu](#).



- Reorganization of the production of the pdf version (and enhancing look and navigation within the pdf) by **Mats Carlsson**.
- Update of the web version (see <http://sofdem.github.io/gccat/>) by **Sophie Demassey**.
- A strong effort has also been made in 2014 to improve the dissemination of **IBEX** and the collaboration of programmers. This includes:
  - Course on **IBEX** by **Gilles Chabert** at **MACS 2015**.
  - Creation of a new web site, see <http://www.ibex-lib.org/>.
  - Documentation writing (low-level interval arithmetic operations, contractors), see <http://www.ibex-lib.org/doc/>.
  - Migration of the code from SVN+sourceforge to github ([github.com/ibex-team/ibex-lib](https://github.com/ibex-team/ibex-lib)).
  - Support via the new forum (<http://ibex-lib.org/forum>).
  - Bug/issue tracking system, private wiki for developers.
  - Introduction of Travis for continuous integration.
- Within the context of *Artificial Intelligence and real time strategy games*,
  - Interview by Inria Bretagne of **F. Richoux** on his work about Game AI, see [emergences.inria.fr/emergences-2014/newsletter-n30/L30-STARCRAFT](http://emergences.inria.fr/emergences-2014/newsletter-n30/L30-STARCRAFT).
  - **F. Richoux** has been invited to write a short article about his work about Game AI in the “Bulletin de l’Association Française pour l’Intelligence Artificielle”. It should appear on January 2015.
- Presentation at the workshop **les femmes dans le monde académique** by **Charlotte Truchet**.
- A the 2014 edition of the Fête de la Science (Nantes University):
  - One talk on *Challenges around optimizations problems* was given by **Xavier Lorca**.
  - A session discussing and answering questions around the work of professor and researcher in computer science with young persons (18 years old) was spent by **N. Beldiceanu**.

## TEA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

Jean-Pierre Talpin is a member of the steering committee of the ACM-IEEE Conference on Methods and Models for System Design (MEMOCODE).

#### 9.1.1.2. responsable of the conference program committee

Jean-Pierre Talpin co-chaired the program committee of the 12th. ACM-IEEE MEMOCODE conference and the 5th. IEEE RTSS workshop AVICPS.

#### 9.1.1.3. member of the conference program committee

Jean-Pierre Talpin served the program committee of the 12th. ACM EMSOFT'14, ACM LCTES'14, and SCOPES'14 conferences, as well as the MODELS workshop ACVI'14.

Thierry Gautier served as program committee member for the 2014 Electronic System Level Synthesis Conference, ESLsyn 2014 (<http://www.ecsi.org/eslsyn>) and for the 12th ACM-IEEE International Conference on Formal Methods and Models for System Design, MEMOCODE'14 (<http://memocode.irisa.fr>).

### 9.1.2. Journal

#### 9.1.2.1. member of the editorial board

Jean-Pierre Talpin is Associate Editor with the ACM Transactions for Embedded Computing Systems (TECS); he is also Associate Editor with the Springer journal on Frontiers of Computer Science (FCS) and Associate Editor with EURASIP journal of embedded systems.

#### 9.1.2.2. reviewer

Jean-Pierre Talpin reviewed for Acta Informatica and Science of Computer Programming.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Supervision

- *PhD advisory of Chan Ngo* by Jean-Pierre Talpin, Paul Le Guernic and Thierry Gautier, entitled "*Vérification formelle d'un générateur de code pour les spécifications polychrones*", defended in December 2014.
- *PhD advisory of Sun Ke* by Jean-Pierre Talpin, Paul Le Guernic and Thierry Gautier, entitled "*Conception conjointe de modules synchrones et de réseaux flot-de-données polychrones*", since 2011.
- *PhD co-advisory of Imré Frotier de la Messelière* by Jean-Pierre Talpin and Pierre Jouvelot (Mines ParisTech), entitled "*Conception et implémentation d'applications musicales innovantes pour les nouvelles technologies multimédia*", since October 2013.

### 9.2.2. Juries

Jean-Pierre Talpin served as Referee at the Thesis Defence of Vincent Gaudel (UBO), entitled "*Des patrons de conception pour assurer l'analyse d'architectures : un exemple avec l'analyse d'ordonnancement*", December 2014.

## TEMPO Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events

#### 8.1.1.1. Invitationr

Vania Joloboff was invited for a short stay at Academia Sinica in Taipei Taiwan, in October 2014.

#### 8.1.1.2. Member of the organizing committee

Vania Joloboff jointly organized with ECNU staff the LIAMA Open Day in Shanghai in July 2014

Vania Joloboff jointly organized and chaired a session at the LIAMA Workshop for collaboration between Europe and China in May 2014.

Mingsong Chen was invited to served as a Session Chair of the conference SERE 2015.

#### 8.1.1.3. Member of the conference program committee

Vania Joloboff is program committee member of DATE conference workshop on Model Implementation Fidelity.

Mingsong Chen served as a Program Committee member of International Conference on VLSI Design.

Mingsong Chen served as a Program Committee member of the conference SAC 2015.

Mingsong Chen served as a Program Committee member of the conference DATE 2015.

#### 8.1.1.4. Reviewer

Mingsong Chen was a reviewer for the conferences VLSID 2015, SAC 2015, DATE 2015, DAC 2015.

### 8.1.2. Journal

#### 8.1.2.1. Member of the editorial board

Mingsong Chen serves as an associate editor of Journal of Circuits, Systems and Computers.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

#### Virtual Prototyping

Vania Joloboff : Virtual Prototyping, ECNU SEI

Master Students

### 8.2.2. Supervision

Mingsong Cheng and Vania Joloboff started supervision of several Master and PhD. students at East China Normal University.

### 8.2.3. Juries

Vania Joloboff was jury member of PhD defence for Yanwen Chen, a double PhD degree of East China Normal University and University of Nice.

## TOCCATA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- J.-C. Filliâtre chaired the fifth meeting of the IFIP Working Group 1.9/2.15 (Verified Software) in Vienna, Austria, July 2014.

#### 9.1.1.2. Member of the organizing committee

- S. Boldo and G. Melquiond are members of the organizing committee for the 22nd IEEE Symposium on Computer Arithmetic (ARITH 2015), held in Lyon in June 2015.
- J.-C. Filliâtre organized the sixth meeting of the IFIP Working Group 1.9/2.15 (Verified Software) in Paris, France, December 2014.
- C. Paulin co-organized with Z. Shao (Harvard University) the *Workshop on certification of high-level and low-level programs*, July 7-11, 2014. This workshop was part of the IHP thematic trimester *Semantics of proofs and certified mathematics*, which took place in Paris from April to July.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- S. Boldo is a member of the program committee of the 7th International Workshop on Numerical Software Verification (NSV-7). For 2015, she will be in the program committees of the 26th Journées Francophones des Langages Applicatifs (JFLA 2015), of the 8th International Workshop on Numerical Software Verification (NSV-8) and of the 22nd IEEE Symposium on Computer Arithmetic (ARITH 2015).
- A. Charguéraud served on the external review committee for POPL 2015.
- É. Contejean is a member of the program committee of the ACM SIGPLAN 2014 Workshop on Partial Evaluation and Program Manipulation, (PEPM 2014) affiliated with the POPL 2014 conference.
- J.-C. Filliâtre is a member of the program committees of the Symposium on Languages, Applications and Technologies (SLATE 2014) and the Journées Francophones des Langages Applicatifs (JFLA 2014).
- C. Marché, member of program committee of the first international workshop Formal-IDE (F-IDE), held as a satellite workshop of ETAPS 2014 <http://perso.ensta-paristech.fr/~etaps/>, and of the next workshop F-IDE 2015.
- C. Paulin is a member of the program committees of the conference Interactive Theorem Proving (ITP 2014) and the Coq Workshop 2014. For 2015, she will be in the program committees of the following conferences: Certified Programs and Proofs (CPP 2015), Mathematics of Program Construction (MPC 2015) and Types for Proofs and Programs (TYPES 2015).
- A. Paskevich is a member of the program committee of the 11th International Workshop on User Interfaces for Theorem Provers (UITP 2014) affiliated with the FLoC 2014 conference.

#### 9.1.2.2. Reviewer

The members of the Toccata team have reviewed papers for numerous international conferences, including: ARITH, CICM, CPP, ESOP, NFM, POPL, SLATE.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- S. Boldo is member of the editorial committee of the popular science web site “i()”: <http://interstices.info/>.
- S. Boldo is member of the editorial board of Binaire <http://binaire.blog.lemonde.fr>, the blog of the French Computer Science Society.
- J.-C. Filliâtre is member of the editorial board of the *Journal of Functional Programming*.
- C. Paulin is member of the editorial board of the *Journal of Formalized Reasoning*.

#### 9.1.3.2. Reviewer

The members of the Toccata team reviewed numerous papers for numerous international journals, including: Journal of Automated Reasoning (JAR), Transactions in Computational Sciences (TCS), Theory of Computing Systems (TCS), IEEE Transactions on Computers (TC), Journal of Scientific Programming, Journal of Field Robotics (JFR), Mathematical Structures in Computer Science (MSCS), Journal of Automated Software Engineering.

### 9.1.4. Invited Talks

- S. Boldo was invited speaker at the 16th GAMM-IMACS International Symposium on Scientific Computing, Computer Arithmetic and Validated Numerics conference (SCAN 2014) [25] about her methodology for the formal verification of floating-point programs.
- S. Boldo and G. Melquiond were invited speakers at an international workshop in Lyon, France called Mathematical Structures of Computation during the week 4: Formal Proof, Symbolic Computation and Computer Arithmetic. <http://smc2014.univ-lyon1.fr/doku.php?id=week4>.
- C. Lelay was invited speaker at the 25th JFLA (Journées Francophones des Langages Applicatifs), Fréjus, France, Jan 10th, 2014 about “Coq passe le bac”: she tried the 2013 mathematics test of the scientific Baccalaureate in Coq at the same time as the students.
- C. Marché, “Calcul de plus faible précondition, revisité en Why3”, 25th JFLA, special session on selected representative papers of past editions, joint work with A. Tafat, Fréjus, France, Jan 11th, 2014.
- C. Marché, “Beyond SPARK2014: the ProofInUse project”, IFIP WG1.9/2.15, Vienna, Austria, Jul 15th, 2014.
- G. Melquiond was invited speaker at the 12th International Workshop on Satisfiability Modulo Theories (SMT 2014).
- C. Paulin was invited speaker at the 25th JFLA (Journées Francophones des Langages Applicatifs), Fréjus, France, Jan 10th, 2014 to give a tutorial presentation of the ALEA library. She also gave an invited talk during the GDR-GPL “Journées Nationales”.
- C. Paulin was invited speaker at the workshop “All about Proofs, Proofs for All” (APPA) as part of the Vienna Summer of Logic. She presented an introduction to the Calculus of Inductive Constructions. She wrote a chapter in the post-conference book [115] to appear next year.

### 9.1.5. Collective Responsibilities

- S. Boldo, elected member of the Inria Evaluation Committee until August 2014. She was in the committee in charge of selecting the Inria permanent researchers (CR2) in Bordeaux and Nancy and in the national committee for first-class Inria permanent researchers (CR1).
- S. Boldo, member of the national Inria admission committee.
- S. Boldo, C. Marché, and G. Melquiond, members of committees in charge of recruiting assistant professors at Université Paris-Sud.
- S. Boldo, member of the CLFP, *comité local de formation permanente*.

- S. Boldo, scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria.
- S. Boldo, member of the national popularization committee, *comité de médiation scientifique*, of Inria.
- A. Charguéraud is vice-president of *France-ioi*, a non-profit organization in charge of the selection and the training of the French team to the International Olympiads in Informatics (IOI). France-ioi also provides online exercises in programming and algorithmics—in average, over 70,000 such exercises are solved every month on the website.
- A. Charguéraud is a board member of the non-profit organization *Animath*, which aims at developing interest in mathematics among young students.
- A. Charguéraud and G. Melquiond are members of the committee for the monitoring of PhD students (*commission de suivi des doctorants*).
- S. Conchon and A. Paskevich, members of the *commission consultative de spécialistes de l'université*, Section 27, University Paris-Sud since December 2014.
- É. Contejean, leader of the VALS team since February 2014.
- É. Contejean, nominated member of the *conseil du laboratoire* of LRI since April 2010 till June 2014.
- É. Contejean, elected member of the *section 6 du Comité National de la Recherche Scientifique* since September 2012.
- É. Contejean, member of the committee of experts for the AERES evaluation of the Verimag laboratory (2014).
- É. Contejean, reviewer for the ANR (2014).
- É. Contejean, reviewer for the START program of the Austrian Science Fund (FWF) (2014).
- S. Dumbrava, elected member of the *conseil du laboratoire* of LRI since June 2014.
- J.-C. Filliâtre is *correcteur au concours d'entrée à l'École Polytechnique* (computer science examiner for the entrance exam at École Polytechnique) since 2008.
- C. Lelay, elected member of the *conseil du laboratoire* of LRI from November 2011 to June 2014.
- C. Marché and S. Boldo, members of the *jury de l'agrégation externe de mathématiques* as experts in computer science, since 2012.
- C. Marché (since April 2007) and C. Paulin (since September 2010), members of the program committee of Digiteo Labs, the world-class research park in *Île-de-France* region dedicated to information and communication science and technology, <http://www.digiteo.fr/>. C. Marché, president of this committee since July 2013.
- C. Marché, member of the executive team of the LRI (as “chargé de mission”), since July 2014.
- C. Marché, president of the hiring committee of one associate professor position (Maître de Conférences), Université Paris-Sud, April-June 2014. Member of another such committee.
- C. Marché, director of the ProofInUse Joint Laboratory between Inria and AdaCore, <http://www.spark-2014.org/proofinuse>
- G. Melquiond and C. Paulin, members of the *commission consultative de spécialistes de l'université*, Section 27, University Paris-Sud since April 2010. C. Paulin is the president of this committee since December 2014.
- G. Melquiond, elected officer of the IEEE-1788 standardization committee on interval arithmetic since 2008.
- C. Paulin, scientific leader of Labex DigiCosme <http://labex-digicosme.fr> (Digital Worlds: distributed data, programs and architectures), a project launched by the French Ministry of research and higher education as part of the program “Investissements d’avenir”, it involves the 14 research units in computer science and communications from the “Paris-Saclay” cluster.

- C. Paulin, president of the Computer Science Department of the University Paris-Sud <https://www.dep-informatique.u-psud.fr/>, since February 2012.
- C. Paulin, president of the assembly of directors of graduate schools at the Université Paris-Sud since September 2012.
- C. Paulin, chaired the hiring committee for a professor position in computer science at Université Paris-Sud.
- In 2014, C. Paulin was elected member of the Informatics Section of Academia Europaea <http://www.ae-info.org/>.
- A. Paskevich was in charge (together with C. Bastoul in 2012–2013 and B. Cautis in 2013–2014) of Licence professionnelle PER (L3) at IUT d’Orsay, Paris-Sud University since September 2012 till August 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master Parisien de Recherche en Informatique (MPRI) <https://wikimpri.dptinfo.ens-cachan.fr/doku.php>: “Proofs of Programs” <http://www.lri.fr/~marche/MPRI-2-36-1/> (M2), C. Marché (12h), A. Charguéraud (12h), Université Paris 7, France.

Licence: “Programmation Fonctionnelle avancée” (L3), M. Clochard (10h), Université Paris-Sud, France.

Master: “Projet de programmation (compilation)” (M1), M. Clochard (50h), Université Paris-Sud, France.

Licence: “Programmation fonctionnelle avancée” (L3), S. Conchon (30h), Université Paris-Sud, France.

Master: “Compilation” (M1), S. Conchon (33h), Université Paris-Sud, France.

DUT (Diplôme Universitaire de Technologie): “Systèmes” (S3), D. Declerck, IUT d’Orsay, Université Paris-Sud, France.

DUT (Diplôme Universitaire de Technologie): “Programmation et administration des bases de données” (S2), S. Dumbrava (62h), IUT d’Orsay, Université Paris-Sud, France.

DUT (Diplôme Universitaire de Technologie): “Bases de données avancées” (S3), S. Dumbrava (36h), IUT d’Orsay, Université Paris-Sud, France.

Licence: “Langages de programmation et compilation” (L3), J.-C. Filliâtre (36h), École Normale Supérieure, France.

Licence: “INF411: Les bases de l’algorithmique et de la programmation” (L3), J.-C. Filliâtre (16h), École Polytechnique, France.

Licence: “Mathématiques pour l’informatique” (L2), L. Gondelman (30h), Université Paris-Sud, France.

Master: “Compilation” (M1), L. Gondelman (28h), Université Paris-Sud, France.

DUT (Diplôme Universitaire de Technologie): “Programmation système” (S4), A. Paskevich (48h), IUT d’Orsay, Université Paris-Sud, France.

### 9.2.2. Internships

- Y. Chatelain, a L3 student from Université Paris-Sud, did a 2-month internship under the supervision of J.-C. Filliâtre and A. Paskevich, on the implementation of a new criterion of termination of recursive functions in a pure functional language.
- J.-P. Deplaix, a third-year student of Epitech, did a 4-month internship, supervised by J.-C. Filliâtre and A. Paskevich, on the compilation of *Why3* programs to C.

- J. Grangier, a M1 student from ENSIEE, did a 10-week internship under the supervision of A. Charguéraud, on the verification of the functional correctness and the asymptotic complexity of a dynamic array data structure.
- X. Onfroy, a L3 student from ENS-Lyon, did a 6-week internship, supervised by G. Melquiond, on the formalization of the gauge integral in the setting of the Coquelicot library.

### 9.2.3. Supervision

HDR: É. Contejean, “Facettes de la preuve, Jeux de reflets entre démonstration automatique et preuve assistée” [13], Université Paris-Sud, June 13th, 2014.

HDR: S. Boldo, “Deductive Formal Verification: How To Make Your Floating-Point Programs Behave” [12], Université Paris-Sud, October 6th, 2014.

PhD: C. Dross, “Theories and Techniques for Automated Proof of programs” [14], Université Paris-Sud, Apr. 1st, 2014, supervised by C. Marché, A. Paskevich, and with industrial supervisors Y. Moy and J. Kanig (AdaCore company).

PhD: A. Mebsout, “SMT-based Model-Checking” [15], Université Paris-Sud, Sep. 29th, 2014, supervised by F. Zaïdi (LRI) and S. Conchon.

PhD in progress: C. Lelay, “Real numbers for the Coq proof assistant”, since Oct. 2011, supervised by S. Boldo and G. Melquiond.

PhD in progress: S. Dumbrava, “Towards data certification”, since Oct. 2012, supervised by V. Benzaken (LRI) and É. Contejean.

PhD in progress: L. Gondelmans, “Obtention de programmes corrects par raffinement dans un langage de haut niveau”, since Oct. 2013, supervised by J.-C. Filliâtre and A. Paskevich.

PhD in progress: M. Clochard, “A unique language for developing programs and prove them at the same time”, since Oct. 2013, supervised by C. Marché and A. Paskevich.

PhD in progress: J. C. Mbiada Djanda, “Augmented Semantics for the Non-interference of critical C Code”, since Nov. 2013, supervised by C. Marché and J. Signoles (CEA LIST).

PhD in progress: D. Declerck, “Vérification par des techniques de test et model checking de programmes C11”, since Sep. 2014, supervised by F. Zaïdi (LRI) and S. Conchon.

### 9.2.4. Juries

S. Boldo: examiner, PhD committee of Mohamed Amine Najahi, “Synthesis of certified programs in fixed-point arithmetic, and its application to linear algebra basic blocks”, Perpignan, France, December 2014.

J.-C. Filliâtre: examiner, PhD committee of Jonathan Protzenko, “Mezzo: the language of the future”, Université Paris Diderot, September 2014.

C. Marché: reviewer, PhD committee of T. Borner “Advancing Deductive Program-Level Verification for Real-World Application”, Karlsruhe Institute of Technology, Karlsruhe, Germany, October 2014.

C. Marché: examiner, HDR committee of S. Boldo, “Deductive Formal Verification: How To Make Your Floating-Point Programs Behave”, Université Paris-Sud, October 2014.

C. Paulin: examiner, PhD committee of Guillaume Cano, “Interaction entre algèbre linéaire et analyse en formalisation des mathématiques”, University of Nice-Sophia Antipolis, March 2014.

C. Paulin: examiner, HDR committee of Évelyne Contejean, “Facettes de la preuve, Jeux de reflets entre démonstration automatique et preuve assistée”, Université Paris-Sud, June 2014.

C. Paulin: president of the PhD committee of Peva Blanchard “Synchronization and Fault-tolerance in Distributed Algorithms”, Université Paris-Sud, September 2014.

C. Paulin: examiner, HDR committee of Stéphane Graham-Lengrand “Polarities & Focussing: a Journey from Realisability to Automated Reasoning”, Université Paris-Sud, December 2014.



### 9.3. Popularization

- S. Boldo presented the *Concours Castor informatique* to computer sciences teachers (ISN) in Nancy on April 17th, 2014. A video of the talk is available at <http://videos.univ-lorraine.fr/index.php?act=view&id=1369>.
- S. Boldo gave a 2-hour course entitled *Les nombres et l'ordinateur* at the École Normale Supérieure de Cachan, France, on September 9th.
- S. Boldo gave a 2-hour course *Pourquoi mon ordinateur calcule faux?* to a general audience at the Université Inter-Âge in Versailles, France, on March 4th.
- S. Boldo gave a talk for computer sciences teachers (ISN) in Créteil on March 24th
- S. Boldo gave a talk for teenagers at the lycée Maximilien Perretin Alfortville on May 22nd.
- S. Boldo wrote an article with Jean-Michel Muller (ARIC) in the popularization journal *La Recherche* [42].
- S. Boldo wrote in 2013 an article for the French blog celebrating 2013 as the “Mathematics of Planet Earth” year: <http://mpt2013.fr/meme-les-ordinateurs-font-des-erreurs/>. This article was selected to be published in a book published in 2014 [41].
- S. Boldo is member of the editorial committee of the popular science *Interstices* web site, since April 2008. <http://interstices.info/>.
- S. Boldo is member of the editorial board of *Binaire* <http://binaire.blog.lemonde.fr>, the blog of the French Computer Science Society.
- S. Boldo, G. Melquiond, A. Paskevich, and C. Paulin animated two stands at the *Fête de la science*.
- A. Charguéraud and S. Boldo contributed to the preparation of the exercises of the *Concours Castor informatique* <http://castor-informatique.fr/>. A. Charguéraud is also one of the three organizers of this contest. The purpose of the *Concours Castor* is to introduce pupils (from *6ème* to *terminale*) to computer sciences. More than 228,000 teenagers played with the interactive exercises in November 2014.
- S. Conchon and J.-C. Filliâtre published a book “*Apprendre à programmer avec OCaml*” for undergraduate students learning computer programming [39] (Eyrolles, September 2014).

## VEGAS Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Scientific events organisation

#### 7.1.1.1. Organizing committee membership

Sylvain Lazard organized with S. Whitesides (Victoria University) the 13th Inria - McGill - Victoria Workshop on Computational Geometry<sup>0</sup> at the Bellairs Research Institute of McGill University in Feb. (1 week workshop on invitation).

Marc Pouget and Guillaume Moroz organized the first ANR-SingCAST meeting on subdivision methods for singular systems in Nantes in December.<sup>0</sup>

Guillaume Moroz co-organizes the *Journées Nationales de Calcul Formel 2015 (JNCF)*.

### 7.1.2. Scientific events selection

#### 7.1.2.1. Conference program committee membership

Monique Teillaud is a member of the program committee of the 2015 *Symposium on Computational Geometry SoCG'15*.

#### 7.1.2.2. Reviewing activities

All members of the team are regular reviewers for the conferences of our field, namely the *Symposium on Computational Geometry* (SoCG) and the *International Symposium on Symbolic and Algebraic Computation* (ISSAC) and also SODA, CCCG, EuroCG.

### 7.1.3. Journal

#### 7.1.3.1. Editorial board membership

Olivier Devillers is a member of the Editorial Board of *Graphical Models*.

Monique Teillaud is a member of the Editorial Boards of CGTA, *Computational Geometry: Theory and Applications*, and of IJCGA, *International Journal of Computational Geometry and Applications*.

Marc Pouget and Monique Teillaud are members of the **CGAL** editorial board.

#### 7.1.3.2. Reviewing activities

All members of the team are regular reviewers for the journals of our field, namely *Discrete and Computational Geometry* (DCG), *Computational Geometry. Theory and Applications* (CGTA), *Journal of Computational Geometry* (JoCG), *International Journal on Computational Geometry and Applications* (IJCGA), *Journal on Symbolic Computations* (JSC), *SIAM Journal on Computing* (SICOMP), *Mathematics in Computer Science* (MCS), etc.

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<sup>0</sup>Workshop on Computational Geometry

<sup>0</sup>SingCAST

### 7.1.4. Steering Committees

Monique Teillaud is a member of the Steering Committee of the European Symposium on Algorithms (ESA).

### 7.1.5. National committees

Monique Teillaud has been a member of the Scientific Board of the Société Informatique de France (SIF) since November.

Laurent Dupont is a member of “Commission Pédagogique Nationale” (CPN) Information-Communication / Métiers du Multimédia et de l’Internet.

### 7.1.6. Web site

M. Teillaud is maintaining the Computational Geometry Web Pages <http://www.computational-geometry.org/>, hosted by Inria Nancy - Grand Est since December. This site offers general interest information for the computational geometry community, in particular the Web proceedings of the Video Review of Computational Geometry, part of the Annual Symposium on Computational Geometry.

G. Moroz is maintaining the ANR Presage website <http://webloria.loria.fr/~goaoc/ANR-Presage>

M. Pouget is maintaining the ANR SingCAST website <https://project.inria.fr/singcast/>

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Master : O. Devillers, *Synthèse, image et géométrie*, 12h (academic year 2014-15), IPAC-R, Université de Lorraine. <http://www.loria.fr/~odevil/master/>

Master: Marc Pouget, *Introduction à la géométrie algorithmique*, 10.5h, M2, École Nationale Supérieure de Géologie, France.

Master: Guillaume Moroz, *Introduction à la résolution réelle de systèmes bivariés et topologie de courbes*, 20h (April 2014), Université de Ziguinchor, Sénégal.

Licence: Laurent Dupont, *Systèmes de Gestion de Bases de Données Avancé*, 40h, L3, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Concepts et Outils Internet*, 70h, L1, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Programmation Objet et Évènementielle*, 50h, L2, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Programmation de Sites Web Dynamiques*, 70h, L2, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Algorithmique*, 30h, L1, Université de Lorraine (IUT Charlemagne)

Licence: Sylvain Lazard, *Algorithms and Complexity*, 25h, L3, Université de Lorraine.

Licence: Yacine Bouzidi, *Programmation orientée objet*, 46h, L2, Université de Lorraine.

Master: Yacine Bouzidi, *Java avancé*, 20h, M1, Université de Lorraine.

### 7.2.2. Supervision

PhD in progress : Rémy Thomasse, Smoothed complexity of geometric structures and algorithms, started December 1st 2012, Olivier Devillers. (The student is hosted in EPI GEOMETRICA but supervised by O. Devillers).

PhD in progress : Ranjan Jha, Étude de l’espace de travail des mécanismes à boucles fermées, started in Oct. 2013, supervised by Damien Chablat, Fabrice Rouillier and Guillaume Moroz.

PhD in progress : Sény Diatta, Complexité du calcul de la topologie d'une courbe dans l'espace et d'une surface, started in Nov. 2014, supervised by Daouda Niang Diatta, Marie-Françoise Roy and Guillaume Moroz.

PhD: Yacine Bouzidi, Solving bivariate algebraic systems and topology of plane curves, defended in March 2014, supervised by Sylvain Lazard and Marc Pouget.

Postdoc: Rémy Imbach, Topology and geometry of singular surfaces with numerical algorithms, supervised by Guillaume Moroz and Marc Pouget.

Postdoc: Laurent Veysseire, Probabilistic analysis of geometric structures, supervised by Olivier Devillers.

### 7.2.3. *Juries*

O. Devillers was a member (advisor) of the PhD defense committee of Ross Hemsley (Univ. Nice - Sophia Antipolis).

M. Pouget and S. Lazard were member (advisors) of the PhD defense committee of Yacine Bouzidi (Univ. Lorraine).

G. Moroz was a member (external examiner) of the PhD defense committee of Esmaeil Mehrabi (Univ. of Western Ontario)

## 7.3. Popularization

Guillaume Moroz is a member of the organizing committee of the *Olympiades académiques de mathématiques*.

## VERIDIS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Organization of scientific events

#### 9.1.1.1. General Chair, Scientific Chair

Pascal Fontaine co-organized the SAT/SMT Summer School 2014, affiliated with Vienna Summer of Logic, in Semmering, Austria.

Stephan Merz is a member of the steering committee of the workshop on Automated Verification of Critical Systems (AVoCS). He co-organized the TLA<sup>+</sup> Community Event, a satellite of ABZ 2014 in June in Toulouse.

Thomas Sturm is chair of the steering committee of the conference series *Mathematical Aspects of Computer and Information Sciences* (MACIS). He coordinated the CDZ Workshop GZ1115 *Computation and Reasoning with Constraints*, Beijing, China, 2014.

Christoph Weidenbach is a member of the steering committee of *Bundeswettbewerb Informatik*, the German competition among high-school students in computer science.

#### 9.1.1.2. Membership in Organizing Committees

The International Summer School on Verification Techniques, Systems, and Applications (VTSA) has been organized since 2008 in the Greater Region (Nancy, Saarbrücken, Luxembourg, and Liège), and Stephan Merz and Christoph Weidenbach are co-organizers of VTSA. In 2014, VTSA took place during the last week of October in Luxembourg.

### 9.1.2. Service in Program Committees

#### 9.1.2.1. Chairmanship of Conference Program Committees

Dominique Méry was co-chair of the program committee of the 11th International Colloquium on Theoretical Aspects of Computing, held in Bucharest, Romania in September, and of the First Workshop on Formal Integrated Development Environments, a satellite of ETAPS in Grenoble, France, in April.

Stephan Merz was co-chair of the program committee of the 16th International Conference on Formal Engineering Methods, held in Luxembourg in November, and of the First International Workshop on Formal Reasoning in Distributed Algorithms (FRIDA) in July, as part of Vienna Summer of Logic.

Christoph Weidenbach was co-chair of the program committee for the 7th International Joint Conference on Automated Reasoning (IJCAR) that took place in Vienna, Austria, as part of Vienna Summer of Logic.

#### 9.1.2.2. Membership in Conference Program Committees

Pascal Fontaine served on the program committees of the International Joint Conference on Automated Reasoning (IJCAR) and of the workshops PAAR and SMT.

Dominique Méry served on the program committees of ABZ, AFADL, CSDM, MedicalCPS, FHIES, FM, ICFEM, iFM, and FACS.

Stephan Merz served on the program committees of the international conferences ABZ, IJCAR, SAC, SEFM, SSS, and of the workshops AVoCS, GRSRD, SETS, and VERIFY.

Uwe Waldmann served on the program committee of IJCAR.

### 9.1.3. Journal Edition

Stephan Merz (together with Gerald Lüttgen of University of Bamberg) edited a special issue of *Science of Computer Programming* on the Automated Verification of Critical Systems, following AVoCS 2012.

Thomas Sturm is a member of the editorial boards of the *Journal of Symbolic Computation* (Elsevier) and *Mathematics in Computer Science* (Springer).

Christoph Weidenbach is an editor of the Journal of Automated Reasoning.

#### 9.1.4. Scientific Bodies and Self-Administration

Pascal Fontaine was an elected member of the SMT Steering Committee (2012–2014), and he is one of three SMT-LIB managers. He was elected CADE trustee in October 2014.

Dominique Méry is a member of the IFIP Working Group 1.3 on *Foundations of System Specification*. He is the head of the Doctoral School IAEM Lorraine for the University of Lorraine and head of the Formal Methods department of the LORIA laboratory. He is an expert for the French Ministry of Education (DS9), an expert for the French Agence Nationale de la Recherche (ANR) and for AERES.

Stephan Merz is a member of the IFIP Working Group 2.2 on *Formal Description of Programming Concepts*. He is a member of the Scientific Directorate of the International Computer Science Meeting Center in Schloss Dagstuhl. He is the delegate for the organization of conferences at the Inria Nancy Grand Est research center and co-head of the PhD committee for computer science in Lorraine. He was a member of the hiring committee for an associated professor at Université Toulouse 3 and an expert for Agence Nationale de la Recherche (ANR), for Haut Conseil de l'Évaluation de la Recherche et de l'Enseignement Supérieur (HCERES), for the German DFG, the Dutch NWO, and for the European Research Council (ERC).

Thomas Sturm is a member of the selection committee for MSc and PhD students at the International Max Planck Research School.

Christoph Weidenbach is a trustee of CADE (elected 2009, reelected 2012). He is a member of the selection committee of the Saarbrücken Graduate School in Computer Science.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

The university employees of VeriDis (in Nancy) have statutory teaching obligations of 192 hours per year. We indicate the graduate courses that members of the team have been teaching in 2014.

Marie Dufлот-Kremer taught a course on Introduction to Algorithmic Verification (first-year master level at Université de Lorraine). She and Stephan Merz also taught a course on Algorithmic Verification in the second year of master and for students of Erasmus Mundus Dependable Software Systems.

Pascal Fontaine is head of the Master MIAGE (Business Informatics) at Université de Lorraine since September 2014.

Stephan Merz taught a course on formal specification using TLA<sup>+</sup> at the SPES\_XT summer school on model-based development of embedded systems at the University of Twente (The Netherlands) in September.

Uwe Waldmann gave courses on Automated Reasoning I and II at Saarland University.

Christoph Weidenbach gave a course on Automated Reasoning I.

### 9.2.2. Supervision

PhD: Arnaud Fietzke, Labelled Superposition, Universität des Saarlandes. Supervised by Christoph Weidenbach, defended on June 5, 2014.

PhD: Hernán Pablo Vanzetto, Proof Automation and Type Synthesis for Set Theory in the Context of TLA<sup>+</sup>, Université de Lorraine. Supervised by Kaustuv Chaudhuri and Stephan Merz, defended on December 8, 2014.

PhD in progress: Manamiary Andriamiarina, Refinement Techniques for Distributed Algorithms, Université de Lorraine. Supervised by Dominique Méry, since 10/2010.

PhD in progress: Noran Azmy, On the Automation of Proofs in TLAPS, Saarland University. Supervised by Stephan Merz and Christoph Weidenbach, since 11/2012.

PhD in progress: Haniel Barbosa, Refutational Completeness in Satisfiability Modulo Theories, Université de Lorraine and UFRN (Natal, Brazil). Supervised by David Déharbe, Pascal Fontaine, and Stephan Merz, since 12/2013.

PhD in progress: Martin Bromberger, Arithmetic Reasoning, Saarland University. Supervised by Christoph Weidenbach, since 07/2014.

PhD in progress: Pablo Federico Dobal, Satisfiability Modulo Arithmetic Theories, Université de Lorraine and Saarland University. Supervised by Pascal Fontaine, Stephan Merz, and Thomas Sturm, since 09/2014.

PhD in progress: Marek Košta, Computational Logic, Universität des Saarlandes. Supervised by Thomas Sturm, since 11/2011.

PhD in progress: Manuel Lamotte Schubert, Automatic Authorization Analysis, Saarland University. Supervised by Christoph Weidenbach, 07/2010.

PhD in progress: Marco Voigt, Decidable Hierarchic Combinations, Saarland University. Supervised by Christoph Weidenbach, since 11/2013.

PhD in progress: Daniel Wand, First-Order Extensions to Support Higher-Order Reasoning, Saarland University. Supervised by Christoph Weidenbach, since 02/2011.

### **9.2.3. Juries**

Stephan Merz served as a reviewer for the PhD theses of Nadezhda Baklanova (Univ. Toulouse 3), Claire Dross (Univ. Paris Sud), and Giuliano Losa (EPFL Lausanne).

## **9.3. Popularization**

Marie Duflot-Kremer took part in various popularization activities, with a public ranging from primary school kids (with unplugged activities concerning sorting, programming, error detection) to non-scientific staff of the Inria center. She is also a member of the steering committee preparing an itinerant exposition intended for explaining computer science to high-school students and took part in an event of the European Code Week in Paris.

Pascal Fontaine and Stephan Merz illustrated some subjects and techniques that underly formal verification of protocols and algorithms at events like “Fête de la Science”. Using wooden puzzles and Sudoku sheets, they explained how real-life problems can be represented in logical form and then solved using automated tools based on formal logic.

Christoph Weidenbach lectured within the series “Perspektiven der Informatik” at Saarland University and within the public lecture series of the federal state of Saarland.

## APICS Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

- L. Baratchart was a plenary speaker at Constructive Functions 2014 (June 2014) in Nashville, USA (TN). He was an invited speaker at the Complex Analysis Meeting of the Russian Academy of Sciences (April 2014) in Saint Petersburg, Russia, at the International Conference on Orthogonal Polynomials, Integrable Systems and their Applications (October 2014) in Shanghai, China, and at the conference Foundations of Constructive Mathematics (December 2014) in Montevideo. He was a visitor at Vanderbilt university, at MIT, at the University of Macao and at the University of Cyprus. He was a speaker at the seminar of Université de Bordeaux.
- M. Caenepeel gave a talk at the 33th Benelux Meeting on Systems and Control (The Netherlands) at the 18th IEEE Workshop on Signal and Power Integrity in Ghent (Belgium) and he presented a poster at the ERNSI meeting in Ostende (Belgium).
- S. Chevillard gave a talk at PICOF 2014 (May 2014) in Hammamet, Tunisia, at Constructive Functions 2014 (June 2014) in Nashville, USA (TN). He was an invited speaker at “Journée scientifique SMAI-SIGMA 2014” (November 2014) in Paris.
- J. Leblond organized an invited session at PICOF 2014<sup>0</sup> (May 2014). A poster about joint work on source estimation in EEG was presented at OHBM 2014<sup>0</sup> [28].
- S. Lefteriu was an invited speaker at the Max Planck Institute and presented a poster at the meeting of the working group GT Identification.
- M. Olivi gave a talk at the MTNS 2014 conference in Groningen (The Netherlands) [18].
- D. Ponomarev gave a talk at the 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications (July 2014) , in Madrid, Spain, at the seminar of the team Analyse, Géométrie, Topologie (AGT), Institut de Mathématiques de Marseille, Aix-Marseille Université (May 2014), and at the seminar of the team Defi, Inria Saclay - Ecole Polytechnique (Nov. 2014).
- F. Seyfert gave a talk at the MTNS 2014 in Groningen, at the IMS 2014 in Tampa and was invited to give a plenary lecture at the Ernsi meeting in Ostende.

#### 9.1.1. Scientific events selection

##### 9.1.1.1. member of the conference program committee

L. Baratchart was a member of the program committee of MTNS (Mathematical Theory of Networks and Systems) 2014, Groningen, The Netherlands.

#### 9.1.2. Journal

##### 9.1.2.1. member of the editorial board

L. Baratchart is a member of the Editorial Boards of *Constructive Methods and Function Theory* and *Complex Analysis and Operator Theory*.

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<sup>0</sup><http://www.lamsin.tn/picof14/>

<sup>0</sup><http://www.humanbrainmapping.org/i4a/pages/index.cfm?pageID=3565>



## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

**Colles:** S. Chevillard is giving “Colles” at Centre International de Valbonne (CIV) (2 hours per week).

### 9.2.2. Supervision

PhD in progress: D. Ponomarev, Inverse problems for planar conductivity and Schrödinger PDEs, since Nov. 2012 (advisors: J. Leblond, L. Baratchart).

PhD in progress: M. Caenepeel, The development of models for the design of RF/microwave filters, since Feb. 2013 (advisors: Y. Rolain, M. Olivi, F. Seyfert).

PhD in progress: C. Papageorgakis, Conductivity model estimation, since Oct 2014 (advisors: J. Leblond, M. Clerc, B. Lanfer).

### 9.2.3. Juries

- M. Olivi was a referee of the PhD manuscript of P. Vuillemin (Univ. Toulouse) and of the PhD manuscript of F. Cheng (Univ. Lorraine).
- J. Leblond was a member of the PhD defense committee of L. Jassionnesse (Univ. Dijon, Nov 2014).
- F. Seyfert was a member of the PhD defense committee of Le Ha Vy Nguyen (Univ. Paris Sud, Inria project DISCO)

## 9.3. Popularization

- L. Baratchart was a speaker at “Café in” (Oct. 2014, Inria Sophia-Antipolis-Méditerranée).
- J. Leblond is a member of the Committee MASTIC. She was an invited speaker at the seminar associated with the lecture by G. Berry at the Collège de France (Jan. 2014).
- M. Olivi is president of the Committee MASTIC (Commission d’Animation et de Médiation Scientifique) <https://project.inria.fr/mastic/>. She is responsible for Scientific Mediation.

## 9.4. Community services

- S. Chevillard is representative at the “comité de centre” and at the “comité des projets” (Research Center Inria-Sophia).
- J. Leblond is an elected member of the “Conseil Scientifique” and of the “Commission Administrative Paritaire” of Inria. She is one of the two researchers in charge of the mission “Conseil et soutien aux chercheurs” within the Research Center.
- M. Olivi is responsible for scientific mediation and co-president of the committee MASTIC.

## ASPI Project-Team

## 8. Dissemination

### 8.1. Promoting scientific activities

#### 8.1.1. Scientific events organisation

Valérie Monbet has co-organized the workshop on *Stochastic Weather Generators*, held in Avignon in September 2014.

François Le Gland has been a member of the organizing committee of the *46èmes Journées de Statistique*, held in Bruz in June 2014.

### 8.2. Teaching, supervision, thesis committees

#### 8.2.1. Teaching

François Le Gland gives

- a course on **Kalman filtering and hidden Markov models**, at université de Rennes 1, within the SISEA (signal, image, systèmes embarqués, automatique, école doctorale MATISSE) track of the master in electronical engineering and telecommunications,
- a 3rd year course on **Bayesian filtering and particle approximation**, at ENSTA (école nationale supérieure de techniques avancées), Paris, within the systems and control module,
- a 3rd year course on **linear and nonlinear filtering**, at ENSAI (école nationale de la statistique et de l'analyse de l'information), Ker Lann, within the statistical engineering track,
- and a 3rd year course on **hidden Markov models**, at Télécom Bretagne, Brest.

He has also animated a set of training sessions on particle filtering, with an application to video multi-object tracking, to engineers from Canon Research France.

Patrick Héas gives a course on statistical image analysis at université de Rennes 1, within the SISEA (signal, image, systèmes embarqués, automatique, école doctorale MATISSE) track of the master in electronical engineering and telecommunications.

Valérie Monbet gives several courses on data analysis, on time series, and on mathematical statistics, all at université de Rennes 1 within the master on statistics and econometrics. She is also the director of the master on statistics and econometry at université de Rennes 1.

#### 8.2.2. Supervision

François Le Gland has been supervising one PhD student

- Damien-Barthélémy Jacquemart, title: *Contributions to multilevel splitting for rare events, and applications to air traffic*, université de Rennes 1, started in October 2011, defense in December 2014, funding: DGA / ONERA grant, co-direction: Jérôme Morio (ONERA, Palaiseau).

and he is currently supervising two PhD students

- Alexandre Lepoutre, provisional title: *Detection issues in track-before-detect*, université de Rennes 1, started in October 2010, expected defense in 2015, funding: ONERA grant, co-direction: Olivier Rabaste (ONERA, Palaiseau),
- Kersane Zoubert-Ousseni, provisional title: *Particle filters for hybrid indoor navigation with smart-phones*, université de Rennes 1, started in December 2014, expected defense in 2017, funding: CEA grant, co-direction: Christophe Villien (CEA LETI, Grenoble).

Valérie Monbet has been supervising one PhD student

- Julie Bessac, title: *On the construction of stochastic wind data generators off-shore Brittany*, universit  de Rennes 1, started in October 2011, defense in October 2014, co-direction : Pierre Ailliot (universit  de Bretagne Occidentale).

### 8.2.3. Thesis committees

Fran ois Le Gland has been a reviewer for the PhD theses of Paul Lema tre (universit  de Bordeaux 1, advisors: Pierre Del Moral and Bertrand Iooss), Achille Murangira (universit  de technologie de Troyes, advisors: Igor Nikoforov and Karim Dahia) and El houcine Bergou (universit  de Toulouse, advisor: Serge Gratton).

Val rie Monbet has been a member of the committee for the PhD thesis of Emmanuelle Autret (IFREMER).

## 8.3. Participation in workshops, seminars, lectures, etc.

In addition to presentations with a publication in the proceedings, which are listed at the end of the document in the bibliography, members of ASPI have also given the following presentations.

Fr d ric C rou has given a talk on rare event simulation for molecular dynamics, at the ICMS workshop on Computational Methods for Statistical Mechanics — at the Interface between Mathematical Statistics and Molecular Simulation, held in Edinburgh in June 2014, and a talk on a central limit theorem for adaptive splitting, at the 10th International Workshop on Rare Event Simulation (RESIM'14), held in Amsterdam in August 2014. He has been invited to give two seminar talks on rare event simulation with multilevel splitting, in Marseilles in May 2014.

Fran ois Le Gland has given a talk on a two-step multilevel splitting algorithm for rare event simulation, at the 10th International Workshop on Rare Event Simulation (RESIM'14), held in Amsterdam in August 2014, and a talk on simulation-based algorithms for the optimization of sensor deployment, at the Conference on Optimization and Practices in Industry (COPI), held in Palaiseau in October 2014.

## 8.4. Collective responsibilities

Fran ois Le Gland is a member of the “conseil d’UFR” of the department of mathematics of universit  de Rennes 1.

Val rie Monbet is a member of the two “comit  de direction” and “conseil” of IRMAR (institut de recherche math matiques de Rennes, UMR 6625). She is also the deputy head, and a member of the two “conseil scientifique” and “conseil d’UFR” of the department of mathematics of universit  de Rennes 1.

## BACCHUS Team

## 7. Dissemination

### 7.1. Promoting Scientific Activities

#### 7.1.1. Scientific events organisation

- M. Colin and M. Ricchiuto have co-organized (with P. Lubin, I2M Bordeaux) the event B'Waves 2014, a workshop on breaking waves hosting some of the world's leaders on modelling and simulation of free surface waves. The event has been hosted by Inria BSO, and a second edition B'Waves 2016 will be held in Norway (host: Bergen University) ;
- M. Ricchiuto has co-organized (with A. Delis, Technical University of Crete) the mini-symposium 'non-hydrostatic free surface flows: models and methods' and the ECMI 2014 conference (Taormina, June 2014) ;
- Ci's member of the board of the GAMNI group of SMAI and she is secretary. She has participated to the organization of the "journées SMAI-MAIRCI-GAMNI sur le Maillage" (Paris, May 2014) ;
- P.M. Congedo has organized a mini-symposium on Uncertainty Quantification Techniques for Fluid-flow Problems at the ECCOMAS 2014 Conference (Barcelona, July 2014) ;
- P.M. Congedo has contributed to the organization of VKI Lecture Series Uncertainty Quantification in Computational Fluid Dynamics - STO-AVT-235 (Brussels, September 2014).

#### 7.1.1.1. Reviewer

We reviewed papers for top international journals and conferences in the main scientific themes of the team : Journal of Computational Physics, Computer Methods in Applied Mechanics and Engineering, Optimization and Engineering, International Journal of Numerical Methods in Fluids, Physics of Fluids, Journal of Marine Science and Technology, Engineering Applications of Computational Fluid Mechanics, Computers and Fluids, International Journal of Modelling and Simulation in Engineering Aircraft Engineering and Aerospace Technology, International Journal of Computational Fluid Dynamics, Applications and applied mathematics : An international journal, Discrete and Continuous Dynamical Systems - Series A, Electronic Journal of Differential Equations, Calculus of Variations and Partial Differential Equations, Nonlinear Analysis: Modelling and Control, Advanced Nonlinear Studies, Communications on Pure and Applied Analysis, Communications in Computational Physics.

### 7.2. Teaching - Supervision - Juries

#### 7.2.1. Teaching

Licence : Héloïse Beaugendre, Co-Responsable des projets TER de première année, 10h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Héloïse Beaugendre, Encadrement TER, 16h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Mathieu Colin, Analyse Fonctionnelle et Intégration, 54 h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Mathieu Colin, TER 32h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence, Mathieu Colin, Analyse, L1, Formation alternée INP, FRANCE

Licence : Pietro Marco Congedo, Fundamentals of Numerical Analysis II, 24h, ENSEIRB-MATMÉCA, France.

Licence : Pietro Marco Congedo, Fundamentals of Fluid Mechanics II, 20h, ENSEIRB-MATMÉCA, France.

- Licence : Cécile Dobrzynski, Langages en Fortran 90, 54h, L3, ENSEIRB-MATMÉCA, FRANCE
- Licence : Cécile Dobrzynski, Analyse numérique, 24h, L3, ENSEIRB-MATMÉCA, FRANCE
- Licence : Mario Ricchiuto, Fundamentals of Numerical Analysis, 24h, ENSEIRB-MATMÉCA, France.
- Master : Héloïse Beaugendre, Responsable de filière de 3ème année, 10h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Approximation numérique et problèmes industriels, 26h, M1, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Outils informatiques pour l'insertion professionnelle, 9h, M2, Université de Bordeaux, France
- Master : Héloïse Beaugendre, Calcul Parallèle (OpenMP-MPI), 40h, M1, ENSEIRB-MATMÉCA et Université de Bordeaux, France
- Master : Héloïse Beaugendre, Calcul Haute Performance (MPI), 36h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Calcul Haute Performance et décomposition de domaine, 36h, M2, ENSEIRB-MATMÉCA et Université Bordeaux, France
- Master : Mathieu Colin, PDE, 30 H, M1, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin, EDP approfondies, 36 h, M2, Université de Bordeaux, FRANCE
- Master : Mathieu Colin, TER, 12h, M1, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin, Projet fin d'études, 6h, M2, ENSEIRB-MATMÉCA, FRANCE
- Master : Pietro Marco Congedo, Simulation Numérique des écoulements fluides, 20h, M2, ENSEIRB-MATMÉCA, France
- Master : Cécile Dobrzynski, Projet fin d'études, 6h, M2, ENSEIRB-MATMÉCA, FRANCE
- Master : Cécile Dobrzynski, TER, 16h, M1, ENSEIRB-MATMÉCA, FRANCE
- Master : Cécile Dobrzynski, Théorie du maillage, 12h, M2, formation Structures Composites, ENSCBP, FRANCE
- Master : Cécile Dobrzynski, Techniques de maillages, 36h, M2, ENSEIRB-MATMÉCA, FRANCE
- Master : Mario Ricchiuto, Simulation Numérique des écoulements fluides, 16h, M3, ENSEIRB-MATMÉCA, France
- Master : Mario Ricchiuto, Post-graduate course on introduction to CFD, 18h, M2 IAS (Master Spécialisé Ingénierie Aéronautique et Spatiale, [http://www.ensam.fr/fr/formation\\_initiale/masteres\\_specialises/ingenierie\\_aeronautique\\_et\\_spatiale](http://www.ensam.fr/fr/formation_initiale/masteres_specialises/ingenierie_aeronautique_et_spatiale)), ENSAM, France

### 7.2.2. Supervision

- PhD in progress : Arpaia Luca, Continuous mesh deformation and coupling with uncertainty quantification for coastal inundation problems, started in March 2014.
- PhD in progress : Bellec Stevan, Discrete asymptotic modelling of free surface flows, October 2013.
- PhD in progress : Cortesi Andrea, Predictive numerical simulation for rebuilding freestream conditions in atmospheric entry flows, started in October 2014.
- PhD in progress : Filippini Andrea, Nonlinear finite element Boussinesq modelling of non-hydrostatic free surface flows, started in February 2014.
- PhD in progress: Fusi Francesca, Stochastic robust optimization of a helicopter rotor airfoil, started in October 2013.
- PhD in progress: Lin Xi, Asymptotic modelling of incompressible reactive flows in self-healing composites, started in October 2014.

PhD in progress : Nouveau Léo, Adaptation de maillage non structurés anisotropes pour les méthodes de pénalisation en mécanique des fluides compressibles, started in Oct 2013.

PhD in progress: Perrot Gregory, Physico-chemical modelling of self-healing ceramic composites, started in October 2011.

PhD in progress : Peluchon Simon, Approximation numérique et modélisation de l'ablation différentielle de deux matériaux: application à l'ablation liquide. Started in December 2014.

PhD in progress : Viville Quentin, Etude sur les méthodes de pénalisation adaptées aux maillages non-structurés fortement anisotropiques et utilisation de l'adaptation de maillage, started in Oct 2013.

## BIPOP Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events selection

##### 9.1.1.1. member of the conference program committee

- Florence Bertails-Descoubes: Siggraph 2014 IPC and Eurographics 2014 IPC.
- Pierre-Brice Wieber: 2014 IEEE-RAS International Conference on Humanoid Robots

##### 9.1.1.2. reviewer

- Bernard Brogliato: IEEE Conference on Decision and Control 2014, Euromech ENOC 2014.
- Pierre-Brice Wieber: IEEE International Conference on Robotics and Automation, IEEE/RSJ International Conference on Intelligent Robots and Systems, IEEE-RAS International Conference on Humanoid Robots

#### 9.1.2. Journal

##### 9.1.2.1. member of the editorial board

- Pierre-Brice Wieber: associate editor IEEE Transactions on Robotics.
- Jérôme Malick: associate editor Journal of Global Optimization.

##### 9.1.2.2. reviewer

- Bernard Brogliato: Automatica, Systems and Control Letters, IEEE Transactions on Automatic Control, SIAM J. Control Optimization, Multibody System Dynamics, ASME J. Applied Mechanics, Nonlinear Dynamics.
- Florence Bertails-Descoubes: Siggraph, Siggraph Asia, TOG, Eurographics.
- Pierre-Brice Wieber: International Journal of Robotics Research, Autonomous Robots, Automatica, IEEE Transactions on Control Systems Technology
- Vincent Acary: Automatica, Systems and Control Letters, IEEE Transactions on Automatic Control, Journal Sound and Vibrations, International Journal for Numerical Methods in Engineering, Nonlinear Analysis: Hybrid systems and project calls Fondecyt and NSERC

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence :

Master : Bernard Brogliato, Hybrid Dynamical Systems, 30 h., M2, Grenoble INP.

Master : Pierre-Brice Wieber, Autonomous Robotics, 9 h., M2, Grenoble INP.

Master : Florence Bertails-Descoubes, Numerical Optimization, 10.5 h., M1, ENSIMAG (Grenoble INP)

Master : Jérôme Malick, Numerical Optimization, 50 h., M1, ENSIMAG (Grenoble INP)

Master : Jérôme Malick, Mathematical Programming, 16 h., M2, UJF

Master : Vincent Acary, Nonsmooth Dynamical Systems, 9 h., M2, Université de Limoges

### 9.2.2. Supervision

- PhD in progress : Mounia Haddouni, 01 mai 2012, Vincent Acary and Bernard Brogliato

- PhD in progress : Olivier Huber, 01 octobre 2011, Vincent Acary and Bernard Brogliato
- PhD in progress : Narendra Akahdkar, 01 décembre 2012, Vincent Acary and Bernard Brogliato
- PhD : Sofia Zaourar, 04 November 2014, Jérôme Malick and Bernard Brogliato
- PhD in progress : Romain Casati, 01 octobre 2011, Florence Bertails-Descoubes and Bernard Brogliato
- PhD in progress : Alejandro Blumentals, 01 octobre 2013, Florence Bertails-Descoubes and Bernard Brogliato
- PhD in progress : Gilles Daviet, 01 octobre 2013, Florence Bertails-Descoubes and Bruno Raffin (LIG)
- PhD in progress : Federico Pierucci, 01 octobre 2012, Jérôme Malick and Zaid Harchaoui and Anatoli Ioudilski
- PhD in progress : Saed al Homsy, 01 octobre 2012, Pierre-Brice Wieber and Bernard Brogliato
- PhD in progress : Jory Lafaye, 01 octobre 2012, Pierre-Brice Wieber and Bernard Brogliato
- PhD in progress : Alexander Sherikov, 01 décembre 2012, Pierre-Brice Wieber and Bernard Brogliato
- PhD in progress : Nicolas Cazy, 01 octobre 2013, Pierre-Brice Wieber and François Chaumette
- PhD in progress : Jose Eduardo Morales Morales, *Travelling pulses in spatially discrete excitable media*, 15 november, 2013, Arnaud Tonnelier and Guillaume James

### 9.2.3. Juries

- Bernard Brogliato: Saed Aoues (04 décembre 2014), Laboratoire Ampère, INSA de Lyon (directeur de thèse D. Eberard). *Schémas d'intégration dédiés à l'étude, l'analyse et la synthèse dans le formalisme hamiltonien à ports*, Jury: D. Eberard, B. Maschke, T. Helie, E. Busvelle, A. Seuret, W. Marquis-Favre, B. Brogliato (Rapporteur).



## **CAGIRE Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. Member of the organizing committee*

Member [RM] of the steering committee of the Special Interest Group “Turbulence Modelling” (SIG-15) of ERCOFTAC (European Research COmmittee for Flow, Turbulence and Combustion) that organizes a series of international workshops dedicated to cross-comparisons of the results of turbulence models and experimental/DNS databases.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Member of the conference program committee*

- Co-chair ([RM], with M. Visbal, Air Force Research Laboratory, Ohio, USA) of the symposium on DNS, LES and hybrid RANS/LES within the international conference FEDSM (Fluid Engineering Division Summer Meeting) of the ASME (American Society of Mechanical Engineers), organized in Chicago, in August 2014.
- Member [RM] of the scientific committee of the Intl Symp. Turbulence, Heat and Mass Transfer, Sarajevo, Bosnia and Herzegovina, 2015
- Member [RM] of the scientific committee of the Intl. Symp. Engineering Turbulence Modelling and Measurement, Marbella, Spain, 2014

#### *9.1.2.2. Reviewer*

- Turbo Expo ASME Gas Turbines Conference 2015 (Montreal) [PB]

### **9.1.3. Journal**

#### *9.1.3.1. Reviewer*

This year, the team members have reviewed 33 papers for the following journals:

- Aerospace Science and Technology [PB]
- Combustion and Flame [PB]
- Computational Thermal Science [PB]
- Computers and Fluids [RM]
- Concurrency and Computation: practice and experience [PB]
- Flow Turbulence and Combustion [RM]
- Heat Transfer Engineering [RM]
- International Journal of Heat and Fluid Flow [RM]
- International Journal of Refrigeration [PB]
- Journal of Computational Physics [VP]
- Journal of Fluid Mechanics [RM]
- Journal of Petroleum Science and Engineering [PB]
- Journal of Propulsion Power [PB]
- Proceedings of the Combustion Institute [PB]

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Master : [RM], Turbulence Modelling, 28h, École centrale de Lille/ENSI Poitiers/ISAE-ENSMA, Poitiers, France.
- Engineering School: [RM] Industrial codes for CFD, 12h, ISAE-ENSMA, Poitiers, France.
- Continuous Training : [RM] Simulation numérique de la turbulence en LES, 3h, EUROSAE, Paris, France.

### 9.2.2. Supervision

- PhD in progress: Simon Delmas, Simulation d'écoulements pariétaux génériques à bas nombre de Mach pour l'amélioration du refroidissement des chambres de combustion : développement et mise en œuvre de schémas de type Galerkin discontinu adaptés, University of Pau, started January 2013, Dir.: [PB] and Co-dir.: [VP].
- PhD in progress : Nurtoleu Shakhan, Modelling and simulation of supersonic jet in crossflow, University of Almaty (Kazakhstan), started October 2013, Dir.: Altyn Naïmanova and Co-dir.: [PB] (the thesis subject has been modified mid-2014).
- PhD in progress: Jean-François Wald, Modélisation de la turbulence avec traitement adaptatif des parois prenant en compte la thermique active ou passive, started October 2013, Dir.: [RM]

### 9.2.3. Juries

The participation in the following thesis juries is noted ("referee" in a French doctoral thesis jury is more or less equivalent to an external opponent in an Anglo-Saxon like PhD jury):

- PhD : Guao Wang, « Simulation numérique sur des feux de nappe de kérosène de grande échelle soumis à un vent traversier avec prise en compte d'un aéronef », University of Poitiers, France, 10 January 2014, [PB, referee].
- PhD : Julien Pilet, « Analyse du comportement moteur stabilisé en windmilling par couplage des modèles thermodynamiques et simulations numériques », University of Toulouse, France, 17 January 2014, [PB, referee].

## 9.3. Popularization

- Opération Forum des Métiers organisée par la Zone d'Activité Pédagogique d'Oloron Sainte Marie (64) , Salle Pierre Scohy, Oloron Sainte Marie (a stand was manned by [PB] during one day with the objective of explaining the activity of researcher to an audience of schoolboys/girls and high school students).

## **CLASSIC Project-Team**

### **6. Dissemination**

#### **6.1. Teaching - Supervision - Juries**

##### **6.1.1. Teaching**

###### **E-learning**

Visio-conferencing at IFCAM (Indo-French Centre for Applied Mathematics), Summer School on Applied Mathematics, Indian Institute of Science, Bangalore (July 2014). Olivier Catoni gave a three hour presentation on PAC-Bayes bounds applied to statistical learning. The conference is still available on the author's web page.

##### **6.1.2. Supervision**

- PhD : Thomas Mainguy, Markov Substitute Processes, a statistical model for linguistics, Université Pierre et Marie Curie, supervised by par Olivier Catoni, (defended on December 11, 2014).
- PhD in progress : Iliaria Giulini, data analysis in high dimension, started in September 2012, Olivier Catoni.

## COMMANDS Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

- A. Kröner: Local organizer of the Workshop “Geometric control and related fields” within the Special Semester on New Trends in Calculus of Variations, Linz, Austria, 17.11.-21.11.2014.

##### 9.1.1.1. general chair, scientific chair

- H. Zidani: NETCO’2014, June 23-27, 2014, Tours.

##### 9.1.1.2. member of the organizing committee

- F. Bonnans: PGMO-COPI’14 conf., October 28-31, 2014, Ecole Polytechnique, Palaiseau.

#### 9.1.2. Scientific events selection

##### 9.1.2.1. member of the conference program committee

- F. Bonnans: EUROPT Workshop on Advances in Continuous Optimization, 10-12 July, 2014, Perpignan.

#### 9.1.3. Journal

##### 9.1.3.1. Participation to editorial boards

- F. Bonnans is Corresponding Editor of “ESAIM:COCV” (Control, Optimization and Calculus of Variations), and Associate Editor of “Applied Mathematics and Optimization”, “Optimization, Methods and Software”, and “Series on Mathematics and its Applications, Annals of The Academy of Romanian Scientists”.
- H. Zidani is Associate Editor of “Set-Valued and Variational Analysis”, and "Communication of Pure and Applied Analysis".

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### Master

F. Bonnans: Numerical analysis of partial differential equations arising in finance and stochastic control, 24h, M2, Ecole Polytechnique and U. Paris 6, France.

F. Bonnans: Optimal control, 10h, M2, Ensta, France.

H. Zidani: Optimal control, 10h, M2, Ensta, France.

#### E-learning

F. Bonnans, several lecture notes on the page

<http://www.cmap.polytechnique.fr/~bonnans/notes.html>

### 9.2.2. Supervision

- PhD in progress : Florine Bleuse, Optimal control and robustness for rechargeable hybrid vehicles. Started October 2013, F. Bonnans and P. Martinon, IFPEN fellowship.
- PhD in progress : Benjamin Heymann, Dynamic optimization with uncertainty; application to energy production. Started October 2013, F. Bonnans, Polytechnique fellowship.
- PhD in progress : Nicolas Gréville, Numerical methods for solving stochastic equilibrium problems; application to energy markets. Started January 2013, F. Bonnans, CIFRE fellowship (EDF R & D).

- PhD in progress: Athena Picarelli, First and Second Order Hamilton-Jacobi equations for State-Constrained Control Problems. Started November 2011, O. Bokanowski and H. Zidani, SADCO fellowship.
- PhD in progress: Cristopher Hermosilla, Feedback controls and optimal trajectories. Started November 2011, H. Zidani, SADCO fellowship.
- PhD in progress: Mohamed Assellaou, Reachability analysis for stochastic controlled systems. Started October 2011, O. Bokanowski and H. Zidani.

### **9.3. Popularization**

The paper [10] about running strategies was reported in several media in 2014, especially by Figaro (May 29), Usine Nouvelle (May 18), Science Daily (May 15), MedicalXPress (May 15), Ipodiatry (May 21) and French Huffington Post in 2013.

## CORIDA Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. Organizing committee membership

In April 2014, CORIDA organized in Nancy a workshop on “Observers for finite and infinite dimensional systems” gathering people working in the field of control theory for finite and infinite dimensional systems.

Takéo Takahashi and Marius Tucsnak organized a workshop “Workshop in Mathematical Fluid Dynamics”, in Nancy from November 26th-28th, 2014. There were 10 invited speakers from France, India, Portugal and Germany.

Marius Tucsnak is a member of the organizing Committee of SIAM Conference on Control, Paris 2015.

##### 8.1.1.2. Conference program committee membership

Xavier Antoine was a member of the program committee for The Ninth International Conference on Engineering Computational Technology (ECT2014), Naples, Italy, 2-5 September 2014.

#### 8.1.2. Journal

##### 8.1.2.1. Editorial board membership

Jean-Claude Vivalda is an associate editor of the *Journal of Dynamical and Control Systems*.

Xavier Antoine is a member of the editorial board of the collection *Mathématiques Appliquées pour le Master* for SMAI/DUNOD Ed.

Marius Tucsnak is a member of the editorial board of *MCSS*, *Journal of Mathematical Fluid Mechanics*, *ESAIM COCV*, *Mathematical Reports* and *Revue Roumaine de Mathématiques Pures et Appliquées*

##### 8.1.2.2. Reviewing activities

Most members of the team are reviewers for major journals in the field, including *Automatica*, *IEEE Transactions on Automatic Control*, *ESAIM Contrôle optimal et calcul des variations*, *SIAM Journal of Control*, *Journal of Functional Analysis*.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Most of the members of the team have a teaching position (192 hours a year) in Université de Lorraine.

- Fatiha Alabau has a full time full professor position;
- Xavier Antoine has a full time full professor position at ENSEM;
- Thomas Chambrion has a full time associate professor position at ESSTIN;
- Antoine Henrot has a full time full professor position at ENSEM-Mines Nancy;
- Bruno Pinçon has a full time associate professor position at Telecom Nancy;
- Lionel Rosier has a full time full professor position at ESSTIN;
- Jean-François Scheid has a full time associate professor position at Telecom Nancy;
- Marius Tucsnak has a full time full professor position;
- Julie Valein has a full time associate professor position at ESSTIN.

We only detail below the teaching activities of the Inria researchers:

Master : Takahashi, *Résolution numérique des EDP*, 21 hours, Mines Nancy, France

Master : Takahashi, *Analyse numérique*, 18 hours, Mines Nancy, France

Master : Ramdani, *Analyse numérique*, 18 hours, Mines Nancy, France

### 8.2.2. Supervision

HdR : Thomas Chambrion, *Méthodes mathématiques pour la commande de systèmes mécaniques de dimension infinie*, Université de Lorraine, May 29 2014.

HdR: Jean-François Scheid, , Université de Lorraine, December 11 2014.

PhD : Tatiana Manrique, *Optimisation de stratégie de conduite d'un véhicule à basse consommation sous contraintes temps réel*, Université de Lorraine, December 9 2014, supervisors: T. Chambrion and G. Millerioux.

PhD: Jérémy Dalphin, "Etude de fonctionnelles géométriques dépendant de la courbure par des méthodes d'optimisation de formes", Université de Lorraine, December 5th, 2014. Supervisors: Antoine Henrot and Takéo Takahashi.

PhD in progress : Chi-Ting WU, since 2013. Supervisors: Marius Tucsnak and Julie Valein.

### 8.2.3. Juries

X. Antoine has been a member of the committee for A. Vion (PhD thesis, Univ. de Liège, Décembre 2014) and M. Darbas (HDR thesis, Amiens, Décembre 2014).

## CQFD Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events selection

##### 9.1.1.1. Member of the conference program committee

Jonatha Anselmi has been member of the conference program committee of the 8th International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS) and of the 21st International Conference on Analytical and Stochastic Modelling Techniques and Applications (ASMTA).

Pierrick Legrand has been member of the conference program committee of the EVOLVE 2015 International Conference and of the Genetic and Evolutionary Computation Conference (GECCO 2014).

##### 9.1.1.2. Reviewer

All the members of the team are regular reviewers for several conferences in applied probability and statistics.

#### 9.1.2. Journal

##### 9.1.2.1. Member of the editorial board

F. Dufour is associate editor of the journal: SIAM Journal of Control and Optimization since 2009.

J. Saracco is an associate editor of the journal Case Studies in Business, Industry and Government Statistics (CSBIGS) since 2006.

##### 9.1.2.2. Reviewer

All the members of the team are regular reviewers for several journals in applied probability and statistics.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : F. Dufour, Probabilités et statistiques, 16 heures, niveau L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.

Master : F. Dufour, Méthodes numériques pour la fiabilité, 24 heures, niveau M1, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.

Master : F. Dufour, Probabilités, 20 heures, niveau M1, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.

Licence : J. Anselmi, Probabilités 16 heures, niveau L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.

Licence : M. Chavent, Statistique descriptive, 36 ETD ,L1, Bordeaux university, France

License : M. Chavent, Modélisation statistique, 18 ETD, niveau L3, Bordeaux university, France

Master : M. Chavent, Analyse des données 2, 25 ETD, niveau M2, Bordeaux university, France

Master : M. Chavent, Scoring, 21 ETD, niveau M2, Bordeaux university, France

Licence: J. Saracco, Descriptive statistics, 10.5h, L3, First year of ENSC, France

Licence: J. Saracco, Mathematical statistics, 20h, L3, First year of ENSC, France

Licence: J. Saracco, Data analysis (multidimensional statistics), 20h, L3, First year of ENSC, France

Licence: J. Saracco, Mathematics (complement of linear algebra), 20h, L3, First year of ENSC, France



Master: J. Saracco, Statistical modeling, 20h, M1, Second year of ENSC, France

Master: J. Saracco, training project, 20h, M1, Second year of ENSC, France

Licence : B. de Saporta, Logiciels scientifiques 15h ETD, M1, université Montpellier 2, France

Master : B. de Saporta, Processus de Markov, 31,5h ETD, M2, université Montpellier 2, France

P. Legrand, Mathématiques générales (responsable de l'UE), Licence 1 SCIMS (138 heures)

P. Legrand, Informatique pour les mathématiques (responsable de l'UE), Licence 1 SCIMS (36 heures)

P. Legrand, Complément d'Algèbre/Espaces Eucl. (responsable de l'UE), Licence 2 SCIMS (54 heures)

### 9.2.2. Supervision

PhD completed : Karim Claudio, Un outil d'aide à la maîtrise des pertes dans les réseaux d'eau potable : mise en place d'un modèle de fuite multi-état en secteur hydraulique instrumenté , supervised by J. Saracco and V. Couallier.

PhD in progress : Amaury Labenne, Approche Statistique du diagnostic territorial par la notion de qualité de vie, supervised by M. Chavent, J. Saracco and V. Kuentz.

PhD in progress : Adrien Todeschini, Elaboration et validation d'un système de recommandation bayésien, supervised by F. Caron and M. Chavent.

PhD in progress : Isabelle Charlier, Optimal quantization applied to conditional quantile estimation, University of Bordeaux and Université Libre de Bruxelles, supervised by J. Saracco and D. Paindavaine.

PhD in progress : Christophe Nivot, Optimisation de la chaîne de montage du futur lanceur européen, September 2013, B. supervised by B. de Saporta and F. Dufour

PhD in progress : Alizé Geeraert, Contrôle optimal des processus Markoviens déterministes par morceaux et application à la maintenance, University of Bordeaux, September 2014, supervised by B. de Saporta and F. Dufour.

Nicolas Antunes: Application d'algorithmes prédictifs à l'identification de niches ecoculturelles des population du passé: approche ethnoarchéologique. Financement ERC F. D'Errico. Co-encadrement : D'Errico, Del Moral, Legrand. Cette thèse consiste à utiliser des algorithmes de type GARP pour prédire l'existence de niches écologiques à partir de données climatologiques. 2011-2014.

Emigdio Z. Flores Lopez, "Classification of mental states with genetic programming", PhD in engineering sciences. Financement Conacyt (Consejo Nacional de Ciencia y Tecnología) national scholarships for PNP programs (Programa Nacional de Posgrados Calidad), Mexico. Co-encadrement : L. Trujillo (50%), P. Legrand (50%). 2013-2016.

### 9.2.3. Juries

B. de Saporta was a member of the PhD defense jury of Coralie Fritsch, université Montpellier 2, France.

M. Chavent was a member of the CR2 concours of Inria Bordeaux-Sud-Ouest.

J. Saracco was a member of the PhD defense jury of Hussein Hashem, Brunel University, UK.

J. Saracco was a member of the PhD defense jury of Karim Claudio, Bordeaux University, France.

J. Saracco was member of various juries for positions in french universities (Bordeaux, professor; Poitiers, assistant professor; Orléans, professor) in april-may 2014.

## 9.3. Popularization

M Chavent and J. Saracco are elected members of CNU 26.

B. de Saporta was an elected member of CNU 26 until sept. 2014.

J. Saracco is vice president of the french statistical society (SFdS).

## DEFI Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

- H. Haddar organized a minisymposium on "Inverse Scattering" at IPTA 2014 <http://ipta2014.iopconfs.org/218704>
- H. Haddar co-organized with Marc Bonnet a minisymposium on "Asymptotic Expansions" at IPTA 2014 <http://ipta2014.iopconfs.org/218704>
- H. Haddar co-organized with Nicolas Chaulet a minisymposium on "Asymptotics, Inverse Problems and Applications" at SIAM Conference on IMAGING SCIENCE <http://www.math.hkbu.edu.hk/SIAM-IS14/Minisymposia.html>

#### 9.1.1.1. General chair, scientific chair

- G. Allaire is the scientific chair and one of the five organizers of the conference Conca60-BCAM, Bilbao (december 2014).
- G. Allaire is the scientific chair and one of the main organizers of the CEA/GAMNI seminar on computational fluid mechanics, IHP Paris (January 2014).
- O. Pantz is Co-chairman of the symposium *Optimization tools for large scale industrial systems* for COPI'14, École Polytechnique, (October 2014)

#### 9.1.1.2. Member of the conference program committee

- G. Allaire and H. Haddar are members of the scientific committee of PICO'F'2014 <http://www.lamsin.tn/picof14/>

### 9.1.2. Journal

#### 9.1.2.1. Member of the editorial board

- G. Allaire is member of the editorial boards of
  - Structural and Multidisciplinary Optimization,
  - Discrete and Continuous Dynamical Systems Series B,
  - Computational and Applied Mathematics,
  - Mathematical Models and Methods in Applied Sciences (M3AS),
  - Annali dell'Università di Ferrara,
  - OGST (Oil and Gas Science and Technology),
  - Journal de l'École Polytechnique - Mathématiques.
- H. Haddar is member of the editorial advisory board of Inverse Problems
- J.-R. Li is an Associate Editor of the SIAM Journal on Scientific Computing.

#### 9.1.2.2. Reviewer

The members of the team reviewed numerous papers for numerous international journals. Too many to make a list.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence : Grégoire Allaire, "Numerical Analysis and Optimization", (main instructor) 27 equivalent TD hours, L3, Ecole Polytechnique, Palaiseau, France
- Licence : Olivier Pantz, "Numerical Analysis and Optimization", 72 equivalent TD hours, L3, Ecole Polytechnique, Palaiseau, France
- Licence : Houssem Haddar, "Numerical Analysis and Optimization", 56 equivalent TD hours, L3, Ecole Polytechnique, Palaiseau, France
- Master : Grégoire Allaire, "Optimal design of structures", (main instructor) 13,5 equivalent TD hours, M1, Ecole Polytechnique, Palaiseau, France
- Master : Grégoire Allaire, "Transport et Diffusion", (main instructor) 6,5 equivalent TD hours, M1, Ecole Polytechnique, Palaiseau, France
- Master : Grégoire Allaire, "Functional analysis and applications", (main instructor) 18 equivalent TD hours, M2, University Pierre et Marie Curie, Paris, France
- Master : Houssem Haddar, "Inverse problems", (main instructor) 24 equivalent TD hours, M2, Ecole Polytechnique, Palaiseau, France
- Master : Olivier Pantz, "Optimal design of structures", 14 equivalent TD hours, M1, Ecole Polytechnique, Palaiseau, France
- Master : Olivier Pantz, "Introduction to calculus of variation and asymptotic analysis", 40 equivalent TD hours, M1, Ecole Polytechnique, Palaiseau, France
- Doctorat : Houssem Haddar, "Introduction to qualitative methods for inverse electromagnetic scattering theory" at CIME summer school, 12 equivalent TD hours, Cetraro, Italy
- Doctorat : Olivier Pantz, "Introduction course" at the 'FreeFem++ days'. University Pierre et Marie Curie, Paris, France

### 9.2.2. Supervision

- Ph.D. in progress: L. Audibert, Qualitative methods for non destructive testing of concrete like materials, 2012, H. Haddar
- Ph.D. in progress: T. Mercier, Data assimilation for temperature estimates in PWR, 2012, H. Haddar
- Ph.D. in progress: M. Lakhali, Time domain inverse scattering for buried objects, 2014, H. Haddar
- Ph.D. in progress: T.P. Nguyen, Direct and Inverse scattering from locally perturbed layers, 2013, H. Haddar
- Ph.D. in progress: T. Rienmuller, Scattering for inhomogeneous waveguides, 2014, A. Lechleiter and H. Haddar
- Ph.D. in progress: B. Charfi, Identification of the singular support of a GIBC, 2014, H. Haddar and S. Chaabane
- Ph.D. in progress: G. Fournet, Inclusion of blood flow in micro-vessels in a new dMRI signal model, 2013, J.-R. Li and L. Ciobanu
- Ph.D. in progress: S. Schiavi, Homogenized models for Diffusion MRI, 2013, H. Haddar and J.-R. Li
- Ph.D. in progress: K. Van Nguyen, Modeling, simulation and experimental verification of water diffusion in neuronal network of the Aplysia ganglia, 2014, J.-R. Li and L. Ciobanu
- PhD in progress : A. Maury, shape optimization for non-linear structures, 2013, G. Allaire and F. Jouve
- PhD in progress : J.-L. Vié, optimization algorithms for topology design of structures, 2013, G. Allaire and E. Cancès

- PhD in progress : C. Patricot, coupling algorithms in neutronic/thermal-hydraulic/mechanics for numerical simulation of nuclear reactors, 2013, G. Allaire and E. Hourcade
- PhD in progress : A. Talpaert, the direct numerical simulation of vapor bubbles at low Mach number with adaptative mesh refinement, 2013, G. Allaire and S. Dellacherie
- PhD in progress : A. Bissuel, linearized Navier Stokes equations for optimization, floating and aeroacoustic, 2014, G. Allaire
- PhD in progress : M. Giacomini, Shape optimization and Applications to aeronautics, 2013, O. Pantz and K. Trabelsi
- PhD in progress : L. Azem, Modeling and simulation of damage and fracture, O. Pantz and H. Zorgati

### **9.3. Popularization**

- H. Haddar gave a lecture at UnithéouCafé on "Décoder les ondes". The video is available at the youtube inriachannel <https://www.youtube.com/watch?v=baS8mL66xiE>

## DISCO Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

With E. Zerz (RWTH Aachen University), Alban Quadrat co-organized two invited sessions at the *21th International Symposium on Mathematical Theory of Networks and Systems (MTNS)*, Groningen (The Netherlands), 07-11/07/2014. The contributions of these invited sessions will appear as extended chapters of the book *Algebraic and Symbolic Computation Methods in Dynamical Systems*, Springer series ADD@S, Springer, 2015 (A. Quadrat, G. Regensburger, E. Zerz eds.).

With E. Zerz (RWTH Aachen University), Alban Quadrat co-organized a special issue for the international journal *Multidimensional Systems and Signal Processing* (Springer), entitled *Symbolic Methods in Multidimensional Systems Theory*. This issue will appear at the beginning of 2015.

#### 9.1.1.1. General chair, Scientific chair

Catherine Bonnet is co-chair of the Organizing Committee of SIAM CT15 which will held 8-10 July in Paris. She is also with Maurice Robin (DIGITEO) the Local Conference Organizer.

Catherine Bonnet is co-organizer with Alexandre Chapoutot and Paolo Mason of the Working Group Shy of DigiCosme on the Plateau de Saclay.

Alban Quadrat is a scientific committee member of the *Journées Nationales de Calcul Formel (JNCF)*, <http://www.lifl.fr/jncf2014/index.html>.

#### 9.1.1.2. Member of the organizing committee

Catherine Bonnet was a member of the organizing committee of the *Symposium in honor of Professor Abdelhaq El Jai* 29-30 May 2014 in Ifrane, Marocco.

Frédéric Mazenc was a member of the organizing committee of the *2014 European Control Conference*, July, Strasbourg, France.

### 9.1.2. Scientific events selection

Catherine Bonnet is in the board of directors of Cap' maths.

Sorin Olaru was the Scientific organizer of the Workshop "Interpolation-based techniques for constrained control: from improved vertex control to robust model predictive control alternatives." at ECC 2014.

Alban Quadrat was an inviter speaker at the conference *Homological Perturbation Lemma*, Galway (Ireland), 01-05/12, and at the conference *DelSys' 2014*, Grenoble (France), 12-14/11, and gave a talk at the department of mathematics, SUNY Cortland, New York (USA), 16/09, and at the seminar of the University of Versailles, 17/12. He also attended the *Journées Nationales de Calcul Formel*, CIRM, Luminy (France), 03-07/11.

#### 9.1.2.1. Member of the conference program committee

Catherine Bonnet was a member of the scientific committee of the *Symposium in honor of Professor Abdelhaq El Jai* 29-30 May 2014 in Ifrane, Marocco.

Sorin Olaru was a member of the program committees of the European Control Conference 2014, 18th International Conference on System Theory, Control and Computing - ICSTCC 2014.

Guillaume Sandou was a member of the Programm Committee of the 2014 IEEE Symposium on Computational Intelligence in Production and Logistics Systems (CIPLS'14), Orlando, USA, December 2014.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

Frédéric Mazenc is Member of the *Mathematical Control and Related Fields* editorial board.

Frédéric Mazenc is Member of the *European Journal of Control* editorial board.

Frédéric Mazenc is Associate Editor for the *Asian Journal of control*.

Frédéric Mazenc is Associate Editor for the *Journal of Control and Decision*.

Frédéric Mazenc is Associate Editor for *IEEE Transactions on Automatic Control*.

Frédéric Mazenc was Associate Editor for the conferences *2015 American Control Conference*, Chicago, USA and the *53th IEEE Conference on Decision and Control*, Los Angeles, USA, (2014).

Sorin Olaru is a member of the editorial board of *IMA Journal of Mathematical Control and Information*.

Alban Quadrat is an associate editor of the journal *Multidimensional Systems and Signal Processing*, Springer.

#### 9.1.3.2. Reviewer

The team reviewed many papers for international journals (European Journal of Control, Automatica, IEEE Trans. Aut Contr, IEEE Trans. on Control Systems Technology, IMA Journal of Mathematical Control and Information, Information Sciences, IEEE Symposium Series on Computational Intelligence, SICON, Journal of Process Control, Journal of Franklin Institute, Transactions on Cybernetics, Asian Journal of Control) and conferences (IEEE Conference on Decision and Control, American Control Conference, European Control Conference, IFAC World Congress 2014) and for a book for Springer.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Le Ha Vy Nguyen, Signals and Systems, 28h, L3, Paris-Sud University

Master : Le Ha Vy Nguyen, Information Processing and Source Coding, 12h, M1, Paris-Sud University

Master : Le Ha Vy Nguyen, Numerical Methods for Physics, 12h, M1, Paris-Sud University

Licence : Guillaume Sandou, Signals and Systems, 87h, L3, Supélec

Licence : Guillaume Sandou, Mathematics and programming, 18h, L3, Supélec

Master : Guillaume Sandou, Automatic Control, 8h, M1, Supélec

Master : Guillaume Sandou, Numerical methods and optimization, 28h, M1 and M2, Supélec

Master : Guillaume Sandou, Modelling and system stability analysis, 21h, M2, Suplec

Master : Guillaume Sandou, Control of energy systems, 22h, M2, Suplec

Master : Guillaume Sandou, Robust control and mu-analysis, 9h, M2, Suplec

Master : Guillaume Sandou, Systems identification, 32h, M2, ENSTA

Master : Guillaume Sandou, Embedded Systems, 18h, M2, Ecole Centrale Paris

Master : Guillaume Sandou, Automatic control, 23h, M2, Ecole Centrale Paris

Master : Guillaume Sandou, System Analysis, 22h, M2, Ecole des Mines de Nantes

Licence : Sorin Olaru, Numerical methods and Optimization, 24h, niveau M1, SUPELEC, France

Licence : Sorin Olaru, Hybrid systems, 16h, niveau M2, SUPELEC, France

Licence : Sorin Olaru, Automatic Control, 8h , niveau M1, SUPELEC, France

Licence : Sorin Olaru, Signals and systems, 8h , niveau L3, SUPELEC, France

Licence : Sorin Olaru, Embedded systems, 8h , niveau M1, Centrale Paris, France

### 9.2.2. Supervision

- Postdoc: Y. Bouzidi, *Constructive study of analysis and synthesis problems of multidimensional systems*, Inria Saclay - Île-de-France, ANR MSDOS, 2014-2015, A. Quadrat.
- PhD : Thach Ngoc Dinh, *Interval Observers and Delay Systems*, University Paris-Sud, December 2011. Date of the defence: 24 Nov., 2014. Supervisor: Frédéric Mazenc. Co-Supervisor: Silviu I. Niculescu, Silvère Bonnabel.
- PhD José Luis Avila Alonso, *Leucémie Aigue Myéloblastique : Modélisation et Analyse de Stabilité*, Defended July 2nd 2014. University Paris-Sud, STITS. Supervisor : Catherine Bonnet. Co-supervisors : Jean Clairambault and Silviu I. Niculescu.
- PhD in progress Walid Djema, *Analysis of an AML model enabling evaluation of polychemiotherapies delivered in the case of AML which have a high level of Flt-3 duplication (Flt-3-ITD)*. Supervisor : Catherine Bonnet. Co-supervisors : Jean Clairambault and Frédéric Mazenc.
- PhD Le Ha Vy Nguyen,  *$H_\infty$  Stabilité et Stabilisation de diverses classes de systèmes fractionnaires et à retards*, Defended December 9th 2014. University Paris-Sud, STITS. Supervisor: Catherine Bonnet.

### 9.2.3. Juries

- Catherine Bonnet was a reviewer of the Habilitation thesis of Lucie Beaudoin entitled 'Problèmes inverses et commande robuste de quelques équations aux dérivées partielles', Université Toulouse 3 Paul Sabatier, France, June 20th 2014.
- Frédéric Mazenc was a reviewer of the PhD thesis of Houda Thabet, entitled "Détection de défauts des systèmes non linéaires à incertitudes bornées continus", (Université de Bordeaux, December 2014).
- Frédéric Mazenc was a reviewer of the PhD thesis of Hassan Omran, entitled "Contribution à la commande de systèmes non linéaires sous échantillonnage aperiodique", (Ecole Centrale de Lille, March 2014).
- Frédéric Mazenc was an invited member of the PhD thesis of José Avial, entitled "Leucémie Aigue Myéloblastique : Modélisation et Analyse de Stabilité", (université Paris-Sud soutenue au L2S, CNRS, July 2014).
- Sorin Olaru was a reviewer for John Anderson Sandoval Moreno's PhD thesis. The thesis was defended in November 2014, Gipsa-Lab, Univ. Joseph Fourier Grenoble.

## 9.3. Popularization

Catherine Bonnet has been a portrait in the exhibition '*Infinités Plurielles*', Marie-Hélène Le Ny

Alban Quadrat gave a scientific popularization talk entitled *Une science du contrôle ou Qu'appelle-t-on théorie du contrôle en science ?* at the conference *Contrôle et Contrainte en Science-Fiction*, University of Picardie Jules Verne, Beauvais (France), organized by the department of Lettres, Langues, Arts et Sciences Humaines (FLASH), 23-25/04/2014.

## **DOLPHIN Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. General chair, Scientific chair*

- E-G. Talbi: META'2014 Int. Conf. on Metaheuristics and Nature Inspired Computing, Marrakech, Morocco, Oct 2014.
- E-G. Talbi: IEEE NIDISC'2015 Workshop on Nature Inspired distributed Computing, Phoenix, USA, May 2014.
- L. Brotcorne, Stream Chair IFORS 2014, Revenue Management and Pricing, Barcelona, Spain, July 2014.

#### *9.1.1.2. Member of the organizing committee*

- L. Jourdan: META'2014 Int. Conf. on Metaheuristics and Nature Inspired Computing, Marrakech, Morocco, Oct 2014.
- N. Melab: Organization of Grid'5000 training at Inria Lille, November 20th, 2014
- N. Melab: Organization of 5 seminars on high performance computing (Idris, UMONS, Nvidia, EDF R&D and Laboratoire d'Infochimie, Univ. of Strasbourg).
- L. Brotcorne, Chair of the "Prix Jeune Chercheur de la ROADEF", Bordeaux, Feb 2014.
- L. Brotcorne, Vice-President of the Euro Working Group on Pricing and Revenue Management.
- L. Brotcorne, Board Member of the ROADEF Society.
- Vice-President of the Euro Working Group on Pricing and Revenue Management.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Responsible of the conference program committee*

- D. Brockhoff: ACM GECCO'2014 track chair EMO (Evolutionary Multi-objective Optimization) track.

#### *9.1.2.2. Member of the conference program committee*

- ECAI 2014, 21st European Conference on Artificial Intelligence (Prague, Czech Republic, 2014)
- GECCO 2014, Genetic and Evolutionary Computation Conference, Evolutionary Combinatorial Optimization and Metaheuristics (ECOM) track (Vancouver, Canada, 2014)
- EvoCOP 2014: 14th European Conference on Evolutionary Computation in Combinatorial Optimisation (Granada, Spain, 2014)
- LION 2015: 9th Learning and Intelligent OptimizatiON Conference (Lille, France, 2015)
- EMO 2015: 8th International Conference on Evolutionary Multi-criterion Optimization (Guimarães, Portugal, 2015)

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

- Guest editors of a special issue on Evolutionary Multiobjective Optimization, European Journal of Operational Research, co-edited by Dimo Brockhoff, Bilel Derbel, Arnaud Liefooghe and Sébastien Verel.



- Guest editors of a special issue on Computational intelligence for Cloud computing, IEEE Computational Intelligence Magazine, co-edited by El-ghazali Talbi, Pascal Bouvry.

#### 9.1.3.2. Reviewer

- A Quarterly Journal of Operations Research (4OR, Springer)
- Discrete Applied Mathematics (DAM, Elsevier)
- European Journal of Operational Research (EJOR, Elsevier)
- Journal of Heuristics (HEUR, Springer)
- Soft Computing (SOCO, Springer)
- IEEE Transactions on Evolutionary Computation
- Applied Soft Computing
- Journal of Supercomputing
- International Transactions in Operational Research
- IEEE/ACM Transactions on Computational Biology and Bioinformatics
- Evolving Systems Journal
- Evolutionary Computation
- Computers and Operations Research
- IEEE Transactions on Cybernetics
- ACM Computing Surveys
- Computation and Concurrency: Practice and Experience
- International Journal of Parallel, Emergent and Distributed Systems

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence: A. Liefoghe, Algorithmic and Data structure, 36h ETD, L2, Université de Lille 1, France
- Licence: A. Liefoghe, Algorithmic for Operations Research, 36h ETD, L3, Université de Lille 1, France
- Master: A. Liefoghe, Databases, 30h ETD, M1, Université de Lille 1, France
- Master: A. Liefoghe, Advanced Object-oriented Programming, 53h ETD, M2, Université de Lille 1, France
- Master: A. Liefoghe, Combinatorial Optimization, 10h ETD, M2, Université de Lille 1, France
- B. Derbel is the co-supervising the Master 2 MOCAD (Complex Models, Algorithms, Data)
- Master : Bilel Derbel, Combinatorial Optimization, 35h, M2, University Lille 1, France
- Master : Bilel Derbel, Grid Computing, 16h, M2, University Lille 1, France
- Master : Bilel Derbel, Parallel and Distributed Programming, 35h, M1, University Lille 1, France
- Master : Bilel Derbel, Advanced Object Programming, 132h, M1, University Lille 1, France
- Master : Bilel Derbel, Algorithms and Applications, 28h, M1, University Lille 1, France
- Laetitia Jourdan: Master in Computer Sciences and Master MIAGE of University of Lille 1: Business Intelligence (30h), Datamining (60h), Datawarehouse (30h)
- Laetitia Jourdan : Informatique L1 University of Lille 1 48h
- Laetitia Jourdan: Responsible of sandwich courses in Master Lille 1
- Laetitia Jourdan: Co-responsible of Licence 1 Computer Science
- Master: D. Brockhoff, Advanced Control, 18.25h, M2, Ecole Centrale Paris, Chatenay-Malabry, France

- Master : N. Melab, Supercomputing, 33h, M2, Université Lille 1, France
- Master : N. Melab, Operations Research, 82h, M1, Université Lille 1, France
- Master leading: N. Melab, Co-head (with C. Chainais) of the master 2 of advanced scientific computing, U. Lille 1
- Master creation: N. Melab, Participation to the proposition of a new master of engineering at Lille 1
- Engineering school : Clarisse Dhaenens, Graphs and Combinatorics, 80 HeqTD, Polytech Lille, University Lille 1, France
- Engineering school : Clarisse Dhaenens, Operations Research, 70 HeqTD, Polytech Lille, University Lille 1, France
- Engineering school : Clarisse Dhaenens, Algorithmics and programming, 45 HeqTD, Polytech Lille, University Lille 1, France
- Engineering school : Luce Brotcorne, Optimisation, 17h ETD, IMA4, Polytech Lille, France
- Engineering school : Luce Brotcorne, Recherche Opérationnelle, 24 h ETD, IEESP2, Polytech Lille, France
- Engineering school : Luce Brotcorne, Analyse Numérique et Optimisation, 18h ETD, Ecole Centrale de Lille, France
- Engineering school : Luce Brotcorne, Modèles d'affectation du trafic, 6hETD, Ecole Centrale de Lille, France
- Engineering school : El-Ghazali Talbi, Advanced optimization, 36h, Polytech'Lille, University Lille 1, France
- Engineering school : El-Ghazali Talbi, Data mining, 36h, Polytech'Lille, University Lille 1, France
- Engineering school : El-Ghazali Talbi, Operations research, 60h, Polytech'Lille, University Lille 1, France
- Engineering school : El-Ghazali Talbi, Graphs, 25h, Polytech'Lille, University Lille 1, France
- Polytech Lille : Marie-Eléonore Marmion, Database, 67h ETD, 1st year, Université Lille 1, France
- Polytech Lille : Marie-Eléonore Marmion, Algorithm and Programming, 45h ETD, 1st year, Université Lille 1, France
- Polytech Lille : Marie-Eléonore Marmion, Graph, 10h ETD, 1st year, Université Lille 1, France
- Polytech Lille : Marie-Eléonore Marmion, Data Mining, 10h ETD, 3rd year, Université Lille 1, France

#### **E-learning**

Lecture in a E-learning master degree at the University of Lille 1 : Bilel Derbel, Cluster et Grille de Calcul, 2 days on-site, and 3 distance courses, COROLIA Training - Digital Learning Pole, Lille TELECOM , Master 2 TIIR E-learning, continuing education, ten students enrolled.

#### **9.2.2. Supervision**

PhD : Nadia Dahmani, Multi-objective packing problems, 02/2014, El-Ghazali Talbi and François Clautiaux

PhD : A. Stathakis, Satellite payload reconfiguration optimization, 10/2014, El-Ghazali Talbi and Pascal Bouvry

PhD in progress : : Sophie Jacquin, Combining exact method and metaheuristics for production problems, début : 1/10/2012, Co-direction : El-Ghazali Talbi et Laetitia Jourdan

PhD in progress: Datamining et optimisation combinatoire adaptés à la prévention et à l'orientation de patients, Maxence Vandromme début : 1/06/2014, CIFRE with Alicante Co-direction : Clarisse Dhaenens and Laetitia Jourdan

PhD in progress: Gauvain Marquet, Mono-objective decomposition for multi-objective optimization, University Lille 1, Sep. 2014, Bilel Derbel and El-Ghazali Talbi

PhD : Trong-Tuan Vu, Heterogeneity and locality-aware work stealing for large scale branch-and-bound irregular algorithms, Inria University Lille 1, 12 Dec 2014, Bilel Derbel and Nouredine Melab

PhD in progress : Thanh-Do Tran, Benchmarking Continuous Multiobjective Optimization Algorithms, since 12/2011, Dimo Brockhoff and El-Ghazali Talbi

PhD defended: Trong Tuan VU, Heterogeneity and Locality-aware Work Stealing for Large Scale Branch-and-Bound Irregular Algorithms, Nouredine Melab and Bilel Derbel, December 12th, 2014

New PhD: Jan GMYS, Optimization and simulation of electrical networks using massively parallel heterogeneous computing, Nouredine Melab and Daniel Tuytens (UMONS, Belgium), since October 2014.

PhD in progress : Rudi LEROY, Massively parallel tree-based exact algorithms for hybrid clusters, 11/05/2012, Nouredine Melab

PhD in progress : Francois LEGILLON, Static and Dynamic Resource Brokering on multi-clouds, 09/01/2010, Nouredine Melab and El-Ghazali Talbi

PhD in progress : Sylvain Dufourny, Optimisation de décisions économiques concurrentielles dans un simulateur de gestion d'entreprise, Novembre 2012, Clarisse Dhaenens

PhD in progress : Sezin Afsar, Bilevel models for energy pricing problems , 09/2011, L. Brotcorne

PhD in progress : Martin Bue, Optimisation d'un service de réservation hôtelière, 09/2011, L. Brotcorne, F. Clautiaux.

PhD in progress : Bayrem Tounsi, Optimisation conjointe des opérations de transport et préparation dans le cadre du E-commerce, 09/2011, L. Brotcorne.

PhD in progress : A. Q. Nguyen, Green scheduling on cloud computing systems, 11/2012, El-Ghazali Talbi and Pascal Bouvry

PhD in progress : Oumayma Bahri, Fuzzy multi-objective optimization, 11/2013, El-Ghazali Talbi and Nayla Ben-Omar

PhD in progress : Asma Gannouni, Stochastic multi-objective optimization using metaheuristics , 11/2013, El-Ghazali Talbi and Rachid Ellaia

### 9.2.3. Juries

- D. Brockhoff: external reviewer for the Luxembourg National Research Fund (FNR).
- N. Melab: HDR Matthieu Basseur, Université d'Angers, December 3rd, 2014.
- C. Dhaenens: President of the recruiting committee for associate professorship in computer science (COS McF 27 - Univ. Lille 1 - 2014) - 3 positions.
- C. Dhaenens: Problème de caractérisation multiple - Application à la détection de souches bactériennes phytopathogènes de Fabien Chhel, Université d'Angers, encadrants : Frédéric Lardeux, Frédéric Saubion, Octobre 2014, (Présidente)
- C. Dhaenens: Modèles d'abstraction pour la résolution de problèmes combinatoires, HDR de Adrien Goeffon, Université d'Angers, garant : Frédéric Saubion, Novembre 2014, (Rapporteur)
- L. Brotcorne, Member of the commission for the Concours CR Inria 2014.
- L. Brotcorne, Member of the COST GTRI Inria.
- Luce Brotcorne : Planification des opérations de cross-docking, de Anne-Laure Ladier, University of Grenoble, Encadrants : G. Alpan november 2014 (Rapporteur).

## 9.3. Popularization

- Bioinspired computing - talk in undergraduate and graduate schools
- Inaugural conference of Math en Jean - Bioinspired computing (see <http://lille1tv.univ-lille1.fr/videos/video.aspx?id=6b894d87-bcd3-4ee5-a69c-7af3a2b6446f>)
- Operational research - for 2nde during integration week (June 2015)
- E-learning in algorithmics [http://ressources.unisciel.fr/progcartes/co/\\_web.html](http://ressources.unisciel.fr/progcartes/co/_web.html)
- Optimisation des données, Interstice
- Invited GECCO'2013 tutorial on Evolutionary Multiobjective Optimization
- Invited tutorial on Evolutionary Multiobjective Optimization (Reseau Mexico meeting, November 2014 in La Rochelle, France)
- Invited talk at PGMO-COPI conference on Multiobjective CMA-ES (November 2014 in Palaiseau, France)

## ECUADOR Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

- Laurent Hascoët is on the organizing committee of the EuroAD Workshops on Algorithmic Differentiation. The 15th EuroAD workshop was organized and hosted by the team in Sophia-Antipolis, June 16-17.
- Ecuador was local organizer of the 11th workshop of the Inria-Illinois JLPC in Sophia-Antipolis, June 9-11, and of the PUF summer school on HPC systems, June 12-13.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master : Laurent Hascoët, Optimisation avancée, 15 h, M2, University of Nice

### 9.2.2. Supervision

PhD in progress : Gautier Brêthes, “Multigrilles anisotropes adaptatives”, started October 2012, advisor A. Dervieux

PhD in progress : Ala Taftaf, “Adjoint Automatic Differentiation on High-performance codes”, started July 2013, advisor L. Hascoët.

### 9.2.3. Juries

- Alain Dervieux, jury, PhD defense of Fernando Grossi, University of Toulouse, February 11.
- Alain Dervieux, jury, HDR defense of Elie Hachem, University of Nice, May 20.
- Laurent Hascoët, opponent, PhD defense of Mikko Auvinen, Aalto University, Finland, October 10.

## 9.3. Popularization

- Laurent Hascoët made a presentation on “Adjoint Automatic Differentiation for Data Assimilation” at the EGC 2014 conference in Rennes, January 28.
- Laurent Hascoët made a presentation on “Using Algorithmic Differentiation Tools to Compute Derivatives” at the ATOC Adjoint 2014 workshop organized by the British Antarctic Survey, Cambridge, July 1-2.
- Laurent Hascoët was invited to a seminar on adjoint methods <http://www.dagstuhl.de/program/calendar/partlist/?semnr=14371&SUOG> in Dagstuhl, Germany, September 7-12.

## **GAMMA3 Project-Team**

# **7. Dissemination**

## **7.1. Promoting Scientific Activities**

### **7.1.1. Scientific events selection**

#### *7.1.1.1. Member of the conference program committee*

AIAA conferences in Meshing, Visualization, and Computational Environments

### **7.1.2. Journal**

#### *7.1.2.1. Reviewer*

The members of the team reviewed numerous papers for numerous international conferences and journals: IJNME, EWC, Computers and Structures, IMR, JCP, SICOMP, SINUM, AIAA...

## **GECO Project-Team**

# **8. Dissemination**

## **8.1. Promoting Scientific Activities**

### **8.1.1. Scientific events organisation**

- Davide Barilari, Ugo Boscain and Mario Sigalotti were organizers of the IHP trimester “Geometry, Analysis and Dynamics on Sub-Riemannian Manifolds”, Fall 2014, Institut Henri Poincaré, Paris.
- Ugo Boscain and Mario Sigalotti were organizers of the CIRM School (Marseille) “Sub-Riemannian manifolds: from geodesics to hypoelliptic diffusion”, September 2014.

#### *8.1.1.1. Member of editorial boards*

- Ugo Boscain is Associate Editor of SIAM Journal of Control and Optimization
- Ugo Boscain is Managing Editor of Journal of Dynamical and Control Systems
- Mario Sigalotti is Associate Editor of Journal of Dynamical and Control Systems
- Ugo Boscain is Associate Editor of ESAIM Control, Optimisation and Calculus of Variations
- Ugo Boscain is Associate Editor of Mathematical Control and Related Fields
- Ugo Boscain is Associate editor of Analysis and Geometry in Metric Spaces

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Supervision**

- PhD: Moussa Gaye, “Some problems of geometric analysis in almost-Riemannian geometry and of stability of switching systems”, supervisors: Ugo Boscain, Yacine Chitour, Paolo Mason, defended in November 2014.
- PhD in progress: Guiherme Mazanti, “Stabilité et taux de convergence pour les systèmes à excitation persistante”, started in 1/9/2013, supervisors: Yacine Chitour, Mario Sigalotti.

### **8.2.2. Juries**

- Ugo Boscain was referee for the PhD thesis of Sylvain Arguillere, Paris 6, July 2014.
- Ugo Boscain was member of the commission for the PhD defense of Laurent Sifre, Ecole Polytechnique, October 2014.
- Mario Sigalotti was member of the commission for the PhD defense of Dolly Tatiana Manrique Espindola, Université de Lorraine, December 2014.
- Ugo Boscain was member of the commission for the HDR of Gregoire Charlot, Université de Grenoble, September 2014.
- Mario Sigalotti was member of the commission for a MCF position at INPT ENSEEIHT, Toulouse.
- Ugo Boscain was member of the jury for positions of CR at INSMI.

## GEOSTAT Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. General chair, scientific chair

H. Yahia and K. Daoudi are members of the scientific committee of the ISIVC 2014 conference.

##### 8.1.1.2. Reviewer

K. Daoudi has been reviewer for INTERSPEECH, ICASSP and for the "The Icelandic Research Fund" project.

#### 8.1.2. Journal

##### 8.1.2.1. Member of the editorial board

- H. Yahia is a member of the editorial board of the open access journal *Frontiers in Fractal Physiology*.
- H. Yahia has been a member of Elsevier's *Digital Signal Processing* from 2011 until mid 2014.
- H. Yahia is the editor in chief of the *Frontiers Research Topic* "theoretical physics and signal processing", to be organized in 2015 with P. Ivanov (Boston University) and A. Turiel (ICM-CSIC).

#### 8.1.3. Conseil National des Universités

H. Yahia, member, section 61.

## 8.2. Teaching - Supervision - Juries

#### 8.2.1. Seminars, presentations

- H. Yahia has given a presentation at the **Séminaire Cristolien d'Analyse Multifractale** (SCAM), headed by S. Jaffard: *Exposants de singularité en formalisme microcanonique et analyse multirésolutions quasi-optimale*, Jan 16, 2014.
- H. Yahia was invited to make a presentation: *Edges, transitions, criticality: novel nonlinear characterizations of low-level transition features in signal processing and applications to cross-scale inference in complex signals* at the ISIVC 2014 conference <http://www.i3e.ma/isivc2014/keynote.php>.
- O. Pont was invited to make a presentation: *Cardiodynamic Complexity: Electrocardiographic Characterization of Arrhythmic Foci*, [22].
- K. Daoudi was invited by Dr. Jon Gudnason to give a lecture on nonlinear speech analysis at Reykjavik university, Iceland.
- H. Badri has made a presentation at *Journées de l'EDMI* (Bordeaux - France), November 2014.
- H. Badri has made a presentation in the MANAO team: *Recovering Gradient Fields with Multi-Sparse Priors* March 26, 2014.
- H. Badri has made presentation at the "Signal-Image" seminar, co-organized by IMS-IMB-LaBRI in the framework of Labex CPU, May 15, 2014.
- GEOSTAT has invited A. Bijaoui, astronomer Emeritus to give a seminar for the Inria BSO centre, June 3rd, 2014.

#### 8.2.2. Courses, summer schools

1. Mediterranean School of Complex Networks - (Salina, Sicily), June 9-13, attended by H. Badri.



2. WIPO intellectual property certificate attended by H. Badri.
3. University Teaching 101 - Johns Hopkins University certificate attended by H. Badri.

### **8.2.3. Teaching**

Licence : H. Badri, C2I course, 32 hours, L1 level, Bordeaux I University, France.

Master : K. Daoudi was invited by the Moroccan CNRST within the FINCOME'2014 program (<http://www.fincome.cnrst.ma/>) to give a 20 hours lecture on speech processing at the Master2 InfoTelecom of the faculty of science of Rabat (<http://www.fsr.ac.ma/MIT/>).

### **8.2.4. Juries**

H. Yahia was a member of the PhD Jury of S. Chef (Le2I, UMR CNRS 6306, Laboratoire Electronique, Informatique et Image), defended November 25, 2014. Title: *Contribution à l'analyse de signaux acquis par émission de photons. Dynamique pour l'étude de circuits à très haute intégration*. Jury:

- S. Binczak, professeur université de Bourgogne (directeur de thèse),
- S. Jacquir, maitre de conférence université de Bourgogne (co-encadrant),
- F. Morain-Nicolier, IUT de Troyes, (rapporteur),
- K. Sanchez, docteur ingénieur CNES, (examineur),
- L. Torres, professeur LIRMM, (rapporteur),
- H. Yahia, chargé de recherche Inria Bordeaux (examineur).

## I4S Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

V. Le Cam was general chair of the 7th European Workshop on Structural Health Monitoring in Nantes, from 8 to 11, July 2014.

L. Mevel was scientific chair of the 7th European Workshop on Structural Health Monitoring in Nantes, from 8 to 11, July 2014.

#### 9.1.1.2. member of the organizing committee

M. Doehler was member of the organizing committee of 7th European Workshop on Structural Health Monitoring in Nantes, from 8 to 11, July 2014.

M. Le Pen was member of the organizing committee of 7th European Workshop on Structural Health Monitoring in Nantes, from 8 to 11, July 2014.

Q. Zhang is member of the national organization committee of the IFAC Symposium SAFEPROCESS 2015 (<http://safeprocess15.sciencesconf.org/>).

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

V. Le Cam has been nominated head of the EWSHM scientific committee in 2014 (<http://ewshm2014.com>).

#### 9.1.2.2. member of the conference program committee

L. Mevel

- has been nominated as member of the EWSHM scientific committee in 2014 (<http://ewshm2014.com>).
- has organized with M. Doehler one invited session at EWSHM 2014 (<http://ewshm2014.com>)
- is member of the IOMAC scientific committee (<http://www.iomac.dk>)

J. Dumoulin is

- member of the scientific committee of the GI Division (Geosciences Instrumentation and Data Systems) of EGU for infrastructure instrumentation and monitoring since April 2013.
- member of the committee of QIRT (quantitative Infrared Thermography) since February 2014 (<http://qirt2014.scientific-event.com>)
- organizer of invited sessions at EWSHM 2014 (<http://ewshm2014.com>) and TRA 2014 (<http://www.traconference.eu>).
- organizer of some invited sessions at EGU 2014 (<http://www.egu2014.eu>).

Q. Zhang is

- member of IFAC Technical Committee on Modelling, Identification and Signal Processing (TC 1.1, <http://tc.ifac-control.org/6/4/>).
- Member of IFAC Technical Committee on Fault Detection, Supervision and Safety of Technical Processes (TC 6.4, <http://tc.ifac-control.org/6/4/>).
- Member of the international program committee of the IFAC Symposium SYSID 2015 (<http://sysid2015.info/>).
- Member of the international program committee of the IFAC Symposium SAFEPROCESS 2015 (<http://safeprocess15.sciencesconf.org/>).

### 9.1.2.3. reviewer

L. Mevel, M. Doehler were reviewers for many conferences in 2014 (IFAC WC, CDC, EWSHM, ...).

J. Dumoulin was reviewer for EWSHM 2014 (<http://ewshm2014.com>) and for the European Signal Processing Conference (EUSIPCO - <http://www.eusipco2014.org/>).

## 9.1.3. Journal

### 9.1.3.1. member of the editorial board

L. Mevel is member of the editorial board of journal of Simulation in Engineering.

L. Mevel is member of the editorial board of journal of Shock and Vibration.

Q. Zhang is member of the editorial board of the journal of Intelligent Industrial Systems.

### 9.1.3.2. reviewer

L. Mevel was reviewer for Mechanical Systems and Signal Processing, journal of Sound And Vibration, Applied Maths and Computation, Operational Research, journal of CSNDT.

M. Doehler was reviewer for Journal of Electrical Power and Energy Systems and Mechanical Systems and Signal Processing.

L. Mevel and M. Doehler were reviewers for the journal of Smart Materials and Structures.

J. Dumoulin was reviewer for IEEE Transactions on Instrumentation and Measurement, Quantitative Infrared Thermography Journal, Optics and Lasers in Engineering journal, Journal Cultural Heritage, International Journal of Architectural Heritage, Journal of Geophysics and Engineering, Research in Nondestructive Evaluation

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence Professionnelle TAM : J. Dumoulin, thermographie infrarouge active, 8h, Université Paris-Est, France

Master 2 MMMRI, (Maintenance et Maîtrise des Risques Industriels), J. Dumoulin, contrôle non destructif par thermographie infrarouge active, 12h, Université Paris-Est, France

Master Système Communicant Mobile, V. Le Cam, embedded systems under Linux Operating System, 12h, Polytech Nantes, France

Master Civil engineering, V. Le Cam, Structural Monitoring, 4h, Université de Nantes, France

Licence 3 SEICOM, V. Le Cam, 3h, SHM and smart grids, Université de Nantes, France

Licence 3 SEICOM, V. Le Cam, 8h, TP, SHM and smart grids, Université de Nantes, France

ESEO, V. Le Cam, 8h, TP, embedded systems under Linux Operating System, France

### 9.2.2. Supervision

PhD : Jordans, Broons, *Développement d'outils numériques pour l'audit énergétique des bâtiments*, Université Paris-Est, A. Nassiopoulos, Frédéric Bourquin (IFSTTAR) and Karim Limam (Université de La Rochelle), Ecole doctorale Science Ingénierie et Environnement (SIE), 01/12/14.

PhD : Ahmed Jhinaoui, *Subspace-based identification and vibration monitoring algorithms for rotating systems*, Université de Rennes 1, L.Mevel and J. Morlier (ISAE), Ecole doctorale MATISSE, defended on May 28th, 2014

PhD : Philippe Mellinger, *Estimation des incertitudes en identification modale avec et sans entrées connues : Théorie, validation et application*, Université de Rennes 1, L. Mevel and C. Meyer (Dassault Aviation), Ecole doctorale MATISSE, defended on December 16th, 2014

PhD : Nassif Berrabah, *Electrical cable aging monitoring*, Q. Zhang, Ecole doctorale MATISSE, Université de Rennes 1, since November 2014

PhD : Delwar Hossain Bhuyan, *Damage localisation on offshore platforms*, L. Mevel and M. Doehler, Ecole doctorale MATISSE, Université de Rennes 1, since November 2014

PhD : Mohamed Oumri, *Diagnostic of defaults in electric networks*, Q. Zhang, Université de PARIS-SUD, 2014. Thesis happened jointly with SISYPHE project at Inria Rocquencourt

Liangquan Zhang's post-doctoral project on hybrid system monitoring, Q. Zhang, 2014-2015.

### 9.2.3. *Juries*

J. Dumoulin was part of the jury of A. Crinière at Ecole Centrale de Nantes.

L. Mevel was member of Julie Bessac's PhD defense committee at IRMAR, University of Rennes 1, October 20th, 2014.

L. Mevel was member of Fabien Menant's PhD defense committee at IFSTTAR, Nantes, Ecole Centrale de Nantes, November 4th, 2014.

Q. Zhang was member of Mariem Sahnoun's PhD defense committee at Université de Lyon 1, December 4th, 2014

## 9.3. Popularization

Qinghua Zhang has published the following work:

Q. Zhang: Encyclopedia article '*Nonlinear system identification – an overview*', in Encyclopedia of Systems and Control, Springer, 2014, (<http://www.springerreference.com/docs/html/chapterdbid/364854.html>) [57].

## IPSO Project-Team

## 7. Dissemination

### 7.1. Promoting Scientific Activities

#### 7.1.1. Scientific events organisation

##### 7.1.1.1. Member of the organizing committee

- F. Castella organised, jointly with P. Chartier, a meeting held in Saint-Malo (25 participants) in the framework of the european ANR project Lodiquas.

#### 7.1.2. Scientific events selection

##### 7.1.2.1. Member of the conference program committee

- A. Debussche was member of the scientific committee of the conference *Stochastic Partial Differential Equations and Applications - IX*, Trento, Italy, january 7-11, 2014.

#### 7.1.3. Journal

##### 7.1.3.1. Member of the editorial board

- N. Crouseilles is member of the editorial board of Hindawi review "International Journal of Analysis"  
<http://www.hindawi.com/journals/analysis/>
- M. Lemou is associate editor in the journal "Annales de la faculté des sciences de Toulouse"
- A. Debussche is editor in Chief of "Stochastic Partial Differential Equations: analysis and computations".
- A. Debussche is member of the editorial board of "Potential Analysis".
- A. Debussche is member of the editorial board of the "Journal of Evolution Equations".
- A. Debussche is member of the editorial board of "Differential and Integral Equations".
- A. Debussche is member of the editorial board of "ESAIM: Proceedings".
- A. Debussche is member of the editorial board of the collection: "Mathématiques et Applications", SMAI, Springer.
- P. Chartier is member of the editorial board of M2AN (Mathematical Modelling and Numerical Analysis).
- P. Chartier is member of the editorial board of ISRN Mathematical Analysis.

### 7.2. Teaching - Supervision - Juries

#### 7.2.1. Teaching

Master 2 lectures: N. Crouseilles, Numerical methods for kinetic equations.

Master 1 lectures: M. Lemou, Theory of distributions, University of Rennes 1 and ENS Cachan (Ker Lann), 24 hours.

Master 2: M. Lemou was the manager of Master 2 courses in "Analysis and Applications", university of Rennes 1.

E. Faou gave a series of lectures on *Stochastic methods for PDEs*, Heriot-Watt University, Edinburgh, UK, october 2014.

E. Faou gave a series of lectures on *Geometric Numerical Integration for PDE*, KIT, Karlsruhe, Germany, August 2014.

E. Faou gave a series of lectures on *Stochastic computation* and on *Geometric Numerical Integration for PDE*, Chinese Academy of Sciences, Beijing, May 2014

A. Debussche gave a mini-course on *Introduction aux EDPS* in the school *EDP avec conditions aleatoires*, Toulouse, April 22-25, 2014.

Licence 3: P. Chartier gave a lecture on ODEs at ENS Rennes, september-december, 24 hours.

### 7.2.2. Supervision

N. Crouseilles and M. Lemou co-advise H. Hivert's PhD (first year in Rennes university), ENS grant.

N. Crouseilles and M. Lemou co-advise (with R. Raghurama and M. Lemou) A. Ruhi's PhD (third year in IISc), Indian grant.

M. Lemou and F. Méhats co-advise P. Carcaud's PhD: University of Rennes 1. Thesis defense on june 2nd 2014.

P. Chartier and F. Méhats co-supervise the PhD thesis of G. Leboucher.

P. Chartier and F. Castella co-supervise the PhD thesis of J. Sauzeau.

A. Debussche and F. Méhats co-supervise the PhD thesis of M. Tusseau.

E. Faou co-supervises the PhD thesis of R. Horsin.

A. Debussche and E. Faou co-supervised the thesis of M. Kopec, ENS Rennes.

### 7.2.3. Juries

N. Crouseilles: member of the PHD jury of P. Glanc, 20 january 2014 (Strasbourg); co-advicing (with M. Mehrenberger) of Pierre Glanc PhD (Strasbourg University), Inria-Cordi grant.

N. Crouseilles: member of the PHD jury of Ch. Steiner, 11 december 2014 (Strasbourg); co-advicing (with M. Mehrenberger) of Christophe Steiner PhD (Strasbourg University), ministry grant.

N. Crouseilles: member of the PHD jury of M. Kuhn, 29 september 2014 (Strasbourg); co-advicing (with S. Genaud) of Matthieu Kuhn PhD (Strasbourg University and Inria IPSO), ANR "E2T2" grant.

N. Crouseilles: member of the Master 2 jury of P. Pereira, 26 november 2014 (Lisboa, Portugal).

F. Méhats was referee of the thesis of L. Hari (Cergy, supervised by T. Duyckaerts and C. Ferma-  
nian).

F. Méhats was referee of the thesis of X. Zhao (Singapore, supervised by W. Bao).

P. Chartier was referee of the PhD thesis of Philipp Bader, University of Valencia, june.

## **MATERIALS Team**

### **8. Dissemination**

#### **8.1. Promoting Scientific Activities**

S. Brisard has co-organized the "Stochastics and Material Mechanics" mini-symposium at the 2014 "European Mechanics of Materials Conference", organized at Gothenburg (Sweden), 27-29 August 2014.

E. Cancès

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

He was an Ordway visiting professor at the University of Minnesota for the academic year 2013-2014.

He has organized or co-organized:

- the 2nd workshop on "Mathematical and numerical analysis of electronic structure models", Berlin, April 2014,
- the workshop "Horizon math 2014", Rueil Malmaison, December 2014.

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-), *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-).

C. Le Bris is a member of

- the Cabinet of the High Commissioner for Atomic Energy,
- the scientific board of ENPC, 2008- (nominated as representative of the research scholars),
- the "Comité d'experts" for the "Fondation de Recherche pour l'Aéronautique et l'Espace",
- the "Comité d'animation du domaine thématique Mathématiques appliquées, calcul et simulation" at Inria,
- 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)s,
- the International Mathematical Union Circle,
- the "Conseil de perfectionnement du Master de Mathématiques" of the University Pierre et Marie Curie.

C. Le Bris has held a position of Visiting Professor at the University of Chicago, February-October-November 2014.

He has been a member of the Program Committee of ICM 2014 in Seoul and is 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 P. Souganidis and S. Weinberger, the conference *Prospects in Applied Mathematics*, Chicago, 19-20 October 2014.

He has been the Göran Gustafsson Lecturer in Mathematics 2014, KTH, Stockholm.

F. Legoll

- is a member of the editorial board of SIAM MMS (2012-) and of ESAIM Proc (2012-),
- is 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),
- co-organized the Workshop "Numerical methods for high-dimensional problems" at the Ecole des Ponts, April 14-18th 2014 (with Virginie Ehrlacher, Yvon Maday and Anthony Nouy),
- co-organized the Journées Inverse problems for multiscale and stochastic problems, Ecole des Ponts, October 2-3rd 2014 (with Virginie Ehrlacher, Frédéric Legoll and Karam Sab),
- co-organized the MoMaS'14 conference. CIRM, November 17-20th, 2014 (with Grégoire Allaire, Clément Cancès, Alexandre Ern and Raphaële Herbin),
- co-organizes the Journées EDP-Probab at Institut Henri Poincaré (with F. Malrieu),
- is the head of the GDR MoMaS, a French research group on the mathematical modeling and the numerical simulations for nuclear waste management problems (Main scientific themes: multiscale models for flows in porous media, molecular simulation of clays, multiphase flows),
- 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 "Numerical Methods for PDEs", Autumn 2016 (with D. A. Di Pietro, A. Ern and L. Formaggia).

G. Stoltz has

- co-organized the workshop "Computational methods for statistical mechanics - at the interface between mathematical statistics and molecular simulation" at ICMS (Edinburgh, UK), June 2-6, 2014 (with G. Pavliotis, Imperial College London, and Ch. Hartmann, FU Berlin)
- has given a public lecture on "Computer Simulations: The third way of doing science", at ICMS (Edinburgh, UK, June 2014)

## 8.2. Teaching - Supervision - Juries

The members of the team have taught the following courses:

- Licence: Probabilités (18h) et calcul scientifique (18h), Ecole Centrale Paris (S. Boyaval),
- Licence: Analyse, 36h, L3, Ecole des Ponts, France (E. Cancès, D. Gontier, F. Legoll, M. Rousset, W. Minvielle, V. Ehrlacher, S. Lemaire)
- Licence: Remise à niveau en analyse de base et algèbre linéaire, 18h, L3, ESIEE (S. Lemaire)
- Licence: Calcul Scientifique, 30h, L3, Ecole des Ponts ParisTech (G. Stoltz)
- Master: Mathématiques des modèles multiéchelles, 39h, M1, Ecole des Ponts ParisTech (F. Legoll)
- Master: Problèmes multiéchelles, 24h, M2, Université Paris 6 (F. Legoll)
- Master: Coques et Structures avancées, 24h, M1, Ecole des Ponts ParisTech (S. Brisard)
- Master: Conception des Structures, 14h, M1, Ecole des Ponts ParisTech (S. Brisard)



- Master: Images et Mécanique, 6h, M2, Ecole des Ponts ParisTech (S. Brisard),
- Master: Imagerie des Milieux Désordonnés, 9h, M2, Ecole des Ponts ParisTech (S. Brisard)
- Master: Modélisation mathématique des vagues (3h00), M1, Ecole Nationale des Ponts et Chaussées (S. Boyaval),
- Master: Processus Stochastiques, 18h. M1, ESIEA (C.-E. Bréhier),
- Master: Outils Probabilistes pour la Finance, M1, Ecole des Ponts, France (M. Rousset),
- Master: Processus de Markov et temps long, 30h, M2, Université Paris-Est (M. Rousset),
- Master: Analyse spectrale, 39h, M1, Ecole des Ponts, France (G. Stoltz, V. Ehrlacher)
- Master: Modéliser Programmer Simuler, 28 h, M1, Cours Ecole des Ponts ParisTech (T. Lelièvre).
- Master: Méthodes numériques probabilistes, 36 h, M2 Mathématiques et Applications, Université Pierre et Marie Curie (T. Lelièvre).
- Master: Analyse spectrale, 39h, M1, Ecole des Ponts, France (V. Ehrlacher, G. Stoltz)
- Master: Projets de physique, 10h, M1, Ecole des Ponts, France (V. Erhlacher, G. Stoltz)
- Master: Introduction au calcul Scientifique, 13h, M1, Ecole des Mines ParisTech, France (G. Stoltz, F. Madiot)
- Master: théorie spectrale des opérateurs de Schrödinger, 30h, M2, Université de Marne-la-Vallée, France (G. Stoltz)

The following PhD were defended by students members of the research group at the Ecole des Ponts:

- David Benoit, Méthodes numériques pour la simulation des fluides non-Newtoniens, Université Paris-Est, Université Paris Est, started October 1st, 2010, supervised by C. Le Bris and T. Lelièvre, January 22nd 2014.

The following PhDs are in progress (some of the following students conduct their research on a daily basis in other research groups, co-supervised by members of MATERIALS) :

- 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,
- William Minvielle, Méthodes numériques pour les matériaux, Université Paris-Est, Université Paris Est, started october 1st, 2012, supervised by C. Le Bris and F. Legoll,
- David Gontier, Université Paris-Est, started September 1st, 2012, supervised by E. Cancès,
- Ahmed-Amine Homman, Multiscale methods for the simulation of shock and detonation waves, Université Paris-Est, Ecole des Ponts ParisTech and CEA/DAM, started April 1st, 2013, supervised by G. Stoltz and J.-B. Maillet,
- 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,
- Gerome Faure, Multiscale methods for the simulation of shock and detonation waves, Université Paris-Est, Ecole des Ponts ParisTech and CEA/DAM, started November 1st 2014, supervised by G. Stoltz and J.-B. Maillet,
- Boris Nectoux, Métastabilité et distribution quasi-stationnaire, since November 2014, supervised by T. Lelièvre and E. Cancès,
- Houssam Alrachid, Méthodes numériques en dynamique moléculaire, Ecole des Ponts ParisTech, since September 2012, supervised by T. Lelièvre,
- Rémi Saint, Modèles multi-échelles pour le trafic, IFFSTAR and Ecole des Ponts ParisTech, since September 2013, supervised by T. Lelièvre and X. Louis.

The following HDR was defended:

- Mathias Rousset, Probability in computational physics and biology: some mathematical contributions, Université Paris-Est, 27 nov. 2014.

### 8.3. Conference participation

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

- S. Boyaval, Séminaire mathématiques appliquées à RWTH, IGPM, 2014,
- S. Boyaval, Groupe de travail mathématiques appliquées à Université de Marne la Vallée, LAMA, 2014,
- C.-E. Bréhier, SPDEs and Applications IX, Trento, Italy, January 2014,
- C.-E. Bréhier, MCQMC 2014, Leuven, Belgium, April 2014,
- C.-E. Bréhier, Journées MAS 2014, Toulouse, August 2014,
- C.-E. Bréhier, Seminar of Numerical Analysis, Geneva, Switzerland, October 2014,
- C.-E. Bréhier, Seminar of Probability and Statistics, Bordeaux, November 2014,
- S. Brisard, Séminaire LabEx MMCD – Industrie, ENPC, July 2014,
- S. Brisard, Journées annuelles NEEDS – Milieux Poreux, Paris, December 2014,
- E. Cancès, CIRM meeting on advanced numerical methods for the simulation of Bose-Einstein condensates, February 2014,
- E. Cancès, Ki-Net Workshop on mathematical and numerical methods for complex quantum systems, Chicago, March 2014,
- E. Cancès, Mathematics colloquium, University of Minnesota, April 2014,
- E. Cancès, Weakly seminar of the chemistry department, University of Minnesota, April 2014,
- E. Cancès, Weakly seminar of the mathematics department, Bonn, May 2014,
- E. Cancès, Weakly seminar of the mathematics department, Amiens, June 2014,
- E. Cancès, IPAM workshop on materials defects, Lake Arrowhead, June 2014,
- E. Cancès, Oberwolfach workshop on computational multiscale methods, June 2014,
- E. Cancès, IPAM summer school on Electronic structure theory of materials and (bio)molecules, Los Angeles, July 2014,
- E. Cancès, International congress of mathematicians (invited lecture), Seoul, August 2014,
- E. Cancès, Workshop on Solution for solvation, on the occasion of Prof. Tomasi's 80th birthday, Pisa, September 2014,
- E. Cancès, Annual meeting of the ANR Becasim, Lille, September 2014,
- E. Cancès, BIRS workshop on multiscale models for crystal defects, Banff, September 2014,
- E. Cancès, ICERM workshop on high-dimensional approximation, integration and optimization, Providence, October 2014,
- E. Cancès, Prospects in applied mathematics, Chicago, October 2014,
- E. Cancès, Workshop on mathematics integrated to industry, Sao Jose dos Campos, November 2014,
- E. Cancès, X-IHES Laurent Schwartz seminar, November 2014,
- E. Cancès, Zurich colloquium on applied and computational mathematics, November 2014,
- E. Cancès, Horizons math 2014, Rueil Malmaison, December 2014,
- V. Ehrlacher, LJLL workshop on "Sparse tensor methods", University Paris 6, France, January 2014,
- V. Ehrlacher, Seminar of the mathematics department of Chemnitz University, Chemnitz, Germany, February 2014,

- V. Ehrlicher, GdR AMORE meeting, ENS Cachan, France, March 2014,
- V. Ehrlicher, Workshop on "Numerical methods for electronic structure calculations", Berlin, Germany, April 2014,
- V. Ehrlicher, IPAM Workshop on Materials Defects: Mathematics, Computation and Engineering, Lake Arrowhead, USA, June 2014,
- V. Ehrlicher, ICOSAHOM conference, Salt Lake City, USA, June 2014,
- V. Ehrlicher, WCCM conference, Barcelona, Spain, July 2014,
- V. Ehrlicher, Banff workshop on "Multiscale models for crystal defects", Banff, Canada, September 2014,
- V. Ehrlicher, Journée Forum CEA Incertitudes, CEA DAM Bruyères-le-Chatel, France, September 2014,
- V. Ehrlicher, LJLL workshop on "Sparse tensor methods", University Paris 6, France, December 2014,
- D. Gontier, Theoretical and numerical aspects of quantum transport, Aalborg, April 2014,
- D. Gontier, Mathematical and numerical analysis of electronic structure models, April 2014,
- D. Gontier, Solid math, Trieste, June 2014,
- C. Le Bris, Workshop 'Multiscale Problems from Physics, Biology and Materials Science', Shanghai Jiao Tong University, May 28-31, 2014,
- C. Le Bris, Workshop at the Mittag-Leffler Institute, September 2014,
- C. Le Bris, Final conference of the SPP 1324, Marburg, November 2014,
- C. Le Bris, Colloquium of the Imperial College, March 2014,
- C. Le Bris, Colloquium of the Eindhoven Multiscale Institute, March 2014,
- C. Le Bris, Outreach Conference of the Series Sciences and Society, Université de Lorraine, Region Lorraine, November 2014,
- F. Legoll, Weekly seminar, Imperial College, London, February 2014,
- F. Legoll, Workshop "From atomistic to continuum models in material science", L'Aquila (Italy), April 2014,
- F. Legoll, Workshop on Computational Aspects of Multiscale Materials Modeling, Evanston (USA), May 2014,
- F. Legoll, Weekly seminar, Augsburg University, May 2014,
- F. Legoll, Reunion Conference of the Materials Defects IPAM program, Los Angeles, June 2014,
- F. Legoll, Oberwolfach workshop "Computational Multiscale Methods", June 2014,
- F. Legoll, 8th International Workshop on Parallel Matrix Algorithms and Applications, Lugano, July 2014,
- F. Legoll, AIMS conference, Madrid, July 2014,
- F. Legoll, WCCM conference, Barcelona, July 2014,
- F. Legoll, Workshop on Multiscale Models of Crystal Defects, Banff, Sept. 2014,
- F. Legoll, MMM conference, Berkeley, October 2014,
- F. Legoll, Journées annuelles NEEDS, Nantes, October 2014,
- F. Legoll, Atelier du GdR ModMat "De l'atome au code industriel", Marseille, December 2014,
- T. Lelièvre, conference MCMSKI, Chamonix, January 2014,
- T. Lelièvre, conference on applied mathematics, MPI Leipzig, January 2014,
- T. Lelièvre, séminaire K. Schulten group, Urbana Champaign, January 2014,
- T. Lelièvre, CECAM conference, Lugano, March 2014,

- T. Lelièvre, conférence MCQMC, Leuven, April 2014,
- T. Lelièvre, ICMS lecture, "Computational methods for statistical mechanics", Edinburgh, June 2014,
- T. Lelièvre, Numerical Analysis for Partial Differential Equations, Sussex, June 2014,
- T. Lelièvre, ICMS conference, "Multiscale Computational Methods in Materials Modelling Meeting", Edinburgh, June 2014,
- T. Lelièvre, Oberseminar Analysis, Munich, June 2014,
- T. Lelièvre, Inria TOSCA team seminar, July 2014,
- T. Lelièvre, AIMS conference, Madrid, July 2014,
- T. Lelièvre, ENS Cachan, Séminaire pour les nouveaux normaliens, September 2014,
- T. Lelièvre, ANR Stab conference, Lyon, September 2014,
- T. Lelièvre, CECAM conference, Mainz, October 2014,
- T. Lelièvre, Inria POEM team seminar, Paris, October 2014,
- T. Lelièvre, Statistics Colloquium, Chicago, October 2014,
- T. Lelièvre, Séminaire EDP non linéaires, Université Paris 13, December 2014,
- T. Lelièvre, Séminaire ENS Chimie, Paris, December 2014,
- W. Minvielle, Weekly seminar, Creteil University, April 2014,
- W. Minvielle, Summer school on Applied Analysis for Materials, Berlin, September 2014,
- W. Minvielle, Workshop on Multiscale Models of Crystal Defects, Banff, Sept. 2014,
- W. Minvielle, Workshop on "Stochastic and multiscale inverse problems", ENPC, October 2-3, 2014,
- W. Minvielle, MOMAS Conference, Marseille, November 2014,
- M. Rousset, MCQMC 2014, Leuven, Belgium, April 2014.
- M. Rousset, AIMS 2014, Madrid, Spain, July 2014.
- G. Stoltz, workshop "Mathematical and Numerical Analysis of Electronic Structure Models", Berlin, April 2014,
- G. Stoltz, workshop "Theoretical and Numerical Aspects of Quantum Transport", Aalborg, Denmark, April 2014,
- G. Stoltz, 10th AIMS conference on Dynamical Systems, Differential Equations and Applications, Madrid, July 2014,
- G. Stoltz, seminar of University of Lille, september 2014,
- G. Stoltz, MOMAS meeting, Marseille, November 2014,

In addition to the above, some members of the team have been invited for stays in institutions abroad:

- E. Cancès, one month at the University of Minnesota as an Ordway professor.

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

- C. Le Bris, Göran Gustafsson Lecturer in Mathematics 2014, KTH, Stockholm,
- C. Le Bris, Lectures on Numerical stochastic homogenization, 5 hours, RTG Summer School, The University of Chicago, July 2014,
- C. Le Bris, Lectures on Nonperiodic homogenization of elliptic equations, 6 hours, Berlin Mathematical School, TU Berlin, September 2014,
- C. Le Bris, Graduate course on 'Model reduction', The University of Chicago, 10 hours, Fall 2014,
- T. Lelièvre, 2 hours lecture, ICMS "Computational methods for statistical mechanics", Edinburgh, June 2014,

Members of the team have presented posters in the following events:

- D. Gontier, IPAM summer school on Electronic structure theory of materials and (bio)molecules, Los Angeles, July 2014,
- W. Minvielle, CANUM 2014, Carry le Rouet, April 2014,

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

- S. Brisard, 8th International Workshop on Parallel Matrix Algorithms and Applications, Lugano, July 2014,
- L. Chamoin, séminaire du Collège de France, December 2014,
- S. Brisard, Journées annuelles NEEDS, Nantes, October 2014,
- S. Lemaire, Summer school on Applied Analysis for Materials, Berlin, September 2014,
- F. Madiot, CANUM 2014, Carry-le-Rouet, April 2014,
- F. Madiot, Inaugural Chicago Summer School in Analysis, Chicago, July 2014,
- F. Madiot, Summer school on Applied Analysis for Materials, Berlin, September 2014,
- W. Minvielle, Inaugural Chicago Summer School in Analysis, Chicago, July 2014.

## MATHRISK Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

- R. Dumitrescu: Co-organizer of the young researchers in Mathematics Seminar of Université Paris Dauphine.
- A. Alfonsi: Co-organizer of the working group seminar of MathRisk “Méthodes stochastiques et finance”.  
<http://cermics.enpc.fr/~alfonsi/GTMSF.html>

#### 9.1.2. Administrative and scientific responsibilities

- A. Alfonsi: In charge of the Master “Finance and Application” at the Ecole des Ponts.
- 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, Scientific Coordinator for the evaluation of the Inria theme *Stochastic Approaches*, Paris, March 2014.

#### 9.1.3. Scientific events selection

- A. Alfonsi:
  - "Pathwise optimal transport bounds between a one-dimensional diffusion and its Euler scheme", Oberwolfach and Paris 13 seminar in May.
  - "Stochastic Local Intensity Loss Models with Interacting Particle Systems", Bachelier conference in June, Bruxelles.
  - "Dynamic optimal execution in a mixed-market-impact Hawkes price model", SIAM-SMAI Conference on Financial Mathematics: Advanced Modeling and Numerical Methods (June), Workshop "Stochastic analysis for risk modeling", CIRM (September) and Finance and Stochastics seminar, Imperial College.
  - Invitation Imperial College, Antoine Jacquier (19- 20 November)
- V. Bally
  - Statistics, jump processes and Malliavin calculus: recent applications, Barcelona June 2014
  - SPA - 2014, 37th conference on Stochastic Processes and their applications, Buenos Aires, July 2014.
  - invited lecture "Convergence in total variation distance using an interpolation method", Colloquium of the Mathematics department, Ritsumeikan University, Japan, December.
- R. Dumitrescu
  - Inria Junior Seminar, 13 February
  - Séminaire Jeunes Chercheurs, Université Paris Dauphine, 7 March
  - Colloque Mathématiques en Mouvement, Fondation des Sciences Mathématiques de Paris, 28 May
  - Conference Cycle Thématique en Mathématiques Financières, Paris, 20 June
  - Premier Séminaire Bachelier Paris-Londres, Paris, 25-26 September

- R. Elie
  - Colloquium Bachelier, Metabief, January 2014
  - Seminar Ecole Polytechnique, February 2014
  - Seminar Marne la Vallée, March 2014
  - Seminar ETH, Zurich, July 2014
  - Seminar University of Santa Barbara (UCSB), September 2014
  - Seminar University of Southern California, Los Angeles, September 2014
  - Seminar of Risk analysis, Stanford University, October 2014
  - Seminar on stochastics, Humboldt & TU, Berlin, December 2014
  - 2 weeks visit ETH Zurich, July 2014
  - 2 weeks visit, University of Santa Barbara (UCSB), September 2014
- B. Jourdain:
  - Bachelier seminar, IHP, Paris, 4 April 2014 : Capital distribution and portfolio in the mean-field Atlas model
  - Paris 13 university seminar, 21 May 2014: Estimation of the Wasserstein distance between the marginals of a diffusion and its Euler scheme
  - Workshop Computational methods for statistical mechanics, ICMS Edimbourg 2-6 June 2014 : Optimal scaling of the transient phase of Metropolis Hastings algorithms
  - Special session on Stochastic processes and spectral theory for partial differential equations and boundary value problems, AIMS 2014 Madrid, 7-11 July 2014 : A trajectorial interpretation of the dissipations of entropy and Fisher information for stochastic differential equations
  - Workshop Advances in stochastic analysis for risk modeling, CIRM 8-12 September 2014 : Long-time behavior of the mean-field Atlas model
  - London-Paris Bachelier workshop 25-26 september 2014 Paris : Long-time behavior of the mean-field Atlas model
  - Seminar ENSTA-CMAP, 6 October 2014 : Capital distribution and portfolio performance in the mean-field Atlas model
  - Seminar of the chair "Financial risks", 21 november 2014 : Estimation of the Wasserstein distance between the marginals of a diffusion and its Euler scheme
- D. Lambertson
  - Invited to give some lectures in the framework of the workshop in Quantitative Finance at the University of Bologna in May 2014. Title: "A short course on American options".
- A. Sulem
  - Plenary speaker, Mathematics of Systemic Risk, Pacific Institute for the Mathematical Sciences, University of British Columbia, Vancouver, Canada, July 27-31 2014, Title: "Control of interbank contagion under partial information"
  - Plenary speaker at Stochastics in Environmental and Financial Economics, Centre of Advanced Studies CAS of the Norwegian Academy of Sciences and Letters, Oslo, September 2014
  - Workshop "Stochastic analysis for risk modeling", CIRM, Lumigny, 8-12 September 2014. <http://www.cirm.univ-mrs.fr/>, Title: "Dynamic Programming Principle for Combined Optimal Stopping and Stochastic Control with f-conditional Expectation"
  - Bachelier seminar, IHP, Paris, November 7 2014. Title: " Optimal control of interbank contagion under partial information", <https://sites.google.com/site/seminairebachelierparis/>

- Seminar on stochastic methods and Finance, Inria Paris, October 6th, "Control of interbank contagion under partial information", <http://cermics.enpc.fr/~alfonsi/GTMSF.html>

### 9.1.4. Journal

#### 9.1.4.1. Member of the editorial board

- R. Elie  
Associate editor of *SIAM Journal on Financial Mathematics (SIFIN)* (since November 2014)
- D. Lamberton  
Associate editor of:
  - Mathematical Finance,
  - 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)*

#### 9.1.4.2. Reviewer

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

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

License

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

R. Dumitrescu, Applied courses (Travaux Dirigés) in Linear Algebra, 35h, L2, Université Paris Dauphine

R. Elie, Algebra (UPEMLV, L2), Probability (UPEMLV, L3)

B. Jourdain, "Probability theory and statistics", first year, ENPC, France

B. Jourdain, Introduction to probability theory", first year, Ecole Polytechnique, France  
Master

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

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

- V. Bally, "Interest Rates", 20h, Master 2 Finance, Université Marne la Vallée

- V. Bally, "Risk methods in actuarial science", 36h, Master IMIS, Université Marne la Vallée

- R. Dumitrescu, Applied courses (Travaux Dirigés) Asset pricing by absence of arbitrage opportunities (Master 2 MASEF), 35h, Université Paris Dauphine

- R. Elie : Imperfect markets modeling M2 Master MASEF (Paris-Dauphine), Stochastic calculus (UPEMLV, ENSAE); Introduction to mathematical finance (UPEMLV), Statistics for big data and applications (ENPC)



- B. Jourdain, B. Lapeyre , "Monte-Carlo methods in finance", 3rd year ENPC and Master Recherche Mathématiques et Application, University Paris- Est Marne-la-Vallée ;
- J.-F. Delmas, B.Jourdain, "Jump processes with applications to energy markets", 3rd year ENPC and Master Recherche Mathématiques et Application, University Paris- Est Marne-la-Vallée
- B. Jourdain, "Stochastic numerical methods", 3rd year, Ecole Polytechnique, France
- B. Jourdain, "projects in finance and numerical methods", 3rd year, Ecole Polytechnique, France
- 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.
- A. Sulem , Master of Mathematics, University of Luxemburg, 22 h lectures and responsible of the module "Numerical Methods in Finance".

### 9.2.2. Supervision

#### PhD

- J. Mint Moustapha : "Modelling and simulation of vehicle traffic : statistical analysis of insertion models and probabilistic simulation of a kinetic model, Université Paris Est, November 13 2014, Adviser: B. Jourdain [73].
- J. Reygner : "Longtime behaviour of particle systems : applications in physics, finance and PDEs" , Université Pierre et Marie Curie, November 24 2014, advisers: B. Jourdain and L. Zambotti [81]

#### PhD in progress :

- Anis Al Gerbi, "Discretization of stochastic differential equations and systemic risk modeling", Paris-Est Cermics, Adviser: B. Jourdain
- Pierre Blanc, "Price impact on marker orders and limit order books (from Nov. 2012), Ecole des Ponts, Adviser : A. Alfonsi
- Rui Chen, "Stochastic Control of mean field systems and applications to systemic risk, from September 2014, Université Paris-Dauphine, Adviser A. Sulem
- Roxana Dumitrescu, "Stochastic control with nonlinear expectation, stochastic targets and applications to risk optimization", from September 2012, Université Paris-Dauphine, Adviser A. Sulem and R. Elie.
- 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.
- Victor Rabiet : "On a class of jump type stochastic equations", Université Paris-Est Marne la Vallée, Advisers: V. Bally (75 %) and E. Locherbach
- Clément Rey (from Oct. 2012), " High order discretization schemes for singular diffusions", Ecole des Ponts, Advisers : A. Alfonsi and Vlad Bally.
- Benjamin Schannes, 2014, "Statistical learning and actuarial applications", Adviser: R. Elie.

### 9.2.3. Juries

- R. Elie: Report on the PhD thesis of Christoph Mainberger, "Essays on Supersolutions of BSDEs and Equilibrium Pricing in Generalized Capital Asset Pricing Models", Humboldt, Berlin
- R. Elie: Report on the PhD thesis of Xuzhe Zhao, Multi-modes switching problems via BSDEs, Université du Mans
- R. Elie: PhD thesis of Adrian Iuga, "Analyse et modélisation du processus de formation de prix à travers les échelles. Market Impact", Université Paris-Est
- R. Elie: HDR: Idris Kharroubi, Représentations et approximations probabilistes en contrôle stochastique et finance mathématique, Université Paris-Dauphine

B. Jourdain: Report on the Habilitation thesis “Contributions à l’étude du comportement en temps long de processus stochastiques”, of Fabien Panloup, Institut de Mathématiques de Toulouse, Université Paul Sabatier, December 4th 2014

B. Jourdain: Report on the Habilitation thesis "Contributions aux méthodes numériques pour le filtrage et l’optimisation stochastique" of Nadia Oudjane, University Paris 7, Defense on 22 January 2015.

A. Sulem : Committee for the recruitment of an Assistant Professor ("Maitre de conférences") in Financial Mathematics and numerical probability, Laboratoire de probabilités (LPMA), Université Paris-Diderot, May 2014.

### **9.3. Popularization**

- A. Sulem, "Nouvelles directions de recherche en Mathématiques financières, Inria Alumni, jam session on Risk, November 25th, Inria, Paris.

## Maxplus Project-Team

### 9. Dissemination

#### 9.1. Animation de la communauté scientifique/Promoting Scientific Activities

##### 9.1.1. Scientific events organisation

###### 9.1.1.1. Member of the organizing committee

- X. Allamigeon: co-organisateur avec F. Meunier (ENPC, CERMICS) de sessions invitées “Complexity of Linear Programming and Games” à la conférence “Conference on Optimization & Practices in Industry” du Programme Gaspard Monge pour l’Optimisation, Palaiseau, Octobre 2014.
- X. Allamigeon, co-organisateur des journées du Programme Gaspard Monge pour l’Optimisation, jointes avec la conférence COPI, Palaiseau, Octobre 2014.
- M. Akian, organisatrice de la session “Max-plus methods for optimal control and zero-sum games”, à la “53rd IEEE Conference on Decision and Control”, Los Angeles, USA, Dec. 2014.
- S. Gaubert, co-organisateur des journées annuelles du Programme Gaspard Monge d’Optimisation (PGMO), associées à la “Conference on Optimization & Practices in Industry” (COPI), Palaiseau, Octobre 2014, <http://www.fondation-hadamard.fr/fr/pgmo-copi-14>.
- S. Gaubert, co-organisateur du Séminaire Parisien d’Optimisation.
- S. Gaubert, co-organisateur (avec William McEneaney, San Diego) de deux sessions “Max-Plus Methods in Optimal Control and Game Theory” au “21st International Symposium on Mathematical Theory of Networks and Systems” (MTNS 2014), Groningen, Pays-Bas, Juillet 2014.

##### 9.1.2. Scientific events selection

###### 9.1.2.1. Member of the conference program committee

- S. Gaubert, membre du comité scientifique de “Conference on Optimization & Practices in Industry” (COPI), Palaiseau, Octobre 2014.
- S. Gaubert, membre du comité scientifique de SIAM CT’15 qui se tiendra à Paris en Juillet 2015.

##### 9.1.3. Journal

###### 9.1.3.1. Member of the editorial board

- S. Gaubert est membre du comité éditorial de la collection Mathématiques et Applications, SMAI et Springer.
- S. Gaubert est membre du comité éditorial du journal RAIRO Operations research.

##### 9.1.4. Other

- M. Akian :
  - Membre élue du conseil du laboratoire du CMAP.
- S. Gaubert :
  - Directeur du PGMO (Programme Gaspard Monge d’optimisation, programme de mécénat d’EDF administré par la FMJH).
  - Vice-président du comité des projets du Centre de Recherche Inria de Saclay – Île-de-France depuis Janvier 2008, et membre nommé de la commission d’évaluation de l’Inria.
  - Membre du conseil scientifique du CMAP.
  - Membre du CNU en 26ième section.

## 9.2. Enseignement - Encadrement - Jurys /Teaching - Supervision - Juries

### 9.2.1. Enseignement/Teaching

- X. Allamigeon
  - Petites classes et encadrement d’enseignements d’approfondissement de Recherche Opérationnelle en troisième année à l’École Polytechnique (programme d’approfondissement de Mathématiques Appliquées) (niveau M1).
- S. Gaubert
  - Cours “Systèmes à Événements Discrets”, option MAREVA, ENSMP.
  - Cours “Algèbre max-plus pour le contrôle optimal et les jeux” du Parcours Optimisation et Théorie des Jeux - Modélisation en Économie (OJME) du M2 Mathématiques et Applications de l’Université de Paris 6 et de l’École Polytechnique.
  - Cours magistral, petites classes et organisation des enseignements d’approfondissement de Recherche Opérationnelle en troisième année à l’École Polytechnique (programme d’approfondissement de Mathématiques Appliquées), avec polycopié [85].
- A. Hochart
  - Cours niveau L1 à l’Univ. Paris Diderot (Paris VII), 18h, dans le cadre d’un monitorat.

### 9.2.2. Encadrement/Supervision

- PhD : Pascal Benchimol, inscrit à l’École Polytechnique à partir de septembre 2011, directeur de thèse: S. Gaubert, coencadrement: X. Allamigeon, avec une participation à l’encadrement de M. Joswig (TU Berlin) dans le cadre du programme bourse Monge (bourses données pour des doctorants avec un partenaire étranger), soutenue le 2 décembre 2014.
- PhD in progress : Andrea Marchesini, inscrit à l’École Polytechnique, depuis septembre 2012, directeur de thèse: Marianne Akian, codirection: S. Gaubert, avec une participation à l’encadrement de Françoise Tisseur (U. Manchester).
- PhD in progress : Antoine Hochart, inscrit à l’École Polytechnique, depuis octobre 2013, directeur de thèse: Stéphane Gaubert, codirection: Marianne Akian.
- PhD in progress : Eric Fodjo, inscrit à l’École Polytechnique, depuis octobre 2013, directeur de thèse: Marianne Akian.
- PhD in progress : Nikolas Stott, inscrit à l’École Polytechnique, depuis octobre 2014, directeur de thèse: Stéphane Gaubert, codirection: Xavier Allamigeon et Éric Goubault.
- PhD in progress : Vianney Boeuf, inscrit à l’École Polytechnique, depuis octobre 2014, directeur de thèse: Stéphane Gaubert, codirection: Stéphane Raclot (BSPP), Marianne Akian, Xavier Allamigeon.
- M2 internship: Nikolas Stott, Mines Paristech, option MAREVA, avril–juillet 2014. Sujet : “Invariants semi-algébriques pour la vérification”. Directeurs: Stéphane Gaubert, codirection: Xavier Allamigeon et Éric Goubault.
- Enseignement d’approfondissement de l’École Polytechnique (élèves de troisième année) d’Alexandre Hannebelle, Armelle Patault, Pierre-Yves Queault et Jean-Nicolas Roussel, cosupervisé avec le Cdt Stéphane Raclot (BSPP), Régis Reboul (Préfecture de Police) et Philippe Robert (projet Inria RAP), avec le concours de Marianne Akian, Xavier Allamigeon, et Vianney Boeuf. Étude préliminaire d’évaluation de performance de l’évolution projetée de la chaîne de réponse aux appels d’urgence.

### 9.2.3. Jurys/Committees

- X. Allamigeon
  - Examinateur dans le jury de soutenance de thèse de Pascal Benchimol (Décembre 2014).
- S. Gaubert

- Membre de la commission de recrutement en informatique à l'École Polytechnique.
- Membre du jury de concours Inria CR2 de l'Inria Rhône-Alpes.
- Membre du jury de concours Inria CR2 de l'Inria Saclay – Île-de-France.
- Jury de thèse de Thomas Nowak (président), École Polytechnique, 5 Septembre 2014.
- Jury de thèse de Pablo Maldonado, UPMC, 4 Novembre 2014.
- Jury de thèse de Vinicus Mariano Goncalvez, Mina Gerais, Rapporteur, 28 Novembre 2014.
- Jury de thèse de Pascal Benchimol, École Polytechnique, 2 Décembre 2014.

### 9.3. Popularization

J.P. Quadrat : administre le site d'intérêt général <http://www.maxplus.org>, dédié à l'algèbre max-plus.

### 9.4. Participation à des colloques, séminaires/Conférences, Seminars

- M. Akian
  - Séminaire Parisien d'Optimisation, IHP, 7 avril 2014. Titre de l'exposé: "Complexité de l'itération sur les politiques pour les jeux à somme nulle".
  - Structured Matrix Days, Limoges, May 2014. Invited talk: "Log-majorization of eigenvalues of matrix polynomials and tropical scaling".
  - Conference on "New trends in optimal control" (NETCO), Tours, June 2014. Titre de l'exposé: "Policy iteration for stochastic zero-sum games".
  - 19th Conference of the International Linear Algebra Society (ILAS), August 2014, Seoul. Titre de l'exposé: "Tropical bounds for eigenvalues of matrices using Hungarian dual variables".
  - Conference on Optimization & Practices in Industry, session invitée "Complexity of Linear Programming and Games", Palaiseau, Octobre 2014. Titre de l'exposé: "Complexity of policy iteration for stochastic zero-sum games".
  - 53rd IEEE Conference on Decision and Control, Los Angeles, décembre 2014, session invitée "Max-plus methods for optimal control and zero-sum games". Titre de l'exposé: "Generic uniqueness of the bias vector of mean payoff zero-sum games".
- X. Allamigeon
  - Séminaire donné dans le cadre du Research Training Group "Methods for Discrete Structures", TU Berlin, Avril 2014. Titre de l'exposé : "Tropicalizing semialgebraic pivoting rules".
  - Séminaire SIESTE, ENS Lyon, Mai 2014. Titre de l'exposé : "Relations entre la complexité de la programmation linéaire et celle des jeux à paiement moyen".
  - 41st International Colloquium on Automata, Languages, and Programming (ICALP), Copenhagen, Juillet 2014. Titre de l'exposé : "The Tropical Shadow-Vertex Algorithm Solves Mean Payoff Games in Polynomial Time On Average".
  - Conférence "Recent Advances in Linear Optimization", Paris, Juillet 2014. Titre de l'exposé : "The Tropical Shadow-Vertex Algorithm Solves Mean Payoff Games in Polynomial Time On Average".
  - Conference on Optimization & Practices in Industry, session invitée "Complexity of Linear Programming and Games", Palaiseau, Octobre 2014. Titre de l'exposé : "The Tropical Shadow-Vertex Algorithm Solves Mean Payoff Games in Polynomial Time On Average".
- P. Benchimol

- Séminaire au laboratoire CERMICS (Ecole Nationale des Ponts et Chaussées), Champs sur Marne, France, Février 2014. Titre de l'exposé : "La méthode du simplexe tropical".
- ROADEF - 15ème congrès annuel de la Société française de recherche opérationnelle et d'aide à la décision, Bordeaux, Février 2014. Titre de l'exposé : "La méthode du simplexe tropical".
- 21st International Symposium on Mathematical Theory of Networks and Systems (MTNS 2014), Groningen, Pays-Bas, Juillet 2014, session invitée "Max-Plus Methods in Optimal Control and Game Theory". Titre de l'exposé : "Combinatorial Simplex Algorithms Can Solve Mean Payoff Games".
- 20th Conference of the International Federation of Operational Research Societies (IFORS 2014), Barcelone, Espagne, Juillet 2014. Titre de l'exposé : "Combinatorial Simplex Algorithms Can Solve Mean Payoff Games".
- Conférence "Recent Advances in Linear Optimization", Paris, Juillet 2014. Titre de l'exposé : "Long and winding central paths".
- Conference on Optimization & Practices in Industry, session invitée "Complexity of Linear Programming and Games", Palaiseau, Octobre 2014. Titre de l'exposé : "Long and winding central paths".
- S. Gaubert
  - Séminaire Université de Metz, Département de Matheématiques, Janvier 2014: "Tropical convexity applied to dynamic programming: a guided tour".
  - Séminaire ENS Ulm, Département d'informatique, Janvier 2014: "De la convexité tropicale aux jeux répétés".
  - Séminaire donné dans le cadre du Research Training Group "Methods for Discrete Structures", TU Berlin, Avril 2014. Titre de l'exposé : "Non-linear Perron-Frobenius theory applied to zero-sum games".
  - Séminaire au département de Mathématiques de Chambéry, Mai 2015: "The central path can be tortuous".
  - Séminaire au CIFASIS, Rosario, Argentina, June 2015: "The central path can be tortuous".
  - Workshop Mathematical Aspects of Game Theory and Applications (MAGTA 2014), Roscoff, June 2014. Titre de l'exposé : "Solving mean payoff games by tropical linear programming".
  - MTNS conference, Groningen, July 2013, session invitée "Max-Plus Methods in Optimal Control and Game Theory": "Bundle-based pruning in the max-plus curse of dimensionality free method".
  - ILAS conference (Satellite of ICM), Seoul, August 2014. Invited plenary talk: "From tropical linear algebra to zero-sum games".
  - Séminaire SIESTE, ENS Lyon, Décembre 2014, "Non-linear Perron-Frobenius theory applied to zero-sum games".
  - 53rd IEEE Conference on Decision and Control, Los Angeles, décembre 2014, session invitée "Max-plus methods for optimal control and zero-sum games". Titre de l'exposé: "Non-linear eigenvalue problems arising from growth maximization of positive linear dynamical systems".
- A. Hochart
  - Conférence MODE 2014 (Mathématiques de l'Optimisation et de la décision), Rennes, Mars 2014. Titre de l'exposé : "Points fixes d'opérateur de Shapley sans paiement et propriétés structurelles des jeux à paiement moyen".

- Conference on “New trends in optimal control” (NETCO), Tours, June 2014. Poster: “Fixed point of payment-free Shapley operators and structural properties of mean payoff games”.
- Workshop Mathematical Aspects of Game Theory and Applications (MAGTA 2014), Roscoff, June 2014. Poster: “Fixed point of payment-free Shapley operators and structural properties of mean payoff games”.
- MTNS conference, Groningen, July 2013, session invitée “Max-Plus Methods in Optimal Control and Game Theory”: “Fixed Point Sets of Payment-Free Shapley Operators and Structural Properties of Mean Payoff Games”.
- Conference on Optimization & Practices in Industry, Palaiseau, Octobre 2014. Titre de l’exposé : “Generic uniqueness of the bias vector of mean-payoff zero-sum games”.
- A. Marchesini
  - 19th Conference of the International Linear Algebra Society (ILAS), August 2014, Seoul. Titre de l’exposé: “Asymptotic eigenvalue problems”.
  - Séminaire des doctorants (CMAP), 12 décembre 2014. Titre de l’exposé: “Valeurs propres tropicales”.
- C. Walsh
  - Séminaire, Titre de l’exposé: “The Tropical Martin boundary”, 16 avril 2014, Séminaire de Géométrie Tropicale, Ecole Polytechnique.
  - Conférence, Titre de l’exposé: “Hilbert isometries”, 16–20 juin 2014, Géométrie et dynamiques des espaces de Finsler, CIRM, Marseille.

## MC2 Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. National structures

- Thierry Colin is elected as a member of the national committee of the French Universities (CNU). It is a national structure that has in charge a peer review of the carriers of mathematicians in France.
- Olivier Saut is the head of the GDR Metice (Mathématiques appliquées aux espèces, tissus et cellules).
- C. Poignard is elected member of the Evaluation Committee of Inria. He is also Principal Investigator of the European Lab EBAM

#### 9.1.2. Scientific events organisation

##### 9.1.2.1. General chair, Scientific chair

- Workshop on Electroporation and Biophysical Therapies. (Organisation : C. Poignard, F. Tregan).  
Website: <http://memove2014.sciencesconf.org/>

##### 9.1.2.2. Member of the conference program committee

- S. Benzekry, member of the scientific committee of the MB2 conference (bio-mathematics workshop organized in Besancon, July 7-10, 2015)

#### 9.1.3. Journal

##### 9.1.3.1. Member of the editorial board

Thierry Colin is a a member of the following scientific boards:

- 2001- : "Mathématiques et Applications", Springer-SMAI, 70 livres parus à ce jour.
- 2011- : Revue CPAA.
- 2012- : Revue Computational Surgery (Springer).
- 2012- : Comité éditorial de SIAM NEWS.
- 2014 - : Revue Mathematical Biosciences and Engineering.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

C. Poignard: 80 hours of teaching (Master course and undergraduate)

M. Bergmann: 80 hours of teaching

L. Weynans: teaching in approximation of PDEs and programming (Fortran), exchange operation with high schools, class of mathematics for math minor international engineer students

### 9.2.2. Supervision

HdR: Clair Poignard, A few advances in biological modeling and asymptotic analysis, Université de Bordeaux, September 2014

HdR: Michel Bergmann, Contributions à la simulation numérique en mécanique des fluides et à la réduction de modèle, Université de Bordeaux, June 2014

PhD: Michael Leguebe, Modélisation de l'électroperméabilisation à l'échelle cellulaire, Université de Bordeaux, September 2014, co-supervised by C. Poignard and T. Colin



PhD: Xin Jin, Une chaine d'outils numériques pour la conception aerodynamique de pales d'eoliennes, Universite de Bordeaux, September 2014, co-supervised by M. Bergmann and A. Iollo

PhD: Yoann Eulalie, Etude aérodynamique et contrôle de la traînée sur un corps de Ahmed culot, Jan 2014, co-supervised by I. Mortazavi and C.H. Bruneau.

PhD in progress: F. Cornelis is a medical doctor of the Institut Bergonie'. He is a radiologist practicing CT-Scans, MRI but also local mini-invasive treatments (interventional radiology). He spends one day a week to prepare a PhD on the modelling aspects of his work. started 2010

PhD in progress: F. Bernard, started October 2011

PhD in progress: Etienne Baratchart, Mathematical modeling of the metastatic initiation biology, started December 2012, cosupervised by S. Benzekry, T. Colin and O. Saut

PhD in progress: G. Lefebvre, Image-based modeling of resistance to targeted therapies for metastases from gastro-intestinal tumors, started October 2012, supervised by T. Colin

PhD in progress: J. Jouganous, Prediction of the spatial growth of lung metastatic nodules, started October 2012, supervised by O. Saut

PhD in progress: T. Michel, Modeling of tumor spheroids growth, started October 2013, co-supervised by T. Colin and C. Poignard

PhD in progress: O. Gallinato, Mathematical modeling of invadopodia, started October 2013, in joint supervision with T. Colin, C.Poignard from MC2 and T. Suzuki from Osaka University

PhD in progress: P. Berment, Modeling of PET-scan imaging data of tumor growth, started October 2013, co-supervised by O. Saut and T. Colin

PhD in progress: A. Peretti, Image-based mathematical modeling of kidney cancer, started 2014, co-supervised by T. Colin and O. Saut

PhD in progress: M. Deville, started 2014, in joint supervision by C. Poignard from MC2 and R. Natalini from the CNR and Sapienza University, Rome, Italy.

PhD in progress: M. Jedouaa, Effets collectifs dans l'interaction plasma/globules rouges et la nage de micro-organismes, started 2013, co-supervised by C.H. Bruneau and E. Maître (Grenoble)

### 9.2.3. Juries

Angelo Iollo was in the jury of the following PhDs

- Reviewer: Anna Cattani, Politecnico di Torino, « Multispecies Models to Describe Large Neuronal Networks », Torino, Fev 2014.
- Reviewer: Nicolas Dovetta, LadHX, Ecole Polytechnique, « Data-based models for flow control », Paris, June 2014.
- Reviewer: Ali Al Alaouwi, IMATH, Université de Toulon « Reconstruction 3D des vaisseaux sanguins », Dec 2014.
- Jury: Elisa Schenone, LJLL, UPMC, « Reduced Order Models, Forward and Inverse Problems in Cardiac Electrophysiology », Nov 2014.
- Jury: Guillaume Dechristé, IMB, Université de Bordeaux « Méthodes numériques pour la simulation d'écoulements de gaz raréfiés autour d'obstacles mobiles », Dec 2014.

### 9.3. Popularization

- C. Poignard "Des décharges électriques contre le cancer" (Journée IREM Mai 2014).
- C. Poignard, A. Silve. Différence de potentiel induite par un champ électrique sur la membrane d'une cellule biologique . La Revue 3EI, N°75, Jan 2014.
- O. Saut participates to the "excellence interviews" ( <http://www.lesentretiens.org>)
- Lisl Weynans and Michel Bergmann held a stand at the "Fete de la science".
- Lisl Weynans is "chargee de mission" from the IMB for relations with high schools and gave talks to students and teachers to introduce scientific calculus.

## MCTAO Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

Ludovic Rifford was in the scientific comitee of the “**Conference of Calculus of Variations: Geometry, Inequalities, and Design**” within the Thematic Program on Variational Problems in Physics, Economics and Geometry, Fields INstitute, Toronto.

#### 9.1.2. Journals

##### 9.1.2.1. Member of the editorial board

L. Rifford is a member of the editorial board of *Discrete and Continuous Dynamical Systems - Series A* (AIMS Journal).

##### 9.1.2.2. Reviewer

The members of the team reviewed numerous papers for international journals including: SIAM J. on Control and Optimisation, International J. of Control, IEEE Trans. Automatic Control, Acta Applicandae Mathematicae, Journal of Dynamical and Control Systems.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

B. Bonnard and L. Rifford did their teaching duty at Univ. Nice and Univ. Bourgogne (Esirem).

#### 9.2.2. Supervision

Ph: Ayadi Lazrag, *Théorie de contrôle et systèmes dynamiques* (Control theory and dynamical systems), defended September 25, 2014, University of Nice, advisor: Ludovic Rifford.

Ph: Lionel Jassionnesse, *Contrôle optimal et métriques de Clairaut-Liouville avec applications*, Université de Bourgogne, started october, 2010, advisor: Bernard Bonnard.

PhD in progress: Helen Heninger, subject: *Étude des solutions du transfert orbital avec poussée faible dans le probleme des deux ou trois corps*, Université de Nice Sophia Antipolis, started october, 2012, advisors: Bernard Bonnard and Jean-Baptiste Pomet.

PhD in progress: Jérémy Rouot, subject: *Moyennisation en contrôle et en contrôle optimal, effet des perturbations non périodiques*, Université de Nice Sophia Antipolis, started october, 2013, advisors: Bernard Bonnard and Jean-Baptiste Pomet.

PhD in progress: Zeinab Badredine, subject: *Techniques d'intégrabilité en dynamique des spins et applications au contrôle optimal*, Université de Bourgogne, started october, 2014, advisors: Bernard Bonnard and Ludovic Rifford.

MSc: Sofya Maslovskaya, *Finsler metric associated with average minimum time problems*, Ensta ParisTech, supervisors: Jean-Baptiste Pomet.

## MEPHYSTO Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. General chair, scientific chair

S. De Bièvre is the scientific coordinator of CEMPI

##### 9.1.1.2. Member of the organizing committee

D. Bonheure and A. Gloria organize a PDE and analysis seminar at Brussels (<http://homepages.ulb.ac.be/~dbonheur/seminaire-ANEDP.html>).

G. Dujardin and I. Lacroix are in charge of the PDE and numerical analysis seminar of the Paul Painlevé mathematics department in Lille (<http://math.univ-lille1.fr/d7/sanedp>).

G. Francfort (Paris 13), A. Gloria, and M. Kruzik organized a workshop "Relaxation, homogenization and dimensional reduction in hyperelasticity" at Université Paris-Nord, March 25-27, 2014 (<http://staff.utia.cas.cz/kruzik/workshop/>).

#### 9.1.2. Journal

##### 9.1.2.1. Member of the editorial board

D. Bonheure is associate editor at the Bulletin of the Belgian Mathematical Society - Simon Stevin (<http://projecteuclid.org/DPubS?service=UI&version=1.0&verb=Display&handle=euclid.bbms>), the Journal of calculus of variations (<http://www.hindawi.com/journals/jcv/>), and International Scholarly Research Notices (<http://www.hindawi.com/journals/isrn/>).

C. Chainais and A. Gloria are associate editors at the North-Western European Journal of Mathematics (<http://math.univ-lille1.fr/~nwejm/>), a new journal launched by the mathematical departments of the French region Nord-Pas-De-Calais.

##### 9.1.2.2. Reviewer

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

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

The members of the team are mainly academics. We teach at the licence and master levels at the Université Lille 1 and ULB.

#### 9.2.2. Supervision

PhD in progress: P.-L. Colin, Theoretical and numerical study of some corrosion models, since October 2012, advised by C. Chainais and I. Lacroix-Violet.

PhD in progress: M. Duerinckx, Problems in stochastic homogenization, since October 2014, advised by A. Gloria and S. Serfaty (UPMC).

PhD in progress: E. Soret, Stochastic acceleration and thermalization, since October 2011, advised by S. De Bièvre and T. Simon (Lille 1).

### 9.3. Popularization

C. Calgaro is the organizer of the action "Mathématiques itinérantes" (<http://mathematiques.univ-lille1.fr/Ouvertures/Mathematiques-itinerantes/>), which promotes mathematics among young people (conferences in highschools, "journées de la science", etc.). Members of the team regularly participate in these actions.

## MISTIS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- F. Forbes co-organized the workshop *Statistical Challenges in Neuroscience* in Warwick, UK in Sept. 2014, <http://www2.warwick.ac.uk/fac/sci/statistics/crism/workshops/neuroscience/>.
- F. Forbes co-organized the workshop on *Probabilistic graphical models and structured data on graphs* in Grenoble, in July 2014.
- Stéphane Girard co-organized the workshop "Extreme Value Theory, Spatial and Temporal Aspects", Besançon, <https://trimestres-lmb.univ-fcomte.fr/Workshop-on-Extreme-Value-Theory>
- Stéphane Girard co-organized the "Rencontres d'Astrostatistique", Grenoble, <http://astrostat2014.sciencesconf.org>
- "Extremes and Copulas", Grenoble, <http://mistis.inrialpes.fr/workshop-copulas-extremes>.
- Stéphane Girard organized the workshop "*Copulas and extremes*", Grenoble, <http://mistis.inrialpes.fr/workshop-copulas-extremes.html>.
- Marie José Martinez, Jean Baptiste Durand, Florence Forbes in collaboration with Iragael Joly (Grenoble Applied Economics Laboratory) organized the workshop "Statistics, Activities and Transportation" in Grenoble <http://mistis.inrialpes.fr/workshop-statistique-transport.html> as part of the MOTU project (2013-14).

#### 9.1.1.2. member of the organizing committee

- F. Forbes is a member of the committee for the 2nd SFRMBM (Société Française de Résonance Magnétique en Biologie et Médecine) conference in Grenoble in 2015, <http://sfrmbm2015.sciencesconf.org/>

#### 9.1.1.3. member of the conference program committee

- Stéphane Girard organized an invited session "Regression extremes" at the *7th international conference ERCIM*, Pisa, Italy, december 2014.

#### 9.1.1.4. member of the editorial board

- Florence Forbes is Associate Editor of the journal *Frontiers in ICT: Computer Image Analysis* since its creation in Sept. 2014. Computer Image Analysis is a new specialty section in the community-run openaccess journal *Frontiers in ICT*. This section is led by Specialty Chief Editors Drs Christian Barillot and Patrick Boutheymy.
- Stéphane Girard is Associate Editor of the *Statistics and Computing* journal since 2012. He is also member of the Advisory Board of the *Dependence Modelling* journal since decembre 2014.

#### 9.1.1.5. reviewer

- In 2014, Florence Forbes has been a reviewer for the *NIPS* and *ICASSP* conferences and for the *Statistics and Computing* journal.
- In 2014, Stéphane Girard has been a reviewer for *Annals of Statistics*, *Journal of Statistical Software*, *Metrika*, *Lecture Notes in Statistics*, *RevStat*, *ESAIM Probability & Statistics*, *Journal de la Société Française de Statistique*.

### 9.1.2. Societies and Networks

- F. Forbes and J.-B. Durand are part of an INRA (French National Institute for Agricultural Research) Network (AIGM, <http://carlit.toulouse.inra.fr/AIGM>) on Algorithmic issues for inference in graphical models.
- F. Forbes and S. Girard were elected as members of the bureau of the “Analyse d’images, quantification, et statistique” group in the Société Française de Statistique (SFdS).
- F. Forbes and M.-J. Martinez are members of the ERCIM working group on Mixture models.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence (IUT): Marie-José Martinez, *Statistics*, 192 ETD, L1 to L3 levels, université Grenoble 2, France.

Master: Jean-Baptiste Durand, *Statistics and probability*, 192 ETD, M1 and M2 levels, Ensimag Grenoble INP, France.

Licence (IUT) : Gildas Mazo, *Mathematics and C language*, 128h, L1 level, université Grenoble 1, France.

Master: Farida Enikeeva, *Statistics*, 96 ETD, M1 level, Ensimag Grenoble INP, France.

Master : Stéphane Girard, *Statistique Inférentielle Avancée*, 45 ETD, M1 level, Ensimag Grenoble-INP, France and *Introduction à la statistique des valeurs extrêmes*, 12 ETD, M2 level, université Grenoble 2, France.

Master : Florence Forbes, *Mixture models and EM algorithm*, 12h, M2 level, UFR IM2A, université Grenoble 1, France.

M.-J. Martinez is faculty members at Univ. Pierre Mendès France, Grenoble II.

J.-B. Durand is a faculty member at Ensimag, Grenoble INP.

F. Enikeeva was on a half-time ATER position at Ensimag, Grenoble INP.

### 9.2.2. Supervision

- PhD : Pierre Fernique, *"A statistical modeling framework for analyzing tree-indexed data"*, Montpellier 2 University. 10 Dec. 2014, Y. Guédon, J.-B. Durand.
- PhD : Gildas Mazo, *"Construction et estimation de copules en grande dimension"*, Université Grenoble 1, 17 nov 2014, S. Girard, F. Forbes.

### 9.2.3. Juries

Stéphane Girard has been involved in the following PhD committees:

- Blandine Fillon "Développement d’un outil statistique pour évaluer les charges maximales subies par l’isolation d’une cuve de méthanier au cours de sa période d’exploitation", Univ. Poitiers, December 2014.
- Tom Rohmer "Deux tests de détection de rupture dans la copule d’observations multivariées", Univ. Pau et des Pays de l’Adour, October 2014.
- Anthony Zullo "Functional analysis of high dimensional remote sensing images : application to the characterization of semi-natural objects in landscape ecology", Univ. Toulouse, July 2014.

Florence Forbes has been involved in the PhD committees of:

- Haithem Boussaid, "Efficient Inference and learning in Graphical models for multi-organ shape segmentation", Ecole Centrale Paris, January 8, 2015 (President).
- Zacharie Irace, "Modélisation statistique et segmentation d’images TEP. Application à l’hétérogénéité et au suivi de tumeurs", INP Toulouse, Oct 8, 2014 (Reviewer).
- Vincent Brault, "Estimation et sélection de modèle pour le modèle des blocs latents", Paris-Sud University, Sept 9, 2014 (Reviewer).

Florence Forbes has been reviewer for the HDR committee of:

- Stéphane Chrétien, "Contribution à l'analyse et à l'amélioration de certaines méthodes pour l'inférence statistique par vraisemblance pénalisée", from Univeristy of Besancon, in Dec. 2014.

From Sept. 2009 to Sept. 2014, F. Forbes was head of the committee in charge of examining post-doctoral candidates at Inria Grenoble Rhône-Alpes ("Comité des Emplois Scientifiques").

Florence Forbes is a member of the INRA committee (CSS MBIA) in charge of evaluating INRA researchers once a year in the MBIA dept of INRA.

Florence Forbes was a member of the committee for research scientist candidate (CR) selection at Inria Lille and at Inria Grenoble in 2014.

## MODAL Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

Alain Celisse, Julien Jacques and Guillemette Marot organized and were the scientific chairs of the workshop Kernel Methods for Big data, 31 March - 2 April 2014 <http://math.univ-lille1.fr/~jacques/KernelMethod-Lille-2014.html>

Guillemette Marot was the general chair and the scientific chair of the first session of the scientific day organized by Bilille platform about bioinformatics around integrative biology, Dec 17, 2014 <http://www.lifl.fr/~touzet/PPF/integrative.html>

Cristian Preda was member of the Scientific Committee of the 7-th international Workshop on Applied Probability (Antalya, 16-19 June, 2014).

#### 9.1.1.2. member of the organizing committee

Since 12, C. Biernacki is the president of the data mining and learning group of the French statistical association (SFdS) <http://www.sfds.asso.fr/>.

Sophie Dabo-Niang co-organized the session "Functional Statistics and Hydrology" of the international conference "Statistics and Hydrology", in november 2014, Masdar Institute, Abu-Dhabi.

Alain Celisse belongs to the "Mathematical statistics" board of The French Statistical Association (SFDS)

Julien Jacques belongs to the "Statistics and Image" board of The French Statistical Association (SFDS) and animated the probability and statistics seminar of the Laboratory of mathematics "Painlevé" of U. Lille 1.

Guillemette Marot is a member of the organizing committee of seminars from Bilille platform. More information about all seminars of the year is available on <https://wikis.univ-lille1.fr/bilille/animation>.

### 9.1.2. Journal

#### 9.1.2.1. member of the editorial board

Christophe Biernacki is an associate editor, since 10, of the journal Case Studies in Business, Industry and Government Statistics (CSBIGS) <http://www.bentley.edu/centers/csbig>.

Cristian Preda is an associate editor (since 2013) of the Journals : Methodology and Computing in Applied Probability (<http://www.springer.com/statistics/journal/11009>) and Romanian Journal of Mathematics and Computer Science (<http://www.rjm-cs.ro>)

#### 9.1.2.2. reviewer

Alain Celisse is reviewer for numerous top-level statistical journals: Annals of Statistics, Electronic journal of Statistics, Biometrika, JSPL...

Julien Jacques has reviewed papers for Statistics and Computing, Journal of Applied Statistics, Computational Statistics and Data Analysis, Communications in Statistics, European Journal of Operational Research.

Guillemette Marot has reviewed papers for Statistical Applications in Genetics and Molecular Biology, BMC Bioinformatics and Journal of Bioinformatics Research Studies

Vincent Vandewalle has reviewed papers for Pattern Recognition, Advances in Data Analysis and Classification and International journal of computer mathematics

### 9.1.3. Invited Talks

Christophe Biernacki gave two invited talks of two hours each to the “Journées d’Etudes en Statistique” in October 2014 at Frejus ([http://www.sfds.asso.fr/23-Les\\_Journees\\_dtudes\\_en\\_Statistique\\_JES](http://www.sfds.asso.fr/23-Les_Journees_dtudes_en_Statistique_JES)). Subjects were “mixture models” and “high dimensional clustering”, both from the general topic model choice and agregation.

Cristian Preda was invited as speaker in the special session on Statistics in functional and Hilbert spaces, ERCIM 2014, 7th International Conference of the ERCIM working group on Computational and Methodological Statistics, Pisa, Italy, December 2014.

The other invited talks are included into the bibliography.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Christophe Biernacki is head of the M2 Ingénierie Statistique et Numérique <http://mathematiques.univ-lille1.fr/Formation/>

Vincent Vandewalle is head of the DUT Statistique et Informatique Décisionnelle, <http://iut.univ-lille2.fr/fr/statistique-et-informatique-decisionnelle.html>

Licence: A. Celisse, Mathematics for computer science, 48h, L1, U. Lille 1, France

Licence : S. Iovleff, Analysis and numerical methods, 28h, L1, U. Lille 1, France.

Licence : S. Iovleff, Linear Algebra, 74h, L1, U. Lille 1, France

Licence : S. Iovleff, Discrete mathematics, 42h, L1, U. Lille 1, France

Licence : G. Marot, Biostatistics, 9h, L1, U. Lille 2, France

Licence: C. Preda, Probability, 40h, L1, U. Lille 1, France

Licence: C. Preda, Inferential Statistics, 50h, L1, U. Lille 1, France

Licence : V. Vandewalle, Simulation Techniques, 16h, L1 , U. Lille 2, France

Licence : V. Vandewalle, Descriptive statistics, 62h, L1 , U. Lille 2, France

Licence : V. Vandewalle, Probabilities, 80h, L1 , U. Lille 2, France

Licence: A. Celisse, Mathematics for computer science, 48h, L2, U. Lille 1, France

Licence: S. Iovleff, Mathematics, 28h, L2, U. Lille 1, France

Licence: S. Iovleff, Operational research, 28h, L2, U. Lille 1,France

Licence : V. Vandewalle, Analysis, 24h, L2, U. Lille 2, France

Licence : V. Vandewalle, Project management, 9h, L2, U. Lille 2, France

Licence : S. Iovleff, Probability and Statistics, 32h, L3, U. Lille 1, France.

Licence : J. Jacques, Inferential Statistics, 50h, L3, U. Lille 1,France

Licence : V. Vandewalle, Data analysis, 30h, L3, U. Lille 2, France

Licence : Q. Grimonprez, Probability, 4h, L3, U. Lille 1, France.

Master : C. Biernacki, Mathematical statistics, 60h, M1, U. Lille 1, France

Master : C. Biernacki, coaching project, 10h, M1, U. Lille 1, France

Master : Q. Grimonprez, Data Analysis, 36h, M1, U. Lille 1, France

Master : Q. Grimonprez, Classification, 8h, M1, U. Lille 1, France

Master: S. Iovleff, Monte Carlo method, 30h, M1, U. Lille 1, France

Master: J. Jacques, Data Analysis, 40h, M1, U. Lille 1,France



Master: J. Jacques, Statistical Modelling, 30h, M1, U. Lille 1, France  
 Master: M. Marbac-Lourdelle, Data Analysis, 48h, M1, U. Lille 1, France  
 Master: G. Marot, Biostatistics, 49h, M1, U. Lille 2, France  
 Master: G. Marot, Coaching project, 10h, M1, U. Lille 2, France  
 Master: C. Preda, Data Analysis, 40h, M1, U. Lille 1, France  
 Master: C. Thery, Linear Models, 12h, M1, U. Lille 1, France  
 Master : C. Biernacki, Data analysis, 97.5h, M2, U. Lille 1, France  
 Master : C. Biernacki, Analysis of variance and experimental design, 22.5h, M2, U. Lille 1, France  
 Master : C. Biernacki, coaching internship, 20h, M2, U. Lille 1, France  
 Master: A. Celisse, Statistical theory, 30h, M2, U. Lille 1, France  
 Master: B. Guedj, Statistical Learning and Data Mining, 8h, M2, ENSAE ParisTech, France  
 Master: J. Jacques, Time Series, 25h, M2, U. Lille 1, France.  
 Master: C. Preda, Biostatistics, 12h, M2, U. Lille 1, France  
 Master: C. Preda, Functional data analysis, 12h, M2, U. Lille 1, France  
 Doctorat: G. Marot, Data Analysis with R, 18h, U. Lille 2, France

### 9.2.2. Supervision

PhD : Loïc Yengo, Contribution to variable clustering in high dimensional linear regression models, Univ. Lille 1, May 28th, 2014, J. Jacques, C. Biernacki  
 PhD : Alexandru Amarioarei, Approximations for Multidimensional Discrete Scan Statistics, Univ. Lille 1, September 15th, 2014, C. Preda (<https://ori-nuxeo.univ-lille1.fr>)  
 PhD : Matthieu Marbac-Lourdelle, Model-based clustering for categorical and mixed data sets, Univ. Lille 1, September 23rd, 2014, C. Biernacki, V. Vandewalle  
 PhD in progress : Clément Thery, Classification in high dimension, from 2011, C. Biernacki  
 PhD in progress : Florence Longeville, Analysis of variance with nested factors for counting data - Application to control quality, from Dec 1st, 2012, J. Jacques, C. Preda  
 PhD in progress : Quentin Grimonprez, Detection of change points and peaks in high dimension, from Oct 1st, 2013, A. Celisse, G. Marot, J. Jacques  
 PhD in progress : Jérémie Kellner, Generative models and kernel methods Jeremie, from Oct 1st, 2013, A. Celisse, C. Biernacki  
 PhD in progress : Maxime Brunin, The computation time/accuracy trade-off in statistical learning, from Oct 1st, 2014, A. Celisse, C. Biernacki

### 9.2.3. Juries

Alain Celisse was a jury member for one associate professor competition.

Sophie Dabo-Niang was a referee and member of the jury of

- Mohamed Badaoui thesis's, March, 2014, Oujda, Maroc
- Tamaro Johng-Ay thesis's, April, 2014, Pau, France
- Abdourahmane Diallo thesis's, December 2014, Marseille, France

Julien Jacques was reviewer of the Ph.D. of Damien McPartland (University College Dublin) and Anastasios Bellas (University Paris 1) and a jury member for one associate professor competition.

Guillemette Marot was a jury member for two associate professor competitions.

## 9.3. Popularization

- **Fête de la Science**

**Participant:** Vincent Kubicki

Fête de la Science is a series of presentations in high schools. The objective is to meet the students and expose them to the research environment and the applications of the work done by the team.

- **XPérium Lille 1**

**Participants:** Quentin Grimonprez, Vincent Kubicki, Samuel Blanck, Maxime Brunin, Christophe Biernacki, Serge Iovleff, Julien Jacques, Vincent Vandewalle

Vulgarization of MODAL's research to sensitize high school students and members of Lille 1 university: <https://modal.lille.inria.fr/xperium/>

## **MOKAPLAN Team**

# **8. Dissemination**

## **8.1. Promoting Scientific Activities**

### **8.1.1. Scientific events organisation**

#### *8.1.1.1. Member of the organizing committee*

Guillaume Carlier was organiser of the RICAM special semester on Calculus of Variation <http://www.ricam.oeaw.ac.at/specsem/specsem2014/>. This was a two weeks event. The first week was devoted to original minicourses on special research topics that are particularly active: Numerical methods for optimal transport (J.-D. Benamou), Multi-marginal transport problems (L. de Pascale) and Gradient Flows (J.-A. Carrillo). The second week, a workshop was organized. This event gathered more than 50 participants with a majority of young researchers (more than 30).

### **8.1.2. Scientific events selection**

#### *8.1.2.1. Member of the conference program committee*

Guillaume carlier is in the scientific committee for SMAI 2015.

#### *8.1.2.2. Reviewer*

Vincent Duval has reviewed several contributions for the *Scale Space and Variational Methods* SSVM 2015 conference.

### **8.1.3. Journal**

#### *8.1.3.1. 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".

#### *8.1.3.2. Reviewer*

Vincent Duval has reviewed several papers for the following journals:

- 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)

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

In 2014, Guillaume Carlier gave an advanced course on Mean-Field Games (M2 EDP-MAD and Masef) and a master course (M1) on dynamic programming at Dauphine

Master : Guillaume Carlier, Mean-Field Games, M2 EDP-MAD , U. Paris- Dauphine.

Master : Guillaume Carlier, Dynamic Programming , M1 , U. Paris- Dauphine.

### **8.2.2. Supervision**

PhD in progress: Quentin Denoyelle, "Analyse théorique et numérique de la super-résolution sans grille", 2014, Gabriel Peyré and Vincent Duval.

PhD in progress : Roméo Hatchi , "Analyse mathématique de modèles de trafic congestionné", 2012, Guillaume Carlier.

PhD in progress : Maxime Laborde , " Dynamique des systèmes de particules en interaction, approche par flots de gradient et applications", 2013 , Guillaume Carlier

PhD in progress : Luca Nenna , "Méthodes numérique pour le transport optimal multimarge" , 2013, Jean-David Benamou et Guillaume Carlier.

PhD in progress: Quentin Denoyelle, "Analyse théorique et numérique de la super-résolution sans grille", thèse commencée le 1er octobre 2014, supervised by Gabriel Peyré (main supervisor) and Vincent Duval (co-supervisor).

### **8.2.3. Juries**

Guillaume carlier was in the Ph.D. committee of Serena Guarino (Pisa) and Miryana Grigorova (Paris 7).

## NACHOS Project-Team

# 8. Dissemination

## 8.1. Teaching - Supervision - Juries

### 8.1.1. Teaching

Stéphane Lanteri, *Computational electromagnetics*, MAM5, 20 h, Polytech Nice.

Claire Scheid, *Practical works on ordinary differential equations*, 36 h, L3, University of Nice-Sophia Antipolis.

Claire Scheid, *Lectures and practical works in Numerical Analysis*, 36 h, M1, Mathematics engineering, University of Nice-Sophia Antipolis.

Stéphane Descombes, *Analyse numérique et applications en finances*, M2, 30 h, University of Nice-Sophia Antipolis.

### 8.1.2. Supervision

PhD defended in December 2014 : Caroline Girard, *Numerical modeling of the electromagnetic susceptibility of innovative planar circuits*, October 2011, Stéphane Lanteri, Ronan Perrussel and Nathalie Raveu (Laplace Laboratory, INP/ENSEEIH/UPS, Toulouse).

PhD in progress : Fabien Peyrusse, *Numerical simulation of strong earthquakes by a discontinuous Galerkin method*, University of Nice-Sophia Antipolis, October 2010, Nathalie Glinsky and Stéphane Lanteri.

PhD in progress : Marie Bonnasse-Gahot, *Numerical simulation of frequency domain elastic and viscoelastic wave propagation using discontinuous Galerkin methods*, University of Nice-Sophia Antipolis, October 2012, Julien Diaz (MAGIQUE3D project-team, Inria Bordeaux - Sud-Ouest) and Stéphane Lanteri.

PhD in progress : Jonathan Viquerat, *Discontinuous Galerkin Time-Domain methods for nanophotonics applications*, October 2012, Stéphane Lanteri and Claire Scheid.

PhD in progress : Colin Vo Cing Tri, *Numerical modeling of non-local dispersion for plasmonic nanostructures*, November 2014, Stéphane Lanteri and Claire Scheid.

## NANO-D Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Scientific events selection

#### 7.1.1.1. Reviewer

- Leonard Jaillet was reviewer for the International Conference on Intelligent Robots and Systems (IROS).
- Leonard Jaillet was reviewer for the International Conference on Robotics and Automation (ICRA).
- Stephane Redon was reviewer for the Workshop on Virtual Reality Interaction and Physical Simulation (VRIPHYS).

### 7.1.2. Journal

#### 7.1.2.1. Reviewer

- Sergei Grudinin was reviewer for the FEBS Journal.
- Sergei Grudinin was reviewer for Proteins: Structure, Function, and Bioinformatics.
- Sergei Grudinin was reviewer for the Journal of Bioinformatics (JBI).
- Leonard Jaillet was reviewer for Transaction on Robotics (T-RO).
- Stephane Redon was reviewer for the Journal of Computational Chemistry (JCC).

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Licence : Stephane Redon, "Introduction to C++ Programming", INF585, 36h, Ecole Polytechnique, Paris, France

Licence : Stephane Redon, "Algorithms and Programming", INF431, 40h, Ecole Polytechnique, Paris, France

#### E-learning

Stephane Redon was involved in the creation of a video explaining adaptively restrained particle simulations for Inria's Mooc Lab (direction Jean-Marc Hasenfratz): <https://www.youtube.com/watch?v=RYFSdWy3DcE>.

### 7.2.2. Supervision

- PhD : Georgy Derevyanko, Algorithmes appliqués aux structures pour l'étude des interactions protéines-protéines, defended on October 15, 2014, advised by Valentin Gordeliy and Sergei Grudinin
- PhD : Ivan Gushchin, Etudes structurales des rhodopsines microbiennes et des autres protéines membranaires au moyen de la cristallographie aux rayons X et de la modélisation informatique, defended on September 5, 2014, advised by Valentin Gordeliy and Sergei Grudinin
- PhD in progress : Sémého Edoth, advised by Stephane Redon
- PhD in progress : Alexandre Hoffmann, advised by Valérie Perrier and Sergei Grudinin
- PhD in progress : Khoa Minh Nguyen, advised by Leonard Jaillet and Stephane Redon
- PhD in progress : Petr Popov, advised by Sergei Grudinin, Anatoli Juditsky and Stephane Redon

- PhD in progress : François Rouse, advised by Stephane Redon
- PhD in progress : Krishna Kant Singh, advised by Jean-François Méhaut, Benjamin Bouvier and Stephane Redon
- PhD in progress : Zlatomir Todorov, advised by Michel Vivaudou, Christophe Moreau and Sergei Grudin
- PhD in progress : Zofia Trstanova, advised by Gabriel Stoltz and Stephane Redon

### **7.2.3. Juries**

- Stephane Redon was in the PhD committee of Didier Devaurs (LAAS)
- Stephane Redon was in the PhD committee of Aude Giard (Montpellier University)

## NECS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. International activities

C. Canudas de Wit, leader of the team, is member of the Board of Governors (BoG) of the IEEE Control System Society (CSS), and president of the European Control Association EUCA. He is IEEE CSS distinguished lecturer (2013-2015).

### 9.1.2. Scientific events organisation

#### 9.1.2.1. general chair, scientific chair

C. Canudas de Wit serves as General Chair for the European Control Conference (ECC'14), Strasbourg, France, July 2014 (<http://www.ecc14.eu/>).

#### 9.1.2.2. member of the organizing committee

F. Garin was a student activities chair at the European Control Conference (ECC'14). A. Kibangou is the co-animator of the research action PCS (Pervasive Computing Systems) of the Labex Persyval-Lab (<https://persyval-lab.org/research/action/pcs>) and the organizer of seminars for the Control Department of Gipsa-Lab.

### 9.1.3. Scientific events selection

#### 9.1.3.1. member of the conference program committee

H. Fourati serves as international advisory member for the international conference on Sciences and Techniques of Automatic control and computer engineering STA'14 (<http://www.sta-tn.com/STA.htm>) and the international Conference on Systems and Control ICSC'15 (<http://lias.labo.univ-poitiers.fr/icsc/icsc2015/index.php>).

#### 9.1.3.2. reviewer

All the members of the permanent staff serve as peer-reviewers for the main conferences in 2014 and 2015 (CDC, ECC, ACC, ICRA, IROS, STA, IFAC World Congress, EUSIPCO, ICASSP, MTNS).

### 9.1.4. Journal

#### 9.1.4.1. member of the editorial board

C. Canudas de Wit serves as Associate Editor of IEEE Transactions on Control System Technology (since January 2013) and of IEEE Transactions on Control of Network Systems (since June 2013), and Editor of the Asian Journal of Control (since 2010).

#### 9.1.4.2. reviewer

All the members of the permanent staff serve as peer-reviewers for the main international journals of the community (IEEE Trans. on Automatic Control, Automatica, System and Control Letters, IEEE Trans. on Control Systems and Technology, IEEE Trans. on Signal Processing, Signal Processing (Elsevier), IET Signal Processing, IET Communications, Int. J. of Adaptive control and Signal Processing, Journal of the Franklin Institute, Control Engineering Practice, IEEE Trans. on Industrial Electronics, IEEE Trans. in Industrial Informatics, Discrete Event Dynamic Systems, European Journal of Control, IEEE Sensors Journal, IEEE Trans. on Instrumentation and Measurement, IEEE/ASME Trans. on Mechatronics, Micromachines, Sensors).

### 9.1.5. Book

H. Fourati started the process of editing a book on "Multisensor data fusion: from algorithm and architecture design to applications" in collaboration with Kris Iniewski (Redlen Technologies, Canada). The book will be published by CRC Press, Taylor & Francis by Jun. 2015.



## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: H. Fourati, Informatique Industrielle, 105h, L1, IUT 1 (GEII2), University Joseph Fourier, France;

Licence: H. Fourati, Réseaux locaux industriels, 62h, L1 et L2, IUT1 (GEII2), University Joseph Fourier, France.

Licence: H. Fourati, Automatique, 45h, L3, UFR physique, University Joseph Fourier, France

Master: F. Garin, Distributed Algorithms and Network Systems, 19.5h, M2, University Joseph Fourier, France.

Licence: A. Kibangou, Automatique, 52h, L2, IUT1(GEII1), University Joseph Fourier, France.

Licence: A.Kibangou, Mathématiques, 33h, L2, IUT1 (GEII1), University Joseph Fourier, France.

Licence: A.Kibangou, Mathématiques, 44h, L1, IUT1 (GEII1), University Joseph Fourier, France.

#### E-learning

Pedagogical resources (Victory, Pedagogice) : H. Fourati, Systèmes d'Informations Numériques, video, L1, [http://chamilo1.grenet.fr/ujf/courses/IUT1GEIIM1102/?id\\_session=0](http://chamilo1.grenet.fr/ujf/courses/IUT1GEIIM1102/?id_session=0).

### 9.2.2. Supervision

PhD: Abir Ben Khaled, Distributed real time simulation of numerical models: application to powertrain, Grenoble INP, May. 27th, 2014, co-advised by D. Simon and M. Ben Gaid (IFPEN).

PhD: Luis R. Leon Ojeda, Short-term multi-step ahead traffic forecasting, Grenoble University, Jul. 3th, 2014, Co-advised by C. Canudas de Wit and A. Kibangou.

PhD: Dominik Pisarski, Collaborative Ramp Metering Control: Application to Grenoble South Ring, Grenoble University, Sep. 16, 2014, Advised by C. Canudas de Wit.

PhD: Zarina Samigulina, Development of an intelligent complex objects management system, KazNTU University, May. 30, 2014, Advised by O. Shiryayeva and H. Fourati.

PhD in progress: Ruggero Fabbiano, Distributed source seeking control, Grenoble University, Dec. 2011 - in progress, co-advised by C. Canudas de Wit and F. Garin.

PhD in progress: Thi-Minh Dung Tran, Consensus en temps fini et ses applications en estimation distribuée pour les systèmes de transport intelligents, Grenoble University, Jan. 2012 - Mar. 2015, co-advised by A. Kibangou and C. Canudas de Wit.

PhD in progress: Giovanni de Nunzio, Control of communicating vehicles in urban environnement, Grenoble University, Sep. 2012 - Aug. 2015, co-advised by C. Canudas de Wit and P. Moulin (IFPEN).

PhD in progress: Aida Makni, Estimation multi-capteurs et commande temps-réel tolérante aux fautes d'un drone aérien, Grenoble INP, Oct. 2012 - Sep. 2015, co-advised by H. Fourati, A. Kibangou and C. Canudas de Wit.

PhD in progress: Pietro Grandinetti, Control of large-scale traffic networks, CNRS, Apr. 2014 - Mar. 2017, co-advised by C. Canudas de Wit and F. Garin.

PhD in progress: Andrés Alberto Ladino Lopez, Robust estimation and prediction in large scale traffic networks, CNRS, Oct. 2014 - Sep. 2017, co-advised by C. Canudas de Wit, A. Kibangou and H. Fourati.

PhD in progress: Simon Gerwig, Collaborative, reconfigurable and resilient control for hydro-electric power-plants, Alstom, Oct. 2014 - Sep. 2017, co-advised by C. Canudas de Wit, F. Garin and B. Sari (Alstom).

PhD in progress: Thibaud Michel, Mobile Augmented Reality Applications for Smart Cities, Persyval, Nov. 2014 - Oct. 2017, co-advised by N. Layaida, H. Fourati and P. Geneves.

### 9.2.3. Juries

H. Fourati participated in the jury of recruitment of students within the department of Electrical Engineering, IUT Grenoble, France.

### 9.3. Popularization

- The team published a flyer entitled "City Labs for Intelligent Road Transportation Systems" in the report "Impact of Control Technology", <http://ieeecss.org/sites/ieeecss.org/files/CSSIoCT2Update/IoCT2-RC-CanudasdeWit-1.pdf>.
- The team has organized the Hycon2 Show day in May 2014 with technical presentations and posters on traffic modeling, estimation and control. We got more than 40 registered peoples from different universities and compagnies, <http://www.inria.fr/en/centre/grenoble/calendar/hycon2-show-day-traffic-modeling-estimation-and-control>.
- The team has organized the 1st technical SPEEDD meeting in May 2014 with a specific visit organized to the traffic center (DIR-CE, Grenoble).

## NON-A Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

- J.-P. Richard, a member of NOC of 20th IFAC World Congress, Toulouse, France, 10-14 July 2017
- W. Perruquetti, National Projects Vice-Chair at ECC 2014, Strasbourg, France, 24-25 June 2014

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

- J.-P. Richard, Associate Editor, EUCA-IEEE ECC'15, Linz, Austria (14th European Control Conference) June 15-17, 2015, <http://www.ecc15.at>
- J.-P. Richard, Associate Editor, IEEE MED'2015, Torremolinos, Spain (23rd IEEE Mediterranean Conference on Control and Automation) June 16-19, 2015, <http://med2015.uma.es>
- J.-P. Richard, Associate Editor, IFAC TDS'2015, Ann Arbor, MI, USA (12th IFAC Workshop on Time Delay Systems), Univ. of Michigan, 28-30 juin 2015, <http://me.engin.umich.edu/dirifac/>
- J.-P. Richard, Associate Editor, EUCA-IEEE ECC'14, Strasbourg, France (13th European Control Conference) June 24-27, 2014, <http://www.ecc14.eu>
- J.-P. Barbot, IPC-Chair, 13th International Workshop on Variable Structure Systems, Nantes, France, 29 June-2 July 2014

#### 9.1.2.2. member of the conference program committee

- J.-P. Richard, IEEE ICCVE 2014, Vienna, Austria (3rd Int. Conference on Connected Vehicles & Expo), Nov. 3-7, 2014, <http://www.iccve.org/>
- J.-P. Richard, IOV 2014, Beijing, China (International Conference on Internet of Vehicles), Sept. 1-3, 2014, <http://www.bjiiov.org/>
- J.-P. Richard, SC2 2014, Beijing, China (4th Internat. Symposium on Cloud and Service Computing, co-conf. within IOV2014), Sept. 1-2, 2014, <http://www.bjiiov.org/>
- J.-P. Richard, IFIP WWIC 2014, Paris, France (12th IFIP Int. Conf. on Wired & Wireless Internet Communications), May 26-28, 2014, <http://www.lissi.fr/wwic2014/>
- J.-P. Richard, EuroHaptics'14, Versailles, France (14th EHS European conference on Haptic Systems), June 24-27, 2014, <http://www.eurohaptics.org/>
- J.-P. Richard, IEEE SaCoNeT 2014, Vilanova i la Geltrú, Spain (5th IEEE Int. Conference on SmArt Communications in NeTwork Technologies), June 18-20, 2014, <http://www.craax.upc.edu/saconet2014/>
- W. Perruquetti and D. Efimov, IFAC World Congress 2014, Cape Town, South Africa
- A. Polyakov, 13th International Workshop on Variable Structure Systems, Nantes, France

#### 9.1.2.3. reviewer

Members of the team have been involved in the evaluation process of many papers submitted to many international conferences: IEEE Conference on Decision and Control, IFAC World Congress 2014, European Control Conference, American Control Conference, ICRA, ...

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- T. Floquet, Member of Editorial Board, Mathematical Problems in Engineering (Impact Factor: 1.082)
- A. Polyakov, Member of Editorial Board, Journal of Optimization Theory and Applications (Impact Factor: 1.406)
- A. Polyakov, Associate Editor, Journal of the Franklin Institute (Impact Factor: 2.260)
- A. Polyakov, Editor, International Journal of Robust and Nonlinear Control (Impact Factor: 2.652)

#### 9.1.3.2. reviewer

The members of Non-A are reviewers for most of the journals of the control and signal communities: IEEE Transactions on Automatic Control, IEEE Transactions on Systems and Control Technologies, IEEE Transactions on Industrial Electronics, IEEE Transactions on Signal Processing, Automatica, SIAM Journal on Control and Optimization, Journal of Computation and Applied Mathematics, Systems & Control Letters, International Journal of Control, International Journal of Robust and Nonlinear Control, International Journal of Systems Science, IET Control Theory & Applications, Automation and Remote Control, Journal of Optimization Theory and Applications, Fuzzy Sets and Systems, Mathematics and Computers in Simulation, International Journal of Modeling and Simulation, Journal of the Franklin Institute, ...

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence : Lotfi Belkoura; Automatique (systèmes linéaires monovariables)(75h), Introduction à la Robotique (25h), L3; Lille 1; France
- Licence : Gang Zheng; TP Automatic control (16h), L2; EC Lille; France
- Licence : Samer Raichy; Systèmes linéaires, Asservissements, Conversion d'énergie, Echantillonnages et systèmes discrets (192h), L3; ENSEA; France
- Licence : Rosane Ushirobira; TP Automatic control (16h), L2; TP Numerical Analysis (20h), L1; EC-Lille and Polytech Lille; France
- Master : Jean-Pierre Richard; Systèmes dynamiques (30h), Métiers de la recherche (4h), Modélisation des systèmes complexes(12h), Commande et observation (12h), Séminaire episteme (24h); EC-Lille; France
- Master : Wilfrid Perruquetti; Systèmes dynamiques non linéaires et à retards (30h), M2; Lille 1 – EC-Lille, France
- Master : Lotfi Belkoura; Représentation d'état (55h), M1; Projets (10h), M1; Introduction aux distributions (10h), M2; Lille 1; France
- Master : Rosane Ushirobira; Probability and Statistics (20h); M2; EC-Lille; France
- Master : Denis Efimov; TD Automatic control (12h), M1; Analysis of Nonlinear Systems (28h), M2, Lille 1; France

### 9.2.2. Supervision

- PhD: Omran Hassan, "Commande et observation des systèmes de contrôle en réseau", 2011–2014, supervisors are J.-P. Richard, F. Lamnabhi-Lagarigue and L. Hetel
- PhD: Maalej Sonia, "Algebraic estimation for robust control", 2011–2014, supervisors are L. Belkoura and A. Kruszewski
- PhD in progress : Matteo Guerra, "Supervisory control of collective motion of mobile robots", 2012–..., supervisors are W. Perruquetti, D. Efimov and G. Zheng

- PhD in progress : Zilong Shao, "Oscillatory control of robot manipulator", 2013–..., supervisors are W. Perruquetti, D. Efimov and G. Zheng
- PhD in progress : Hafiz Ahmed, "Identification and modeling of circadian rhythms for oysters", 2013–..., supervisors are D. Efimov, R. Ushirobira and D. Tran
- PhD in progress : Essaid Edjekouane, "Cyber-physical systems", 2012–..., supervisors are J.P. Barbot, S. Riachy and M. Ghanes
- PhD in progress: Guo Qi, "Estimation dynamique des paramètres de robots manipulateur", 2012–..., supervisors are W. Perruquetti and M. Gautier
- PhD in progress: Zohra Kader, "Observation et commande des systèmes affines à commutation", 2014–..., supervisors are L. Belkoura, C. Fiter, L. Hetel
- PhD in progress: Maxime Feingesicht, "Dynamic Observers for Control of Separated Flows", 2015–..., supervisors are J.-P. Richard, F. Kerherve, A. Polyakov

### 9.2.3. *Juries*

The team members are also involved in various examination committees of Theses and Habilitations, recruitment committees, in France and abroad (more than 10).

## 9.3. Popularization

- Non-A team participated in Innorobo 2014 at Lyon, which is the only European event on robotics (<https://team.inria.fr/non-a/2014/12/15/innorobo-2014/>).
- The new platform for mobile robot demonstration in Euratechnologie Inria Lille in December 2014 is provided by using the result of ADT SLIM (<http://www.inria.fr/en/centre/lille/news/robots-superheroes-of-cooperation-and-surveillance>).
- The invited paper [84] is published in the journal ERCIM News. It presents the main goals and the results of the Inria team-project NON-A in the context of Cyber-Physical Systems.

## OPALE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

- P. Goatin was member of the Scientific Committee of “CANUM 2014 - 42e Congrès National d'Analyse Numérique”, Carry-le-Rouet (France). April 2014. <http://smai.emath.fr/canum2014/>
- P. Goatin was member of the Scientific Committee of “PED2014 - Conference on Pedestrian and Evacuation Dynamics”, Delft (The Netherlands). October 2014. <http://www.ped2014.nl/>

### 8.1.2. Scientific events selection

#### 8.1.2.1. Member of the conference program committee

- T. Nguyen is member of the Advisory Board and of the Program Committee of the 9th Intl. Conf. on Networking and Services (ICNS2014). Chamonix (Fr), April 2014. <http://www.iaria.org/conferences2014/ICNS14.html>
- T. Nguyen is member of the Program Committee of the 2nd Intl. Conf. on Smart Grids and Green IT Systems (SMARTGREENS2014). Lisbon (Portugal), May 2014. <http://www.smartgreens.org/>
- T. Nguyen is member of the Program Committee of the 12th Intl. Conf. on Cooperative Design, Visualization and Engineering (CDVE2014), Seattle (USA), September 2014. <http://www.cdve.org/cdve2014/pc.html>
- T. Nguyen is member of the Technical Program Committee and Advisory Chair on Virtualization for the 4th Intl. Conf. on Cloud Computing, GRIDs and Virtualization, Venice (Italy), May 2014. <http://www.iaria.org/conferences2014/CLOUDCOMPUTING14.html>
- T. Nguyen is member of the Program Committee of BDCloud2014, Sydney (Australia), December 2014. <http://www.swinflow.org/confs/bdcloud2014/pc.htm>

### 8.1.3. Journal

#### 8.1.3.1. Reviewer

- R. Duvigneau is reviewers for the following international journals : Comp. & Fluids, Int. J. Num. Fluids, Comp. Meth. Appl. Mech. Eng., Comp. Aided Geom. Design, Appl. Math. & Mech., Eng. Opt.
- P. Goatin is reviewers for the following international journals: Acta Applicandæ Mathematicæ ; African Journal of Mathematics and Computer Science Research; Algorithms; Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire; Applied Mathematics and Computation; Computer-aided Civil and Infrastructure Engineering; Discrete and Continuous Dynamical Systems; European Journal of Operational Research; IEEE Transactions on Automatic Control; IEEE Transactions on Intelligent Transportation Systems; International Journal of Dynamical Systems and Differential Equations; Journal of Computational Physics; Journal of Flow, Turbulence and Combustion; Mathematical Models and Methods in Applied Sciences; Mathematics of Computation; Networks and Heterogeneous Media; New Journal of Physics; Nonlinear Analysis Ser. B: Real World Applications; SIAM Journal of Mathematical Analysis; SIAM Journal of Applied Mathematics; SIAM Journal of Numerical Analysis; SIAM Journal on Scientific Computing.
- A. Habbal is reviewer for the following international journals: Applied Mathematics (AM), Scientific Research Publishing Structural and Multidisciplinary Optimization

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: Advanced Optimization, 40.5 hrs, M2, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (J.-A. Désidéri, R. Duvigneau).

Master: Conservation laws and finite volume scheme, 30 hrs, M2, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (P. Goatin).

Master: Multidisciplinary Optimization, 22.5 hrs, joint *Institut Supérieur de l'Aéronautique et de l'Espace* (ISAE Supaéro, "Complex Systems") and M2 (Mathematics), Toulouse (J.-A. Désidéri, R. Duvigneau).

Licence: Introduction to Numerical Analysis, 19.5hrs, Ecole Polytechnique Universitaire (EPU), Water Engineering, Nice Sophia Antipolis (J.-A. Désidéri).

Licence: Numerical Methods I, 76hrs, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Licence: Summer Project in Mathematical Modeling, 36 hrs, L3, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Numerical Methods for Partial Differential Equations, 66 hrs, M1, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Concurrent design in building structures, M2 Students Project, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

### 8.2.2. Supervision

PhD : Maria Laura Delle Monache, *Traffic flow modeling by conservation laws*, University of Nice Sophia Antipolis, September 2014. Supervisor: P. Goatin.

PhD : Jérémie Labroquère, *Optimization of active devices for turbulent separated flow control*, University of Nice Sophia Antipolis, November 2014. Supervisors: Régis Duvigneau and Jean-Antoine Désidéri.

PhD : Maxime Nguyen Dinh, *Qualification of numerical simulations by anisotropic mesh adaptation*, University of Nice Sophia Antipolis, March 2014. Supervisors: Jean-Antoine Désidéri and Jacques Peter (ONERA).

PhD : Enric Roca León, *Aero-mechanical simulations for rotor blade optimization of helicopter in forward motion*, University of Nice Sophia Antipolis, October 2014. Supervisors: Jean-Antoine Désidéri and Arnaud Le Pape (ONERA).

PhD : Aalae Benki, *Méthodes efficaces de capture de front de Pareto en conception mécanique multicritère. Applications industrielles.*, Jan 2014, Supervisor: A. Habbal.

PhD : Fatima Zahra Oujebbour, *Méthodes et applications industrielles en optimisation multicritère de paramètres de processus et de forme en emboutissage*, March 2014, Supervisor : A. Habbal.

PhD : Mohamed Kaicer, *Group lending : analysis of asymmetric information using game theory. Analysis design and implementation of a simulator adapted to micro-finance market*, July 2014, Supervisors: R. Aboulaich (Rabat) and A. Habbal.

PhD in progress : Matthias Mimault, *crowd motion modeling by conservation laws* , Oct. 2012. Supervisor: P. Goatin.

PhD in progress : Sébastien Bourasseau, *Méthode de raffinement de maillages non structurés basées sur le vecteur adjoint pour le calcul de coefficients aérodynamiques*, October 2010. Supervisors: J.-A. Désidéri and J. Peter (ONERA).

PhD in progress : Cédric Durantin, *Métamodélisation et optimisation pour les dispositifs nanophotoniques*, October 2014. Supervisors: J.-A. Désidéri and A. Glière (CEA LETI, Grenoble).

PhD in progress : Boutheina Yahyaoui, *Modélisation de la dynamique des cellules : Des équations de Fisher-KPP aux systèmes mécano-bio-chimiques*, January 2013. Supervisors: A. Habbal and M. Ayadi (Tunis).

PhD in progress : Maroua Mokni, *Développement, analyse et évaluation numérique d'un algorithme à multiples gradients (MGDA) pour l'optimisation multicritère*, April 2014. Supervisors: J.-A. Désidéri and M. Ayadi (Tunis).

PhD in progress : Asma Gdhami, *Isogeometric methods for hyperbolic systems*, April 2014. Supervisors: R. Duvigneau and M. Moakher (ENIT).

PhD in progress : Matthieu Sacher, *Performance Optimization of Racing Yacht Sails*, October 2014. Supervisors: O. Lemaitre (CNRS LIMSI), R. Duvigneau and F. Hauville (Ecole Navale, Brest).

### 8.2.3. *Juries*

P. Goatin was member of the selection (Inria Sophia Antipolis) and admission (national) committees for the competitive selection of young graduate scientists (CR2).

## 8.3. Popularization

P. Goatin authored a short contribution to the book "*Brèves de Maths - Mathématiques de la planète Terre*", Nouveau Monde ed., 2014.

J.-A. Désidéri is a consultant at ONERA (*The French Aerospace Lab*) and participates in the scientific activities of DSNA (Department of Numerical Simulation and Aeroacoustics, Châtillon) and DAAP (Department of Applied Aerodynamics, Meudon).



## POEMS Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Advisory and management activities

- A. S. Bonnet-Ben Dhia was the chair of the scientific council of the CNRS Institute for Engineering and Systems Sciences (INSIS) until September 2014.
- P. Joly is a member of the scientific committee of CEA-DAM.
- E. Lunéville is the Head of UMA (Unité de Mathématiques Appliquées) at ENSTA ParisTech.

#### 9.1.2. Scientific events organisation and selection

- M. Bonnet was a member of the program committee of the 5th International Workshop on New Computational Methods for Inverse Problems(ENS Cachan, May 2014).
- E. Bécache, A. S. Bonnet-Ben Dhia, M. Bonnet, C. Hazard, P. Joly and E. Lunéville are members of the scientific committee for the 12th international conference on mathematical and numerical aspects of wave propagation, which will be held in Karlsruhe in July 2015.
- A. S. Bonnet-Ben Dhia is a member of the organizing committee of the workshop Waveguides: Asymptotic Methods and Numerical Analysis which will be held in Napoli in May 2015.

#### 9.1.3. Journal

- A. S. Bonnet-Ben Dhia is associate editor of SINUM (SIAM Journal of Numerical Analysis).
- M. Bonnet is associate editor of Engineering Analyses with Boundary Elements
- M. Bonnet is in the editorial board of Inverse Problems.
- M. Bonnet is in the editorial board of Computational Mechanics.
- M. Bonnet is in the editorial board of Journal of Optimization Theory and Application.
- P. Ciarlet is an editor of DEA (Differential Equations and Applications)
- P. Ciarlet is an editor of CAMWA (Computers & Mathematics with Applications).
- P. Ciarlet is an editor of ESAIM:M2AN (Mathematical Modeling and Numerical Analysis).
- P. Joly is an editor of ESAIM:M2AN (Mathematical Modeling and Numerical Analysis).
- P. Joly is a member of the editorial board of AAMM (Advances in Applied Mathematics and Mechanics).
- P. Joly is a member of the Book Series Scientific Computing of Springer Verlag.
- The team members regularly review papers for many international journals.

### 9.2. Teaching - Supervision

#### 9.2.1. Teaching

Eliane Bécache

- *Méthode des éléments finis*, ENSTA ParisTech (2nd year)
- *Compléments sur la méthode des éléments finis*, ENSTA ParisTech, (2nd year)

Marc Bonnet

- *Problèmes inverses*, Master DSMSC (Centrale Paris)
- *Méthodes intégrales*, Master TACS (ENS Cachan)

- *Equations intégrales et multipôles rapides*, Ecole doctorale MODES (Univ. Paris Est, Marne la Vallée)
- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA Paris-Tech (1st year)

Anne-Sophie Bonnet-Ben Dhia

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA Paris-Tech (1st year).
- *Propagation dans les guides d'ondes*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)
- *Etude mathématique de quelques problèmes de transmission avec coefficients changeant de signe*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)
- *Théorie spectrale des opérateurs autoadjoints et applications aux guides optiques*, ENSTA ParisTech (2nd year).
- *Propagation d'ondes*, Ecole Centrale de Paris (3rd year) and master DSMSC.

Laurent Bourgeois

- *Outils élémentaires pour l'analyse des équations aux dérivées partielles*, ENSTA Paris-Tech (1st year)
- *Inverse problems: mathematical analysis and numerical algorithms*, (Master AN& EDP, Paris 6 and Ecole Polytechnique)

Stéphanie Chaillat

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Fonctions d'une variable complexe*, ENSTA ParisTech (2nd year)

Colin Chambeyron

- *Analyse réelle: optimisation libre et sous contraintes*, Dauphine University (1st year)
- *Outils mathématiques*, Dauphine University (1st year)
- *Algèbre linéaire*, Dauphine University (2nd year)

Patrick Ciarlet

- *Compléments sur la méthode des éléments finis*, ENSTA ParisTech (2nd year)
- *Theory and algorithms for distributed computing*, ENSTA ParisTech (3rd year), and Master "Modeling and Simulation" (M2)
- *Maxwell's equations and their discretization*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)
- *Etude mathématique de quelques problèmes de transmission avec coefficients changeant de signe*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Gary Cohen

- Gary Cohen is writing a book entitled "High Order Finite Element Methods for Wave Equations" in collaboration with Sébastien Pernet (DTIM-ONERA). This book addresses construction and analysis of a large class of finite element methods and discontinuous Galerkin methods for wave equations and should be published by Springer-Verlag in Sept. 2015.

Sonia Fliss

- *Méthode des éléments finis*, ENSTA ParisTech (2nd year)
- *Programmation scientifique et simulation numérique*, ENSTA ParisTech (2nd year)

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA ParisTech (1st year).
- *Propagation des ondes dans les milieux périodiques*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Christophe Hazard

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Théorie spectrale des opérateurs autoadjoints et applications aux guides optiques*, ENSTA ParisTech (2nd year)

Patrick Joly

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Propagation des ondes dans les milieux périodiques*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Nicolas Kielbasiewicz

- *Programmation scientifique et simulation numérique*, ENSTA ParisTech (2nd year)
- *Parallélisme et calcul réparti*, ENSTA ParisTech (Master 2)

Marc Lenoir

- *Fonctions d'une variable complexe*, ENSTA ParisTech (2nd year)
- *Equations intégrales*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)
- *Méthodes asymptotiques hautes fréquences pour les équations d'ondes - course notes*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Eric Lunéville

- *Introduction au Calcul Scientifique*, ENSTA ParisTech (2nd year).
- *SIMNUM : Simulation numérique*, ENSTA ParisTech (2nd year).
- *Propagation dans les guides d'ondes*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Jean-François Mercier

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Fonctions d'une variable complexe*, ENSTA ParisTech, ENSTA ParisTech (2nd year)
- *Théorie spectrale des opérateurs autoadjoints et application aux guides optiques*, ENSTA ParisTech (2nd year)

### 9.2.2. Supervision

PhD : Aliénor Burel, " Contributions à la simulation numérique en élastodynamique : découplage des ondes P et S, modèles asymptotiques pour la traversée de couches minces", July 2014, Patrick Joly and Marc Bonnet

PhD : Maxence Cassier, "Etude de deux problèmes de propagation d'ondes transitoires : 1) Focalisation spatio-temporelle en acoustique ; 2) Transmission entre un diélectrique et un métamatériau", Juin 2014, Christophe Hazard and Patrick Joly

PhD : Audrey Vigneron, "Formulations intégrales pour la simulation du contrôle non destructif par courants de Foucault", January 2015, Marc Bonnet

PhD in progress : Zouhair Adnani, "Modélisation numérique tridimensionnelle des effets de site en interaction sol-structure par une méthode adaptée aux problèmes sismiques de très grande taille", October 2014, Marc Bonnet and Stéphanie Chaillat

PhD in progress : Marc Bakry, "Estimateurs a posteriori pour la résolution des problèmes de diffraction par équations intégrales", October 2013, Marc Lenoir and Sébastien Pernet.

PhD in progress : Geoffrey Beck, "Modélisation de la propagation d'ondes électromagnétiques dans des câbles co-axiaux", October 2012, Patrick Joly

PhD in progress : Antoine Bensalah, "Une approche nouvelle de la modélisation mathématique et numérique en aéroacoustique par les équations de Goldstein et applications en aéronautique", October 2014, Patrick Joly and Jean-François Mercier

PhD in progress : Camille Carvalho, "Étude théorique et numérique de guides d'ondes plasmoniques", October 2012, Anne-Sophie Bonnet-Ben Dhia and Patrick Ciarlet

PhD in progress : Matthieu Chamaillard, "Conditions aux limites effectives pour des revêtements minces périodiques", October 2011, Patrick Joly and Housseem Haddar

PhD in progress : Rémi Cornaggia, "Asymptotique petit-défaut de fonctions-coût et son application en identification: justifications théorique et expérimentale, extensions", October 2012, Marc Bonnet and Bojan Guzina

PhD in progress : Luca Desiderio, "Efficient visco-elastic wave propagation in 3D for high contrast media", October 2013, Stéphanie Chaillat and Patrick Ciarlet

PhD in progress : Léandre Giret, "Development of a domain decomposition method on non-conforming meshes: application to the modeling of a Reactivity-Initiated Accident (RIA) in a Pressurized Water Reactor (PWR)", October 2014, Patrick Ciarlet

PhD in progress : Matthieu Lecouvez, "Méthodes de décomposition de domaine optimisées pour la propagation d'ondes en régime harmonique", March 2012, Patrick Joly

PhD in progress : Simon Marmorat, "Etude d'un modèle asymptotique et de son couplage avec une approche par éléments finis pour simuler la propagation d'ondes ultrasonores dans un milieu complexe perturbé par de petites inclusions", Mars 2012, Patrick Joly

PhD in progress : Laure Pesudo, "Modélisation de la réponse ultrasonore de défauts de type fissure par méthode BEM et couplage à un modèle de propagation - Application à la simulation des contrôle non destructifs", October 2014, Marc Bonnet and Stéphanie Chaillat

PhD in progress : Arnaud Recocquilly, "Identification de défauts dans un guide d'ondes en régime temporel", October 2014, Laurent Bourgeois

PhD in progress : Antoine Tonnoir, "Simulation numérique de la diffraction d'ondes ultrasonores par un défaut localisé dans une plaque élastique anisotrope", October 2011, Anne-Sophie Bonnet-Ben Dhia and Sonia Fliss

PhD in progress : Elizaveta Vasilevskaia, "Modes localisés dans les guides d'onde quantiques", November 2012, Patrick Joly

PhD in progress : Valentin Vinales, "Analyse asymptotique des équations de Maxwell en présence de métamatériaux", October 2012, Sonia Fliss and Patrick Joly

PhD in progress : Emmanuel Zerbib, "Éléments finis spectraux sur maillages décalés en électromagnétisme pour la simulation de grands modèles", October 2014, Gary Cohen

### 9.3. Popularization

- Publication in the journal *Interstices of Inria: Le piano rêvé des mathématiciens* Juliette Chabassier, Antoine Chaigne, Marc Duruflé and Patrick Joly.
- Conference of Patrick Joly to high school teachers: *Modélisation d'instruments de musique par ordinateur*, Journées ISN pour l'académie de Versailles, Inria Rocquencourt, April 2014.
- Conference of Patrick Joly to high school students during the TFJM (Tournoi Français des Jeunes Mathématiciens et Mathématiciennes) at ENSTA, June 2014.

## QUANTIC Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Scientific events selection

#### 7.1.1.1. member of the conference program committee

M. Mirrahimi was a member of the international conference program committee for the PRACQSYS (The Principles and Applications of Control in Quantum Systems) 2014, held at Isaac Newton Institute, Cambridge University, UK.

### 7.1.2. Journal

#### 7.1.2.1. member of the editorial board

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

#### 7.1.2.2. reviewer

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

M. Mirrahimi has been a reviewer for several automatic control and physics journals or conferences.

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

M. Mirrahimi and P. Rouchon gave an introductory 3-hours mini-course on quantum systems at MTNS (Mathematical Theory of Networks and Systems) 2014, Groningen.

M. Mirrahimi gave a 8-hours mini-course on the "Stability and stabilization of partial differential equations" at the Institute for Research in Fundamental Sciences, Tehran, Iran.

### 7.2.2. Supervision

A. Sarlette is co-supervising 3 PhD students with his former institution UGent. One of them is working on (quantum) network algorithms accelerations and intends to address other quantum control questions in parallel, possibly joining Inria next year.

PhD in progress: Joachim Cohen, "Towards fault-tolerant quantum computation adapted to circuit QED experiments", Sept 2013-August 2016, Advisor: Mazyar Mirrahimi.

Visiting PhD student: Ananda Roy, "Towards a robust source of Schrödinger cat states", Feb 2014-July 2014, Advisor: Mazyar Mirrahimi.

## 7.3. Popularization

The high profile publications in Nature and Science are popularizing the new field of quantum engineering.

A. Sarlette has been giving talks on "reservoir engineering" to the (non-quantum) control community during several seminars.

M. Mirrahimi was an invited plenary speaker at CANUM (Congrès National d'Analyse Numérique) 2014, where he gave a public presentation on quantum feedback and quantum reservoir engineering.

## REALOPT Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

Our team's organized the annual meeting of the French Operations Research Society (ROADEF) in February 2014. <http://roadef2014.sciencesconf.org> Roadef 2014 gathered more than 400 attendees, with plenary talks by Pierre Bonami (IBM ILOG CPLEX), Michel Balinski (Ecole polytechnique - CNRS), Andrea Lodi (University of Bologna), Pascal Van Hentenryck (NICTA), and Jean-Francois Cordeau (HEC Montréal); and 12 clusters having each organized a one-hour tutorial.

#### 9.1.1.2. Chair of conference program committee

Arnaud Pêcher is co-chair of the programm committee of the international conference BGW2014.

#### 9.1.1.3. Member of the conference program committee

- Arnaud Pêcher is member of the program committee of ICGT2014
- Arnaud Pêcher is member of the program committee of Journées Graphes et Algorithmes 2014
- Pierre Pesneau is member of the program committee of INOC 2015, International Network Optimization Conference, May 18-20, 2015

### 9.1.2. Journal

#### 9.1.2.1. Member of the editorial board

- O. Beaumont is editor for IEEE Transactions on Parallel and Distributed Systems (TPDS)
- F. Vanderbeck is Associate Editor for the EURO Journal on Computational Optimization

#### 9.1.2.2. Reviewer

The team members are regular referees for the best journals of the field.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Arnaud Pêcher, Programmation objet et impérative, 200h, DUT, Université de Bordeaux, France

Licence : Arnaud Pêcher, Théorie des graphes, 16h, DUT, Université de Bordeaux, France

Licence : Pierre Pesneau, Système et Programmation, 59h, L2, Université de Bordeaux, France

Master : Olivier Beaumont, Optimisation en Cloud Computing & Big Data, 15h Cours, M2, Université de Bordeaux, France

Master : Olivier Beaumont, Fouille de données, 3h TD, M2, Institut Polytechnique de Bordeaux, France

Master : Olivier Beaumont, Fonctionnement des moteurs de recherche, 4h TD, M1, Institut Polytechnique de Bordeaux, France

Master : François Clautiaux, Programmation linéaire 1, 15h TD, M1, Université Bordeaux 1, France

Master : François Clautiaux, Introduction à l'optimisation en nombres entiers, 30h TD, M1, Université Bordeaux 1, France

Master : François Clautiaux, Gestion des opérations et planification de production, 60h TD, M2, Université Bordeaux 1, France

Master : François Clautiaux, Combinatoire et routage, 30h TD, M2, Institut Polytechnique de Bordeaux, France

Master : Boris Detienne, Optimisation stochastique, 60h cours/TD, M2, Université de Bordeaux, France

Master : Boris Detienne, Recherche opérationnelle, 16h TD, M1, Institut Polytechnique de Bordeaux, France

Master : Lionel Eyraud-Dubois, Optimisation en Cloud Computing & Big Data, 15h Cours, M2, Université de Bordeaux, France

Master : Pierre Pesneau, Programmation Linéaire 2, 14h, M1, Université de Bordeaux, France

Master : Pierre Pesneau, Modèles de flot, 22h Cours, M1, Université de Bordeaux, France

Master : Pierre Pesneau, Algorithmique et Programmation Objet (C++), 30h Cours Intégré, M1, Université de Bordeaux, France

Master : Ruslan Sadykov, Introduction à la Programmation par Contraintes, 30 HETD, M2, Université de Bordeaux, France

Master : Ruslan Sadykov, Modélisation, Optimisation, Complexité et Algorithmes, 50 HETD, M2, CNAM Aquitaine, France

Master : François Vanderbeck, Recherche opérationnelle, 15h cours, M1, Institut Polytechnique de Bordeaux, France

Master : François Vanderbeck, Programmation entière, 50h cours/TD, M2, Université de Bordeaux, France

### 9.2.2. Supervision

PhD : Nastaran Rahmani, Planning and routing via decomposition approaches [11], Université de Bordeaux, June 26th 2014, François Vanderbeck, Ruslan Sadykov, Boris Detienne

PhD : Sagnik Sen, A contribution to the theory of graph homomorphisms and colorings, Université de Bordeaux, February 3rd 2014, Arnaud Pêcher, E. Sopena, A. Raspaud

PhD in progress : Martin Bué, Gestion du revenu dans le cadre du voyage professionnel, 01/09/2012, François Clautiaux, Luce Brotcorne

PhD in progress : Matthieu Gérard, Résolution de problèmes d'optimisation dans le commerce de détail, 01/09/2012, François Clautiaux

PhD in progress : Jérémy Guillot, Optimisation de problèmes de partitionnement, 01/09/2014, François Clautiaux, Pierre Pesneau

PhD in progress : Suraj Kumar (Runtime project team), 01/11/2013, Emmanuel Agullo, Lionel Eyraud-Dubois, Samuel Thibault, Olivier Beaumont

PhD in progress : Thomas Lambert, 01/09/2014, Lionel Eyraud-Dubois, Abdou Guermouche, Olivier Beaumont

PhD in progress : Philippe Moustrou, Le codage aléatoire de réseau, 01/09/2014, Arnaud Pêcher, Pr. Bachoc

### 9.2.3. Juries

- Olivier Beaumont : Inria CR2 recruitment, Inria Bordeaux-Sud Ouest
- Olivier Beaumont : Inria CR1 recruitment, national
- Olivier Beaumont : Evaluation (rapporteur) of the PhD thesis of Dounia Zaidouni (ENS Lyon)
- François Clautiaux : Evaluation (examinateur) of the Habilitation à Diriger des Recherches d'Alice Yalaoui (Université de Technologie de Troyes)

- François Clautiaux : Evaluation (rapporteur) of the PhD thesis of Michael Gabay (Université de Grenoble)
- François Clautiaux : Evaluation (examinateur) of the PhD thesis of Mohand Lounes Bentaha (Ecole Nationale des Mines de Saint-Etienne)
- François Clautiaux : Evaluation (examinateur) of the PhD thesis of Nastaran Rahmani (Université de Bordeaux)
- François Clautiaux : Evaluation (examinateur) of the PhD thesis of Rodrigue Tchapnga (Université de Bordeaux)
- Arnaud Pêcher : Evaluation (rapporteur) of the PhD thesis of Djelloul Mameri (Université de Clermont-Ferrand 2)
- Arnaud Pêcher : Evaluation (examinateur) of the PhD thesis of Clément Charpentier (Université de Bordeaux)
- François Vanderbeck : Evaluation (rapporteur) of the PhD thesis of Sofia Zaourar (U Grenoble, 11/2014).
- François Vanderbeck : Evaluation (rapporteur) of the PhD thesis of Stephen J Maher (University of New South Wales, Sydney, Australia, 01/2014).



## **REGULARITY Project-Team**

### **9. Dissemination**

#### **9.1. Promoting Scientific Activities**

##### **9.1.1. Scientific events organisation**

###### *9.1.1.1. General chair, scientific chair*

Regularity has organized and hosted a conference in honour of Pr. K. Falconer's 60th birthday in May 2014.

##### **9.1.2. Journal**

###### *9.1.2.1. Member of the editorial board*

Jacques Lévy Véhel is associate editor of the journal *Fractals*.

###### *9.1.2.2. Reviewer*

Xiequan Fan is a reviewer for Mathematical Reviews (AMS). Jacques Lévy Véhel reviewed papers for many journals and conferences.

#### **9.2. Teaching - Supervision - Juries**

##### **9.2.1. Teaching**

Master: Jacques Lévy Véhel, Wavelets and Fractals, M2, 8h, Ecole Centrale Nantes.

Master: Jacques Lévy Véhel, Wavelets and Fractals, M2, 18h, ESIEA.

##### **9.2.2. Supervision**

PhD : Benjamin Arras, Around some selfsimilar processes with stationary increments, Ecole Centrale Paris, December 2014, advisor : J. Lévy Véhel

PhD : Alexandre Richard, Local regularity of some fractional Brownian fields, Ecole Centrale Paris, September 2014, advisor : E. Merzbach

##### **9.2.3. Juries**

J. Lévy Véhel has been a member of the juries for recruiting two AER, one AS and one AF at Inria Saclay.

#### **9.3. Institutional commitment**

J. Lévy Véhel is a member of the Bureau du Comité des Projets, of the Commission Scientifique, and of the Comité de Centre at Inria Saclay. He is the animator of the Commission de Suivi Doctoral also at Inria Saclay. Finally, he was the head of the jury for the 2014 CR2 positions contest for Inria Saclay.

## SELECT Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

Gilles Celeux is one of the co-organizers of the international Working Group on Model-Based Clustering. This year this workshop took place in Dublin (Ireland).

Jean-Michel Poggi was Guest Editor (with R. Kenett, A. Pasanisi) of the special issue on Special Issue on Graphical causality models: Trees, Bayesian Networks and Big Data, in *Quality Technology and Quantitative Management (QTQM)*.

Jean-Michel Poggi was Editor (with A. Antoniadis, X. Brossat) of a *Lecture Notes in Statistics: Modeling and Stochastic Learning for Forecasting in High Dimension*, Springer.

Jean-Michel Poggi was Organizer and President of the Scientific committee (with R. Kenett, A. Pasanisi) of the ENBIS-SFdS 2014 Spring Meeting on Graphical causality models: Trees, Bayesian Networks and Big Data, IHP, Paris, 9-11 April 2014.

Jean-Michel Poggi was Organizer of the meeting *Horizons de la Statistique*, Paris, IHP, 21 January 2014.

Jean-Michel Poggi was organizer of the ERCIM 2014 Session *ElectricityLoad Forecasting*, Pisa, 6-8 December 2014.

Yves Rozenholc was the scientific coordinator and organizer of the third edition of the school “*Tumoral Genome Analysis*”, 12-19 Mai 2014.

### 9.1.2. Journal

#### 9.1.2.1. Member of the editorial board

Gilles Celeux is Editor-in-Chief of *Journal de la SFdS*. He is Associate Editor of *Statistics and Computing*, *CSBIGS*.

Pascal Massart is Associate Editor of *Annals of Statistics*, *Confluentes Mathematici*, and *Foundations and Trends in Machine Learning*.

Jean-Michel Poggi is Associate Editor of *Journal of Statistical Software*, *Journal de la SFdS* and *CSBIGS*.

#### 9.1.2.2. Reviewer

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

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

All the SELECT members are teaching in various courses of different universities and in particular in the Master 2 “*Modélisation stochastique et statistique*” of University Paris-Sud.

### **9.2.2. Supervision**

PhD: Vincent Brault, Estimation et sélection de modèle pour le modèle des blocs latents, Université Paris-Sud, September 2014, Gilles Celeux and Christine Keribin

PhD: Rémi Fouchereau, Modélisation probabiliste des courbes S-N, Université Paris-Sud, March 2014, Gilles Celeux and Patrick Pamphile

PhD: Lucie Montuelle, Inégalités d'oracle et mélanges, Université Paris-Sud, December 2014, Erwan Le Pennec

PhD: Clément Levrard, Quantification vectorielle en grande dimension : vitesses de convergence et sélection de variables, Université Paris-Sud, September 2014, Pascal Massart and Gérard Biau (UPMC)

PhD in progress: Émilie Devivjer, 2012, Pascal Massart and Jean-Michel Poggi

PhD in progress: Jana Kalawoun, 2012, Gilles Celeux et Patrick Pamphile

PhD in progress: Nelo Molter Magalães, 2011, Pascal Massart

PhD in progress: Solenne Thivin, 2012, Erwan Le Pennec

PhD in progress: Valérie Robert, 2013, Gilles Celeux et Christine Keribin

PhD in progress: Yann Vasseur, 2013, Gilles Celeux et Marie-Laure Martin-Magniette (URGV)

PhD in progress: Neska El Haouij, 2014, Jean-Michel Poggi and Meriem Jaïdane, Raja Ghozi (ENIT Tunisie) and Sylvie Sevestre-Ghalila (CEA LinkLab), Thesis ENITUPS

PhD in progress: Vincent Thouvenot, 2012, Jean-Michel Poggi and Anestis Antoniadis (Univ. Joseph Fourier, Grenoble)

### **9.3. Popularization**

Gilles Celeux and Valérie Robert have written an article on statistics in basket-ball to appear in the Journal of the SFdS, special issue 'sport and statistics'.

## SEQUEL Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- P. Chainais has co-organized with Z. Harchaoui the GDR ISIS 1 day workshop on "Learning adapted representations for signal and image processing" in Paris on Feb. 4th, 2014, see <http://www.gdr-isis.fr/index.php?page=reunion&idreunion=234>.
- P. Chainais has led the application of Lille to the organization of the french national Signal Processing conference (GRETSI 2017) : Marrakech won, but we had a good feedback in view of 2019.

#### 9.1.1.2. member of the conference program committee

- AAAI Conference on Artificial Intelligence (AAAI 2014)
- IEEE Approximate Dynamic Programming and Reinforcement Learning (ADPRL 2014)
- French Conference on Planning, Decision-making, and Learning in Control Systems (JFPDA 2014)
- Conférence Apprentissage Automatique (CAP)
- Extraction et Gestion des Connaissances (EGC)

#### 9.1.1.3. reviewer

- International Conference on Pattern Recognition Applications and Methods (ICPRAM 2014)
- Algorithmic Learning Theory (ALT 2014)
- AAAI Conference on Artificial Intelligence (AAAI 2014)
- Conference on Learning Theory (COLT 2014)
- European Workshop on Reinforcement Learning (EWRL 2014)
- Annual Conference on Neural Information Processing Systems (NIPS 2014)
- International Conference on Artificial Intelligence and Statistics (AISTATS 2014)
- European Conference on Machine Learning (ECML 2014)
- International Conference on Machine Learning (ICML 2014)
- International Conference on Uncertainty in Artificial Intelligence (UAI 2014)
- IEEE Congress on Evolutionary Computation (CEC)
- French Conference on Planning, Decision-making, and Learning in Control Systems (JFPDA 2014)
- IEEE FUSION 2014
- IEEE Approximate Dynamic Programming and Reinforcement Learning (ADPRL 2014)

### 9.1.2. Journal

#### 9.1.2.1. reviewer

- IEEE Transactions on Image Processing
- Journal of Statistical Physics
- Digital Signal Processing
- IEEE Transactions on Information Theory
- IEEE Statistical Signal Processing SSP'2013

- European Signal Processing Conference EUSIPCO 2013
- 10th International Conference on Sampling Theory and Applications (SampTA 2013)
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2013 & 2014)
- Annual Conference on Neural Information Processing Systems (NIPS 2013)
- International Conference on Machine Learning (ICML 2013)
- European Conference on Machine Learning (ECML 2013)
- Uncertainty in Artificial Intelligence (UAI 2013)
- Machine Learning Journal (MLJ)
- Journal of Machine Learning Research (JMLR)
- Journal of Artificial Intelligence Research (JAIR)
- IEEE Transactions on Automatic Control (TAC)
- IEEE Transactions of Signal Processing
- Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)
- Mathematics of Operations Research (MOR)

### 9.1.3. Invited Talks

- Alessandro Lazaric gave an invited talk on “Approximate Dynamic Programming meets Statistical Learning Theory” at CNRS Journée Des D’ecollements in Orsay (November 2014)
- Alessandro Lazaric gave a talk on “Transfer in Reinforcement Learning” at the “30 minutes of sciences” seminars at Inria Lille (December 2014)
- Michal Valko gave a talk “Bandits on Graphs” at CMLA group at ENS Cachan (December 2014)
- Michal Valko gave a talk “Optimistic Optimization” at CMLA group and at MIST conference, Slovakia (January 2014)
- Ph. Preux gave a talk “décision adaptative face au Big Data”, colloque AAFD, Institut Galilée (April 2014).

### 9.1.4. Evaluation activities, expertise

- *P. Chainais* is a grant proposal reviewer for the ANR.
- *M. Ghavamzadeh* is in the Editorial Board Member of Machine Learning Journal (MLJ, 2011-present).
- *M. Ghavamzadeh* is in the Steering Committee Member of the European Workshop on Reinforcement Learning (EWRL, 2011-present).
- *P. Preux* and *J. Mary* are experts for *Crédit Impôt Recherche* (CIR).
- *P. Preux* is expert for ANR, ANRT, AERES, FNRS. He was member on the visiting committee of the Laboratoire d’Informatique de Grenoble (LIG)
- *E. Duflos* is a project proposal reviewer for ANR.
- *A. Lazaric* is a project proposal reviewer for ANR.
- *A. Lazaric* is the main organizer of the European Workshop in Reinforcement Learning in 2015.
- *A. Lazaric*, *J. Mary*, *R. Munos*, *O. Pietquin*, and *M. Valko* are members of the Belgium Commission Evaluation F.R.S-FNRS, 2014.
- *M. Valko* is an elected member of the evaluation committee and participates in the hiring, promotion, and evaluation juries of Inria.

### 9.1.5. Other Scientific Activities

- *D. Ryabko* is a member of COST-GTRI committee at Inria.
- *D. Ryabko* is a general advisor at Inria Lille.

- *E. Duflos* is Director of Research of Ecole Centrale de Lille since September 2011.
- *E. Duflos* is the Head of the Signal and Image Team of LAGIS (UMR CNRS 8219).
- *R. Gaudel* is board member of LIFL.
- *A. Lazaric* is a member of the committee for research evaluation (CER) at Inria Lille.
- *R. Gaudel* manages the proml mailing list. This mailing list gathers French-speaking researchers from Machine Learning community.
- *P. Chainais* is a member of the administration council of GRETSI, the French association of researchers in signal and image processing.
- *P. Chainais* is co-responsible for the action "Machine Learning" of the GDR ISIS which gathers french researchers in signal and image processing at the national level.
- *Ph. Preux* is Head of the LIFL/CRISTAL lab at the Université de Lille 3; he is head of the data intelligence (DatInG) thematic group of CRISTAL; he is on the scientific committee of CRISTAL. He is local organization chair for ICML 2015.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Awards

- D. Calandriello won the best master thesis award from the Italian Association for Artificial Intelligence for his thesis "Sparse Multi-Task Reinforcement Learning". The association awards the prize to the best master thesis focused on AI in Italy in 2014. The thesis was written under the co-supervision of A. Lazaric during a year spent in Sequel
- F. Guillou won the ACM RecSys challenge (on recommendation systems)
- P. Chainais won an IBM Faculty Award for the creation of the option DAD (Data Analysis and Decision making) at Ecole Centrale Lille (10000\$ have been given to EC Lille). The partnership with IBM about Big Data is getting stronger and new perspectives are coming.

### 9.2.2. Teaching

Licence: R. Gaudel, programmation R pour statistiques et sociologie quantitative, 28h eqTD, L1, université Lille 3, France

Licence: R. Gaudel, projet informatique de traitement des données en SHS, 20h eqTD, L2, université Lille 3, France

Licence: R. Gaudel, préparation au C2i niveau 1, 24h eqTD, L1-3, université Lille 3, France

Master: R. Gaudel, fouille du web, 32h eqTD, M2, université Lille 3, France

Master: R. Gaudel, fouille de données, 30h eqTD, M2, université Lille 3, France

Master: A. Lazaric, Reinforcement Learning, 25h eqTD, M2, ENS Cachan, France

Master: A. Lazaric, Reinforcement Learning, 25h eqTD, M2, Ecole Centrale Lille, France

Master: Ph. Preux, "Modeling, Computer Science, Mathematics", 72h eqTD, M1 pshychology/cognitive science, université Lille 3, France

Master: Ph. Preux, "Formal neural networks", 30h eqTD, M1 cognitive science, université Lille 3, France

Licence: Ph. Preux, "Supervised Learning", 30h eqTD, L3 MIASHS, université Lille 3, France

EC Lille (3rd y.): P. Chainais, "Machine learning", 34h eqTD, Ecole Centrale Lille, France

EC Lille (3rd y.): P. Chainais, "Matlab", 16h eqTD, Ecole Centrale Lille, France

EC Lille (3rd y.): P. Chainais, "Image processing", 16h eqTD, Ecole Centrale Lille, France

EC Lille (3rd y.): P. Chainais, "Representation and data compression", 8h eqTD, Ecole Centrale Lille, France

EC Lille (1st y.): P. Chainais, “Signal processing”, 22h eqTD, Ecole Centrale Lille, France  
 EC Lille (2nd y.): P. Chainais, “Wavelets and applications”, 24h eqTD, Ecole Centrale Lille, France  
 EC Lille: J. Mary, Machine Learning with R , 20h eqTD  
 Master: J. Mary, M2 ID - Univ Lille, Programmation web avancée et design pattern, 64h eqTD  
 Master: J. Mary, M1 ID - Univ Lille, Programmation web , 32h eqTD  
 Master: J. Mary, M1 ID - Univ Lille, Algorithmique avancée , 32h eqTD  
 Master: J. Mary, M1 IIES - Univ Lille, Analyse de données avec R, 32h eqTD  
 Master: J. Mary, C2i - Univ Lille, 24h eqTD

### E-learning

SPOC : R. Gaudel, Marc Tommasi and Alain Preux, culture numérique S2, 8 semaines,  
 Moodle, université Lille 3, licence (L1), formation initiale, tous les étudiants (> 7 000).

### 9.2.3. Supervision

HDR defended: *Mohammad Ghavamzadeh* defended his “Habilitation à diriger les recherches” on June 12th.

PhD defended: *Boris Baldassari* defended his PhD thesis *Apprentissage automatique et développement logiciel*, on July 1st, advisor: Ph. Preux.

PhD defended: *Gabriel Dulac-Arnold* defended his PhD thesis *A General Sequential Model for Constrained Classification*, on Feb. 7th, advisor: Ph. Preux, L. Denoyer (Paris 6), P. Gallinari (Paris 6).

PhD defended: *Victor Gabillon* defended his PhD thesis “Active Learning in Classification-based Policy Iteration”, on June 12th, advisor: M. Ghavamzadeh.

PhD defended: *Olivier Nicol* defended his PhD thesis “Data-driven evaluation of Contextual Bandit algorithms and applications to Dynamic Recommendation”, on Dec. 18th, advisor: Ph. Preux, J. Mary.

PhD defended: *Emilie Kaufmann* defended her PhD thesis, “Bayesian Bandits”, advisor: R. Munos, O. Cappé, A. Garivier.

PhD in progress: *Frédéric Guillou*, “Sequential Recommender System”, since Oct. 2013, advisor: Ph. Preux, J. Mary, R. Gaudel.

PhD in progress: *Vicenzo Musco*, “Topology and evolution of software graphs”, since Oct. 2013, advisor: P. Preux, M. Monperrus

PhD in progress: *Adrien Hoarau*, “Multi-arm Bandit Theory”, since Oct. 2012, advisor: R. Munos.

PhD in progress: *Tomáš Kocák*, “Sequential Learning with Similarities”, since Oct. 2013, advisor: R. Munos, M. Valko

PhD in progress: *Amir Sani*, “Learning under uncertainty”, Oct. 2011, since advisor: R. Munos, A. Lazaric.

PhD in progress: *Marta Soare*, “Pure Exploration in Multi-arm Bandit”, since Oct. 2012, advisor: R. Munos, A. Lazaric.

PhD in progress: *Hong Phuong Dang*, *Bayesian non parametric methods for dictionary learning and inverse problems*, since Oct. 2013, advisor: P. Chainais.

PhD in progress: *Linh Van Nguyen*, *High resolution reconstruction from low resolution measurements of velocity fields in turbulent flows*, since Oct. 2013, advisor: P. Chainais & J.P. Laval (Laboratoire de Mécanique de Lille).

PhD in progress: *Clément Elvira*, “Bayesian non parametric approaches for blind hyperspectral images unmixing.”, since Oct. 2014, advisor: P. Chainais & N. Dobigeon (IRIT, Toulouse).

PhD started: *Daniele Calandriello, Efficient Sequential Learning in Structured and Constrained Environments*, since Oct. 2014, advisor: M. Valko & A. Lazaric & P. Preux.

PhD started: *Jean-Bastien Grill, Développement et analyse de méthodes numériques efficaces pour de l'optimisation lorsque la régularité de la fonction sous-jacente n'est pas connue a priori.*, since Oct. 2014, advisor: M. Valko & R. Munos

PhD started: *Pratik Gajane, "Sequential Learning and Decision Making under Partial Monitoring"*, since Oct. 2014, advisor: Philippe Preux, Tanguy Urvoy (Orange Labs)

#### 9.2.4. Juries

A. Lazaric was part of the jury of the PhD of Mahdi Milani Fard at McGill University (supervised by J. Pineau).

Ph. Preux was part of the PhD defense jury of W. Wang (Université Paris-Sud, M. Martinez (Université de Lille), G. Dulac-Arnold (Université Paris 6), V. Gabillon, Boris Baldassari, and O. Nicol (all 3 from Université de Lille).

Ph. Preux was part of the HdR defense jury of M. Ghavamzadeh.

P. Chainais was part of the PhD defense jury of Raja Suleiman (supervised by David Mary) at University of Nice, dec. 2014.

### 9.3. Popularization

- M. Valko gave an Interview on "Face Recognition" at Sciences et Avenir (July 2014)
- M. Valko gave an Interview on "Biometric applications will soon be part of our daily life" at ARTE Future (November 2014)
- Article on research of M. Valko's collaboration with INTEL - Ford and Intel Mobii project using Face Recognition, at engadget.com (June 2014) <http://www.engadget.com/2014/06/25/ford-and-intel-project-mobii-connected-car-cameras/>
- Article on research of M. Valko's collaboration with INTEL - Ford prototype using Face Recognition at intel.com (June 2014) <http://www.intel.com/content/www/us/en/automotive/ford-mobii-prototype-video.html>
- as part of the Inria mediation program, Ph. Preux met high schools pupils to explain what research is.



## SIERRA Project-Team

### 8. Dissemination

#### 8.1. Scientific Animations

##### 8.1.1. Editorial boards

- A. d'Aspremont, Associate Editor, Optimization Methods & Software (2010-2014)
- A. d'Aspremont, Associate Editor, SIAM Journal on Optimization (2013-...)
- F. Bach, Journal of Machine Learning Research, Action Editor.
- F. Bach, IEEE Transactions on Pattern Analysis and Machine Intelligence, Associate Editor.
- F. Bach, Information and Inference, Associate Editor.
- F. Bach, SIAM Journal on Imaging Sciences, Associate Editor.
- F. Bach, International Journal of Computer Vision, Associate Editor

##### 8.1.2. Area chair

- F. Bach, International Conference on Machine Learning, 2013

##### 8.1.3. Workshop and conference organization

- A. d'Aspremont, Workshop preparation for les Houches in Jan 2015: Optimization and Statistical Learning, with Zaid Harchaoui, LEAR, Inria and LJK, Anatoli Juditsky, LJK, Université Joseph Fourier, Jérôme Malick, CNRS and LJK et Philippe Rigollet, ORFE, Princeton University, USA.
- A. d'Aspremont, session organized at SIOPT 2014 in San Diego.
- F. Bach, Workshop co-chair for NIPS 2014.
- V.Perchet, Organizer, summer school "Ecole d'été pluridisciplinaire de Théorie des Jeux", Aussois (7-13 September 2014).

##### 8.1.4. Awards

- F. Bach, 10-year best paper award, ICML 2014.
- S. Lacoste-Julien, MCMCSK<sub>i</sub> IV Honorable Mention Poster Prize (January 2014).

##### 8.1.5. Other

- A. d'Aspremont, Scientific committee, programme Gaspard Monge pour l'Optimisation.

##### 8.1.6. Invited presentations

- S. Arlot, "Kernel change-point detection", Workshop "Kernel methods for big data" (Université Lille 1, March 31 - April 2, 2014)
- S. Arlot, "Optimal model selection with V-fold cross-validation: how should V be chosen?", Seventh International Conference on High Dimensional Probability (Institut d'Études Scientifiques de Cargèse, May 26-31, 2014).
- A. d'Aspremont, "Spectral Ranking using Seriation." Journée big data, SPOC seminar, LIP6, Université de Paris VI.
- A. d'Aspremont, "Spectral Ranking using Seriation." Workshop on Semidefinite Optimization, Approximation and Applications, Simons Institute, Berkeley, Sept. 2014.
- A. d'Aspremont, "Spectral Ranking using Seriation." Cambridge statistics seminar, November 2014.

- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Oxford robotics seminar, March 2014
- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Department of Mathematical Engineering seminar, UCL, Louvain-la-Neuve, February 2014.
- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Colloque CNRS MASTODONS, January 2014.
- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Lunteren Conference on the Mathematics of Operations Research, January 2014.
- A. d'Aspremont, "An Optimal Affine Invariant Smooth Minimization Algorithm." Lunteren Conference on the Mathematics of Operations Research, January 2014.
- A. d'Aspremont, "Phase Recovery, MaxCut and Complex Semidefinite Programming." SLAC Photon Science Seminar, Stanford, March 2014.
- A. d'Aspremont, "Optimisation et apprentissage." Colloquium Jacques Morgenstern, Inria Sophia-Antipolis, Avril 2014.
- F. Bach, Invited talk at workshop on stochastic gradient methods, IPAM, Los Angeles (February 2014).
- F. Bach, Seminar at University of Logano (March 2014).
- F. Bach, Invited tutorial at Eurandom Workshop, Eindhoven (March 2014).
- F. Bach, Invited talk at the Centre de Recerca Matemàtica (CRM), Barcelona (April 2014).
- F. Bach, Seminars at Oxford University (May 2014).
- F. Bach, Invited talk at "Journées de la SFDS", Rennes (June 2014).
- F. Bach, Invited talk at the conference CAP, Saint-Etienne (July 2014).
- F. Bach, Invited tutorial at the IFCAM Summer school, Bangalore, India (July 2014).
- F. Bach, Invited talk at the Duke/UCL workshop, London (September 2014).
- F. Bach, Keynote talk at the conference ECML, Nancy (September 2014).
- F. Bach, Seminar at the University of Vienna, Austria (November 2014).
- F. Bach, Invited talk at the Swiss Statistics Seminar, Berne (November 2014).
- F. Bach, Invited talk at the CIFAR meeting on Neural Computation & Adaptive Perception, Montreal, Canada (December 2014).
- N. Boumal, Journée conjointe des GDR, ISIS and MIA: optimisation géométrique sur les variétés, Nov. 21, Paris.
- N. Boumal, Bordeaux University GIO 2014 international workshop, on the Geometry of Information and Optimization, Dec. 4 & 5, Bordeaux.
- F. Fogel, "Convex Relaxations for Permutation Problems", Journées MAS de Toulouse, August.
- F. Fogel, workshop "Algorithm and Data Science" at Microsoft Research Cambridge, May 15.
- S. Lacoste-Julien, "Frank-Wolfe optimization insights in machine learning", Tsinghua University, Beijing, China, June.
- S. Lacoste-Julien, "Sequential Kernel Herding: Frank-Wolfe Optimization for Particle Filtering", invited talk at Journées MAS 2014, Institut de Mathématiques de Toulouse, Toulouse, France, August.
- S. Lacoste-Julien, "Recent Advances in Frank-Wolfe Optimization", invited talk at the 4th IMA Conference on Numerical Linear Algebra and Optimisation, Birmingham, UK, September.
- S. Lacoste-Julien, "Sequential Kernel Herding: Frank-Wolfe Optimization for Particle Filtering", McGill University, Montreal, Canada, December.

R. Lajugie, invitation at the workshop "Kernel methods for big data" in Lille (March, 31st -April, 2nd).

V. Perchet, Workshop "Optimal Cooperation, Communication, and Learning in Decentralized Systems", Banff, Canada (October 16, 2014). Blackwell Approachability in Absorbing Games.

V. Perchet, Conference "PGMO-COPI", Paris (October 28, 2014). Online multiclass classification via Blackwell approachability.

V. Perchet, Conference "PGMO-COPI", Paris (October 30, 2014). New results in bandits problems with applications.

V. Perchet, Séminaire probas/stats, Orsay (December 4, 2014). From Bandits to Ethical Clinical Trials. Optimal Sample Size for Multi-Stage Problems.

V. Perchet, Conference "New Procedures for New Data", CIRM, Marseille (December 15, 2014). From Bandits to Ethical Clinical Trials. Optimal Sample Size for Multi-Stage Problems.

N. Shervashidze, "Representing graphs for machine learning", Séminaire de Statistiques, Institut Henri Poincaré, Paris, June.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

A. d'Aspremont, Creation of a Master's program MASH (Mathématiques, Apprentissage et Sciences Humaines), with ENS - Paris Dauphine. Started September 2014.

Licence : A. d'Aspremont, L3 course on Optimization: ENSAE, 24h

Mastère: A. d'Aspremont, course on Optimization: MVA, ENS Cachan, 18h. item Mastère (M2) : F. Bach, G. Obozinski, Introduction aux modèles graphiques (30h), Master MVA (ENS Cachan).

Mastère: S. Arlot and F. Bach, "Statistical learning", 24h, Mastère M2, Université Paris-Sud, France.

Mastère (M1): S. Lacoste-Julien, F. Bach, R. Lajugie: "Apprentissage statistique", 35h, Ecole Normale Supérieure, Filière "Math-Info", deuxième année.

### 8.2.2. Supervision

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

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

PhD in progress: Fajwel Fogel, September 2012, A. d'Aspremont and F. Bach.

PhD in progress: Rémi Lajugie, September 2012, S. Arlot and F. Bach.

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

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

PhD in progress: Jean-Baptiste Alayrac, September 2014, S. Lacoste-Julien, Josef Sivic and Ivan Laptev.

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

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

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

PhD in progress: Fabian Pedregosa, September 2012, F. Bach, co-advised with Alexandre Gramfort (Telecom).

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

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

### **8.2.3. Juries**

A. d'Aspremont, member of the PhD Committee for Pierre-André Savalle at Ecole Central de Paris on Oct. 21 2014.

A. d'Aspremont, member of the PhD Committee for Nicolas Boumal at université Catholique de Louvain, Belgium on Feb. 14 2014.

F. Bach, member of the PhD committee of Samuel Vaiter (Dauphine), Rajen Shah (Cambridge), Anthony Bourrier (Rennes)

F. Bach, member of the HDR committee of Josef Sivic and Sylvain Arlot.

### **8.3. Popularization**

S. Lacoste-Julien, Lecture "Apprentissage statistique et big data", Colloque Algorithmique et Programmation, CIRM, Luminy, France, April.

S. Lacoste-Julien, General public talk to high school students having participated in the mathematics olympiad of académie de Versailles "Apprentissage statistique et big data" at Inria-Rocquencourt, Rocquencourt, France, June.

S. Lacoste-Julien, Demi-heure de la science "Apprentissage automatique et big data", at Inria-Rocquencourt, Rocquencourt, France, November.

S. Lacoste-Julien, July-Dec: helped Sydo for making a popularization video for Inria on the theme of "Simulation and machine learning".

## TAO Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Management positions in scientific organisations

#### 9.1.1.1. international

- THRaSH, Theory of Randomized Search Heuristics workshop: Anne Auger, member of Steering Committee
- ACM SIGEVO (Special Interest Group on Evolutionary Computation), Marc Schoenauer, member of Executive Board since 2000, officer (Secretary) since 2012; member of Business Committee (2011-2013). Anne Auger, member of Executive Board since 2011.
- Parallel Problem Solving from Nature: Marc Schoenauer, Member of Steering Committee, (since 1998).
- PASCAL NoE (Pattern Analysis, Statistical modelling, Computational Learning), Michèle Sebag, member of the Steering Committee (PASCAL 2004-2008; PASCAL2, 2009-2013).
- European Machine Learning and Knowledge Discovery from Databases Steering Committee, Michèle Sebag, member since 2010;
- ECCAI Fellow, Michèle Sebag, since 2011;
- LION (Learning and Intelligent Optimization), Marc Schoenauer, member of the Steering Committee since 2012,
- Marc Schoenauer, Honorary Adjunct Professor, School of Computer Science, University of Adelaide, Australia (2009-2015).

#### 9.1.1.2. national

- Michèle Sebag, member of the CoNRS; Senior Advisory Board CHIST-ERA; member of the CSFRS (Conseil Supérieur de la Formation et Recherche Stratégique);
- EA – Association Evolution Artificielle: Marc Schoenauer, founding president, now member of Advisory Committee. Anne Auger, member of Executive Committee since 2008.

#### 9.1.1.3. Université Paris-Sud

- Jamal Atif, “Directeur d’études” at Computer Science department of IUT d’Orsay ; membre de la CCSU 27 (membre du Bureau) since 2012; membre élu au conseil d’Institut, IUT d’Orsay ; membre du Bureau du département Informatique de l’IUT d’Orsay since 2011.
- Anne Auger, membre du Conseil du Laboratoire de Recherche en Informatique since 2012;
- Philippe Caillou, membre élu du Conseil Scientifique et au Conseil Académique de l’université since 2013, directeur des études à l’IUT de Sceaux since 2009
- Cécile Germain-Renaud, elected member of the Scientific Council and of its board. University officer for scientific computing. Deputy head of the computer science department, in charge of research.
- Michèle Sebag, membre élu du Conseil du Laboratoire de Recherche en Informatique et membre de la CCSU 27 since 2004.

#### 9.1.1.4. Université Paris-Saclay

- Michèle Sebag, member of the Senate at Université Paris-Saclay; Member of the Executive committee and responsible for the DataSense axis, DigiCosme Labex;

- Marc Schoenauer, Member of the Executive committee and chair of the Research Committee, DigiCosme Labex;

#### 9.1.1.5. Inria Saclay

- Anne Auger, membre de la Commission de Suivi Doctoral ; représentante du centre de Saclay à la Commission des Jeunes Chercheurs.
- Marc Schoenauer, *Délégué Scientifique* (VP for Research).

### 9.1.2. Scientific events organisation

#### 9.1.2.1. general chair, scientific chair

- Anne Auger: ES/EP GECCO 2014 track chair

#### 9.1.2.2. Member of the organizing committee

- HEPML workshop at NIPS 2014: Cecile Germain-Renaud and Balázs Kégl.
- Michèle Sebag, Senior Program Committee, ECAI 2014; Area Chair, IJCAI 2015.

#### 9.1.2.3. Others

- Anne Auger: Organization of an invited mini-symposium on Function-Value-Free Optimization, SIAM Conference on Optimization, San Diego, USA.
- Anne Auger: Organization of invited session on Recent Advances on Continuous Randomized black-box optimization, PGMO-COPI'14 conference, Paris.
- Anne Auger, Nikolaus Hansen: Organization of workshops BBOB, IEEE Conference on Evolutionary Computation 2015, Sendai, Japan and GECCO 2015 Conference Madrid, Spain.
- Anne Auger: Women@GECCO workshop 2014, Vancouver Canada

### 9.1.3. Scientific events selection

#### 9.1.3.1. Member of the conference Program Committee

All TAO members are reviewers for the main conferences in Machine Learning (IJCAI, ICML, ECAI, ECML-PKDD, ...) and Evolutionary Computation (ACM GECCO, PPSN, IEEE CEC, EvoStar, ...).

### 9.1.4. Journal

#### 9.1.4.1. Member of the Editorial Board

- Anne Auger: Evolutionary Computation, MIT Press.
- Nikolaus Hansen: Evolutionary Computation, MIT Press.
- Marc Schoenauer: Evolutionary Computation, MIT Press, Advisory Board; Kluwer Genetic Programming and Evolvable Machines, Editorial Board; JMLR, Area Editor.
- Michèle Sebag: Machine Learning, Springer Verlag.

#### 9.1.4.2. Reviewer

Similarly, all TAO members do occasional reviews for the main journals in ML and EC.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence: Jamal Atif, Computer Science, approx. 192h, L1, IUT Orsay, Univ. Paris-Sud.
- Licence: Anne Auger, Stochastic Optimization, 20h, L1-3, Ecole Centrale Paris.
- Licence: Philippe Caillou, Computer science for Managers, approx. 192h, L1, IUT Sceaux, Univ. Paris-Sud.
- Licence: Aurélien Decelle, Computer Architecture, 30h, L3, Univ. Paris-Sud
- Licence: Aurélien Decelle, Machine Learning and Artificial Life, 41h, L2, Univ. Paris-Sud
- Licence: Cécile Germain-Renaud, Computer Architecture (head of Licence), approx. 120h, L2-L3, Polytech, Univ. Paris-Sud.
- Licence: Michèle Sebag, Artificial Life, 10h, L2, Univ Paris-Sud.
- Licence: Michèle Sebag, Introduction to Machine Learning, approx. 24h, L3, ENS-Cachan.
- Master : Cécile Germain-Renaud, Parallelisme, approx. 50h, M1, U. Paris-Sud.
- Master : Michèle Sebag, Machine Learning, 25h, M1, MPRI.
- Master : Anne Auger, Optimisation, 12h, M2 Recherche, U. Paris-sud.
- Master : Michèle Sebag, Machine Learning, 24h, M2 Recherche, U. Paris-sud.
- Master : Michèle Sebag, Evolutionary Robotics, 15h, M2 Recherche, U. Paris-sud.
- Master : Philippe Caillou, Multi-Agents Systems, 27h, M2 Recherche, U. Paris-sud.
- Master : Philippe Caillou, Multi-Agent Based Simulation, 3h, M2 Recherche, U. Paris-Dauphine.
- Master : Yann Ollivier, Deep learning, 4h, M2 Recherche, Telecom/Polytech.

### 9.2.2. Supervision

- PhD: Dawei Feng, *Efficient End-to-End Monitoring for Fault Management in Distributed Systems*, 27/03/2014, Germain-Renaud [3].
- PhD: Weijia Wang, *Multi-objective sequential decision making*, 11/07/2014, Michèle Sebag [5].
- PhD: Gaetan Marceau Caron, *Optimization and Uncertainty Handling in Air Traffic Management*, 22/09/2014, Marc Schoenauer [4].
- PhD: Jérémie Decock, *Hybridization of dynamic optimization methodologies*, 26/11/2014, Olivier Teytaud [2].
- PhD: Riad Akrouf, *Robust Preference-based Reinforcement Learning*, 30/09/2014, Marc Schoenauer and Michèle Sebag [1].
- PhD in progress: Ouassim Ait Elhara, *Stochastic Black-Box Optimization and Benchmarking in Large Dimension*, 1/10/2012, Anne Auger and Nikolaus Hansen
- Sandra Cecilia Astete Morales, *Random Processes for Optimization with Risk*, 1/9/2013, Olivier Teytaud
- PhD in progress: Asma Atamna, *Analysis, Improvement and Benchmarking of Constraint Handling for Stochastic Blackbox Continuous Optimization*, 1/11/2013, Anne Auger and Nikolaus Hansen
- PhD in progress: Jérémy Bensadon, *Information theory for learning and optimization*, 1/10/2012, Yann Ollivier
- PhD in progress: Vincent Berthier, *Large-scale black-box optimization*, 1/10/2013, Olivier Teytaud
- PhD in progress: Marie-Liesse Cauwet, *Noisy Optimization for Artificial Intelligence*, 1/9/2013, Olivier Teytaud
- PhD in progress: Alexandre Chotard, *Enhancement and Analysis of Evolution Strategies*, 01.10.2011, Anne Auger and Nikolaus Hansen

PhD in progress: Nicolas Galichet, *Risk-Aware Reinforcement Learning*, 1/10/2011, Michèle Sebag

PhD in progress: Yoann Isaac, *Une approche non-supervisée pour la passage à l'échelle des interfaces cerveau-machine*, 1/10/2011, Jamal Atif and Michèle Sebag

PhD in progress: Jialin Liu, *Portfolios of Noisy Optimization Algorithms*, 14/03/2013, Marc Schoenauer and Olivier Teytaud

PhD in progress: Pierre-Yves Massé, *Gradient methods in statistical learning*, 1/10/2014, Yann Ollivier

PhD in progress: Guohua Zhang, *Curiosity-Driven Navigation in Evolutionary Robotics*, 1/9/2011, Michèle Sebag

PhD in progress: Nacim Belkhir, *Ajustement automatique de paramètres pour les métaheuristiques*, 1/05/2014, Marc Schoenauer

Basile Mayeur, *Direct Value Learning*, 1/10/2014, Michèle Sebag

Antoine Bureau, *Programming by Feedback*, 1/10/2014, Michèle Sebag and Marc Schoenauer

Thomas Schmitt, *A Collaborative Filtering Approach to Matching Job Openings and Job Seekers*, 1/11/2014, Michèle Sebag

Sourava Mishra, *AutoML: an empirical approach to Machine Learning*, 1/10/2014, Balázs Kégl and Michèle Sebag

François Gonard, *Sélection d'algorithmes pour la conception de structures*, 1/11/2014, Marc Schoenauer

### 9.2.3. Tutorials and Summer Schools

- Anne Auger and Nikolaus Hansen: *Evolution Strategies and CMA-ES* at the ACM GECCO, July 2014.
- Nikolaus Hansen: *Introduction to Information Geometry: Stochastic Optimization* at the **Information Geometry in Learning and Optimization** summer school, September 2014, Copenhagen.

### 9.2.4. Juries

- Marc Schoenauer, Reviewer for Adrien Goeffron's HDR, Université d'Angers, Oct. 2014 ; Richard Alligier's PhD, Institut National Polytechnique de Toulouse, Oct. 2014 ; Salwa Belaqziz, Université de Marrakech, May 2014. Jury member for Steve Oudot's HDR, Université Paris-Sud, ; Jérémie Garcia's PhD, Université Paris-Sud, June 2014 (pdt of the jury) ; Mickael Buchet's PhD, Université Paris-Sud, Nov. 2014 (pdt of the jury).
- Michele Sebag, Reviewer for Jonathan Grizou, U. Bordeaux; Gwenael Bothorel, U. Toulouse. Jury member for Bilal Piot, U. Lorraine (pdt of the jury).
- Olivier Teytaud, Reviewer for Manel Tagorti's ph.D. (to be defended early 2015, Loria) and Sothea Hong (Irstea Montpellier).

## 9.3. Popularization

**Yann Ollivier**, co-organizes the European Union Contest for Young Scientists (science fair for high school students from 30+ countries organized by the European Commission).



## TOSCA Project-Team

### 9. Dissemination

#### 9.1. Promoting Scientific Activities

##### 9.1.1. Scientific events organisation

- E. Tanré animates with H. Delingette (EPI ASCLEPIOS) a transverse working group on “Uncertainties in mathematical and numerical models”. In 2014, a three days lectures given by O. Le Maître was organized with around 50 participants issued from 10 teams.

##### 9.1.2. Scientific events selection

###### 9.1.2.1. member of the conference program committee

- A. Lejay served as member of the conference program committee of the *CANUM 2014* (Carry-le-Rouët, May 2014) and the *Journées de Probabilités 2014* (Marseille, May 2014).

##### 9.1.3. Journal

###### 9.1.3.1. member of the editorial board

- M. Bossy serves as an Associate Editor of *Annals of Applied Probability*.
- N. Champagnat serves as an Associate Editor of *Stochastic Models*.
- Together with T. Lelièvre (Ecole des Ponts-ParisTech) and A. Nouy (Ecole Centrale Nantes), N. Champagnat served as co-editor in chief of the special issue of *ESAIM:ProcS* devoted to the CEMRACS 2013.
- A. Lejay serves as co-Editor of the *Séminaire de Probabilités*.
- D. Talay served as an Associate Editor of: *Stochastic Processes and their Applications*, *ESAIM Probability and Statistics*, *Stochastics and Dynamics*, *Journal of Scientific Computing*, *Monte Carlo Methods and Applications*, *Oxford IMA Journal of Numerical Analysis*, *Communications in Applied Mathematics and Computational Science*, *Éditions de l'École Polytechnique*. He also served as the Co-editor in chief of *MathematicS in Action*.
- D. Talay is serving as a member of the Advisory Board of the Centro de Mathematica da Universidade do Porto (Portugal).
- D. Talay participated in Professor position recruitment committees at Paris 6 University.

###### 9.1.3.2. reviewer

- M. Bossy wrote reviews for manuscripts submitted to *ESAIM:ProcS*, *Progress in Energy and Combustion Science*, *Bernoulli Journal*.
- N. Champagnat wrote reviews for manuscripts submitted to *ESAIM:ProcS*, *Stochastic Processes and their Applications* (twice), *New Phytologist*, *Bernoulli Journal*, *Electronic Journal of Probability*, *The Annals of Applied Probability*, *Applied Mathematics and optimization*.
- M. Deaconu wrote reviews for manuscripts submitted to *Potential Analysis*, *M2AN*, *Journal of Computational and Applied Mathematics*, *Mathematics and Computers in Simulation* and *Statistics and Computing*.
- B. Henry wrote a review for a manuscript submitted to *Stochastic Models*.
- J. Inglis wrote reviews for manuscripts submitted to the *Annales de l'Institut Henri Poincaré* and the *Journal of Mathematical Neuroscience*.

- A. Lejay wrote reviews for manuscripts submitted to *Mathematical finance*, *Séminaire de Probabilités*, *Journal of Computational and Applied Mathematics*, *Electronic Journal of Probability*, *Electronic Communication of Probability*, *Journal of Scientific Computing*, *International Journal of Stochastic Analysis*, *SIAM Journal on Control and Optimization*, ...
- E. Tanré wrote reviews for manuscripts submitted to *Journal of Theoretical Biology*, *Journal of Scientific Computing*, *Annales de l'Institut Henri Poincaré* and *The Journal of Mathematical Neuroscience*.
- D. Villemonais wrote reviews for manuscripts submitted to *The Annals of Applied Probability*, *Applied Mathematics and Optimization*, *Applied Probability Trust*, *Electronic Communications in Probability* and *Electronic Journal of Probability*.

#### 9.1.4. Reviewing for fundings

- M. Bossy wrote reports about research projects submitted to the PACA Region council.
- N. Champagnat wrote reports about research projects submitted to ANR, the Leverhulme trust (UK) and FONDECYT (Chile).
- D. Talay reported on applications to Research Grants Council (RGC) of Hong Kong and grants of the Chilean National Science and Technology Commission.

#### 9.1.5. Institutional commitments

- M. Bossy is a elected member of the Inria Evaluation Board.
- M. Bossy is a member of the Scientific Committee of the *École Doctorale "Sciences Fondamentales et Appliquées"* of the Université de Nice - Sophia Antipolis.
- M. Bossy participated to the junior position recruitment committee at the UPMC.
- M. Bossy has been a member of the Committee for junior permanent research positions of Inria Paris-Rocquencourt.
- M. Bossy is a member of the *Collectif Andromède* of the PACA Region council.
- N. Champagnat is a member of the *Commission de Développement Technologique* of Inria Nancy - Grand Est, a substitute member of the *Comité de Centre* of Inria Nancy - Grand Est and a member of the *Commission bibliothèque* of IECL. He is also local correspondent of the COERLE (*Comité Opérationnel d'Évaluation des Risques Légaux et Éthiques*) for the Inria Research Center of Nancy - Grand Est.
- M. Deaconu is member of *Comité des Projets* and *Bureau du Comité des Projets* at Inria Nancy - Grand Est.
- M. Deaconu has been a member of the Committee for junior permanent research positions of Inria Nancy - Grand Est.
- A. Lejay has been General Secretary of Société des Mathématiques Appliquées et Industrielles (SMAI) up to July 2014, and is a member of the Administration Council of the SMAI.
- A. Lejay is the member of the COMIPERS of Inria Nancy Grand-Est.
- A. Lejay has been a member of the hiring committee for a position of Professor in Dijon (2014).
- D. Talay continued to serve as the Head of Science and Chair of the Project-Teams Committee of Inria Sophia Antipolis - Méditerranée up to the end of August 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master: M. Bossy, *Continuous time stochastic models for quantitative Finance*, 45h, M2 IMAFA (Informatique et Mathématiques Appliquées à la Finance et à l'Assurance), École Polytechnique Universitaire, Univ. Nice - Sophia Antipolis, France.

Master : M. Bossy, *Risk on energetic financial markets*, 27h, Master Spécialisé, Ingénierie et Gestion de l'Énergie, Mine ParisTech, France.

Master : M. Bossy *Stochastic Particle Methods for PDEs*, 18h, M2 Probabilité et Applications, Université Paris 6, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 18h, M1, École des Mines de Nancy, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 18h, M2, École des Mines de Nancy, France.

Master: N. Champagnat, *Processus de Markov et génétique des populations*, 22.5h, M2 MFA, Université de Lorraine, France.

Master: M. Deaconu, *Simulation de variables aléatoires*, 12h, M1, École des Mines de Nancy, France.

Master: M. Deaconu, *Modélisation stochastique*, 30h, M2, Université de Lorraine, France.

Master: M. Deaconu, *Simulation Monte Carlo*, 24h, M1, Faculté de Droit, Sciences Economiques et Gestion, Université de Lorraine, France.

Licence: B. Henry, *Probabilité*, 36h, L3, École des Mines de Nancy, France.

Licence: B. Henry, *Analyse numérique*, 18h, L3, École des Mines de Nancy, France.

Master: J. Inglis, *Numerical Methods for Computational Finance*, 15h, M2, UNSA (Mathmods Erasmus Mundus), France.

Master: J. Inglis and E. Tanré, *Advanced Numerics for Computational Finance*, 40h (2\*20h), M2, UNSA (Mathmods Erasmus Mundus), France.

Master: A. Lejay, *Simulation des marchés financiers*, 23h, M2, Université de Lorraine (Metz), France.

Master: A. Lejay, *Probabilités Appliquées*, 15h, M2, Université de Lorraine (Nancy), France.

Master: D. Talay *Stochastic Methods for PDEs with Boundary Conditions*, 18h, M2 Probabilité et Applications, Université Paris 6, France.

Master: E. Tanré, *Numerical Probability in Finance*, 44h, M2, Ecole PolytechNice (IMAF), France.

Master: E. Tanré, *Mathematical Methods for Neurosciences*, 37h, M2, ENS - Master MVA / Paris 6 - Master Maths-Bio, France.

### 9.2.2. Supervision

- PhD: Julien Claisse, *Dynamique des populations : contrôle stochastique et modélisation hybride du cancer*, Université de Nice Sophia Antipolis, 4 July 2014, N. Champagnat, D. Talay.
- PhD in progress: Maxime Bonelli, *Behavioral finance approach to risk assessment in quantitative portfolio management*, September 2013, M. Bossy.
- PhD in progress: Paul Charton, *Hedging strategies for wind energy prices*, September 2010, M. Deaconu and A. Lejay.
- PhD in progress: Baldwin Dumortier, *Contrôle acoustique des éoliennes*, October 2014, M. Deaconu and E. Vincent (EPI PAROLE).
- PhD in progress: Benoît Henry, *Modeling Evolutionary Relationships Between Three-Dimensional Protein Structures*, October 2013, N. Champagnat, D. Ritchie (EPI ORPAILLEUR).
- PhD in progress: Lionel Lenôtre, *Monte Carlo Simulation in fissured and porous media*, September 2012, J. Erhel (Irisa), A. Lejay, G. Pichot (Irisa). L. Lenôtre has a grant from the MESR and stays at Rennes.
- PhD in progress: Radu Maftei, *A stochastic approach to colloidal particle agglomeration in turbulent flows*, November 2014, M. Bossy.

- PhD in progress: Hernán Mardones, *Numerical Solution of Stochastic Differential Equations with Multiplicative Noise*, 2009, A. Lejay, C. Mora (Universidad de Concepción, Chile). H. Mardones has a CONYCIT grant and spent 7 months (Nov. 2013-June 2014) in Nancy with a grand Becas Chile.
- PhD in progress: Sebastian Niklitschek-Soto, *Discretized stochastic differential equations related to one-dimensional partial differential equations of parabolic type involving a discontinuous drift coefficient*, September 2010, D. Talay.
- PhD in progress: Khaled Salhi, *Estimation of Risk in Finance*, October 2013, M. Deaconu and A. Lejay.

### 9.2.3. Juries

- M. Bossy served as a referee for the HDR thesis of Mathias Rousset, *Probability in computational physics and biology: some mathematical contributions*, Université Paris Est, November 27, 2014.
- N. Champagnat served as an examiner for the Ph.D. theses of Julien Claisse, *Dynamique des populations : contrôle stochastique et modélisation hybride du cancer*, Université de Nice Sophia Antipolis, July 4, 2014; of Julien Sainte-Marie, *Contribution à l'intégration des cycles biogéochimiques dans les modèles de croissance forestier à base phénoménologique. Dynamique saisonnière du couvert forestier et décomposition de la matière organique du sol*, Université de Lorraine, September 9, 2014; of Claire Christophe, *Modélisation aléatoire de l'activité des Lymphocytes T Cytotoxiques*, Université Paul Sabatier (Toulouse III), December 2, 2014; of Coralie Fritsch, *Approches probabilistes et numériques de modèles individus-centrés du chemostat*, Université Montpellier II, December 8, 2014.
- A. Lejay served as a referee for the Ph.D. thesis of H.T. Nguyen, *Numerical investigations of some mathematical models of the diffusion MRI signal*, Université d'Orsay, January 29, 2014; of M. Ba, *Homogénéisation des diffusions en milieux périodiques*, Université de Provence, July 8, 2014; of W. Sabbagh, *Some contributions on Probabilistic Interpretation for Nonlinear Stochastic PDEs*, Université du Maine, December 8, 2014.
- D. Talay served as a referee for the HDR theses of J-F. Chassagneux, *Quelques contributions à la Finance mathématique et l'Analyse théorique et numérique des équations différentielles stochastiques rétrogrades*, Université Paris Dauphine, November 26, 2014; of F. Panloup, *Contributions à l'étude en temps long de processus stochastiques*, Université Paul Sabatier, Toulouse, December 4, 2014; of J. Guilleminot, *Modélisations stochastiques en Mécanique multi-échelle des matériaux hétérogènes*, Université Paris-Est, December 12, 2014.
- D. Talay served as a referee for the Ph.D. thesis of K. Hajji, *Accélération de la méthode de Monte-Carlo pour des processus de diffusions et applications en Finance*, December 12, 2014.

## 9.3. Popularization

M. Bossy published in the *Brèves de maths* book [25].

## 9.4. Participation in congresses, conferences, invitations...

- M. Bossy gave talks at the *Energy Workshop* at Inria Chile and an invited talk at the *10th AIMS Conference on Dynamical Systems, Differential Equations and Applications* in Madrid in July.
- M. Bossy gave seminar talks at CINFAV University of Valparaíso and at the *Séminaire du Mésocentre de Calcul* at Centrale Paris.
- N. Champagnat gave talks at the *Schlumberger workshop on Topics in Applied Probability*, at IHES (Bures-sur-Yvette) in March, at the *10th AIMS Conference on Dynamical Systems, Differential Equations and Applications* in Madrid in July, at the workshop *Population Dynamics and Statistical Physics in Synergy* in Eindhoven (Netherlands) in August, and at the workshop on *Discrete, explicit simulations versus continuous, aggregated models* in Lausanne in October.

- N. Champagnat gave seminar talks at the *Séminaire Modèles Probabilistes pour la Biologie* in Montpellier in January, at the *Séminaire PEIPS (Evolution de Populations et Systèmes de Particules en Interaction)* at École Polytechnique, Palaiseau in November, and at the *Séminaire de Statistique et Probabilités Appliquées* in Grenoble in November.
- B. Henry participated in the *École de Printemps de l'ANR MANEGE* in Aussois in April.
- K. Salhi participated in the *Journées de Probabilités* at Marseille, France in May and presented poster at the *Journées MAS* at Toulouse, France in July.
- J. Inglis gave invited talks at the *Mathemacx European Project Meeting*, Max Planck Institute, Leipzig, Germany, at the *Stochastic Analysis Seminar*, Oxford-Man Institute of Quantitative Finance, Oxford, UK, and at the *ALEA seminar*, École Polytechnique, Paris, France, at the *Workshop in Probability and its Applications*, University of Oxford, Oxford, UK.
- J. Inglis participated in the workshop *Inhomogeneous Random Systems*, Institut Henri Poincaré, Paris, France.
- A. Lejay gave a mini-course on rough paths (8 hours) at Université du Maine (Le Mans) in October.
- A. Lejay gave a conference at the *PDE and rough paths* conference in Toulouse in February.
- O. Lupascu gave talks at the *Colloque Franco-Roumain de Mathématiques Appliquées* in Lyon in August and at the *Journées de Probabilités* in Marseille in May. She also presented a poster at the *Journées Modélisation Aléatoire Statistique* in Toulouse in August 2014.
- O. Lupascu gave a seminar talk at the *Seminar of the Partial Derivative Equations* in Chambéry in April.
- D. Talay was an invited section speaker at the International Congress of Mathematicians (ICM 2014), Seoul, Korea, in August.
- D. Talay gave a plenary conference at the Colloque Franco-roumain de Mathématiques Appliquées, Lyon, in August.
- D. Talay was an invited speaker at the NASPDE2014 workshop at EPFL, Lausanne, Switzerland, in September; at the 7th symposium on backward stochastic differential equations, Weihai, China, in June; at the Opening workshop 'Advances in stochastic analysis' of the Laboratory of Stochastic Analysis and its Applications at the Higher School of Economics, Moscow, Russia, in September.
- D. Talay gave a seminar at the Mathematics department of the university of Oxford in November.
- E. Tanré gave a talk at the HBP-Brainscales Meeting *Missing interactions in spike-based computation* in October.

## ABS Project-Team

## 7. Dissemination

### 7.1. Promoting Scientific Activities

#### 7.1.1. Scientific Events Organisation

##### 7.1.1.1. general chair, scientific chair

- F. Cazals co-organized, with C. Robert (IBPC/CNRS, Paris) and J. Cortés (LAAS/CNRS, Toulouse), the Winter School *Modeling Large Macromolecular Assemblies*, held in Sophia-Antipolis on 8-12 December 2014. The school featured lectures by Gerhard Hummer (Max Plack Institut fur Biophysik / Theoretical Biophysics, Frankfurt), Dmitri Svergun (European Molecular Biology Laboratory, Hamburg), Haim Wolfson (Tel Aviv University), and Riccardo Pellarin (UCSF / Institut Pasteur Paris), and Frédéric Cazals. The event gathered 40 students from all over the world. See details at <http://algosb2014.inria.fr/>.

#### 7.1.2. Scientific Events Selection

##### 7.1.2.1. member of the conference program committee

F. Cazals was member of the following program committees:

- Symposium On Geometry Processing
- ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Master: F. Cazals (Inria Sophia Antipolis Méditerranée) and S. Oudot (Inria Saclay), *Foundations of Geometric Methods in Data Analysis*, Data Sciences Program, Department of Applied Mathematics, Ecole Centrale Paris. (<http://www-sop.inria.fr/abs/teaching/centrale-FGMDA/centrale-FGMDA.html>)

Master: F. Cazals, *Algorithmic problems in computational structural biology*, 24h, Master of Science in Computational Biology from the University of Nice Sophia Antipolis, France, see <http://cbb.unice.fr>.

### 7.2.2. Supervision

**(PhD thesis, ongoing)** C. Roth, *Modeling the flexibility of macro-molecules: theory and applications*, University of Nice Sophia Antipolis. Advisor: F. Cazals.

**(PhD thesis, ongoing)** A. Lheritier, *Scoring and discriminating in high-dimensional spaces: a geometric based approach of statistical tests*, University of Nice Sophia Antipolis. Advisor: F. Cazals.

**(PhD thesis, ongoing)** D. Agarwal, *Towards nano-molecular design: advanced algorithms for modeling large protein assemblies*, University of Nice Sophia Antipolis. Advisor: F. Cazals.

**(PhD thesis, ongoing)** S. Marillet, *Modeling antibody - antigen complexes*, University of Nice Sophia Antipolis. The thesis is co-advised by F. Cazals and P. Boudinot (INRA Jouy-en-Josas).

**(PhD thesis, ongoing)** R. Tetley, *Structural alignments: beyond the rigid case*, University of Nice Sophia Antipolis.

### 7.2.3. Juries

- Didier Devaurs, University of Toulouse, October 2014. Rapporteur on the PhD thesis *Extensions of Sampling-based Approaches to Path Planning in Complex Cost Spaces: Applications to Robotics and Structural Biology*. Advisor: Juan Cortés
- Juan Cortés, University of Toulouse, April 2014. Rapporteur on the Habilitation thesis *Algorithmics of motion: from robotics, through structural biology, towards atomic-scale CAD*.

## AMIB Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Scientific events organisation

#### 7.1.1.1. General chair, scientific chair

Yann Ponty

PARC 2014 (PIMS Analytic RNA Combinatorics meeting), Simon Fraser University (Vancouver, Canada)

Christine Froidevaux and Adrien Rougny

Franco-Japanese Workshop 2014: "Logic Based Methods for Systems Biology". This workshop has been organized at PCRI (Orsay, France) from October 6th to October 8th, 2014. There were 14 participants coming from the following institutions: National Institute of Informatics (Tokyo, Japan), Yamanashi University (Yamanashi, Japan), Tokyo Institute of Technology (Tokyo, Japan), Inria AMIB (LRI, France), Institut de Recherche en Communication et Cybernétique de Nantes (Nantes, France), INRA - Centre de Val de Loire (Nouzilly, France) and Laboratoire d'Informatique de Paris 6 (Paris, France). This workshop took place in the context of a National Institute of Informatics (NII) Collaborative Research Project on "Food and Health with Information Technology".

### 7.1.2. Scientific events selection

#### 7.1.2.1. Chair of conference program committee

Yann Ponty

CMSR 2014 (Computational Methods for Structural RNAs). Satellite event of ECCB'14 (Strasbourg, France).

Loïc Paulevé

SASB 2014 (5th international workshop on Static Analysis and Systems Biology), Munich (Germany)

#### 7.1.2.2. Member of the conference program committee

Sarah Cohen-Boulakia

DILS 2014 (Data integration in the life sciences)

TAPP 2014 (Theory and Practice of Provenance)

SWEET 2014 (Int. sigmod Workshop on scalable workflow enactment engines and technologies)

Alain Denise

ECCB 2014 (European Conference on Computational Biology)

CARI 2014 (African Conference on Research in Computer Science and Applied Mathematics)

CMSR 2014 (Computational Methods for Structural RNAs). Satellite event of ECCB'14 (Strasbourg, France).

Sabine Peres

ECCB 2014 (European Conference on Computational Biology)

Yann Ponty

ECCB 2014 (European Conference on Computational Biology)  
 ISMB 2014 (International conference on Intelligent Systems for Molecular Biology)  
 BICOB 2014 (International Conference on Bioinformatics and Computational Biology)  
 BIOVIS 2014 (Symposium on Biological Data Visualization)

#### 7.1.2.3. Reviewer

Yann Ponty

LATIN 2014 (Latin American Theoretical INformatics Symposium)

Loïc Paulevé

FORMATS 2014 (Formal Modelling and Analysis of Timed Systems)

### 7.1.3. Journal

#### 7.1.3.1. Member of the editorial board

Sarah Cohen-Boulakia

Journal of Data Semantics (Springer)

Alain Denise

Mathematics of Bio-molecules, speciality of the journal *Frontiers in Molecular Bio-sciences* (Ed. Frontiers).

*Technique et Science Informatiques* (Ed. Hermès)

Yann Ponty

Mathematics of Bio-molecules, speciality of the journal *Frontiers in Molecular Bio-sciences* (Ed. Frontiers).

#### 7.1.3.2. Reviewer

The members of the team reviewed numerous papers for numerous journals, including: *Bioinformatics*, *BMC Bioinformatics*, *RNA*, *Nucleic Acids Research*, *Journal of Mathematical Biology*, *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, *Journal of Discrete Algorithms*, *Algorithms for Molecular Biology*, *PLOS One*, *Journal of Theoretical Biology*, *Theoretical Computer Science*...

### 7.1.4. Team seminar

The team seminar, organized by Loïc Paulevé and Sabine Peres, hosted 10 talks delivered by invited speakers from multiple institutions in France and abroad, including:

Alexander Bockmayr (Freie Universität Berlin)

Jan Holub (CTU Prague)

Philippe Icard (BIOTICLA Caen)

Anne Siegel (IRISA)

Denis Thieffry (IBENS)

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

We have and we will go on having trained a group of good multi-disciplinary students both at the Master and PhD level. Being part of this community as a serious training group is obviously an asset. Our project is also very much involved in two major student programs in France: the Master BIBS (Bioinformatique et Biostatistique) at Université Paris-Sud/École Polytechnique and the parcours d'Approfondissement en Bioinformatique at École Polytechnique. We are also involved in a student partnership with McGill University (partenariat France Quebec offering French and Canadian students co-supervised internships (short term -3 to 6 months- or long term -part of the PhD studies-). J.-M. Steyaert is involved in the development of an interdisciplinary cooperation between Polytechnique and AP-HP that will favor interships of Polytechnicians and Masters students in AP-HP operational services.



Ch. Froidevaux is a member of the Scientific Committee of the Computer Science Doctoral School of Paris-Sud University.

Ch. Froidevaux is co-heading the Master (M1 and M2) at the University Paris Sud. At Ecole Polytechnique, J.-M. Steyaert was in charge of M1 and M2 until october 2014. M. Régnier is now in charge. Most team members are teaching in this master.

J. Bernauer was appointed *Chargé d'enseignement* in the Computer Science Department of École Polytechnique (DIX) in 2013.

Master BIBS: J. Bernauer, Informatique théorique et Programmation Python, 20h, M2, Université Paris-Sud, France

Master BIBS: M. Régnier and J.-M. Steyaert, Combinatoire, Algorithmes, Séquences et Modélisation (CASM), 32h, M2, Université Paris-Sud, France

Master : M. Régnier, Basic Algorithms in Computational Biology, 4h, M2, MIPT, Russia.

Cycle Ingénieur Polytechnicien: M. Régnier, Modal Bioinformatique, 8h, 2ème année, École Polytechnique, France

### 7.2.2. Supervision

#### PhD

Adrien Guilhot-Gaudeffroy (co-supervised by Ch. Froidevaux, and J. Bernauer, AMIB and J. Azé LIRMM) has defended his PhD thesis (29/09/2014) <https://hal.archives-ouvertes.fr/tel-01081605>

#### PhD in progress

Mélanie Boudard, *Game theory and stochastic learning for predicting the three-dimensional structure of large RNA molecules*, Univ. Paris XI, Encadrant(els): D. Barth (Univ. Versailles), J. Cohen (CNRS, LRI) and A. Denise.

Bryan Brancotte, *Ranking biological and biomedical data: algorithms and applications*, Université Paris Sud, 01/10/2012, Encadrants: S. Cohen-Boulakia and A. Denise.

Alice Heliou, *Identification et caractérisation d'ARN circulaires dans des séquences NGS*, Ecole Polytechnique, Encadrants: Mireille Régnier et H. Becker

Amélie Heliou, *Game theory and conformation sampling for multi-scale and multi-body macromolecule docking*, Ecole Polytechnique, Encadrantes: J. Bernauer and J. Cohen

Daria Iakovishina, *A Combinatorial Approach to Assembly Algorithm*, Inria, Encadrante: Mireille Régnier

Vincent Le Gallic, *Design de structures secondaires avec contraintes de séquences : une approche globale fondée sur les langages formels*, Univ. Paris Sud. Encadrants: A. Denise and Y. Ponty

Cécile Pereira, *Nouvelles approches bioinformatiques pour l'étude à grande échelle de l'évolution des activités enzymatiques*, Univ. Paris XI, Encadrants: Olivier Lespinet and Alain Denise

Adrien Rougny, *Reasonings on biological knowledge to build and analyze signalling networks*, Univ. Paris Sud. Encadrante: Ch. Froidevaux

Antoine Soulé, *Evolutionary study of RNA-RNA interactions in yeast*, Ecole Polytechnique, Encadrants: J.-M. Steyaert and J. Waldispohl (University McGill, Canada).

### 7.2.3. Juries

#### Expertise

S. Cohen-Boulakia acted as an external expert in the ERC Consolidator Grant, panel 'Computer Science and Informatics'

Y. Ponty is a member of the ‘Comité National’ (hiring/evaluation committee) of CNRS in computer science (section 6) and bioinformatics (cid 51); he acted as an external expert for the Emergence program of Ville de Paris, and for the JCJC program of ANR.

M. Régnier was a member of PES/PEDR attribution juries for INRIA and CNRS. She is a member of DIGITEO program Committee and SDV working group in Saclay area. She acted as an external expert for regional initiatives.

A. Denise was a member of the HCERES evaluation committee of INRA MIAT Unit.

#### Hiring committees

Maitre de conferences, Paris Sud, 2014 Computer Science department: Sarah Cohen-Boulakia, Sabine Peres, Christine Froidevaux;

Professeur, Bordeaux, 2014, Computer Science department: Alain Denise;

CR2, INRIA-IDF: M. Régnier;

CR2, INRIA-RENNES: M. Régnier;

#### PhD juries

M. Folschette (Nantes U.) : M. Régnier;

N. Obeid (Toulouse U.): Ch. Froidevaux;

S. Videla (Rennes U.): Ch. Froidevaux;

R. Champeimont (Pierre et Marie Curie U.): A. Denise;

D. Symeonidou (Paris-Sud U.): A. Denise;

A. Jacquot (Paris-Nord U.): A. Denise;

#### HDR juries

Ch. Sinocquet (Nantes U.): Ch. Froidevaux

M. Smail (Nancy U.): Ch. Froidevaux

P. Amar (Paris-Sud U.) : A. Denise

A. Allauzen (Paris-Sud U.) : A. Denise

F. Tahy (Evry U.) : M. Régnier;

J. Bernauer (Paris-Sud U.) : Ch. Froidevaux, J.-M. Steyaert

### 7.3. Popularization

Y. Ponty authored the pop. sci. paper *Bio-algorithmique des ARN : petite promenade aux interfaces* [31] for 1024, the journal of the French society of computer science (SIF).

## ANGE Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. Member of the organizing committee

N. Seguin was a member of the organizing committee of “**Mathematical Hydrodynamics 2014**” which took place in Paris in June.

As a member of EGRIN, A. Mangeney co-organised the 2<sup>nd</sup> summer school which took place at domaine de Chalès from June, 30. to July, 3.

##### 9.1.2. Involvement in the mathematical community

E. Godlewski is a member of the board of AMIES.

A. Mangeney is a member of the scientific committees of the Institut de Physique du Globe de Paris (Univ. Paris 7), of Observatory of Côte d’Azur, of the Bureau de Recherches Géologiques et Minières and of the CNRS Institut National des Sciences de l’Univers “Natural Hazards”.

Y. Penel is a member of the commission Popularisation of the French society for Applied and Industrial Mathematics (SMAI).

##### 9.1.3. Journal

###### 9.1.3.1. Reviewer

Member	Journal	Others
E. Godlewski	Numerische Mathematik, Computational and Applied Mathematics, ESAIM:M2AN, Journal of Difference Equations	
A. Mangeney	Physics of Fluids, Proceedings of the Royal Society A, Landslides, Journal of Geophysical Research, Journal of Fluid Mechanics, Earth Surface processes and Landforms and Bulletin of Volcanology	
Y. Penel	Journal of Scientific Computing	

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master’s degree (M2) : A. Mangeney and J. Sainte-Marie, Dynamique des Ecoulements gravitaires et tsunamis, 40 hours (lectures and programming classes), Univ. Paris Diderot Paris 7

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) : E. Godlewski, Numerical methods for nonstationary PDEs, 18 hours (example and example classes), Univ. Pierre et Marie Curie Paris 6

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

Master's degree (M1) : A. Mangeney, Géologie de l'Environnement, 31 hours (lectures and programming classes), Univ. Paris Diderot Paris 7

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

Engineering school (2nd year) : Y. Penel, Numerical Analysis applied to financial issues, 15 hours (lectures), EFREI

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

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

Bachelor's degree (L2 and L3) : C. Guichard, Introduction to Scilab, 36 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L2)] : Y. Penel, Integration in 2 and 3 dimensions, 24 hours (lectures), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1) : N. Seguin, Mathematics for Biology and Chemistry, 50 hours (example classes), Univ. Nantes

Bachelor's degree (L1) : N. Aïssiouene, Calculus, 48 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.

### 9.2.2. Supervision

PostDoc in progress : 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), from Nov. 2014

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 Nov. 2013

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 Oct. 2014

PhD in progress : 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), from 2011

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 Oct. 2013

PhD in progress : 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), from 2011

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 Oct. 2013

PhD in progress : Laurent Moretti, *Modelling of seismic waves generated by landslides*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with Y. Capdeville), from 2010

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 Oct. 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 in progress : 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), from Nov. 2012

M2 internship : Chen Cheng, *Modélisation numérique de l'érosion en rivière : un schéma de relaxation pour le modèle de Saint-Venant Exner*, ENSTA, supervised by E. Audusse, Spring 2014

M2 internship : Do Minh Hieu, *Numerical Analysis For Quasi Geostrophic Flows*, Univ. Paris 13, supervised by E. Audusse and Y. Penel (in collaboration with S. Dellacherie and P. Omnes), Spring 2014

M2 internship : Antoine Haddon, *Interprétation cinétique et schémas à grands pas de temps pour le système de Saint-Venant*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse, Y. Penel and J. Sainte-Marie, Summer 2014

M2 internship : Ethem Nayir, *Analyse mathématique d'un modèle hyperbolique pour les écoulements à surface libre*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse and Y. Penel, Summer 2014

### 9.2.3. Juries

22/01/14, PhD : J. Sainte-Marie (referee) : David Benoit (Univ. Paris-Est, *Divers problèmes théoriques et numériques liés à la simulation de fluides non newtoniens*)

09/10/14, HdR : A. Mangeney : Frédéric Cappa (Univ. Nice, *Le rôle des fluides dans la mécanique des failles et des glissements de terrain*)

17/10/14, PhD : N. Seguin (referee) : Arnaud Duran, (Univ. Montpellier 2, *Numerical simulation of depth-averaged flow models: a class of Finite Volume and discontinuous Galerkin approaches*)

09/12/14, PhD : E. Godlewski (president) : Mathieu Girardin (Univ. Pierre et Marie Curie Paris 6, *Méthodes numériques tout-régime et préservant l'asymptotique de type Lagrange-Projection. Application aux écoulements diphasiques en régime bas Mach*)

09/12/14, PhD : A. Mangeney : Nadège Langet (IPG Strasbourg), *Détection et caractérisation massives de phénomènes sismologiques pour la surveillance d'évènements traditionnels et la recherche systématique de phénomènes rares*)

## 9.3. Popularisation

2014 : E. Audusse intervened in a secondary school (Pontault Combault) for "Maths en Jeans".

2014 : P. Ung presented his PhD topic in a high school (Lycée Duhamel Du Monceau, Pithiviers). This intervention was an initiative of "Centre-Science" (Orléans) in the context of a doctoral training.

26–28/11/14 : M. Parisot and Y. Penel ran the stand of the French mathematics community (SFdF, SMAI, SMF) at the Onisep part of the European exhibition for Education.

12/12/2014 : E. Audusse gave a talk at Bobigny for Mathematic Park entitled "Maths and Natural Hazards".

Alongside these events, the web platform TsunaMaths developed by E. Audusse, R. Hamouda and J. Sainte-Marie was presented at the exhibition on the occasion of "Mathematics of Planet Earth" (December 2012-December 2013) at the Deutsches Technikmuseum (Berlin). It was also a part of the Nims-Imaginary exhibition at Seoul (Aug. 13-20, 2014) on the occasion of ICM2014.

## ARAMIS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

O. Colliot acts as an expert for the World Health Organization (WHO) panel for setting research priorities in the field of dementia.

O. Colliot acts as an expert for the Canada Foundation for Innovation (CFI), Fonds National de la Recherche Scientifique (Belgium), Alzheimer Nederland, and the FCS Sciences et Technologies pour l'Aéronautique et l'Espace.

F. De Vico Fallani gave invited talk at the Workshop "Controversies in EEG source analysis" - Key Lab of Neuroinformation of the Ministry of Education, Chengdu, China (August 2014).

F. De Vico Fallani gave invited talk "6th Congress of Society Research Cerebellum", IRCCS Fondazione Santa Lucia, Rome, Italy (April 2014).

F. De Vico Fallani acts as an expert for the Research Foundation - Flanders, Belgium.

S. Durrleman acted as an expert for INdAM Fellowships in Mathematics cofounded with Marie Curie Actions and for ANEP (Spanish National Agency for Scientific Evaluation (ANEP)) CONEX Program

S. Durrleman gave an invited presentation at the workshop "comprendre et analyser les phénomènes temporels" of the conference RFIA (Reconnaissance des Formes et Intelligence Artificielle) Rouen, (July 2014)

S. Durrleman gave an invited presentation at the workshop "Statistical challenges in Neurosciences" at Warwick University, UK (September 2014)

S. Durrleman gave an invited presentation at the workshop "Spatiotemporal Image Analysis for Longitudinal and Time-Series Image Data" of the MICCAI Conference, Boston, USA (September 2014)

M. Chavez gave an invited presentation at the "Mediterranean School of Complex Networks" Salina, Italy (June 2014)

M. Chavez gave an invited seminar at the Universitat Pompeu Fabra, Barcelona, Spain (February 2014)

M. Chavez gave an invited seminar at the Universitat Politecnica de Cataluna, Terrasa, Spain (February 2014)

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

F. De Vico Fallani is publicity chair for the IEEE BIoMS Workshop, University "Roma TRE", Rome, Italy 2014

F. De Vico Fallani acted as chairman for 3rd congress of the Society for Research on the Cerebellum, IRCCS F. Santa Lucia, Rome, Italy 2014.

S. Durrleman was co-chair of the 2nd MICCAI Workshop on Deep Brain Stimulation Methodological Challenges (DBSMC), Boston, USA, 2014

S. Durrleman was co-chair of the 3rd International MICCAI Workshop on Spatiotemporal Image Analysis for Longitudinal and Time-Series Image Data (STIA), Boston, USA, 2014

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

D. Dormont is member of the board of the French Society for Neuroradiology.

S. Durrleman was member of the program committee of the 6th International Workshop on Biomedical Registration (WBIR), London, 2014

#### 9.1.2.2. Reviewer

O. Colliot acted as a reviewer for the conference Medical Image Computing and Computer Aided Intervention (MICCAI) .

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

O. Colliot was a member of the Editorial Board of the ISTE-Wiley-Hermes "Neural Engineering" book series.

#### 9.1.3.2. Reviewer

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.

F. De Vico Fallani acted as a reviewer for IEEE TBME, IEEE TNRSE, Hum Brain Mapp, Neuroimage, Plos Comp Bio, J Neurosci Meth, Brain Topography, Clin Neurophysiology, Plos One, Scientific Reports.

S. Durrleman acted as a reviewer for Medical Image Analysis, Neuroimage, IEEE Trans. Medical Imaging (TMI), IEEE Trans. Image Processing (TIP), Image and Vision Computing, International Journal of Computer Vision (IJCV), Annals of Applied Statistics, Journal of Computational and Applied Mathematics, SIAM Journal on Imaging Sciences, Journal of Alzheimer's disease.

M. Chavez acted this year as a reviewer for IEEE TBME, PLoS Comput Biol, PLoS One, J Royal Soc Interface, Phil Trans Royal Soc B, and Neurosc Behav Rev.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. 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, 9 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

PhD school: Fabrizio De Vico Fallani, "Data analysis and modeling in cognitive and clinical neuroscience" - 3hours - Faculty of Psychology and Educational Sciences, Ghent, Belgium.

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

### 9.2.2. Supervision

PhD in progress : Claire Cury, Analyse statistique de la variabilité anatomique de l'hippocampe à partir de grandes populations, Université Pierre et Marie Curie, Started in 2011, advisor: Olivier Colliot

PhD in progress : Takoua Kaaouana, Détection automatique et analyse des micro-saignements cérébraux : Application à des séquences d'imagerie cliniques et à de grandes populations de sujets, Université Pierre et Marie Curie, Started in 2012, advisor: Didier Dormont, co-advisors: Marie Chupin, Ludovic de Rochefort

PhD in progress: Pietro Gori, Statistical analysis of neuronal connectivity in patients with Gilles de la Tourette syndrome based on anatomical structures extracted from both structural and diffusion images, Université Pierre et Marie Curie, Started in 2012, advisors: N. Ayache, O. Colliot and S. Durrleman

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



Visiting PhD student (Janvier - April 2014): Johann Heinz Martinez, Characterization of functional interactions between neural oscillations from EEG recordings, Universidad Politecnica de Madrid, Spain. Responsable: Mario Chavez

Visiting PhD student (September - November 2014): Anton Giulio Maglione, Functional brain connectivity during neuroaesthetics experimental paradigms, Universita Sapienza, Roma, Italy. Responsable: Mario Chavez

Master 2: Kevin Roussel, Morphométrie de la structure interne de l'hippocampe en IRM 7 Tesla, Université Pierre et Marie Curie, Mar-Sept 2014, advisor: Olivier Colliot

Master 2: Evgeny Zuenko, Segmentation des hypersignaux de la substance blanche chez le sujet âgé : amélioration de la méthode WHASA et évaluations sur plusieurs cohortes, Université Paris Sud, Mars-Aout 2014, advisor: Marie Chupin

Master 2: Kanza Dekkiche, Cartographie de susceptibilité magnétique (CSM): Optimisation et comparaison entre méthodes sur des données multicentriques, Université Nice Sophia Antipolis, Mar-Aout 2014, advisor: Marie Chupin

End-of-course internship: Maxime Corduant, Interface graphique interactive pour la segmentation automatisée des sous régions de l'hippocampe humain in-vivo en IRM à très hauts champs, ENSIIE, Mar-Sept 2014, advisor: Marie Chupin

End-of-course internship: Fanny Grosseclin, MATLAB graphical interface for statistical analysis of physiological recordings from monitoring of human respiratory states, Université Paris Est Créteil Val-de-Marne, March - August 2014, advisor: Mario Chavez

End-of-course internship: Guillaume Ruffin, Utilisation de la géométrie Riemannienne pour la caractérisation de la dynamique épileptique chez l'homme, Université Paris Est Créteil Val-de-Marne, March - August 2014, advisor: Mario Chavez

End-of-course internship: Antoine Latrille, Données Syndromiques et Forçages Climatiques en Epidémiologie, ESIEE-Paris, March - August 2014, advisor: Mario Chavez

### 9.2.3. *Juries*

Olivier Colliot participated, as referee, to the PhD committee of Jonathan Young (University College London), 2014 (supervisors: Sébastien Ourselin and John Ashburner).

Olivier Colliot participated, as examiner, to the PhD committee of Pierre Besson (Université de Lille), 2014 (supervisor: Louise Tyvaert).

Olivier Colliot participated, as examiner, to the PhD committee of Hao Xu (Ecole Polytechnique), 2014 (supervisors: Stéphanie Allasonnière and Bertrand Thirion).

Fabrizio De Vico Fallani participated, as referee, to the PhD committee of Jonas Chatel-Goldman (Université de Grenoble), 2014 (supervisor: Marco Congedo, Jean-Luc Schwartz and Christian Jutten).

Fabrizio De Vico Fallani participated, as examiner, to the PhD committee of Aude Costard (Université de Grenoble), 2014 (supervisor: Olivier Michel, Patrice Arby, Sophie Achard and Pierre Borgnat).

Fabrizio De Vico Fallani participated, as referee, to the PhD committee of Guillame Lio (Université de Lyon 1), 2014 (supervisor: Philippe Boulinguez).

Stanley Durrleman participated, as examiner, to the PhD defense of J. Fishbaugh (University of Utah), 2014 (supervisor: Guido Gerig).

Mario Chavez participated, as referee, to the PhD committee of Alessio Cardillo (Universidad de Zaragoza, Saragose, Spain), 2014 (supervisor: Jesus Gardenes).

Mario Chavez participated, as referee, to the PhD committee of Rafael Romero-Garcia (Universidad Pablo de Olavide, Seville, Spain), 2014 (supervisor: Jose Luis Cantero).

## 9.3. Popularization

The team is involved in the BrainCatalogue project (coordinator: Roberto Toro, Institut Pasteur) dedicated to the popularization of neuroanatomical knowledge. The project features MRI scans and 3D reconstructions for various vertebrates species (bear, mouse, macaque, dolphin, leopard, rhinoceros, human, squirrel ...).

The team coordinates the activity of the FreeBorn consortium which aims at promoting the interaction and visibility of the French research teams working on brain connectivity and network theory: <https://sites.google.com/site/fr2eborn/>

## ASCLEPIOS Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. general chair, scientific chair

- **N. Ayache** organized a new course on the "Personalized Digital Patient" at Collège de France for the annual chair on "Informatics and Computer Sciences". He gave 9 lectures and invited 26 lecturers including H. Delingette and X. Pennec from the Asclepios team.

#### 8.1.1.2. member of the organizing committee

- **X. Pennec** was co-organizer of the MICCAI workshop STIA'14 (Spatio-Temporal Image Analysis for longitudinal and time series image data), which was held at Cambridge, MA (USA) on September 18;
- **M. Sermesant** was a co-chair of the MICCAI 2014 Workshop Statistical Atlases and Computational Models of the Heart and a co-organiser of the UCL Centre for Cardiovascular Imaging and Inria Asclepios Project collaborative workshop: Translational Applications of Cardiovascular Models.

### 8.1.2. Scientific events selection

#### 8.1.2.1. member of the conference program committee

- **X. Pennec** was program committee member of the MICCAI 2014 conference (Cambridge, MA, USA), area chair for ICPR 2014 conference (Stockholm, Sweden), and area chair of the International Symposium on Biomedical Imaging (ISBI'15).
- **H. Delingette** was program committee member of the RFIA 2014 conference, the conference on Virtual Reality Interactions and Physical Simulation (VRIPHYS'14), the International Symposium on BioMedical Simulation (ISBMS 2014).

#### 8.1.2.2. reviewer

- **H. Delingette** was reviewer for the International Symposium on Biomedical Imaging (ISBI'12), the conference on Virtual Reality Interactions and Physical Simulation (VRIPHYS'14), the International Symposium on BioMedical Simulation (ISBMS 2014), the conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2014), the European Conference on Computer Vision (ECCV 2014).
- **M. Sermesant** was a reviewer for the MICCAI 2014 and EMBS conferences.
- **X. Pennec** was reviewer for the sixth Workshop on Non-Rigid Shape Analysis and Deformable Image Alignment (NORDIA'14); the workshop on computational diffusion MRI (CDMRI'14); the MICCAI 2014 Workshop on Medical Computer Vision (MCV'14); the 6th International Workshop on Biomedical Image Registration (WBIR'2014); the 24th biennial international conference on Information Processing in Medical Imaging (IPMI 2015).

### 8.1.3. Journal

#### 8.1.3.1. member of the editorial board

- **N. Ayache** is the co-founder and the Co-Editor in Chief with J. Duncan (Professor at Yale) of *Medical Image Analysis*<sup>0</sup>. This scientific journal was created in 1996 and is published by Elsevier.

<sup>0</sup>[http://www.elsevier.com/wps/find/journaleditorialboard.cws\\_home/620983/editorialboard](http://www.elsevier.com/wps/find/journaleditorialboard.cws_home/620983/editorialboard)

- **N. Ayache** is Associated Editor of *IEEE Transactions on Medical Imaging*<sup>0</sup> and a member of the editorial board of the following journals: *Medical Image Technology* (Japanese journal) and *Journal of Computer Assisted Surgery* (Wiley).
- **H. Delingette** is a member of the editorial board of the journal *Medical Image Analysis* (Elsevier).
- **I. Strobant** is editorial coordinator for *Medical Image Analysis*, Elsevier (since october 2001) and editorial assistant for *IEEE Transactions on Medical Image Analysis*, (since october 2001).
- **X. Pennec** is a member of the editorial board of the journal *Medical Image Analysis* (Elsevier), of the *International Journal of Computer Vision* (Springer), of the *SIAM Journal on Imaging Sciences* (SIIMS), and of the *Journal of Mathematical Imaging and Vision* (JMIV).

#### 8.1.3.2. reviewer

- **H. Delingette** was reviewer for the following journals : *Medical Image Analysis* (Elsevier), *IEEE Transactions in Medical Imaging*, *IEEE Transactions in Biomedical Engineering*, *Computer Vision and Image Understanding*, *Biomedical Engineering*, *The Visual Computer*, *Expert Review of Medical Devices*, *Journal of Fluids and Structures*.
- **X. Pennec** was reviewer for the following journals : *International Statistical Review* (ISR), *Medical Image Analysis* (MedIA), *IEEE Transactions in Medical Imaging* (TMI), *NeuroImage* (NIMG), *Symmetry*, a chapter of a Springer book, *IEEE Transactions on Pattern Analysis* (PAMI), *Int. journal of Computer Vision* (IJCV), *Journal of mathematical imaging and vision* (IJCV), *SIAM journal on Imaging Sciences* (SIIMS).
- **M. Sermesant** was reviewer for the following journals: *Nature Scientific Reports*, *Journal of the American College of Cardiology*, *IEEE Transactions on Medical Imaging*, *Medical Image Analysis*, *International Journal for Computer Assisted Radiology and Surgery*, *Computers in Biology and Medicine*.

#### 8.1.4. Invited Lectures

We only list invited talks here. Please refer to general references for regular participation in conferences with a submission process.

- **Nicholas Ayache** gave the following invited lectures:
  - Inaugural lecture at Collège de France on 10 April 2014 entitled "From Medical Images to the Digital Patient"
  - Keynote lecture at the ICIP 2015 conference (Oct. 28 2014)
  - Keynote lecture at Sanofi (Nov. 28 2014)
  - Invited lectures at the "Forum of Laureates" (Dec. 11 2014).
- **Hervé Delingette** gave the following invited lectures:
  - at the *Deformable Object Manipulation international workshop* held in Lyon (Japan).
  - at the *Medical Imaging Summer School* in Favignana (Italy)
  - at a Seminar in College de France within the chair "Informatique et sciences numériques" of Nicholas Ayache on the personalized digital patient, Paris, May 6th, 2014.
  - the *Summer School on Medical Simulation* in Lyon (France).
- **Xavier Pennec** gave the following invited lectures:
  - séminaire de théorie du contrôle, Univ. Toulon, Decembre 11, 2014.
  - Int. workshop on Geometry of Information and Optimization (GIO), Bordeaux, December 4-5, 2014.
  - Geometrical Models in Vision workshop, semester on Geometry, Analysis and Dynamics on Sub-Riemannian Manifolds, Institut Henry Poincaré, Paris - October 22nd-24th, 2014.

<sup>0</sup><http://www.ieee-tmi.org/>

- the Medical Imaging Summer School (MISS' 14) in Favignana (Italy), July 2014.
- Symposium on Statistical Shape models & Applications (Shape 2014), Delémont, Swiss, June 11-13 2013. Keynote speaker.
- Seminar at College de France within the chair "Informatique et sciences numériques" of Nicholas Ayache on the personalized digital patient, Paris, May 13, 2014.
- MICCAI PC Workshop, Cambridge, MA, USA, May 16, 2014.
- Séminaires du Laboratoire de Mécanique, Lille Univ., March 20 2014.
- **Maxime Sermesant** gave invited lectures at the Frontiers Conference on Pediatrics and Congenital Heart Diseases, at the European Society of Cardiovascular Magnetic Resonance, and the opening lecture at the Science and Technology Department Day of Bordeaux University.

### 8.1.5. Other Scientific Animation Activities

- **Nicholas Ayache** a member of the "Comité de la Recherche Biomédicale en Santé Publique (CRBSP)" of the Nice hospitals since 2008. He was invited to Tokyo, Japan in February 2014 to evaluate a national program on "Computational Anatomy" funded by the MEXT.
- **Xavier Pennec** is a member of the MICCAI Society Board of Directors, of the Doctoral follow-up Committee (CSD) at Inria Sophia Antipolis, and in charge of the relationships of Inria-Sophia with the Nice University Hospital (CHU). In 2014, he was a member of the jury of the Vienna Science and Technology Fund (WWTF) for their 2014 call on imaging.
- **H. Delingette** is a member of the local committee in charge of the scientific selection of visiting scientists (Comité NICE) and the local committee on the immersive platform. He was an evaluator for the integrated European project ARTREAT, for the National Commission for Scientific and Technological Research of the Government of Chile (CONICYT). He was involved in the redaction of the application of the Université Cote d'Azur to the IDEX bid.
- **M. Sermesant** acted as an evaluator for the the Natural Sciences and Engineering Research Council of Canada (NSERC). He is a member of the Medical Simulation Working Group of Aviesan and of the CCC (local committee in charge of the selection of funding for courses and conferences organisation). He organized two hackfests for the medInria software.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master : H. Delingette and X. Pennec, Introduction to Medical Image Analysis, 34h course, Master 2 MVA, ENS Cachan, France

Master : H. Delingette and X. Pennec, Advanced medical Imaging, 29h course, Master 2 MVA and École Centrale de Paris, France

Master : H. Delingette and X. Pennec, Computational Anatomy and Physiology, 21h course, Master CBB - Computational Biology and Biomedicine, Univ. Nice-Sophia Antipolis.

### 8.2.2. Supervision

#### 8.2.2.1. PhD defended in 2014

1. Erin Stretton, *Simulation of patient-specific glioma models for therapy planning*. Nice Sophia-Antipolis University, November 2014.
2. Hugo Talbot, *Simulation of Radiofrequency ablation of cardiac cells*. University of Lille, July 2014. [[1]]

#### 8.2.2.2. Current PhDs

1. Chloé Audigier, *Modeling radio-frequency ablation for the planning of abdominal tumors resection*, Nice Sophia-Antipolis University. Started in April 2012.

2. Thomas Benseghir, *3D/2D Coronary Registration for Interventional Cardiology Guidance*, Nice Sophia-Antipolis University. Started in March 2012.
3. Rocio Cabrera Lozoya, *Radio frequency ablation planning for cardiac arrhythmia treatment through biophysical modelling and machine learning approaches*, Nice Sophia-Antipolis University. Started in February 2012.
4. Nicolas Cordier, *Simulation and Analysis and Simulation of Brain Tumors Images*, University of Lille. Started in February 2012.
5. Pietro Gori, *Statistics on the brain connectivity of patients with neurological diseases*, University of Paris. Started in 2012. Thesis in collaboration with the Aramis project-team, co-directed by O. Colliot, S. Durrleman and N. Ayache.
6. Vikash Gupta, *Diffusion tensor imaging of the brain: towards quantitative clinical tools*, Nice Sophia-Antipolis University. Started in November 2011.
7. Mehdi Hadj Hamou, *Biophysical modeling of the anatomical evolution of the brain*, Nice Sophia-Antipolis University. Started in September 2012.
8. Bishesh Khanal, *Modeling the atrophy of the brain in Alzheimer's disease*, Nice Sophia-Antipolis University. Started in November 2012.
9. Loic Le Folgoc, *Biophysical Personalization of Cardiac Models based on Machine Learning*, Nice Sophia-Antipolis University. Started in June 2012.
10. Jan Margeta, *Indexation of time-series 4D cardiac MR images*, Ecole des Mines de Paris. Started in March 2011.
11. Nina Miolane, *Geometric Statistics in Computational Anatomy: Template Estimation and Subspace Learning in Manifolds, Lie groups and Stratified Spaces*, Nice-Sophia Antipolis University. Started in November 2013.
12. Hugo Talbot, *Simulation of Radiofrequency ablation of cardiac cells*, University of Lille. Started in September 2010.
13. Anant Vemuri, *Augmented reality for image-guided surgery*, Nice-Sophia Antipolis University. Started in 2012.
14. Marc-Michel Rohé, *Analyse statistique spatio-temporelle des formes, déformations, flots et propriétés physiologiques du cœur*, Nice-Sophia Antipolis University. Started in 2014.
15. Sophie Giffard-Roisin, *Non-invasive Estimation of Cardiac Electrophysiological Parameters*, Nice-Sophia Antipolis University. Started in 2014.
16. Roch Mollero, *Uncertainty quantification in personalized electromechanical models. Application to cardiomyopathies and obesity*, Nice-Sophia Antipolis University. Started in 2014.
17. Thomas Demarcy, *Segmentation and anatomic variability of the cochlea and other temporal bone structures from medical images*, Nice-Sophia Antipolis University. Started in 2014.

#### 8.2.2.3. Masters Thesis

1. Sophie Giffard-Roisin, *Evaluation of Personalised Canine Electromechanical Cardiac Models*. MVA Master, ENS Cachan. From April 2014 to August 2014.
2. Clair Vandersteen, *New concepts in mini-invasive cochlear implantation surgery applied to a surgical virtual planification*. Surgical Sciences Master, Medicine faculty Créteil Paris XI. From november 2013 to october 2014.

#### 8.2.3. Juries

N. Ayache was co-supervisor of the Phd thesis of E. Stretton (École des Mines de Paris).

Hervé Delingette was co-supervisor of the PhD theses of E. Stretton (École des Mines de Paris) and H. Talbot (Université de Lille I), reviewer in the PhD thesis committee of Blandine Romain (Ecole Centrale de Paris), of Jordan Bano (Université de Strasbourg), of Petru-Stefan Manescu (Université de Lyon), of Mathieu Bailet (Université Joseph Fourier de Grenoble) and examiner in the PhD thesis committee of Elisa Schenone (Université Paris VI), Xavier Faure (Université de Lyon I), and Ahmed Yureidini (Université Lille I).

Maxime Sermesant was examiner in the PhD thesis committee of H. Talbot (Université de Lille I).

### **8.3. Popularization**

Maxime Sermesant gave 2 presentations in 2014 about research and medical imaging in local high schools (Lycée Tocqueville in Grasse and Lycée Saint Exupéry in Saint Raphaël).

## ATHENA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, Scientific chair

- R. Deriche is Adj. Director at the Doctoral School EDSTIC (<http://edstic.i3s.unice.fr/index.html>)
- M. Clerc is “Vice-Présidente du Comité des Projets” (Deputy Head of Science) of Inria Sophia Antipolis Méditerranée Research Center.
- T. Papadopoulo (since september 2011) is the coordinator of the Master of Science in Computational Biology and Biomedicine from University of Nice Sophia Antipolis (Website: <http://cbb.unice.fr>). The scientific goal of this program is to focus on the human being from different perspectives (understanding and modeling functional aspects or interpreting biomedical signals from various devices) and at different scales (from molecules to organs and the whole organism).

#### 9.1.1.2. Member of the organizing committee

- R. Deriche is member of 4 Scientific Councils: University of Nice Sophia Antipolis, ITMO ITS (Institut des Technologies pour la Santé), Olea Medical Company (<http://www.olea-medical.com/>) and the GIS UNS-ENSL-CNRS-Inria.
- R. Deriche is member of the Administration Council of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes).

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- M. Clerc is member of the conference programme committee of International Conference on Basic and Clinical Multimodal Imaging (BACI2015), and of the award committee of the IEEE EMBC conference on Neural Engineering (NER2015).
- T. Papadopoulo is member of the conference programme committee for the national conference GRETSI 2015.

#### 9.1.2.2. Reviewer

- R. Deriche serves several international conferences (Isbi, MICCAI, ISMRM...).
- T. Papadopoulo served the international conferences: ISBI 2014, ISBI 2015, NER 2015, VISAPP 2015.
- M. Clerc served as reviewer for the international conferences: EMBC 2014, ICASSP 2014.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- R. Deriche is member of the Editorial Board of the Journal of Neural Engineering, Associate Editor of SIAM Journal on Imaging Sciences (SIIMS) and editorial board member at Springer for the book series entitled Computational Imaging and Vision.
- M. Clerc is member of the Editorial Board of Biomedical Engineering OnLine, and the ISTE-Wiley book series.

#### 9.1.3.2. Reviewer

- R. Deriche serves several international journals (NeuroImage, IEEE Transactions on Medical Imaging, Magnetic Resonance in Medicine, JMIV, Medical Image Analysis Journal,...).



- In 2014, T. Papadopoulo served as a reviewer for the journals TBME, PMB, Frontiers In Neuroscience.
- In 2014, M. Clerc served as a reviewer for the Proceedings of the IEEE, Physiological Measurement

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Master: R. Deriche, Variational approaches and Geometrical Flows for Brain Imaging, 36 ETD, M2 "Computational Biology and Biomedicine", University of Nice Sophia Antipolis, France.
- Master: R. Deriche, Advanced Image Processing Techniques, 12 ETD, M1 International CBB & Ubinet, University of Nice Sophia Antipolis, France.
- Master: M. Clerc and T. Papadopoulo, *Inverse Problems in Brain Functional Imaging*, 36 ETD, M2 "Computational Biology and Biomedicine", University of Nice Sophia Antipolis, France.
- Master: T. Papadopoulo, *3D Computer Vision*, 12 ETD, M1 International Ubinet, University of Nice Sophia Antipolis, France.
- Master: T. Papadopoulo, *Inverse problems for brain functional imaging*, 24 ETD, M2, Mathématiques, Vision et Apprentissage, ENS Cachan, France.
- PhD: M. Clerc gave a course in a workshop dedicated to the OpenViBE software at the 6th International Brain Computer Interface Conference in Graz, September 2015.

### 9.2.2. Supervision

- PhD in progress: Kai Dang, "Modeling and characterizing electrical conductivity for cochlear implantation", started Dec. 2013, Université Nice Sophia Antipolis. Supervisor: Maureen Clerc.
- PhD in progress: Rutger H.J. Fick, "Microstructure Recovery via dMRI", started Oct. 2013, Université Nice Sophia Antipolis. Supervisor: Rachid Deriche.
- PhD in progress: Gabriel Girard, "fMRI & dMRI", started Sept. 2012, Supervisors: Rachid Deriche & Maxime Descoteaux (University of Sherbrooke, CA).
- PhD in progress: Mouloud Kachouane, "Invariants and biomarqueurs in dMRI", started Oct. 2012, Supervisors: Rachid Deriche & L. Boumghar (USTHB, Algiers).
- PhD in progress: Thinhinane Megherbi, "HARDI & High Order Tensors", started Sept. 2011, Supervisors: Rachid Deriche & L. Boumghar (USTHB, Algiers)
- PhD in progress: Marco Pizzolato, "Diffusion & Perfusion MRI : From bench to bedside" started Dec. 2013, Université Nice Sophia Antipolis. Supervisor: Rachid Deriche.
- PhD in progress: Sebastian Hitziger, "MEEG signal processing", started Nov. 2011, Supervisors: Théodore Papadopoulo & Maureen Clerc.
- PhD in progress: Brahim Belaoucha, "Using diffusion MR information to reconstruct networks of brain activations from MEG and EEG measurements", Université Nice Sophia Antipolis, started October 2013, Supervisor: Theo Papadopoulo.
- Master: Lucas Drevillon, ISEN Brest, Élève Ingénieur Master 2 - Majeur: Technologies Biomédicales. Supervised by D. Wassermann.
- Master: Atousa Setoodegan, Université Nice Sophia Antipolis, Memoire Master 2. Supervised by D. Wassermann.
- Master: Aymeric Reshef, ENS Cachan, Memoire Master 2, Mathématiques / Vision / Apprentissage. Supervised by D. Wassermann & William Wells III (Harvard Medical School / MIT).
- Master: Asya Metelkina, Université Nice Sophia Antipolis, Memoire Master 2, Supervised by M. Clerc.

- Master: Christos Papageorgakis, Université Nice Sophia Antipolis, Memoire Master 2, Supervised by T. Papadopoulo.
- Master: Alicia Malé, Télécom Physique Strasbourg, Memoire Master 2, Supervised by T. Papadopoulo.

### **9.2.3. Juries**

- Rachid Deriche participated in the PhD juries of H.T. Nguyen (Neurospin, Saclay), C. Herold (Telecom ParisTech), Lars Lau Rakêt (CS Dept. University of Copenhaguen), C.Y. Sun (Insa, Lyon), S. Razakarivony (Caen Basse Normandie Univ.)
- Rachid Deriche participated in the HDR juries of J.P Da Costa (Université de Bordeaux).
- Demian Wassermann participated in the PhD Jury of V. Siless (Parietal EPI - Inria Saclay / Neurospin CEA, Orsay).
- Maureen Clerc participated in the PhD jury of Alexandre Fouchard (mi-parcours, CEA-LETI, Grenoble).

## BAMBOO Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, scientific chair

Cristina Vieira is director of the GDRE “Comparative genomics” since the GDRE was renewed in 2010. Marie-France Sagot co-organised the Colloquium *EMOTIONS 2014* (<http://emotions2014.sciencesconf.org/>) as well as the International School *ADDICTION 2014* (<http://team.inria.fr/bamboo/en/events/school-addiction/>). She is also since 2010 member and since 2014 Chair of the Steering Committee of the International Conference *LATIN* (<http://www.latintcs.org/>). She is since member of the Steering Committee of the *European Conference on Computational Biology (ECCB)*.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Member of the conference program committee

Marie-France Sagot was a member of the program committee for the following international conferences in 2014: 22nd Annual International Conference on Intelligent Systems in Molecular Biology (ISMB), Prague Stringology Conference 2014 (PSC), 18th Annual International Conference on Research in Computational Molecular Biology (RECOMB), 12th RECOMB Comparative Genomics 2014 (RECOMB-CG), RECOMB Satellite Workshop On Massively Parallel Sequencing (RECOMB-SEQ), 14th Workshop on Algorithms in Bioinformatics (WABI).

#### 8.1.2.2. Reviewer

Besides the above, various other members of BAMBOO have been reviewer for conferences. These include Christian Baudet, Laurent Bulteau, Vincent Lacroix, Arnaud Mary, Gustavo Sacomoto, and Blerina Sinimeri.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

Marie-France Sagot is member of the editorial board of *Lecture Notes in Bioinformatics* (subseries of *Lectures Notes in Computer Science*), *Journal of Discrete Algorithms*, *BMC Bioinformatics*, and *BMC Algorithms for Molecular Biology*.

Cristina Vieira is Executive Editor of *Gene*, and since 2014 member of the Editorial Board of *Mobile DNA*.

#### 8.1.3.2. Reviewer for Journals

Susan Higashi was reviewer for *Algorithms for Molecular Biology*, and *Evolutionary Bioinformatics*. Vincent Lacroix was reviewer for *BMC Genomics*, *PLoS Computational Biology*, and *Methods*. Gustavo Sacomoto was reviewer for *Bioinformatics*, and *BMC Bioinformatics*. Fabrice Vavre was reviewer for *PLoS Biology*, *Genome Biology and Evolution*, *Applied and Environmental Microbiology*, *Journal of Applied Entomology*, *Symbiosis*, *Microbiology*, *Bulletin of Entomological Research*.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

The members of BAMBOO teach both at the Department of Biology of the University of Lyon (in particular within the MIV (Mathematics and Computer Science for the Life Sciences) specialty) and at the department of Bioinformatics of the Insa (National Institute of Applied Sciences). Cristina Vieira is responsible for the Evolutionary Genetics and Genomics academic career of the Master Ecosciences-Microbiology. She was awarded an IUF (Institut Universitaire de France) distinction and teaches genetics 64 hours per year at the University and École Normale Supérieure. Hubert Charles is responsible for the Master of Modelling and Bioinformatics (BIM) at the Insa of Lyon. He teaches 192 hours per year in statistics and biology. Vincent Lacroix is responsible for several courses both at the University (L2 Bioinformatics, L3 Advanced Bioinformatics) and at the Insa (M1: Gene Expression, M2: Introduction to Bioinformatics for Biochemists). He teaches 192 hours per year, except in 2013-2014 where he taught 120 hours as he had a partial sabbatical funded by Inria (through the ERC AdG Sisyphé grant). He teaches bioinformatics and statistics. Arnaud Mary who was recruited in October as an Associate Professor taught (and will teach) 150 hours in 2014-2015 (L1: mathematics; L2: bioinformatics; M1: data analysis; M1: computer science) as he has a one-year partial sabbatical as a recently recruited personnel of the University of Lyon. Fabrice Vavre taught approximately 20 hours in different Master 2 courses in Lyon, Poitiers and Amiens.

Alice Julien-Laferrrière taught 114 hours of Applied Mathematics and Bioinformatics at the Department of Biology (undergraduate students), Hélène Lopez-Maestre and Laura Urbini taught each 32 hours of Mathematics and Statistics at the Department of Biology (undergraduate students). Two other PhD students taught more occasionally in 2012-2013: Gustavo Sacomoto taught 16 hours of graph algorithms at the Department of Biology (M1: Bioinformatics), and Mariana Ferrarini taught 23 hours at the Department of Biology (L3: Bioinformatics). The postdocs are also involved in teaching. Cecilia Klein taught 7 hours in 2014 at the IUT / University of Lyon 1, Blerina Sinaimeri taught 17 hours of graph algorithms at the University of Lyon 1 and INSA (M2), and Christian Baudet taught 24 hours of computer science at the University of Lyon 1 (L3) and the INSA (L1).

All members of the BAMBOO team are affiliated to the doctoral school E2M2 (Ecology-Evolution-Microbiology-Modelling).

### 8.2.2. Supervision

The following are the PhDs defended in BAMBOO in 2014.

Gustavo Sacomoto, University of Lyon 1, March 6, supervisors: P. Crescenzi (Univ. of Florence, Italy), V. Lacroix, and M.-F. Sagot.

Beatrice Donati, University of Lyon 1 and of Florence (Italy), November 12, supervisors: P. Crescenzi (Univ. of Florence, Italy) and M.-F. Sagot.

Pierre-Antoine Rollat-Farnier, University of Lyon 1, November 22, supervisors: L. Mouton, M.-F. Sagot, and F. Vavre.

Susan Higashi, University of Lyon 1, November 24, supervisors: S. Colella, C. Gautier, and M.-F. Sagot.

### 8.2.3. Juries

- H. Charles: Reviewer of the PhDs of Diana Stefan, University Joseph Fourier, France, and member of the jury for Nicolas Parisot (University Blaise Pascal, Clermont-Ferrand, France) and Sylvain Prigent (Inria/Irisa Rennes).
- M.-F. Sagot: Reviewer of the PhDs of Kimon Froussios, King's College, London, UK, and of Caroline Baroukh, University of Perpignan, Narbonne, France.
- F. Vavre: Member of the jury for the PhDs of: Myriam Badaoui, Université de Poitiers, France; Wen-Juan Ma, University of Groningen, The Netherlands. He was reviewer for the HDR of Olivier Duron, Université de Montpellier 2, France.

- C. Vieira: Member of the jury for the PhDs of: Maialen Sistiaga, Université du Pays Basque, Bilbao; Pierre-Antoine Rollat-Farnier, Université Lyon 1; Laetitia Delabaere, Université Lyon 1; Guillaume Minard, Université Lyon1; Yann Leseque, Université Lyon1; Antoine Bridier-Nahmias, Paris VI; Abdelhakim Negoua, Université de Marrakech, Marrakech, Maroc. Reviewer of the PhDs of Frank Touret, EPHE, Lyon, and of Domitile Chaloppin, ENS Lyon. Member of the HDR jury of Abderrahman Khila, ENS Lyon.

## BEAGLE Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Scientific events organisation

#### 7.1.1.1. general chair, scientific chair

- Guillaume Beslon is a member of the Comité National de la Recherche Scientifique (CoNRS), section 6 (computer science) and CID 51 (interdisciplinary commission, Bioinformatics, Biophysics, Biomathematics)
- Guillaume Beslon is a member of the direction committee of the Rhône-Alpes Institute of Complex Systems (IXXI)
- Hugues Berry is the President of the hiring committee for “young researchers” (CR2), Inria Grenoble Research Center, 2014.
- Hugues Berry is a Member of Inria’s Evaluation Committee (Commission d’Evaluation)
- Hugues Berry is a Member of the Inria’s Administrative Committee (Commission Administrative Paritaire)
- Eric Tannier is an elected member of the administration council of Inria.
- Hugues Berry is a Member of the Science Steering Committee of the Rhône-Alpes Complex Systems Institute (IXXI)
- Hugues Berry is Co-organizer (with M. De Pittà, BEAGLE) of the workshop “Computational Methods and Modeling of Astrocyte Physiology and Neuron-Glia Interactions”, held as part of the conference OCNS (Organization for Computational Neuroscience) 2014 in Quebec, Canada, July 26-31, 2014.

### 7.1.2. Scientific events selection

#### 7.1.2.1. member of the conference program committee

- Eric Tannier: Recomb Comparative Genomics 2014
- Christophe Rigotti: International Conference on Data Mining
- Christophe Rigotti: Workshop on Spatial Data Mining at the national conference EGC 2014
- Guillaume Beslon and Carole Knibbe: scientific committee of Alife’14 (New-York, July 2014)
- Carole Knibbe: ECCB 2014 (European Conference on Computational Biology)

#### 7.1.2.2. reviewer

- Eric Tannier: LATIN 2014

### 7.1.3. Journal

#### 7.1.3.1. member of the editorial board

- Hugues Berry: AIMS Biophysics (<http://aimspress.com/aimsbpoa/ch/index.aspx/>)
- Hugues Berry: the Journal of Complex Systems ([www.hindawi.com/journals/jcs/](http://www.hindawi.com/journals/jcs/))

#### 7.1.3.2. reviewer

- Eric Tannier: BMC Bioinformatics, BMC Genomics, Theoretical Computer Science, Journal of Bioinformatics and Computational Biology.
- H. Soula: Biophysical Journal, Biosystems, Journal of theoretical Biology
- Carole Knibbe: Journal of Theoretical Biology

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Master : Eric Tannier, Computational Molecular Biology, 30heqTD, M2 ENS Lyon (responsabilité du module)

Master : Eric Tannier, Mathématiques et Informatique pour le Génome, 24heqTD, M1 INSA Lyon

Master : Eric Tannier, Mathématiques Discrètes, 8heqTD, M1 INSA Lyon

Doctorat : Eric Tannier, Comparative Genomics, 4heqTD, Ecole de Printemps d'Informatique Théorique, Oléron

Licence: Jonathan Rouzaud-Cornabas, Programmation Orienté Objet - C++, 48.5h, L3, INSA de Lyon, France

Master: Jonathan Rouzaud-Cornabas, Interface Homme-Machine, 42.75h, M1, INSA de Lyon, France

Master: Jonathan Rouzaud-Cornabas, Systèmes d'Exploitation Avancés, 59.87h, M1, INSA de Lyon, France

Licence: Christophe Rigotti, Imperative Programming, 39h L1 and 47h L2, Department 1er cycle of INSA-Lyon.

Licence: Christophe Rigotti, Object-Oriented Programming, 47h, L2, Department 1er cycle of INSA-Lyon.

Licence: Christophe Rigotti, Computer Simulation, 24h, L2, Department 1er cycle of INSA-Lyon.

Master: Christophe Rigotti, Data Mining, 25h, M1, Bioinformatics and Modeling Department of INSA-Lyon.

Licence : Guillaume Beslon, architecture des ordinateurs, 150heqTD, INSA-Lyon

Master : Guillaume Beslon, informatique bioinspirée, 30heqTD, M2 INSA Lyon et M2 Lyon 1

Master : Guillaume Beslon, biologie computationnelle, 9heqTD, M2 INSA Lyon

Licence H. Soula Software Development L3 90h INSA LYON

Licence H. Soula Linear Algebra L3 45h INSA LYON

Licence H. Soula Biology Modelling L3 45h INSA LYON

Master H. Soula Numerical Optimization M1 12h

Master H. Soula Computational Biology M2 30h

### 7.2.2. Supervision

PhD: Jules Lallouette, Modélisation des réponses calciques de réseaux d'astrocytes: relation entre topologie et dynamiques, INSA Lyon, dec 4th 2014, H. Berry

PhD in progress: Alexandre Foncelle, Modeling the signaling pathway implicated in STDP: the role of endocannabinoid and dopamine signaling, 2014, H. Berry

PhD in progress: Sergio Peignier, Conception d'algorithmes de fouille de données exploitant des mécanismes inspirés de l'évolution, INSA de Lyon, started in September 2014, Christophe Rigotti and Guillaume Beslon.

PhD in progress: Alvaro Mateos Gonzalez, Anomalous subdiffusion equations as diffusion limits to integro PDEs with age structure. 2014. co-supervised by H. Berry (30%) with Vincent Calvez (EPI Numed) and Thomas Lepoutre (EPI Dracula).

PhD in progress: Ilya Prokin, Modeling and simulation of signal transduction in living cells: synaptic plasticity of basal ganglia neurons, 2013, H. Berry

PhD in progress : Magali Semeria, Modèles d'évolution de relations entre les gènes, 2012, Eric Tannier, Laurent Gueguen

PhD in progress : Wandrille Duchemin, Phylogénie des dépendances, dépendances des phylogénies, 2014, Eric Tannier, Vincent Daubin

PhD in progress : Yoann Anselmetti, Evolution de la structure des génomes même mal assemblés, 2014, Eric Tannier, Sèverine Bérard

PhD in progress : Priscila Biller, Phylogenies of artificial lineages, 2012, Joao Meidanis (1 year internship supervised by Eric Tannier)

PhD in progress: Arnaud Lefray, Information Flow Protection on Cloud Infrastructure, 2012, INSA CVL et ENS Lyon, Eddy Caron, Jonathan Rouzaud-Cornabas, Christian Toinard

PhD in progress : Charles Rocabert, modélisation de l'évolution de l'évolution, 2013, Guillaume Beslon, Carole Knibbe

PhD in progress : Yoram Vadée-le-Brun, évolution des réseaux de régulation, 2013, Guillaume Beslon, Jonathan Rouzaud-Cornabas

PhD : Bérénice Batut, Étude de l'évolution réductive des génomes bactériens par expériences d'évolution in silico et analyses bioinformatiques, soutenue le 21 novembre 2014, Guillaume Beslon, Carole Knibbe, Gabriel Marais, Vincent Daubin.

HdR : Hédi Soula, Signalisation en biologie computationnelle : de la membrane à l'individu, soutenue le 26 mai 2014.

PhD in progress M. Jacquier 'mathematical model of food intake and leptin resistance' 2012-2015 H. Soula and F. Crauste (Dracula)

### 7.2.3. Juries

- Guillaume Beslon reviewed the manuscript and participated to the defence committee of the HdR of Philippe Lopez, UPMC.
- Guillaume Beslon reviewed the manuscript and participated to the defence committee of the PhD of Colin Raeside, Université de Grenoble
- Eric Tannier reviewed the manuscript and participated to the defense committee of the Ph-D of Antoine Thomas, Inria Lille.
- H. Berry served in the PhD examination committee of Z. Chaker, "Rôle de la signalisation IGF dans la régulation de l'homéostasie tissulaire durant le vieillissement ", Univ. Paris Descartes, December 2014 (examiner)
- H. Soula was in the examination committee of J. Lalouette Modélisation des réponses calciques de réseaux d'astrocytes: relation entre topologie et dynamiques, INSA Lyon, dec 4th 2014
- Cacole Knibbe was a member of the recruiting committee of an assistant professor at INSA.

### 7.3. Popularization

- Guillaume Beslon published an interview on modeling in "la revue du progres".



## BIGS Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. Member of the organizing committee

- Co-organizer of the Journée Fédération Charles Hermite - entreprises, on 2014/01/23, 150 participants and 44 companies coming mainly from Lorraine and few of them from Luxembourg (P. Vallois).
- Organizer of the meeting “Around Hidden Markov Chains”, at Inria Grand-Est, on 2014/07/08 (P. Vallois).
- Co-organizer of the workshop “PL<sup>2</sup>US”, Nancy, January 2014 (C. Lacaux).
- Organizer of the weekly seminar of the Probability and Statistics group of the Institut Élie Cartan de Lorraine since October 2014 (R. Azaïs).

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

BIGS is a team whose composition included University staff only until October 2014. All members teach numerous courses, ranging from L1 to M2 levels.

- Samy Tindel (192h, Université de Lorraine)
- Thierry Bastogne (192h, Université de Lorraine).
- Sandie Ferrigno (192h, Université de Lorraine)
- Céline Lacaux (192h, Université de Lorraine)
- Jean-Marie Monnez (192h, Université de Lorraine)
- Aurélie Muller-Gueudin (192h, Université de Lorraine)
- Pierre Vallois (192h, University)
- Sophie Wantz-Mézières (192h, IUT)

#### 8.2.2. Supervision

- PhD : Geoffrey Nichil, Provisionnement en assurance non vie pour des contrats à maturité longue et à prime unique - Application à la réforme Solvabilité 2, Université de Lorraine, 2014/12/19. Advisor : P. Vallois, S. Hermmann, M. de Calbiac.

#### 8.2.3. Juries

- PhD comittee : Clémence Chamard-Jovenin, Modélisation du rôle d'ER $\alpha$ 36 dans le contrôle de l'initiation et/ou la progression des tumeurs mammaires en réponse aux alkylphénols, CRAN, Vandœuvre-lès-Nancy, 2014/11/18, examiner: A. Muller-Gueudin.
- PhD Raouf Fakhfakh on 2014/10/02 (Université de Sfax), contribution to the study of Cauchy-Stieltjes kernel families, referee: P. Vallois.
- PhD Raghid Zeineddine, 2014/12/01, Université de Lorraine, Sur des nouvelles formules d'Itô en loi, examiner: P. Vallois.
- PhD : Samuel Ronsin, Régularité et Représentations Localisées de Textures à Phases Aléatoires, MAP 5, Université Paris Descartes, 2014/12/15, examiner: C. Lacaux.

### 8.3. Popularization

- Fête de la Science, Nancy, École des Mines, 2014/10/17 (A. Muller-Gueudin, S. Tindel, P. Vallois).
- Forum Emploi Maths 4, December 2014 (C. Lacaux).
- Advisor of a group of students, "La main à la Pâte" project, Institut médico-éducatif (IME), Commercy, September-December 2014 (S. Ferrigno).
- Advisor of a group of pupils from Lycée Varoquaux, Tomblaine (Maths en Jeans) (P. Vallois).
- Publication of the short science popularization article "Les huîtres ont des oreilles" in the book "Brèves de maths – Mathématiques de la planète Terre". Editions Nouveau Monde, 2014 (pages 214–215). Authors: Romain Azaïs, Raphaël Coudret and Gilles Durrieu.
- C. Lacaux is member of the *comité national universitaire (section 26)* (2011–2015).

## BIOCORE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events selection

#### 9.1.1.1. member of the conference program committee

J.-L. Gouzé is a member of the program committee for the conference BIOMATH, held in Sofia (Bulgaria). He is in the editorial committee of the proceedings of the conference in honor of E. Benoit (La Rochelle 2013). O. Bernard is in the technical committee of the Computer Applied to Biotechnology (CAB) conferences. He is in the scientific committee of the French conference "Stic et Environnement".

#### 9.1.1.2. reviewer

All BIOCORE members have been reviewers for the major 2014 conferences in our field: CDC, MTNS, IFAC World Congress,...

### 9.1.2. Journal

#### 9.1.2.1. reviewer

All BIOCORE members have been reviewers for the major journals in our field: Automatica, IEEE Transactions on Automatic Control, Journal of Mathematical Biology, Mathematical Biosciences, New Phytologist,...

### 9.1.3. Other animations

J.-L. Gouzé is in the Inria committee supervising the doctoral theses, and a member of the scientific committee of Labex SIGNALIFE of the University of Nice-Sophia-Antipolis, and of COREBIO PACA. He is a member of the board of the SFBT (French Speaking Society for Theoretical Biology).

M. Chaves is the coordinator of ANR project GEMCO. Since September 2011, she is a member of the COST-GTRI (the Working Group on International Relations in Inria's Council for Scientific and Technological Orientation). The Group is charged with evaluating Inria's Associated Teams as well as some project proposals (EuroMed 3+3), and ERCIM post-docs. M. Chaves was in the Inria (Sophia) committee for the selection of new CR2 researchers (May 12-13) and in the Labex Signalife committee for the selection of new PhD students (June 16-17).

O. Bernard is a member of the scientific committee of the competitiveness pole "Trimatec". He represents Inria at the ANCRE (Alliance Nationale de Coordination de la Recherche pour l'Energie), in the biomass committee. He is member of the ADT committee (Technological Development Actions) at Inria.

F. Grogard is a member of the NICE committee, which allocates post-doctoral grants and fundings for visiting scientists at Inria Sophia Antipolis. He is a member of the scientific committee of the doctoral school "Sciences de la Vie" at the University of Nice-Sophia Antipolis.

S. Touzeau is an elected member of the scientific committee of the MIA departement at INRA (2011–2015). She is a member and a board member of the MBIA CSS (Specialised Scientific Commission), in charge of the research scientist evaluation at INRA (2011–2015). She is a member of the scientific committee of the INRA-ModStatSAP network "Modélisation et Statistique en Santé des Animaux et des Plantes". S. Touzeau was a member of 3 juries for the recruitment of junior research scientists at INRA in April–June: "Epidemiology and plant architecture" (1 position), "Epidemiology and modeling" (2 positions) and "Mathematics for the life sciences and environment" (3 positions). She participated in the panel of experts for the evaluation of the LIRIMA in September 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Bachelor: F. Grogard (45.5h ETD) and L. Mailleret (26h ETD), "Equations différentielles ordinaires et systèmes dynamiques", L3, 1st year Engineering in Modelling and Applied Mathematics, Polytech'Nice, Université of Nice Sophia Antipolis, France.

Master: O. Bernard (4.5 ETD), "Bioenergy from microalgae", M2, Master International Energy Management : alternatives pour l'énergie du futur, Ecole Nationale Supérieure des Mines de Paris, France.

Master: O. Bernard (18h ETD), "Modelling biotechnological processes", M2, Ecole Centrale de Paris, France.

Master: F. Grogard (21h ETD) and L. Mailleret (21h ETD), "Bio-Mathématiques", M1, 2nd year Engineering in Modelling and Applied Mathematics (eq. M1), Polytech'Nice, Université of Nice Sophia Antipolis, France.

Master: J.-L. Gouzé (9h ETD), M. Chaves (4.5h ETD), "Discrete and continuous approaches to model gene regulatory networks", M2, Master of Science in Computational Biology, University of Nice - Sophia Antipolis, France.

Master: J.-L. Gouzé (18h ETD), M. Chaves (12h ETD) "Modelling biological networks by ordinary differential equations", M1, 4th year students, Génie Biologie, Ecole Polytechnique University of Nice - Sophia Antipolis, France.

Master : S. Touzeau (17.25h ETD), "Analyse de données", M1, 2nd engineering year in Génie Biologie, Polytech'Nice – Université Nice Sophia Antipolis, France.

PhD program: J.-L. Gouzé and M. Chaves (3h ETD), seminar course on "Introduction to mathematical modeling of biological networks", to the students of the Labex Signallife PhD program, University of Nice - Sophia Antipolis, France.

O. Bernard together with F. Mairet and Q. Béchet supervised two projects for engineering school students. The first project involved 6 students of Ecole Nationale Supérieure des Mines de Paris (last year of engineering school, 1 week ("Combining photovoltaic panels and microalgae" ) and the second project involved 4 students from the Ecole Centrale de Paris (first year of engineering school), 4 months, to design a process with microalgae growing on a biofilm.

### 9.2.2. Supervision

PhD : P. Hartmann, " Effect of hydrodynamics on light utilization in large scale cultures of microalgae ", UNS, defended May 14, 2014. Supervisors: O. Bernard and A. Sciandra. [13]

PhD : A. Carta, "Modelling, analysis and control for systems biology: application to bacterial growth models", UNS, defended May 22, 2014. Supervisors: J.-L. Gouzé and M. Chaves.[12]

PhD : C. Baroukh, "Metabolic modeling under non-balanced growth. Application to microalgae for biofuels production", U. Montpellier 2, defended October 10, 2014. Supervisors: J.-P. Steyer and O. Bernard.[11]

PhD : Natacha Go, "Modelling the immune response to the Porcine Respiratory and Reproductive Syndrome virus", AgroParisTech, defended December 8, 2014. Supervisors: S. Touzeau & C. Belloc (BioepAR, INRA & Oniris Nantes) [90]

PhD : A. Lebon, "La compensation dans les interactions plantes insectes : modélisation, simulation et expérimentation", University of Montpellier 2, defended December 10, 2014. Supervisors : Y. Dumont (CIRAD), F. Grogard and L. Mailleret.

PhD in progress : G. Grimaud, "Controlled competition for the selection of microalgal species of interest ", since September 2011, UNS. Supervisor: O. Bernard and S. Rabouille.

PhD in progress : I. Belgacem "Contrôle de systèmes de régulation génétique", since November 2011, UNS. Supervisor: J.-L. Gouzé.

PhD in progress : H. Bonnefond, "Experimental development of selection oriented photobioreactors", since september 2012, UNS. Supervisor: A. Sciandra and O. Bernard

PhD in progress : T. Morel Journel, "Où, quand, combien? Stratégies d'introduction d'organismes dans un environnement spatialement structuré", since October 2012, UNS. Supervisors: T. Guillemaud, E. Vercken and L. Mailleret.

PhD in progress : E. Rousseau, "Plant viruses adaptation to quantitative resistance: from the study of their impact on within-host viral evolutionary dynamics to their durable management in agroecosystems", since November 2012, UNS. Supervisors: F. Grogard, L. Mailleret, B. Moury, and F. Fabre (INRA Avignon).

PhD in progress : D. Demory, "Impact of virus dynamics on microalgae mortality ", since September 2013, UPMC. Supervisor: A. Sciandra and O. Bernard

PhD in progress : N. Bajeux, "Influence d'une densité dépendance dans les modèles impulsifs de dynamiques des populations", since October 2013, UNS. Supervisor: F. Grogard.

PhD in progress : S. Casagrande. "Analysis and control of cell growth models", since November 2013, UNS. Supervisors: J.-L. Gouzé and D. Ropers (Inria IBIS).

PhD in progress : S. Almeida. "Theoretical design of synthetic biological oscillators and their coupling", since October 2014, UNS. Supervisors: M. Chaves and F. Delaunay (UNS, iBV).

### 9.2.3. Juries

O. Bernard was referee for the PhD of Cyril Marcilhac "Studies of the culture conditions of a complex ecosystem microalgae / bacteria: application to the development of an a process to extract and recover nutrients from the digestate", University of Rennes 1, Dec. 18, 2014.

O. Bernard was in the PhD jury of G. Bougaran "Co-limitation by nitrogen and phosphorus : study of the mechanisms in the microalgae *Tisochrysis lutea*", Nantes University, Oct. 22, 2014.

O. Bernard was in the PhD jury of T. Dinh. "Interval observers and positive observers", Paris-Sud University (Nov. 24, 2014).

O. Bernard was in the PhD jury of P. Hartmann, " Effect of hydrodynamics on light utilization in large scale cultures of microalgae ", UNS, May 14, 2014.

O. Bernard was in the PhD jury of C. Baroukh, "Metabolic modeling under non-balanced growth. Application to microalgae for biofuels production", U. Montpellier 2, October 10, 2014.

S. Touzeau was in the PhD thesis jury of Natacha Go, "Modelling the immune response to the Porcine Respiratory and Reproductive Syndrome virus", AgroParisTech, December 8, 2014.

M. Chaves and J.-L. Gouzé were in the PhD thesis jury of Alfonso Carta, "Modelling, analysis and control for systems biology: application to bacterial growth models," University of Nice Sophia Antipolis, May 22, 2014.

J.L. Gouzé was referee for the PhD thesis of J.S. Nelva Pasqual. " Exploration des réseaux d'interactions en écologie : de la structure vers la dynamique. Signification des analyses des matrices de communauté en écologie des estuaires". Université Bordeaux 1.

F. Grogard and L. Mailleret were in the PhD jury of A. Lebon, "La compensation dans les interactions plantes insectes : modélisation, simulation et expérimentation", University of Montpellier 2, December 10, 2014.

O. Bernard is in the thesis committee of S. Bellini (University of Montpellier), G. Bougaran (University of Nantes), Valeria Villanova (University of Grenoble) and Sofiane Mazeghrane (University of Montpellier).

S. Touzeau is in the thesis committee of David Demory (UPMC, 2013–2016) and Eric Breton (Université de Nantes, 2013–2016).

F. Mairet is in the thesis committee of Alessandro Solimeno (Universidad Politecnica de Catalunya).

### 9.3. Popularization

The activities related to microalgae have generated many articles in national newspapers (Le Monde.fr, Libération, Le Point.fr, ...), and broadcasts on national TV. Several articles were written by the team members to explain the hurdles and potential of microalgae [74]. A book [93] was also written with C. Gudin (formerly at CEA Cadarache) on the potential of microalgae. We also developed a Java applet for the simulation of microalgae growth and biological pest control. The aim of the applet is for the general public to understand the goals and difficulties of controlling such systems.

We have also made a short movie to explain the advantages of our supervision software ODIN and to present the pilot photovoltaic greenhouses which will be developed within the ANR Purple Sun project.

### 9.4. Conferences, invited conferences

Conferences cited in the bibliography are not repeated here.

O. Bernard was invited to give a conference on microalgae at Ecole Centrale de Paris (“Défi biotechnologie”) “Use of microorganisms for biofuel production” (November 27).

O. Bernard was invited to give a conference at University of Padova “Towards predicting microalgal productivity at large scale from lab experiments”, June 26, and at University of Valparaiso “A new framework for metabolic modelling under non-balanced growth. Application to carbon metabolism of unicellular microalgae”, March 26.

O. Bernard and F. Mairet gave a lecture (3h) on Modelling microalgal based processes at the 3rd French-Chilean Workshop on Bioprocess Modelling (March, Valparaiso, Chile)

F. Mairet gave a joint talk with Magali Ribot entitled Modeling of micro-algae biofilms at the 1st Symposium Physics of living matter: experiments and theoretical models (Nice, Dec. 18).

M. Chaves was invited to give a semi-plenary talk on “Predictive analysis for biological regulatory systems combining discrete and continuous formalisms,” at the Symposium on Mathematical Theory of Networks and Systems (MTNS’14) (July 7-11)

M. Chaves and J.-L. Gouzé organized an invited session on “Discrete and Continuous Formalisms in Systems Biology,” at MTNS’14 (July 7-11)

M. Chaves was invited to give presentations at the following meetings: 1<sup>st</sup> Lyon Control Day (Feb 27-28) and AANS (IEEE International Meeting on Analysis and Applications of Nonsmooth Systems) (Como, Italy, Sep. 10-12),

M. Chaves was invited to give seminars at the department of Mathematics at Imperial College (Mar 25) and at University of Aveiro (Dec 4).

P. Bernhard was invited to give epistemology talks at a small international workshop [42], and later in the seminar of the CIRED (Centre International de Recherches sur l’Environnement et le Développement, CNRS, Ecole des Ponts et Chaussées ParisTech, and Agro ParisTech).

## BONSAI Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- Proteomics for omics analysis, 2014/3/2, 35 people
- Integrative biology, 2014/17/12, 60 people

#### 9.1.1.2. member of the organizing committee

- Polaris seminar series (M. Giraud)

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- RECOMB-seq (L. Noé, H. Touzet).
- ECCB'14 poster session (H. Touzet).
- SeqBio 2014 (H. Touzet).

#### 9.1.2.2. reviewer

- Laurent Noé: AFL 2014.

### 9.1.3. Journal

#### 9.1.3.1. reviewer

- Algorithms for Molecular Biology (L. Noé), Acta Biotheoretica (L. Noé), Bioinformatics (H. Touzet)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- L. Noé, *Bioinformatics*, 54h, M1 (master “Génomique Protéomique”, univ. Lille 1)
- L. Noé, *Networks*, 42h, L3 (licence “Computer science”, univ. Lille 1)
- M. Pupin, M. Salson, *Introduction to programming (OCaml)*, 96h, L1 (licence “Computer science”, univ. Lille 1)
- M. Salson, *Coding and information theory*, 63h, L2 (licence “Computer science”, univ. Lille 1)
- J.-S. Varré *Web programming*, 36h, L2 (licence “Computer Science”, univ. Lille 1)
- J.-S. Varré *Programming with Caml*, 36h, L2 (licence “Sciences for Engineers”, univ. Lille 1)
- J.-S. Varré *Algorithms and Data structures*, 50h, L2 (licence “Computer science”, univ. Lille 1)
- J.-S. Varré, *System*, 36h, L3 (licence “Computer science”, univ. Lille 1)
- M. Salson, *C programming*, 42h, L3 (licence “Computer science”, univ. Lille 1)
- M. Pupin, M. Salson *Bioinformatics*, 100h, M1 (master “Biology and Biotechnologies”, univ. Lille 1)
- S. Blanquart, *Algorithms and applications in bioinformatics*, 24h, M1 (master “Computer Science”, univ. Lille 1)

V. Leclère *Bioinformatics*, 50h, M2 (master “Transformation Valorisation Industrielles des Agroressources”, univ. Lille 1)

M. Pupin, J.-S. Varré *Computational biology*, 30h, M2 (master “Modèles complexes, algorithmes et données”, univ. Lille 1)

S. Blanquart, *Methods in phylogenetics*, 4h, M2 (master “Ecology Environment”, univ. Lille 1)

M. Giraud, *Algorithms for RNA Analysis*, 12h, M2 (master “Bioinformatique et Modélisation”, univ. Paris 6)

M. Salson, *Skeptical thinking*, 14h, M2 (master “journalist and scientist”, univ. Lille1, ESJ)

J.-S. Varré, *ISN - Computer science for secondary school*, 20h, second-level teachers.

### 9.2.2. Supervision

PhD in progress: C. Vroland, Indexing data for microRNA and microRNA target site identification in genomes, 2012/10/01, H. Touzet, V. Castric (GEPV), M. Salson

PhD in progress: T. Rocher, Indexing VDJ recombinations in lymphocytes for leukemia follow-up, 2014/11/01, J.-S. Varré, M. Giraud, M. Salson

PhD in progress: P. Pericard, Methods for taxonomic assignation in metagenomics, 2013/11/01, H. Touzet, S. Blanquart.

PhD in progress: C. Saad, Caractérisation des erreurs de séquençage non aléatoires, application aux mosaïques et tumeurs hétérogènes, 2014/10/01, M.-P. Buisine, H. Touzet, J. Leclerc, L. Noé, M. Figeac

PhD in progress: Y. Dufresne, Modèles et algorithmes pour la gestion de la biodiversité des peptides non-ribosomiques et la mise en évidence de nouveaux peptides bioactifs, 2013/10/01, M. Pupin, L. Noé

PhD in progress: L. Siegwald, Bioinformatic analysis of Ion Torrent metagenomic data, 2014/01/03, H. Touzet, Y. Lemoine (Institut Pasteur de Lille)

### 9.2.3. Juries

- Member of the thesis committee of Jérémie Gilliot (Université Lille 1, J.-S. Varré)
- Member of the thesis committee of Trong-Tuan Vu (Université Lille 1, J.-S. Varré)
- Member of the thesis committee of Audrey Vingadassalon (Université Paris Sud, V. Leclère)
- Member of the thesis committee of Safwan Saker (Université de Toulouse, V. Leclère)
- Member of the thesis committee of Valentin Wücher (Université Rennes 1, H. Touzet)
- Member of the thesis committee Susan Higashi (Université Lyon 1, H. Touzet)
- Member of the thesis committee of Mateusz Pawlik (Freie Universität Bozen, H. Touzet)
- Member of the tenure committee of Sylvie Hamel (UQAM, H. Touzet)
- Member of the national Inria CR1 hiring committee (M. Giraud)
- Member of the CR2 hiring committee of Inria Rocquencourt (M. Giraud)
- Member of the McF 27MC1727 committee (Université Pierre et Marie Curie, L. Noé)
- Member of the McF 27/64, poste 0916 committee (Université de Reims, M. Pupin)
- Member of the hiring committee McF of Université Lyon 1 (H. Touzet)

### 9.2.4. Administrative activities

- National representative (*chargée de mission*) for the Institute for Computer Sciences (INS2I) in CNRS<sup>0</sup>. She is more specifically in charge of relationships between the Institute and life sciences (H. Touzet)

<sup>0</sup>CNRS: National Center for Scientific Research



- Member of the Inria evaluation committee (M. Giraud)
- Member of the Inria local committee for scientific grants (A. Ouangraoua)
- Member of the Inria local committee for technology development (M. Pupin)
- Member of the Gilles Kahn PhD award national committee (H. Touzet)
- Member of the national ANR evaluation committee CES19 (H. Touzet)
- Member of CSS MBIA (mathematics, bioinformatics and artificial intelligence) at INRA (H. Touzet)
- Member of the executive council of the IFB, Institut Français de Bioinformatique, (M. Pupin)
- Member of CUB Inria Lille Nord Europe (S. Blanquart).
- Head of PPF bioinformatics – University Lille 1 (H. Touzet)
- Head of Bilille, Lille bioinformatics platform (M. Pupin)
- Head of IFB-NE (pôle Nord-Est de l’Institut Français de Bioinformatique), a cluster of 4 bioinformatics platforms (M. Pupin)
- Member of UFR IEEA council (M. Pupin)
- Member of UFR Biologie council (V. Leclère)
- Head of the GIS department (Statistics and Computer Sciences) of Polytech’Lille (S. Janot)
- Head of the master “Transformation Valorisation Industrielles des Agro-ressources”, univ. Lille 1 (V. Leclère)
- Head of the master “Modèles complexes, algorithmes et données”, univ. Lille 1 (J.-S. Varré)
- Member of the ProBioGEM Laboratory council (V. Leclère)
- Member of the ProBioGEM scientific committee (V. Leclère)
- Member of the scientific operational committee of Xperium, Univ. Lille 1 (V. Leclère)
- Member of the LIFL Laboratory council (L. Noé, H. Touzet)
- Head of the thematic group "Modeling for Life Sciences" of CRISAL and member of the scientific council of CRISAL (J.-S. Varré)

### **9.3. Popularization**

- We made seven presentations, using dedicated “genome puzzles” in high schools during the “Science week” to popularize bioinformatics.
- During a whole day in June we made presentations on bioinformatics with our “genome puzzles” to several groups of high school students.
- V. Leclère has created a demonstration stand for Xperium, part of the Learning center Innovation of Lille 1 University.

## CARMEN Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events selection

- Y. Coudière member of the Scientific Comitty for the international conference FCVA “Finite Volumes for Complex Applications”, Berlin, juin 2014.”.
- From the 1<sup>st</sup> january 2014, Y. Coudière is in charge of the team CSM at the IMB.
- From september 2014, Y. Coudière is in charge of the Licence “Ingénierie Mathématiques” at the university of Bordeaux.

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

License : S. Labarthe, *pre-BAC Analysis and Geometry*, 24 h eqTD.

License : S. Labarthe, *Introduction to analysis*, 48 h eqTD.

License : S. Labarthe, *Help for the redaction of a resume*, 21 h eqTD.

Engineering school: N. Zemzemi, *How to switch from a mathematical model to a numerical solution (examples with the cardiac activity of the heart in 2D)*, 28 h eqTD

Engineering school: F. Caro, *TER* 2nd year, 6h eqTD, ENSEIRB-MATMECA, IPB.

Engineering school: F. Caro, *Finite elements, variational formulation and Sobolev spaces*, 36h eqTD, Institut Galilée, Univ. Paris 13.

Engineering school: Y. Coudière, *TER* 2nd year, 6h eqTD, ENSEIRB-MATMECA, IPB.

Cursus Ingénieur: Y. Coudière, *project in scientific computing, F90* 1st year, 16h eqTD, ENSEIRB-MATMECA, IPB.

Master : Y. Coudière, « *Analyse numérique approfondie* », 36h eqTD, M2, Univ. Bordeaux.

#### 8.2.2. Supervision

PhD in progress: A. Davidovic, Modelling the cardiac ventricular structural heterogeneities, started on October 2012, supervised by Y. Coudière and C. Poignard.

PhD in progress: G. Ravon, An inverse problem for cardiac optical mapping, started on October 2012, supervised by Y. Coudière and A. Iollo.

PhD in progress: J. Lassoued, Construction de methodes de reduction de modèle pour le problème d’estimation de parametres en electrophysiologie cardiaque, strted on october 2013, co-supervized by N. Zemzemi with Moncef Mahjoub, École Nationale d’Ingénieur de Tunis (Tunisia).

PhD in progress: W. Mbarki, Études thérique et numérique du couplage purkinje-myocarde en electrophysiologie cardiaque, started on october 2013, co-supervised by N. Zemzemi with Saloua Aouadi, Faculté des sciences de Tunis (Tunisia).

PhD in progress: P.E. Bécue, Numerical simulations for cardiac electrophysiology at the microscopic scale, started on october 2014, co-supervised by M. Potse with F. Caro, U. Bordeaux and Maison de la Simulation at Saclay.

#### 8.2.3. Juries

- Y. Coudière, reviewer, PhD of Elisa Schenone, 26 Nov. 2014

- M. Potse, member, D Carlos Sánchez Tapia, Universidad de Zaragoza, Zaragoza, Spain, 23 June 2014.
- M. Potse, member, PhD Annabelle Collin, Univ. Pierre et Marie Curie, Paris VI; France, 6 Oct. 2014

### **8.3. Popularization**

- G. Ravon and Y. Coudière obtained a financial support from Cap'Math for the game: "Heart Attack". It is destined to middle and high school students to introduce mathematical modelling.
- S. Labarthe presented the work of the team at the June session of the Inria Bordeaux-Sud Ouest "Unithé ou café" scientific diffusion presentation.

## CASTOR Project-Team

## 9. Dissemination

### 9.1. Teaching - Supervision - Juries

#### 9.1.1. Teaching

Ecole d'ingénieur: D. Auroux, Optimisation, 66h, M1, Polytech Nice, Université de Nice Sophia Antipolis, France

Master: D. Auroux, Optimisation, 45h, M1, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: D. Auroux, Méthodes numériques, 36h, M1, Polytech Nice Sophia, Université de Nice Sophia Antipolis, France

Master: J. Blum, Optimization, 30h, M1 Erasmus Mundus, Université de Nice Sophia Antipolis, France

Master: J. Blum, Optimisation et controle, 30h, M2, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: J. Blum, Commande Optimale, 37.5h, M2, Polytech Nice Sophia, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: C. Boulbe, Analyse Numérique, 71.5h, L3, Polytech Nice Sophia Antipolis, France

Ecole d'ingénieur: C. Boulbe, Méthodes numérique - EDP, 66h, M1, Polytech Nice Sophia Antipolis, France

Master: B. Nkonga, Analyse Numérique, 40h, M1, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur/Master: B. Nkonga, Méthode des éléments finis, 24h, M2, Polytech Nice Sophia, France

Ecole d'ingénieur/Master: B. Nkonga, Calcul Parallèle, 24h, M2, Polytech Nice Sophia, France

Licence: A. Sangam, Analyse, 40h, L1, Université de Nice Sophia Antipolis, France

Licence: A. Sangam, Modélisation, 10h, L1, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Analyse, 50h, L2, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Méthodes Numériques et Formelles, 40h, L2, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Mathématiques Appliquées, 50h, L3, Université de Nice Sophia Antipolis, France

Master: A. Sangam, Introduction to Finite Element, 25h, M1, Université de Nice Sophia Antipolis, France

Master: R. Pasquetti, module "Modèles de turbulence", 20 h, Masters MSC & IMAG2E, Université de Nice Sophia Antipolis, France.

#### 9.1.2. Supervision

PhD: Giovanni Ruggiero, Une étude comparative de méthodes d'assimilation de données pour des modèles océaniques, Université de Nice Sophia Antipolis, 13 mars 2014, J. Blum et Y. Oumières

PhD: Jeaniffer Vides, Schémas de type Godunov pour la modélisation hydrodynamique et magnéto-hydrodynamique, Université de Nice Sophia Antipolis, 21 octobre 2014

PhD in progress : Pierre Cargemel, "Déraffinement adaptatif de maillages non structurés pour une simulation efficace des procédés EOR", September 1st 2012, Hervé Guillard.

PhD In progress : J. Costa, Modeling of Elms, Sep 2012 - July 2015, B. Nkonga

PhD in progress : E. Estivals, “MHD réduite: Modélisation et Simulation numérique utilisant des éléments finis stabilisés d’ordre élevé sur un maillage courbe non-structuré. Application à l’injection de glaçons et de masse dans ITER”, 15th october 2013, Hervé Guillard, Afeintou Sangam.

PhD in progress : C. Le Touze, “Etude du couplage entre modèles à phase séparée et modèles à phase dispersée pour la simulation de l’atomisation primaire en combustion cryotechnique”, September 1st 2011, Hervé Guillard.

### **9.1.3. Juries**

Jacques Blum was referee in the PhD thesis jury of Ngoc Minh Trang Vu, Université Grenoble Alpes.

Jacques Blum was in the PhD thesis jury of Giovanni Ruggiero, Université de Nice Sophia Antipolis.

Boniface Nkonga was referee in the HDR jury of Marina Olazabal, Université de Bordeaux.

Boniface Nkonga was referee in the PhD thesis jury of Eliam Erichon, Université de Marseille.

Boniface Nkonga was referee in the PhD thesis jury of Pascal Jacq, Université de Bordeaux.

Boniface Nkonga and Hervé Guillard were in the PhD thesis jury of Jeaniffer Vides, Université de Nice Sophia Antipolis.

Richard Pasquetti was referee in the PhD thesis jury of Y. Eulalie, Université de Bordeaux, Bordeaux.

Richard Pasquetti was referee in the PhD thesis jury of R. Cheaytou, Université d’Aix-Marseille.

Richard Pasquetti was president of the PhD thesis jury of B. Bensiali, Marseille.

## **9.2. Popularization**

Contribution of B. Nkonga to a Newspaper in the local Journal La Marseillaise [www.lamarseillaise.fr/.../30371-90-mathematiciens-en-fusion-a-luminy](http://www.lamarseillaise.fr/.../30371-90-mathematiciens-en-fusion-a-luminy)

Contribution of B. Nkonga to the Iter interfaces news. <http://www.itercad.org/Interfaces/Interfaces51.pdf>

B. Nkonga and H. Guillard was organizers of the summer school CEMRACS 2014 on Numerical modeling of plasmas, July 21 - August 29, CIRM, Marseille

## CLIME Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

- Marc Bocquet is a member of the INSU/LEFE MANU scientific committee.
- Marc Bocquet is a member of the Scientific Council of the CERFACS institute in Toulouse, France.
- Marc Bocquet is a member of the selection committee of the Prix André Prud'homme of Météo et Climat (Société Météorologique de France).
- Isabelle Herlin is a member of the Scientific Council of CSFRS (High Council for Strategic Education and Research in France).
- 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 Scientific Council of OSU-EFLUVE.
- Isabelle Herlin is a member of the Evaluation Committee at Inria.
- Isabelle Herlin is a member of the AERES Evaluation Committee of LISTIC.

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. general chair, scientific chair

- Marc Bocquet: Ensemble session, Colloque national sur l'assimilation de données LEFE-MANU, Toulouse, 1-3 December 2014.

##### 9.1.1.2. member of the organizing committee

- Vivien Mallet: seminar on "Uncertainty quantification and ensemble-based methods for geosciences", École normale supérieure, Paris, January 2014.

#### 9.1.2. Scientific events selection

##### 9.1.2.1. reviewer

- Isabelle Herlin: European Conference on Computer Vision (ECCV)
- Isabelle Herlin: International Conference on Image Processing (ICIP).

#### 9.1.3. Journal

##### 9.1.3.1. member of the editorial board

- Marc Bocquet is Associate Editor of the Quarterly Journal of the Royal Meteorological Society.

##### 9.1.3.2. reviewer

- Vivien Mallet: Atmospheric Chemistry and Physics.
- Vivien Mallet: Environmental Modeling & Software.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master OACOS/WAPE: Marc Bocquet, Vivien Mallet, Jean-Matthieu Haussaire; Introduction to Data Assimilation for Geophysics; 30 hours; M2; UPMC, X, ENS, ENSTA ParisTech, École des Ponts ParisTech; France.

Master "Nuclear Energy": Marc Bocquet, Vivien Mallet, Jean-Matthieu Haussaire; 12 hours; M2; École des Ponts ParisTech, Centrale Paris, INSTN; 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

PhD in progress : Paul Baudin, “Agréation séquentielle de prédicteurs appliquée à la prévision de la qualité de l’air”, September 2012, Vivien Mallet and Gilles Stoltz.

PhD in progress: Ruiwei Chen, “Quantification d’incertitude en simulation des émissions du trafic routier”, November 2014, Vivien Mallet.

PhD in progress : Jean-Matthieu Haussaire, “Méthodes variationnelles d’ensemble pour la modélisation inverse en géosciences. Application au transport et la chimie atmosphérique”, University Paris-Est, October 2013, Marc Bocquet.

PhD in progress : Yann Lepoittevin, “Tracking of image structures”, University Paris Centre, October 2012, Isabelle Herlin.

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.

### 9.2.3. Juries

- Marc Bocquet, member, PhD thesis, Victor Winiarek, “Dispersion atmosphérique et modélisation inverse pour la reconstruction de sources accidentelles de polluants”, 4 March 2014, University Paris-Est, Champs-sur-Marne, France.
- Marc Bocquet, reviewer, PhD thesis, Benjamin Ménétrier “Utilisation d’une assimilation d’ensemble pour modéliser des covariances d’erreur d’ébauche dépendantes de la situation météorologique à l’échelle convective”, University Toulouse, 3 July 2014, Toulouse, France.
- Marc Bocquet, reviewer and chair, PhD thesis, Nabil BenSalem, “Modélisation directe et inverse de la dispersion atmosphérique en milieux complexes”, École centrale de Lyon, 17 septembre 2014, Lyon, France.
- Marc Bocquet, member, PhD thesis, Vincent Loizeau, “La prise en compte d’un modèle de sol multi-couches pour la modélisation multi-milieux à l’échelle européenne des polluants organiques persistants”, 20 November 2014, University Paris-Est, Champs-sur-Marne, France.
- Marc Bocquet, member, PhD thesis, Yin Yang, “Study of Variational Ensemble Methods for Image Assimilation”, University Rennes 1, 16 December 2014, Rennes, France.
- Marc Bocquet, reviewer, PhD thesis, Antoine Berchet, “Quantification des émissions de méthane en sibérie par inversion atmosphérique à la méso-échelle”, University Versailles Saint-Quentin-en-Yvelines, 19 December 2014, Paris, France.
- Isabelle Herlin, reviewer, Hector Simon Benavides Pinjosovsky, PhD thesis, “Assimilation variationnelle des données dans le modèle de surface continentale ORCHIDEE grâce au logiciel YAO”, University Pierre and Marie Curie, 27 March 2014, Paris, France.

### 9.3. Popularization

- Marc Bocquet wrote a paper on “La prévision numérique du temps” in the journal “Revue de Technologie” meant for the teachers of vocational technical education.
- Victor Winiarek and Marc Bocquet wrote an internet contribution “de la radioactivité dans l’air”, which was published in the general audience book “Brève de maths”, Nouveau Monde éditions, Paris, 2014.

- Marc Bocquet and Mohammad Reza Koohkan wrote an internet contribution “Quand modèles numériques et mesures ne sont pas sur la même longueur d’onde”, which was also published in “Brève de maths”.
- Vivien Mallet took part to a one-day introduction to Inria research at Assemblée Nationale, as organized by the group “Internet et société numérique”.
- Vivien Mallet introduced data assimilation at urban scale during the “rencontre Inria-industry” organized during the Futur-en-Seine digital festival.



## **COFFEE Project-Team**

### **8. Dissemination**

#### **8.1. Promoting Scientific Activities**

##### ***8.1.1. Journal***

###### *8.1.1.1. SIAM J. Computational Math.*

T. Goudon is founding editor of the SMAI J. of Computational Math.

## DEMAR Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, scientific chair

D. Guiraud is the conference chair of IEEE EMBS Neural Engineering Conference to be held in Montpellier in April 2015.

D. Andreu is co-organizer of the working group on Control Architectures of Robots of the french GdR Robotique.

M. Hayashibe is Co-Chair of IEEE Technical Committee on Human Movement Understanding at Robotics and Automation Society with E. Demircan (Univ. of Tokyo), D. Kulic (Univ. of Waterloo) and D. Oetomo (Univ. of Melbourne). <https://sites.google.com/site/ieeehmhu/>

#### 8.1.1.2. Member of the organizing committee

M. Hayashibe and P. Fraise organized Workshop on Human Motion Modeling and Human-inspired Motor Control together with Emel Demircan, Oussama Khatib (Stanford Univ.) at IEEE HUMANOIDS 2014, Madrid, Spain.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

C. Azevedo Coste is program chair of IEEE EMBS Neural Engineering Conference to be held in Montpellier in April 2015.

#### 8.1.2.2. Member of the conference program committee

Daniel Simon was member of the RTNS'14 (Real Time Networks and Systems) and ETFA'14 (Emerging Technologies and Factory Automation) int. conference program committees

#### 8.1.2.3. Reviewer

All the team members are involved in reviewing articles for various conferences and journals both in engineering and biomedical fields.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

M. Hayashibe is member of the Editorial Board of the International Journal of Advanced Robotic Systems, in Rehabilitation Robotics. M. Hayashibe is Guest Associate Editor, Frontiers in Neuroprosthetics, Biosig- nal processing and computational methods to enhance sensory motor neuroprosthetics, with David Guiraud, Dario Farina, and Jose L. Pons. <http://journal.frontiersin.org/ResearchTopic/1639>

C. Azevedo Coste is Associate Editor of Paladyn Journal Behavioral Robotics (Assistive robotics).

#### 8.1.3.2. Reviewer

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

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: Mitsuhiro Hayashibe, Neuroprotheses II (module coordinator), EMG signal processing and its use for rehabilitation, 6h, Master STIC pour la Santé, Univ. Montpellier 2, France;

Master: Mitsuhiro Hayashibe, Modele et Regulation, Identification and Control in Biomechanics (module coordinator), 6h, Master STIC pour la Santé, Univ. Montpellier 2, France;

Master: D. Andreu, Software engineering, real time OS, discrete event systems, networks, neuroprosthesis, 200h, master and engineers degrees, Polytech Montpellier, France;

Master: Christine Azevedo Coste, Ethics in bioengineering research, 3h, Master STIC pour la Santé, Univ. Montpellier 2, France;

### 8.2.2. Supervision

#### HDR

HdR: Christine Azevedo Coste, "Assistance fonctionnelle : exploiter les fonctions résiduelles du système sensori-moteur déficient", Université Montpellier 2, 14/02/2014

#### PhD

PhD: Abir Ben Khaled, "Distributed real-time simulation of numerical models : application to powertrains", IFPEN, May 27th 2014, D. Simon and M. Ben Gaid (IFPEN)

PhD: Alejandro González de Alba, "Versatile whole-body center of mass identification for balance assessment in home rehabilitation", Université Montpellier 2, Dec. 11, M. Hayashibe and P. Fraisse

PhD: Hélène Leroux, "Méthodologie de conception d'architectures numériques complexes: du formalisme à l'implémentation en passant par l'analyse, préservation de la conformité. Application aux neuroprothèses", Université Montpellier 2, Oct. 28th 2014, D. Andreu and K. Godary

PhD: Zhan Li, "Real-time EMG-Feedback Torque Prediction and Muscle Activation Control toward New Modality in FES", Université Montpellier 2, Dec. 8, M. Hayashibe and D. Guiraud

PhD in progress: Yacine Berranen, "Modélisation volumique du muscle avec représentation des fonctions physiologiques", Oct. 2011, D. Guiraud, M. Hayashibe and B. Gilles

PhD in progress: Wafa Tigra, "Vers la commande intuitive d'une neuroprothèse dédiée à la préhension chez le sujet tétraplégique", Sept. 2013, C. Azevedo and D. Guiraud.

PhD in progress: Thomas Guiho, "Stimulation électrique médullaire en vue de la restauration des fonctions urinaires, intestinales et sexuelles chez le patient blessé médullaire", Sept. 2013, C. Azevedo and D. Guiraud.

PhD in progress: Maedeh Aram, "Online optimization for functional electrical stimulation of hemiplegic patients", Aug. 2014, K. Mombaur (Heidelberg Univ., Germany) and C. Azevedo.

PhD in progress: Melissa Dali, "Modèle d'interaction électro-nerf et optimisation en vue d'améliorer la stimulation sélective", Oct. 2014, O. Rossel and D. Guiraud.

PhD in progress: Marion Vincent, "Précision et modélisation des effets de la stimulation électrique directe lors des opérations de chirurgie éveillée des gliomes de bas-grade", Dec. 2013, F. Bonnetblanc and D. Guiraud.

PhD in progress: Ibrahim Merzoug, "Validation formelle pour les systèmes embarqués critiques", Oct. 2014, K. Godary and D. Andreu.

PhD in progress: Mariam Abdallah, "Système d'acquisition de signaux bioélectriques multicanal, programmable et implantable", Oct. 2012, G. Cathébras and F. Soulier.

### Engineers

David Andreu supervised Guillaume Magro. "Spécification et prototypage d'un contrôleur de SEF implantable". Industrial Informatics Engineer, Inria Expert Engineer contract (3 years contract, Inria).

David Andreu supervised Thibaut Possompes. "HILECOP development". Computer engineering, Inria Research Engineer contract (4 month contract, Inria).

David Andreu supervises Baptiste Colombani. "HILECOP development". Computer engineering, Inria Expert Engineer (2 years contract, Inria).

David Andreu and David Guiraud supervise Milan Demarcq on "Implantable network design", Electronics, Engineer (1 year contract, Inria).

David Andreu supervises Arthur Hiairassary on "Development of a stimulation real-time controller", Industrial Informatics Engineer, Research Engineer (2 years contract, UM2).

Christine Azevedo Coste supervises Benoît Sijobert on "SENSBIO project development", IJD Engineer, Research Engineer (2 years contract, Inria).

### Engineers internships

David Andreu supervised Arthur Hiairassary on "Architecture logicielle temps-réel d'un contrôleur de SEF implantable", Engineer final internship, from March. 2014 to Sep. 2014.

David Andreu supervised Charles Bernard on "Conception et implémentation de fonctions sur un dispositif de Stimulation Electrique Fonctionnelle", Licence Professionnelle internship, from Feb 2014 to Jun 2014.

David Andreu supervised Pascal Wagner on "Conception et Implémentation d'une solution de communication avec un dispositif médical actif", Licence Professionnelle internship, from Feb 2014 to Jun 2014.

Karen Godary and David Andreu supervised Lila Kaci on "Etude de la gestion d'exception dans un modèle formel au coeur de dispositifs médicaux", Master internship, from March 2014 to July 2014.

David Andreu supervised Amandine Pantel on "Contribution à la conception et l'implémentation d'une solution de communication avec un dispositif médical actif, et à son interface d'exploitation", Engineer student, CPE Lyon, from June 2014 to September 2014.

Christine Azevedo Coste and Benoît Sijobert supervised Jennifer Denys on "La détection des épisodes de freezing dans la maladie de Parkinson", MASTER M2, Technologie pour la Santé, from March to July 2014.

Christine Azevedo Coste and Lionel Lapierre (EXPLORE, LIRMM) supervised Geoffrey Gicquel on "Mobile Platform for Parkinson Disease Walk Analysis", DUT Génie Electrique et Informatique, St Etienne, from April to June 2014.

Daniel Simon and David Andreu supervised Samy Lafnoue on "Contrôle d'ordonnancement dans un système de stimulation électrique distribué", Master2 Robotique UM2 internship from Apr. to Sep. 2014.

### 8.2.3. Juries

D. Simon was member of the PhD defense of Yiming Zhan (Univ. Rouen, Apr. 17)

D. Simon was member of the PhD defense of Abir Ben Khaled (Univ. Grenoble, May 27)

D. Simon was member of the PhD defense of Maissa Abdallah (Univ. Nantes, June 18).

Christine Azevedo Coste was reviewer of Antoine Marin PhD thesis defense "Le mouvement Segmentaire au service du déplacement dans la marche : analyse couplée des deux niveaux", Thesis, Université Rennes 2.

Christine Azevedo Coste was examiner of Alejandro Gonzalez de Alba PhD thesis defense "Estimation des paramètres du centre de masse corps complet : vers l'évaluation de l'équilibre pour une application de rééducation à domicile.", Thesis, Université Montpellier 2.

Christine Azevedo Coste was member of the committee for Inria CR2 competition (Monbtbonnot Center).

David Andreu was examiner of Zhan Li PhD thesis defense "Real-time EMG-Feedback Torque Prediction and Muscle Activation Control toward New Modality in FES". Thesis, Université Montpellier 2.

## DRACULA Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. Member of the organizing committee

- Conference "LyonSysBio" (Lyon Systems Biology), Lyon (France), 19 - 21 November 2014 (<http://lyonsysbio.sciencesconf.org/?lang=fr>). Co-organizers : Fabien Crauste and Olivier Grandrillon.
- 12ème Colloque Franco-Roumain de Mathématiques Appliquées, Lyon (France), 25 - 30 August 2014 (<http://cfr2014.univ-lyon1.fr/>). Co-organizer : Fabien Crauste.
- 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Madrid (Spain), 7 - 11 July 2014 (<http://www.aims sciences.org/conferences/2014/>). Co-organizers of the session "Deterministic and stochastic models in biology and medicine" : Mostafa Adimy, Fabien Crauste and Laurent Pujo-Menjouet.
- Regular Semovi seminar series (<http://www.biosyl.org/news/semovi>), 5 seminars organized in 2014. Co-organizer : Olivier Grandrillon. BioSyL (<http://www.biosyl.org>) workshops organization. Co-organizer : Olivier Grandrillon.

#### 9.1.2. Journal

##### 9.1.2.1. Member of the editorial board

- Mostafa Adimy : Journal of Nonlinear Systems and Applications (JNSA); The Scientific World Journal; Chinese Journal of Mathematics.
- Fabien Crauste : Computational and Mathematical Methods in Medicine (HPG)
- Laurent Pujo-Menjouet : Mathematical modelling natural phenomena; Frontiers Mathematics and Computers in Simulation

##### 9.1.2.2. Reviewer

- Fabien Crauste : Abstract and Applied Analysis, Computational and Applied Mathematics, Journal of Mathematical Biology, Journal of Theoretica Biology, Mathematical Biosciences and Engineering, Mathematical Methods in the Applied Sciences, Mathematical Biosciences.
- Laurent Pujo-Menjouet : ISRN Biomathematics, Mathematical Biosciences, Mathematical Biosciences and Engineering, Mathematics and Computers in Simulation, Mathematical Methods in the Applied Sciences, Zeitschrift fuer Angewandte Mathematik und Physik (ZAMP).
- Olivier Grandrillon : Gene, Journal of the Royal Society Interface, PLOS Computational Biology, BMC research notes.
- Phillipe Michel : Nonlinear Analysis, PLOS One
- Samuel Bernard : PLOS Computational Biology, Biophysical Journal, Journal of Theoretical Biology, PLOS One, BMC Systems Biology, Mathematics and Computers in Simulations.
- Thomas Lepoutre : Siam Journal of Mathematical Analysis, Numerical Methods in PDE, Journal of Mathematical Biology.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence : Phillipe Michel, Analyse appliquée, 56h, L3, Ecole Centrale de Lyon.

- Licence : Phillipe Michel, Probabilités et statistique, 30h, L3, Ecole Centrale de Lyon.
- Licence: Samuel Bernard, Algèbre linéaire et matricielle, 45h, L3, INSA Lyon.
- Licence : Laurent Pujo-Menjouet, les réels et les fonctions, 36h, L1, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, suites et séries de fonctions, 36h, L1, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Equations Différentielles, 18h, L2, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Projet de l'étudiant de Licence, 14h, L2, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Biomathématiques et modélisation, 10h, L3, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Equations différentielles et aux dérivées partielles, 36h, L3, Université Lyon 1.
- Licence: Léon Matar Tine, Techniques mathématiques de base (TMB), 42h, L1, Université Lyon 1.
- Licence: Léon Matar Tine, Maths PMI-Analyse, 42h, L2, Université Lyon 1.
- Licence: Léon Matar Tine, Analyse Numérique, 36h, L3, Université Lyon 1.
- Master : Phillipe Michel, Algorithmes pour la décision en entreprise, 15h, M2, Ecole Centrale de Lyon.
- Master : Phillipe Michel, Méthodes variationnelles pour les EDP, 35h, M2, ECL, Ecole Centrale de Lyon.
- Master : Phillipe Michel, Systèmes embarqués collaboratifs, 14h, M1, Ecole Centrale de Lyon.
- Master: Mostafa Adimy, Dynamique des populations cellulaires, 20h, M2, Université Lyon 1.
- Master: Samuel Bernard, Dynamique des populations cellulaires, 20h, M2, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Modélisation en biologie et médecine, 8h, M2, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Gestion de projet en ingénierie mathématique, 3h, M1, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Systèmes dynamiques, 66h, M1, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Projet tutoré en Mathématiques, 3h, M2, Université Lyon 1.
- Master: Léon Matar Tine, Dynamique des protéine, 18h, M2, Université Lyon 1.
- Master: Thomas Lepoutre, Dynamique des protéine, 18h, M2, Université Lyon 1.

### **9.2.2. Supervision**

- HdR : Fabien Crauste, Équations à retard et modèles de dynamiques de populations cellulaires, Université Lyon 1, December 2014.
- PhD in progress : Marine Jacquier, Contribution à l'étude de modèles à retards modélisant l'impact physiologique du comportement de prise alimentaire, Université Lyon 1, October 2012, Mostafa Adimy and Fabien Crauste.
- PhD in progress : Abdennasser Chekroun, Équations différentielles et aux différences à retard pour des modèles de dynamique des cellules souches hématopoïétiques, Université Lyon 1, October 2012, Mostafa Adimy.
- PhD in progress : Barbaroux Loic, modélisation mathématique de la réponse immunitaire chez un individu en vue d'optimiser des stratégies de vaccination, Université de Lyon 1, October 2013, Mostafa Adimy and Phillipe Michel.
- PhD in progress : Raouf El Cheikh, Multiscale modelling of the interaction between the cell cycle and the circadian clock, Université Lyon 1, October 2011, Samuel Bernard and Vitaly Volpert.
- PhD in progress : Apollos Besse, The role of tumor-immune interaction in combined treatments for chronic myeloid leukemia, Université Lyon 1, October 2014, Samuel Bernard and Thomas Lepoutre.

- PhD in progress : Flavien Duparc, Etude d'un modèle mathématiques de régulation de l'hémoglobine chez les patients dialysés, Université Lyon 1, October 2014, Mostafa Adimy and Laurent Pujou-Menjouet.
- PhD in progress : Loïs Boullu, Modélisation de la mégacaryopoïèse et applications aux maladies liées à la production des plaquettes, Université Lyon 1, October 2014, Laurent Pujou-Menjouet and Jacques Bélair (co-tutelle avec l'Université de Montréal).

### **9.2.3. Juries**

- Mostafa Adimy was member and reviewer of the following PhD : Modou Lo (University of Saint-Louis, Senegal), February 2014; Jose Luis Avila Alonso ( University of Paris-Sud XI), July 2014; Benjamin Aymard (University of Paris 6), October 2014; Mathieu Leroy-Lereêtre (University of Toulouse), October 2014.
- Mostafa Adimy was reviewer of the PhD of Ahmed Fadili (University of Agadir, Morocco), December 2014.
- Mostafa Adimy was reviewer of the HDR of Samir Fatajou (University of Marrakech, Morocco), November 2014.
- Mostafa Adimy was member of the juries : Fabien Crauste, HDR (University of Lyon), December 2014; Nathalie Eymard, PhD (University of Lyon), December 2014.

## **9.3. Popularization**

- Fabien Crauste : Cycle "Mathématiques et médecine" de l'Université Ouverte "Grippe saisonnière, épidémie, pandémie : quel apport des mathématiques ?", 25 March 2014.
- Olivier Grandrillon : Participation in the café des sciences "La recherche en génétique, entre prouesses et promesses", in Lyon (Samedi 11 octobre)
- Samuel Bernard : Participation in Conférence à l'Université Ouverte "Garder le rythme, c'est garder la santé" and "L'âge de nos cellules par test nucléaire", in Lyon.
- Thomas Lepoutre : Cycle "Mathématiques et médecine" de l'Université Ouverte.
- Thomas Lepoutre is one of the organizer of Mathalyon (Mathematical exhibitions in highschool with 4 researchers, 20 days of intervention every year).
- Thomas Lepoutre : Intervention at Cité Scolaire Internationale (Highschool in Lyon) to explain what is a researcher's job.
- Laurent Pujou-Menjouet : Cycle "Mathématiques et médecine" de l'Université Ouverte "Le bonheur est dans le pré, les vaches folles aussi", 16 September, 2014.
- Laurent Pujou-Menjouet : supervising junior high school students for the "MathenJeans" program <http://www.mathenjeans.fr> (academic year 2014-2015).



## DYLISS Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events selection

##### 8.1.1.1. Members of conference program committee

- ICGI International Conference on Grammatical Inference [F. Coste, Reviewer and member of Steering Committee].
- PRIB International Conference on Pattern Recognition in Bioinformatics [A. Siegel].
- Program committee of Semantic Web Applications and Tools for Life Sciences (SWAT4LS 2014) [O. Dameron].

#### 8.1.2. Journal

##### 8.1.2.1. Member of editorial board

- Academic editor: Plos One [J. Bourdon]

##### 8.1.2.2. Reviewer

- F. Coste: Theoretical Computer Science.
- O. Dameron: Bioinformatics, Cancer informatics, Journal of Biomedical Informatics, Journal of Biomedical Semantics.
- A. Siegel : Nature, Bulletin of the Belgium Math. Society, BMC Systems Biology.

#### 8.1.3. Participation to council and advisory boards

- Scientific Advisory Board of GDR BIM " Molecular Bioinformatics"[J. Nicolas].
- Member of SCAS (Service Commun d'Action Sociale) of Univ. Rennes 1 [C. Belleannée].
- Member of the IRISA laboratory council [F. Coste].
- Member of the Inria Rennes center council [A. Siegel].
- Member of the the Operational Legal and Ethical Risk Assessment Committee (COERLE) at Inria.
- Scientific Advisory Board of Biogenouest [J. Bourdon, J. Nicolas, A. Siegel].
- Expertise for ANR call [A. Siegel]
- Expertise for national call "Biologie des systèmes appliqués au Cancer" [A. Siegel]
- Expertise for ARP "MERMED : Adaptation aux changements environnementaux en mer Méditerranée : quelles recherches et quels partenariats ?" [[website](#)] [A. Siegel]
- Recruitment committees: assistant professor (LRI, Orsay) [A. Siegel, F. Coste], assistant professor (Univ. Rennes) [F. Coste], professor (Univ. Bordeaux) [A. Siegel].

#### 8.1.4. Organization of local meetings

- **Seminar** A weekly seminar of bioinformatics is organized within the laboratory. Attendees are member of the symbiose team, biologists from Brittany and computer scientists from the laboratory. [[website](#)].
- Organization of Irisa department "Data and knowledge management"'s seminar [F. Coste].
- **Workshop. Théorie des réseaux booléens et ses applications en biologie** A one-week workshop on boolean networks was organized in Nice in Nov. 2014. It gathered 20 researchers in bioinformatics, computer science and mathematics about several aspects of boolean networks properties [[website](#)]

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Course and track responsibilities

F. Coste is coordinator of the track "From Data to Knowledge: Machine Learning, Modeling and Indexing Multimedia Contents and Symbolic Data" of the Master by research in Computer Science (2nd year), University of Rennes 1, France.

F. Coste is coordinator of the course “Extracting knowledge from symbolic data sequences” of the Master by research in Computer Science (2nd year), University of Rennes 1, France.

### 8.2.2. Teaching

Licence: C. Belleannée, Langages formels, 22h, L3 informatique, Rennes1, France.

Licence: C. Belleannée, bureautique et C2i, 40h, L1 informatique, Rennes1, France.

Licence: G. Garet, Algorithmique, 22h, L3 informatique, Rennes1 France.

Licence: G. Garet, Analyse de données, 12h, L3 Miage, Rennes1 France.

Licence: O. Dameron, Biostatistiques, 12h, PACES, Univ. Rennes 1, France.

Licence: O. Dameron, C2i niveau 2, 2.5h, Univ. Rennes 1, France.

Licence: V. Picard, Probability theory, 24h, L3, ENS Rennes, France

Licence: C. Galiez, Bureautique, 16h, L1 informatique, Rennes1 France

Master: C. Bettembourg, principes de programmation et d’algorithmique, 18h, M1 bioinformatique et génomique, Univ. Rennes 1, France.

Master: C. Belleannée, Préférences Logique et contraintes, 32h, M1 informatique, Rennes1 France

Master: G. Collet, Programmation Python, 20h, M1 BioInformatique, Univ. Rennes 1, France

Master: O. Dameron, gestion de projets en informatique, 29.5h, M1 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, principes de programmation et d’algorithmique, 12.5h, M1 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, initiation systèmes et réseaux, 4h, M1 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, techniques de recherche documentaire, 2h, M1 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, Bases de mathématiques, probabilités et statistiques, 3h, M1 santé publique, Univ. Rennes 1, France.

Master: C. Galiez, Compilation, 48h, M1 informatique, Rennes1 France

Master: V. Picard, Formal methods for safe development, 16h, M1, Univ. Rennes 1, France

Master: V. Picard, Agrégation de mathématiques option D, 15h, M1, ENS Rennes/Univ. Rennes 1, France

Master: F. Coste, Apprentissage Supervisé, 10h, M2 Informatique, Univ. Rennes 1, France

Master: F. Coste, Données Séquentielles Symboliques, 10h, M2 Informatique, Univ. Rennes 1, France

Master: O. Dameron, modélisation des connaissances et bio-ontologies, 36h, M2 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, organisation des oraux de stages, 8h, M2 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, E-santé et réseaux hospitaliers, 8h, ESIR3, Univ. Rennes 1, France.

Master: A. Siegel, Integrative and Systems biology, 20h, M2, Univ. Rennes 1, France

Doctorat: A. Siegel, Tilings and Symbolic Dynamics, 8h, School "Representing streams II" at Lorentz center, Leiden, Netherlands.

Doctorat: J. Nicolas, Answer Set programming, 6h, Ecole Doctorale Matisse, Univ. Rennes 1, France

### 8.2.3. Supervision

PhD : Gaëlle Garet, *Discovery of enzymatic functions in the framework of formal languages*, 16 Dec. 2014., supervised by J. Nicolas and F. Coste. [10].

PhD : Sylvain Prigent, *Complétion combinatoire pour la reconstruction de réseaux métaboliques, et application au modèle des algues brunes Ectocarpus siliculosus*, 14 Nov. 2014, supervised by A. Siegel and T. Tonon (UMR 7150, station biologique de Roscoff) [11]

PhD : Santiago Videla, *Reasoning on the response of logical signaling networks with answer set programming*, 7 Jul. 2014, supervised by A. Siegel and T. Schaub (Potsdam univ) [12].

PhD : Valentin Wucher, *Modeling of a gene network between mRNAs and miRNAs to predict gene functions involved in phenotypic plasticity in the pea aphid*, 3 Nov. 2014, supervised by J. Nicolas and D. Tagu (Inra).[13]

PhD in progress : Aymeric Antoine-Lorquin, *Modèles grammaticaux au service de l'identification de marqueurs de régulation génétique dans les séquences biologiques*, started in Oct. 2013, supervised by C. Belleannée

PhD in progress : Clovis Galiez, *Syntactic modelling of protein structure.*, started in Oct. 2012, supervised by F. Coste and J. Nicolas.

PhD in progress : Julie Laniau, *Méthodes d'optimisation combinatoire pour reconstruire et analyser les systèmes métaboliques de microalgues*, started in Oct. 2013, supervised by A. Siegel and D. Eveillard.

PhD in progress : Vincent Picard, *Analyse dynamique d'algorithmes et dynamique symbolique pour l'étude de modèles semi-quantitatifs en biologie des systèmes*, started in Sept. 2012, supervised by A. Siegel and J. Bourdon.

PhD in progress : Jean Coquet, *Semantic-based reasoning for biological pathways analysis*, started in Oct. 2014, supervised by O. Dameron, N. Théret and J. Nicolas.

PhD in progress : Victorien Delannée, *Optimisation à différentes échelles pour étudier la variabilité de la toxicité de contaminants alimentaires*, started in Oct. 2014, supervised by A. Siegel and N. Théret.

#### 8.2.4. Juries

- *Member of Ph-D thesis jury*. M. Folschette, Ecole Centrale Nantes [A. Siegel, rapporteure]. B. Le Gloanec, Univ. Orléans [A. Siegel, présidente]. J. Scicluna, Université de Nantes [F. Coste].

#### 8.2.5. Seminars

- V. Picard. *Multivariate Normal Approximation for the Stochastic Simulation Algorithm: limit theorem and applications*. I3S MDSC Seminar. Sophia Antipolis, France (May. 2014)
- A. Siegel. *modelling and integrating heterogeneous information about the response of a biological system with ASP*. LRI, Orsay, France (Jun. 2014)
- A. Siegel. *AuReMe Integrative method for Automatic Reconstruction of Metabolic network*. LINA, Nante, France (Jul. 2014)
- A. Siegel. *Modéliser et intégrer des informations hétérogènes sur la réponse d'un système biologique*. Séminaire interdisciplinaire MEB, Marseille, France (Oct. 2014)
- G. Collet. *Genome Assembly on a Raspberry Pi*. fOSSa 2014 (Nov. 2014)
- A. Siegel. *Méthodes de programmation logique (ASP) pour apprendre et contrôler la réponse de réseaux de signalisation*. Workshop "Théorie des réseaux booléens et ses applications en biologie", Nice, France (Nov. 2014)
- A. Siegel. *Reconstruire un réseau métabolique à partir de différentes sources d'informations et données*. Journée scientifique BioGenOuest - Axe Analyse structurale et métabolomique, Nantes, France (Dec. 2014)

- A. Siegel. *Modéliser et intégrer des informations hétérogènes à large-échelle sur la réponse d'un système biologique*. Journées biologie intégrative, Lille, France (Dec. 2014)
- O. Dameron *OWL model of eligibility criteria compatible with partially-known information*. Institut des Systèmes Complexes, Paris, France (Dec. 2014)
- V. Picard. *Multivariate Normal Approximation for the Stochastic Simulation Algorithm: limit theorem and applications*. LIFL Biocomputing Seminar. Lille Univ, France (Dec. 2014)
- O. Dameron *Knowledge-based selection of candidate metabolic networks*. Séminaire Biosticker, LINA Nantes France (Dec. 2014)

#### 8.2.5.1. Internships

- Internship, from April until June 2014. Supervised by G. Collet. Student: Efflam Lemaillet. Subject: Méthode de comparaison de protéines sans alignement.
- Internship, from April until June 2014. Supervised by F. Coste. Student: Francisco Dorr. Subject: Compressing (genomic) sequences by grammar inference.
- Internship, from April until June 2014. Supervised by O. Dameron and N. Theret. Student: Dominique Mias-Lucquin. Subject: Analysis of TGF- $\beta$  signalling network trajectories
- Internship, from April until June 2014. Supervised by O. Dameron and G. Collet. Student: Loïc Bourgeois. Subject: Metabolic pathway representation in RDF : converting Reactome into BioPAX
- Internship, from Feb. until June 2014. Supervised by J. Nicolas. Student: Hugo Bazille. Subject: Protein design: a NP-hard problem in bioinformatics
- Internship, from March until Sep. 2014. Supervised by C. Belleannée. Student: Malo Le Boulch. Subject:
- Internship, from March until June 2014. Supervised by C. Belleannée. Student: Lea Flechon. Subject: Identification in silico du site de fixation à l'ARNm de la protéine PTBPI : découverte de motifs par utilisation d'un outil existant via des données CLIP-seq publiques
- Internship, from April until June 2014. Supervised by V. Picard and A. Siegel. Student: Thibault Etienne. Subject: Simulation stochastique quantitative pour la modélisation de systèmes écologiques
- Internship, from January until June 2014. Supervised by A. Siegel and N. Theret. Student: Victorien Delannée. Subject: Modélisation du métabolisme des xénobiotiques de type amines hétérocycliques aromatique (AHA)
- Internship, October 2014. Supervised by F. Coste. Ph D. student: Meriem Zekri. Subject: Modelling GPCR proteins with Protomata-Learner

### 8.3. Popularization

- *Revue Math/info Tangente* Nous avons participé à un numéro spécial de cette revue destinée aux lycées avec un article de bioinformatique sur les langages des molécules du vivant illustrant l'intérêt de la modélisation par langages formels dans ce cadre. [J. Nicolas, C. Belleannée, F. Coste] [41]
- *Rencontre Inria Industrie* "Bio-informatique et outils numériques pour les produits de santé" Lyon (Feb. 2014) [F. Coste, A. Antoine-Lorquin, A. Siegel, S. Videla]
- *FrenchTech Rennes* Popularization of genome assembly on a Raspberry Pi at a FrenchTech event in Rennes (Dec. 2014) [G. Collet].
- *Bioinfo-fr.net* Bioinfo-fr.net is a french web site where researchers, engineers and students talk about bioinformatics. We have written 6 articles for this web site on diverse subjects: metabolic networks, genome assembly, phylogenetics, network visualization. [G. Collet, S. Prigent, O. Dameron]. [more info].
- *Fête de la science (LINA, Nantes)* During the 17th of October, 250 students discovered bioinformatics, genome assembly, metabolomics and algorithmic by practicing games and tutorials made by our team with the help of Julien Gras, Erwan Delage and Stephanie Noguét (LINA) [J. Bourdon, D. Eveillard, Y. Guitton].
- *Organization of Sciences en Cour[ts]*. Popularization Festival where PhD students explain their thesis via short films. [S. Prigent, C. Bettembourg, G. Garet] [more info].
- *GNU/Linux Magazine* Article "La bioinformatique avec Biopython", Hors-série 73, pp 84–97. 2014. [O. Dameron] [40]

## **FLUMINANCE Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

Dominique Heitz

- Member of IRSTEA "Comité directeur des Systèmes d'Information"
- Responsible of the IRSTEA ACTA Team
- Reviewer for AIAA, Exp. in Fluids, Fluid Dynamics Research

Cédric Herzet

- Technical program committees of ICASSP 2014
- Project reviewer for the "Fond National de la Recherche Scientifique" (FNRS), Belgique
- Organizer of a monthly local seminar dedicated to sparse representations.
- Reviewing for ICASSP, IEEE trans. Signal Processing, IEEE Trans. Image Processing

Etienne Mémin

- invited speaker CIMI (Centre International de Mathématiques et d'Informatique - Trimestre EDP & Probabilités - Weather Forecast, jan. 2014
- Associate editor of the Journal of Computer Vision (IJCV)
- Associate editor of the journal of Image and Vision Computing (IVC)
- Reviewing for Tellus-A, IEEE Im. Proc., IEEE trans. Pat. Anal. Mach. Intel., Im. Vis. Comp., Exp in Fluids, ICIP'14, Nonlinear Proc. in Geophysics., Journ. of Comp. Phys, Fluid Dynamics Research.
- Responsible of the "Commission Développement Technologique" Inria Rennes
- member of the "Commission Personnel" Inria-IRISA Rennes

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Licence : Dominique Heitz, Mécanique des fluides, 30h, niveau L2 INSA Rennes

Master : Dominique Heitz, Mécanique des fluides, 25h, niveau M1, Dep GMA INSA Rennes

Master : Cédric Herzet, Analyse de données, Mastere de Statistiques et Econométrie, 10h, niveau M1, Université de Rennes I

Master : Etienne Mémin, Analyse du mouvement, Mastere Informatique, 15h, niveau M2, Université de Rennes 1.

Master : Etienne Mémin, Vision par ordinateur, 15h, niveau M2, ESIR Université de Rennes 1.

### **9.2.2. Supervision**

PhD : Ioana Barbu, Tridimensional estimation of turbulment fluid velocity, Université de Rennes I, defended 15/12/2014, encadrants: Cédric Herzet, Etienne Mémin

PhD : Xuan Quy Dao, Fluid Flow control by visual servoing, Université de Rennes I, defended 16/12/2014, encadrant: Christophe Collewet

PhD : Yin Yuang, Study of variational ensemble methods for image assimilation, Université de Rennes I, defended 16/12/2014, encadrant: Etienne Mémin

PhD in progress : Benoit Pinier, Scale similarity and uncertainty for Ocean-Atmosphere coupled models, started 01/10/2014, supervisors: Roger Lewandowski, Etienne Mémin

PhD in progress : Valentin Resseguier, Oceanic models under uncertainty and image assimilation, started 01/10/2013, Bertrand Chapron (Ifremer), Etienne Mémin

PhD in progress : Cordelia Robinson, Variational assimilation for 3D wake reconstruction, started 01/10/2011, supervisors: Dominique Heitz, Etienne Mémin

### 9.2.3. *Juries*

Dominique Heitz

- Yin Yang, Study of variational ensemble methods for image assimilation, Université Rennes 1, Rennes, 16/12/2014, Examiner.

Cedric Herzet

- Ioana Barbu, Tridimensional estimation of turbulment fluid velocity, Université de Rennes I, 15/12/2014. Supervisor.

Etienne Mémin

- Emmanuelle Autret, Analyse des champs de température de surface de la mer à partir d'observations satellite multi-sources, 07/10/2014, President
- Ioana Barbu, Tridimensional estimation of turbulment fluid velocity, Université de Rennes I, 15/12/2014. Supervisor.
- Xuan Quy Dao, Fluid Flow control by visual servoing, Université de Rennes I, 16/12/2014, Examiner
- Denis Fortun, Aggregation framework and patch based image representation for optical flow, Université de Rennes I, 10/07/2014, President
- Gilles Tissot, Réduction de modèles et contrôle d'écoulement, Université de Poitiers, 02/10/2014, Examiner
- Yin Yang, Study of variational ensemble methods for image assimilation, Université Rennes 1, Rennes, 16/12/2014. Supervisor.
- Pascal Zille, Modèles multi-échelles pour l'analyse d'images : application à la turbulence, Université de Lyon, 07/11/2014, Examiner

## 9.3. Popularization

Etienne Mémin

- E. Mémin. Ou vont les nuages ?, Un jour, une brève, Mathématiques de la planète terre, (Brève)
- Invited paper in the journal "Revue française de photogrammetry et de Télédétection", Outils méthodologiques d'analyse d'images MSG : estimation du mouvement, suivi de masses nuageuses et détection de fronts, with T. Corpetti, V. Dubreuil, E. Mémin, O. Planchon, C. Thomas.
- Invited paper in the journal de la Société Française de Statistique, Image data assimilation with filtering methods, with Anne Cuzol.

## GALEN Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

- Blaschko, Matthew: Co-Organizer of Learning and inference in discrete graphical models tutorial, in conjunction with IEEE Computer Vision and Pattern Recognition (CVPR).
- Kokkinos, Iasonas: Co-Organizer of BASes for Images and Surfaces (BASIS) tutorial, in conjunction with IEEE Computer Vision and Pattern Recognition (CVPR).
- Paragios, Nikos: (i) Co-Organizer of Bayesian and graphical Models for Biomedical Imaging (BAMBI) workshop, in conjunction with the Medical Image Computing and Computer Assisted Intervention (MICCAI), (ii) Co-Organizer of the Learning and inference in discrete graphical models tutorial, in conjunction with IEEE Computer Vision and Pattern Recognition (CVPR).

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- Blaschko, Matthew: Neural Information Processing Systems (NIPS), British Machine Vision Conference (BMVC), Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP).
- Kumar, Pawan: Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP).
- Paragios, Nikos: IEEE Computer Vision and Pattern Recognition (CVPR), Medical Image Computing and Computer Assisted Intervention (MICCAI).

#### 9.1.2.2. Reviewer

- Argyriou, Andreas: Neural Information Processing Systems (NIPS).
- Blaschko, Matthew: Artificial Intelligence and Statistics (AISTATS), Energy Minimization Methods in Computer Vision and Pattern Recognition (EMMCVPR), IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- Kokkinos, Iasonas: European Conference on Computer Vision (ECCV), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Neural Information Processing Systems (NIPS), Artificial Intelligence and Statistics (AISTATS), Asian Conference on Computer Vision (ACCV).
- Kumar, Pawan: European Conference on Computer Vision (ECCV), Advances in Neural Information Processing Systems (NIPS).
- Paragios, Nikos: European Conference on Computer Vision (ECCV).

### 9.1.3. Journal

#### 9.1.3.1. Editor-in-Chief

- Paragios, Nikos: Computer Vision and Image Understanding Journal (CVIU).

#### 9.1.3.2. Member of the editorial board

- Kumar, Pawan: Computer Vision and Image Understanding (CVIU).
- Kokkinos, Iasonas: Image and Vision Computing Journal (IVC), Guest Editor Special Issue on Generative Models in Computer Vision - Computer Vision and Image Understanding Journal (CVIU).

- Paragios, Nikos: Medical Image Analysis Journal (MedIA), SIAM Journal on Imaging Sciences, Guest Editor Special Issue on Discrete Graphical Models in Biomedical Image Analysis - Medical Image Analysis Journal (MedIA).

#### 9.1.3.3. Reviewer

- Kokkinos, Iasonas: International Journal of Computer Vision (IJCV), IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), IEEE Transactions on Image Processing (T-IP), Image and Vision Computing (IVC), Computer Vision and Image Understanding (CVIU).
- Kumar, Pawan: IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), Computer Vision and Image Understanding (CVIU).
- Paragios, Nikos: International Journal of Computer Vision (IJCV), IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), IEEE Transactions on Medical Imaging (T-MI).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### Masters

Blaschko, Matthew

- Master: Foundations of Machine Learning, 36, M1, Ecole Centrale Paris, FR
- Master: Structured Prediction, 24, M2, Ecole Centrale Paris, FR

Kokkinos, Iasonas

- Master: Machine Learning for Computer Vision, 24, M2, Ecole Normale Supérieure-Cachan, FR
- Master: Introduction to Deep Learning, 24, M2, Ecole Centrale de Paris, FR
- Master: Introduction to Signal Processing, 36, M1, Ecole Centrale de Paris, FR
- Master: Introduction to Computer Vision, 36, M1, Ecole Centrale de Paris, FR

Kumar, Pawan

- Master: Introduction to Discrete Optimization, 12, M2, Ecole Centrale de Paris, FR
- Master: Discrete Optimization and Learning, 12, M2, Ecole Normale Supérieure-Cachan, FR

Paragios, Nikos

- Master: Advanced Mathematical Models in Computer Vision, 24, M2, Ecole Normale Supérieure-Cachan, FR

#### E-learning

MOOC: Coursera

Pedagogical resources : Kumar, Pawan & Paragios, Nikos, Discrete Inference and Learning in Artificial Vision, M2, <https://www.coursera.org/course/artificialvision>

### 9.2.2. Supervision

- HdR : Matthew Blaschko, Advances in Empirical Risk Minimization for Image Analysis and Pattern Recognition, École Normale Supérieure de Cachan, 7 novembre 2014
- PhD in progress : Puneet Kumar Dokania, Learning to Rank with Missing and High-Order Information, 2012-2015, M. Pawan Kumar
- PhD in progress : Diane Bouchacourt, Large Scale Diverse Learning for Structured Output Prediction, 2014-2017, M. Pawan Kumar



- PhD in progress: Haithem Boussaid, Efficient Inference and Learning in Graphical Models for Multi-organ Shape Segmentation, 2011-2015, I. Kokkinos
- PhD in progress: Stavros Tsogkas, Learning structured mid-level representations for object recognition, 2011-2015, I. Kokkinos
- PhD in progress: Siddhartha Chandra, Efficient Learning and Optimization for 3D Visual Data, 2013-2016, Iasonas Kokkinos, Pawan Kumar
- PhD in progress: Stefan Kinauer, Surface-based representations for high-level vision tasks, 2013-2016, Iasonas Kokkinos.
- PhD in progress : Wacha Bounliphone, Statistical tools for Imaging-Genetics data integration, 2013-2016, Matthew Blaschko & Arthur Tenenhaus
- PhD in progress : Jiaqian Yu, Structured Prediction Methods for Computer Vision and Medical Imaging, 2014-2017, Matthew Blaschko
- PhD in progress : Eugene Belilovsky, Structured Output Prediction on Large Scale Neuroscience Data, 2014-2017, Matthew Blaschko
- PhD in progress : Stavros Alchatzidis, Message Passing Methods, Parallel Architectures & Visual Processing, 2011-2014, Nikos Paragios
- PhD in progress : Enzo Ferrante, 2D-to-3D Multi-Modal Deformable Image Fusion, 2012-2015, Nikos Paragios
- PhD in progress : Vivien Fecamp, Linear-Deformable Multi-Modal Deformable Image Fusion, 2012-2015, Nikos Paragios
- PhD in progress : Evgenios Kornaropoulos, Diffusion Coefficient: a novel computer aided biomarker, 2010-2013, Nikos Paragios
- PhD in progress : Maxim Berman, Learning Higher Order Graphical Models, 2014-2017, Nikos Paragios
- PhD in progress : Hariprasad Kannan, Efficient Inference on Higher Order Graphs, 2014-2017, Nikos Paragios
- PhD in progress : Huu Dien Khue Le, Graph-based Visual Perception : Theories and Applications, 2014-2017, Nikos Paragios

### 9.2.3. *Juries*

- **Matthew Blaschko**
  - **PhD Thesis Participation:** K. Gkirtzou - FR (PhD).
  - **Grant Reviewing Services:** European Research Council (ERC).
- **Iasonas Kokkinos**
  - **PhD Thesis Participation:** N. Dimitriou - GR (PhD).
  - **Grant Reviewing Services:** Swiss National Science Foundation.
- **Kumar, Pawan**
  - **PhD Thesis Participation:** K. Park - Australia (PhD), G. Lin - Australia (PhD).
- **Paragios, Nikos**
  - **PhD Thesis Participation:** M. Blascho - FR (PhD), D. Fortun - FR (PhD), A. Gastounioti - GR (PhD), B. Romain - FR (PhD), J. Tang - CA (PhD), J. Weissenberg - CH (PhD).
  - **Grant Reviewing Services:** Agence National de la Recherche, Austrian Research Council, Danish Research Council, Dutch Research Council, European Research Council, Israel Research Foundation, Swiss National Science Foundation.

## 9.3. Popularization

- **Blaschko, Matthew**
  - **Presentations:** Third School on Machine Learning and Knowledge Discovery in Databases (BR), Computer Vision and Pattern Recognition Tutorial (US), KU Leuven (BE), Machine Learning Challenge MICCAI Workshop (US), Agence Nationale de la Recherche (FR)
- **Kokkinos, Iasonas**
  - **Presentations:** Imagenet workshop (in conjunction with ECCV, CH), TTI-Chicago (USA), KTH University (SE), Dagstuhl Seminar on Shape Analysis (DE).
- **Kumar, Pawan M.**
  - **Presentations:** University of Oxford (UK), Ecole des Ponts (FR), Swedish AI Society Workshop (SAIS '14, SE), Xerox Research Center Europe (XRCE) (FR).
- **Paragios, Nikos**
  - **Presentations:** Reconnaissance de Formes et l'Intelligence Artificielle (RFIA'14, FR), Medical Imaging Summer School (MISS'14, IT), International Conference on Pattern Recognition (ICPR'15, SE), Algorithmic issues for Inference in Graphical Models (AIGM'14, FR), University of Patras (GR), Swiss Federal Institute of Technology in Zurich (ETHZ) (CH).

## GENSCALE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- Workshop on Computational Optimization (WCO14), Warsaw, Poland, Sep 7-11, 2014 [A. Mucherino, co-chair]

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- International Workshop on Algorithms for Computational Biology (ACB 2014) [D. Lavenier]
- IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2014) [D. Lavenier]
- European Conference on Computational Biology (ECCB'14) [D. Lavenier]
- International Conference on Field Programmable Logic (FPL 2014) [D. Lavenier]
- 4th Annual RECOMB Sattelite Workshop on Massively Parallel Sequencing (RECOMB-Seq 2014) [D. Lavenier, P. Peterlongo]
- International Conference on ReConFigurable Computing and FPGAs (ReConFig 2014) [D. Lavenier]
- IX Southern Programmable Logic Conference (SPL2014) [D. Lavenier]
- Many Faces of Distances (MFD14) [A. Mucherino]
- SeqBio 2014: Workshop on string algorithms [C. Lemaitre]

#### 9.1.2.2. reviewer

- IWOCA 2014 [P. Peterlongo]

### 9.1.3. Journal

#### 9.1.3.1. reviewer

- Advances in Bioinformatics [D. Lavenier]
- Algorithms for Molecular Biology [D. Lavenier]
- Bioinformatics [D. Lavenier]
- BMC Bioinformatics [D. Lavenier]
- BMC Genomics [D. Lavenier, F. Legeai]
- Briefing in Bioinformatics [D. Lavenier]
- Frontiers in Bioengineering and Biotechnology [P. Peterlongo]
- IEEE Transactions on Computational Biology and Bioinformatics [D. Lavenier]
- INS, CAMWA (Elsevier), ITOR (Wiley) , IJNS (World Scientific)[A. Mucherino]
- Integrative Biology [D. Lavenier]
- International Journal of Computer Science [P. Peterlongo]
- Journal of the Brazilian Computer Society [R. Andonov]
- Plos One [D. Lavenier]
- Nucleic Acids Research [D. Lavenier, P. Peterlongo]

### 9.1.4. Invited talks

- P. Peterlongo, Gen2Bio, Saint-Malo, France, Apr. 2014. Title: SNPs discovery.
- D. Lavenier, Los Alamos National Lab, New Mexico, USA, June 2014. Title: GATB: Genome Assembly and Analysis Tool Box.
- A. Mucherino, BAS, Sofia, Bulgaria, June 2014.
- D. Lavenier, Asprom seminar, Paris, France, Sept. 2014. Title: Parallel computation in genomics.
- P. Peterlongo, R-SYST, Inra, Rennes, France, Oct. 2014. Title: Comparing and combining multiple metagenomic datasets.

## 9.2. Administrative duties

- Member of the administrative council of ISTIC [R. Andonov]
- ANR Evaluation Committee Generic Call [R. Andonov]
- Member of the Scientific Council of Computational Biology Institute of Montpellier [D. Lavenier]
- Permanent expert for the MEI (International Expertise Mission), French Research Ministry [D. Lavenier]
- Member of the local Inria Rennes CDT (Technologic Transfer Commission) [D. Lavenier]
- Member of the steering committee of the INRA BIPAA Platform (BioInformatics Platform for Agroecosystems Arthropods) [D. Lavenier]
- Member of the steering committee of The GenOuest Platform (Bioinformatics Platform of BioGenOuest) [D. Lavenier]
- Member of the local Inria CORDIS committee for PhD grants [C. Lemaitre]
- Representative of the environmental axis of UMR IRISA [C. Lemaitre]
- Inria center referee of Scientific mediation [P. Peterlongo]
- Member of the redaction committee Ouest Inria [P. Peterlongo]
- Recruitment committees: 1 professor [D. Lavenier], 2 assistant professors [C. Lemaitre, P. Peterlongo], 1 engineer (IE) [F. Legeai, chair]
- Scientific Responsible for International Relationships at ISTIC [A. Mucherino]
- Member of "Commission Affaires Internationales" at University of Rennes 1 [A. Mucherino]
- AGOS first secretary [P. Peterlongo]

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

Licence : C. Lemaitre, Statistics for biology, 11h, L3, Univ. Rennes 1, France

Licence : D. Lavenier, Architecture and System, 30 h, L3, ENS Rennes, France.

Licence : A. Mucherino, Java basis, 80h, L1, Univ. Rennes 1, France.

Licence : A. Mucherino and R. Andonov, Graph Algorithms, 90h, L3, Univ. Rennes 1, France.

Master : A. Mucherino and R. Andonov, Operational Research, 95h, M1, Univ. Rennes 1, France.

Master : R. Andonov, Advanced Algorithms, 15h, M1, Univ. Rennes 1, France.

Master : A. Mucherino, Introduction to Computational Systems and Networks, 42h, M1, Univ. Rennes 1, France.

Master : A. Mucherino, Object Oriented Programming, 40h, M1, Univ. Rennes 1, France.

Master : A. Mucherino, P. Peterlongo and R. Andonov, Algorithms on Sequences and Structures, 36h, M2, Univ. Rennes 1, France.

Master : D. Lavenier, Intensive Computation of Genomic Data, 15 h, M1, ESEO Angers, France.

Master : D. Lavenier, Project, 12 h, M1, ENS Rennes, France.

Master : C. Lemaitre, P. Peterlongo, Text algorithmics for Bioinformatics, 43 h, M1, Univ. Rennes 1, France.

Master : C. Lemaitre, Dynamical systems for biological networks, 20h, M2, Univ. Rennes 1, France.

### 9.3.2. Supervision

PhD in progress : Mathilde Le Boudic-Jamin, *Structure et comparaison d'objets 3D: applications aux structures protéiques*, Univ. Rennes 1, started in October 2011, supervised by R. Andonov

PhD in progress : F. Moreews, Bioinformatics workflows, 01/2012, D. Lavenier and S. Lagarrigue

PhD in progress : G. Benoit, New algorithms for comparative metagenomics, 01/11/2014, D. Lavenier and C. Lemaitre

PhD in progress : A. Limasset, Algorithm for Genomics, 09/2014, D. Lavenier and P. Peterlongo

### 9.3.3. Juries

- *President of Ph-D thesis jury.* Anne Jeannin-Girardon, Université de Bretagne Occidentale, Brest [D. Lavenier]
- *Member of Ph-D thesis juries.* Germano Abud de Rezende, UNICAMP, Campinas, Sao Paulo, Brazil [A. Mucherino].
- *Referee of Ph-D thesis.* Guillaume Martin, Montpellier AgroSup, [D. Lavenier]
- *Member of Ph-D thesis committees.* J. Boutte, University of Rennes [D. Lavenier], P. Nouhaud, University of Rennes [C. Lemaitre and F. Legeai], C. Mercier, University of Grenoble [C. Lemaitre], S. Guizard, University of Tours [C. Lemaitre], A. Radulescu, university of Nantes [P. Peterlongo], H. Lopez, University of Lyon [C. Lemaitre], V Wucher, university of Rennes [F. Legeai], D. Eoche-Bosy, University of Rennes [F. Legeai], A. Marchant, University Paris XI [F. Legeai].

## IBIS Project-Team

### 8. Dissemination

#### 8.1. Editorial, animation, and reviewing activities

##### Eugenio Cinquemani

Type	Journal, conference, agency
Associate editor	European Control Conference (ECC) 2015
Member PhD committee	Marianna Rapsomaniki (School of Medicine, University of Patras, Greece)
Member PhD advisory committee	Artemis Llamosi (Université Paris Descartes)

##### Hidde de Jong

Type	Journal, conference, agency
Member editorial board	Journal of Mathematical Biology
Member editorial board	ACM/IEEE Transactions on Computational Biology and Bioinformatics
Member editorial board	Biosystems
Member program committee	CMSB 15, MEMICS 14, HSB 14, ISMB/ECCB 14
Member scientific advisory board	Microbiology and Food Chain Department, Inra
Member review and selection committees	International Human Frontier Science Program (HFSP)
Member evaluation committee	AERES evaluation of MIAj and MIG laboratories, INRA, Jouy-en-Josas, 2014
Member recruitment committee	Junior research scientists, INRA
Member recruitment committee	Assistant professor, INSA de Lyon
Member HDR committee	Grégory Batt (Université Paris Descartes)
Member PhD committee	Kyrill Batmanov (Université de Lille I)
Member organization committee	BEEsy Conference on Perspectives in Environmental and Systems Biology (Grenoble, 2015)
Project reviews	BBSRC

##### Johannes Geiselmann

Type	Journal, conference, agency
Member recruitment committee	Assistant professor, INSA de Lyon
Member PhD committee	Thomas Esquerré (Université de Toulouse, INSA), Peng Liu, (Institut Pasteur, Paris), Elisa Brambilla (ENS Cachan)
Member PhD advisory committee	Xuejiao Jiang (INSA de Lyon)
Member scientific committee	ARC1, Rhône-Alpes region
Member organization committee	BEEsy Conference on Perspectives in Environmental and Systems Biology (Grenoble, 2015)
Project reviews	ANR

##### Stephan Lacour

Type	Journal, conference, agency
Member PhD advisory committee	Alexandre Duprey (Université de Lyon)

**Delphine Ropers**

Type	Journal, conference, agency
Member organization committee	SeMoVi (Séminaire de Modélisation du Vivant)
Member recruitment committee	Assistant professor, INSA de Lyon (twice)
Member PhD committee	Anna Zhukova (Université de Bordeaux)
Member PhD advisory committee	Alice Julien-Laferrière (Université de Lyon), Martin Wannagat (Université de Lyon)

**8.2. Administrative activities**

Eugenio Cinquemani is member of the Comité des Utilisateurs des Moyens Informatiques (CUMI) and of the Commission des Emplois Scientifiques at Inria Grenoble - Rhône-Alpes.

Hidde de Jong is member of the working group on International Relations of the Conseil d'Orientation Scientifique et Technique (COST) of Inria.

Johannes Geiselman is member of the scientific council of the Department of Biology at Université Joseph Fourier.

Yves Markowicz is director of the BSc department at Université Joseph Fourier.

François Rechenmann is CEO of Genostar. In addition, he has been commissioned by the Director of Inria Grenoble - Rhône-Alpes to help and to coach PhD students, in the research center, who encounter problems of various sorts during their thesis.

Michel Page is coordinator of the master Systèmes d'information et d'organisation at the Institut d'Administration des Entreprises (IAE), Université Pierre Mendès-France, Grenoble.

Delphine Ropers represents Inria Grenoble - Rhône-Alpes in the scientific board of IXXI, the Complex Systems Institute in Lyon (<http://www.ixxi.fr>). She is also member of the Commission de Formation Permanente and Référente Chercheurs at Inria Grenoble - Rhône-Alpes.

**8.3. Seminars, presentations, and PhD thesis defenses****Eugenio Cinquemani**

Title	Event and location	Date
Modeling and analysis of population systems with applications to molecular biology	Tutorial at HYCON2 workshop at European Control Conference (ECC 14), with G. Ferrari-Trecate and J. Lygeros, Strasbourg	June 2014
Modelling cellular heterogeneity of gene expression in yeast : The mixed-effects approach	CWI-Inria workshop, Paris	September 2014
Modelling dynamics and regulation of gene expression from fluorescent reporter data: Two challenges in two biological scenarios	Seminar at School of Medicine, University of Patras (Greece)	November 2014
Towards real-time control of gene expression at the single cell level: a stochastic control approach	Presentation at 12th international conference on Computational Methods for Systems Biology (CMSB 2014), Manchester (UK)	November 2014

**Hidde de Jong**

Title	Event and location	Date
Genetic Network Analyzer: modélisation et simulation qualitative de réseaux de régulation	Demo at Rencontre Inria-Industrie Bio-informatique et outils numériques pour les produits de santé, Lyon	February 2014
Analysis and identification of bacterial regulatory networks using real-time gene expression data	Invited presentation at Journée régionale Bioinformatique, Toulouse	June 2014
The analysis of global regulatory networks in bacteria using models and experiments	Invited presentation at International Workshop on Hybrid Systems Biology (HSB 2014), Vienna (Austria)	July 2014
Dynamic optimisation of resource allocation in microorganisms	Presentation at International Symposium on Mathematical Theory of Networks and Systems (MTNS 2014), Groningen (the Netherlands)	July 2014
Analysis and identification of bacterial regulatory networks using real-time gene expression data	Invited presentation at Colloque Biologie Synthétique & Systémique (BioSynSys), Toulouse	July 2014
Numerical simulation of piecewise-linear models of gene regulatory networks using complementarity systems	Presentation at International Symposium on Mathematical Theory of Networks and Systems (MTNS 2014), Groningen (the Netherlands)	July 2014

**Johannes Geiselmann**

Title	Event and location	Date
Global regulation and the control of growth rate in <i>Escherichia coli</i>	Invited seminar SeMoVi, Lyon	January 2014
Regulation of gene expression in <i>E. coli</i> : global effects and specific regulations	Seminar at Centre de Biologie Intégrative, Toulouse	March 2014
Systems biology of <i>E. coli</i>	University of Trondheim (Norway)	May 2014
Control of gene expression in <i>E. coli</i>	Journée Recherche, UJF	October 2014

**François Rechenmann**

Title	Event and location	Date
Genostar	Demo at Rencontre Inria-Industrie Bio-informatique et outils numériques pour les produits de santé, Lyon	February 2014

**Delphine Ropers**

Title	Event and location	Date
Global control of gene expression in <i>Escherichia coli</i>	Seminar at MAP laboratory, Lyon	March 2014
Complex regulatory networks in bacteria	Seminar at Institute of Food Research, University of Norwich (UK)	December 2014
Complex regulatory networks in bacteria: How bacteria face the unexpected	Invited presentation at the winter school Multi-scale modelling of biological systems, INSA, Toulouse	

**Diana Stefan**



Title	Event and location	Date
Identification structurelle et paramétrique des réseaux de régulation bactériens	PhD thesis defense, Université Joseph Fourier, Grenoble	June 2014

**Valentin Zulkower**

Title	Event and location	Date
A quantitative study of the regulation of cAMP-dependent promoters in <i>E. coli</i>	Presentation at workshop PTS50, Göttingen (Germany)	September 2014

**8.4. Popular science writing**

The members of IBIS are actively involved in the dissemination of research results in systems biology and bioinformatics to a wider, non-specialist audience. In the context of the **Math C2+ initiative** for high-school students, François Rechenmann has given the presentation "Algorithmes et génomes : analyse informatique de l'information génétique".

**8.5. Teaching**

Four members of the IBIS team are either full professor, associate professor or assistant professor at the Université Joseph Fourier or the Université Pierre Mendès-France in Grenoble. They therefore have a full teaching service (at least 192 hours per year) and administrative duties related to the organization and evaluation of the university course programs on all levels (from BSc to PhD). Besides the full-time academic staff in IBIS, the following people have contributed to courses last year.

**Eugenio Cinquemani**

Subject	Year	Location	Hours
Identification of dynamical models of genetic networks	5	INSA de Lyon	4
Statistics for biologists	4	Master Approches Interdisciplinaires du Vivant, Centre de Recherches Interdisciplinaires/Université Paris Descartes	20
Modelling and identification of metabolic networks	4	Master PHELMA, INP Grenoble	4

**Hidde de Jong**

Subject	Year	Location	Hours
Modeling and simulation of genetic regulatory networks	5	INSA de Lyon	20
Modeling and simulation of genetic regulatory networks	5	ENS Paris	8

**Nils Giordano**

Subject	Year	Location	Hours
Modeling and simulation of genetic regulatory networks	5	ENS Paris	8
Microbiologie	2	Université Joseph Fourier	32
Génétique des Populations	2	Université Joseph Fourier	30
Microbiologie	2	Université Joseph Fourier	32
Introduction à la bioinformatique	2	Université Joseph Fourier	12

**Delphine Ropers**

Subject	Year	Location	Hours
Modeling and simulation of genetic regulatory networks	4	Université Joseph Fourier	7.5
Modeling and simulation of genetic regulatory networks	5	INSA de Toulouse	4
Modeling in systems biology	4	Master PHELMA, INP Grenoble	16

François Rechenmann is preparing a MOOC on the subject "Algorithmes et génome", which is due to appear in 2015. Hidde de Jong organized with Daniel Kahn a module on the modeling of genetic and metabolic networks at INSA de Lyon. Delphine Ropers organizes a module on the mathematical modeling of biological systems at PHELMA, INP Grenoble.

## KALIFFE Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. general chair, scientific chair

F. Filbet was in the scientific committee of “12e Colloque Franco-Roumain en Mathématiques Appliquées” which was organized in Lyon in august 2014.

##### 8.1.1.2. member of the organizing committee

D. Le Roux was in the organizing committee of “12e Colloque Franco-Roumain en Mathématiques Appliquées” which was organized in Lyon in august 2014.

F. Filbet was in the organizing committee of “Journées Modélisation Mathématiques et Calcul Scientifique” at Vapré (Ecully) from 18-19 dec. 2014.

#### 8.1.2. Journal

##### 8.1.2.1. member of the editorial board

F. Filbet is a member of the editorial board of the journals *Confluences Mathematicae* and *ESAIM-Proceedings*.

##### 8.1.2.2. reviewer

- F. Filbet served as a referee for *J. Comp. Phys.*, *SIAM*, *J. Sci. Comput.*, *SIAM J. Num. Anal.*, *Comm. Comput. Phys.*, *J. Sci. Comput.*, *Comp. Applied. Math.s*, *AMS Math. Comp.*
- L.M. Rodrigues served as a referee for *Arch. Ration. Mech. Anal.*, *Comm. Math. Phys.*, *Phys. D*.
- D. Le Roux served as a referee for *AGU Book Series*, *Communications in Numerical Methods in Engineering*, *Computer Methods in Applied Mechanics and Engineering*, *Computers and Fluids*, *International Journal for Numerical Methods in Fluids*, *Journal of Computational Physics*, *SIAM Journal on Scientific Computing*, *Mathematics and Computers in Simulation*.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Our group is strongly involved on teaching activities at Polytech Lyon and at the Department of Mathematics (UCB Lyon).

Licence : M. Bergot (Numerical Analysis, Calculus, 192 h), S. Delcourte (Numerical Analysis, Calculus, 192 h), F. Filbet (Calculus, 52h), S. Delcourte and E. Fouassier (PDE, Analysis, Calculus, 192 h), L. M. Rodrigues (Numerical Analysis, Calculus, 192 h)

Master : F. Filbet (Kinetic Theory, PDE and numerical analysis, 36h), D. Le Roux (Fluid mechanics, PDE and numerical analysis, 36h).

F. Filbet is co-director of the PhD program in Computer Sciences and Mathematics of Lyon (ENS, INSA, ECL, UCBL, UFL, UJML).

### 8.2.2. Juries

- F. Filbet was referee of 5 PhD for Univ. Paris Dauphine - Paris IX, Univ. P. & M. Curie - Paris VI, Univ. Paris Sud- Paris XI, Univ. Bordeaux, Univ. Kaiserslautern (Germany).
- D. Le Roux was in the « jury » of F. Marche (Université de Montpellier), E. Ngom, J. Demange (Université de Grenoble), M.M. Tuhon, K.T. Kouakou (Université Nangui Abrogoua, Abidjan, Côte d'Ivoire)

## LEMON Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events selection

##### 9.1.1.1. Member of the conference program committee

Fabien MARCHE is member of the scientific committee of [Advances in Numerical modeling of Hydrodynamics](#), 2015.

#### 9.1.2. Journal

##### 9.1.2.1. Member of the editorial board

Vincent GUINOT : Journal of Hydroinformatics.

Antoine ROUSSEAU : Discrete and Continuous Dynamical Systems, Series S.

##### 9.1.2.2. Reviewer

Fabien MARCHE : Advances in Applied Mathematics and Mechanics, International Journal for Numerical Methods in Fluids, Journal of Applied and Computational Mathematics, Journal of Computational Physics, Journal of Scientific Computing and SIAM Journal on Scientific Computing.

Vincent GUINOT : Journal of Hydrology and Journal of Hydroinformatics.

Antoine ROUSSEAU : Applied Numerical Mathematics, International Journal for Numerical Methods in Fluids.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

V. Guinot, Mécanique des fluides, 72h ETD, L3, Polytech'Montpellier, France

V. Guinot, Hydraulique à surface libre, 60h ETD, L3, Polytech'Montpellier, France

V. Guinot, Méthodes Mathématiques pour l'Ingénieur, 18h ETD, M1, Polytech'Montpellier, France

V. Guinot, Hydraulique des Réseaux, 30h ETD, M1, Polytech'Montpellier, France

V. Guinot, Mécanique des Fluides, Master SPAE, 36h ETD, M1, UMontpellier, France

V. Guinot, Transitoires hydrauliques, 54 h ETD, M1, Polytech'Montpellier, France

V. Guinot, tutorat de stages ingénieur, 15h ETD, M1, Polytech'Montpellier, France

V. Guinot, Modélisation hydraulique à surface libre 2D, 6h ETD, M2, Polytech'Montpellier, France

V. Guinot, Projet Industriel de Fin d'Etudes (PIFE), 30h ETD, M2, Polytech'Montpellier, France

V. Guinot, Tutorat de Stage de fin d'études ingénieur, 18h ETD, M2, Polytech'Montpellier, France

F. Marche, Biomaths, 72h TD., L1, Université Montpellier 2, France

F. Marche, Analyse numérique des EDP, 24H CM, 12H TD, 15H TP., M1, Université Montpellier 2, France

F. Marche, Calcul scientifique avancé, 26H CM, M2R, Université Montpellier 2, France

A. Rousseau, Weather forecast and geophysical fluids, 10h, M2R, Labex CIMI, Toulouse, France

#### 9.2.2. Supervision

PhD : Arnaud Duran, *Modeling, analysis and simulations of shallow water flows*, Université Montpellier II, December 2014, Fabien Marche.

PhD in progress : Mehdi Pierre Daou, *Développement d'une méthodologie de couplage multi-modèles avec changements de dimension. Validation sur un cas-test réaliste en dynamique littorale*, May 2013, Eric Blayo (EPI MOISE) and Antoine Rousseau

### 9.2.3. Juries

Vincent GUINOT : HDR of C. Delenne (UM2), Section CNU 60, december 2014.

Antoine ROUSSEAU : CR2 competition in Inria Lille, spring 2014.

Antoine ROUSSEAU : Inria Research Position competition, campaign #1, spring 2014.

Antoine ROUSSEAU : Inria Research Position competition, campaign #2, summer 2014.

## 9.3. Popularization

Antoine ROUSSEAU is co-author of the **book** [16] (and **blog**) *Brèves de Maths* (Ed. Nouveau Monde, Nov. 2014)

Antoine ROUSSEAU gave several conferences for highschool students and their teachers in France, on the topics of mathematical modeling for environmental sciences:

*Fête de la Science*, Oct. 2014, Genopolys Montpellier (with Twitter reports on the national account [@EnDirectDuLabo](#))

*Fête de la Science*, Oct. 2014, Centre International de Valbonne

*Initiation à la recherche*, Oct. 2014, **Lycée Saint-Sernin**, Toulouse

Antoine ROUSSEAU gave a public lecture for Inria staff *Café In'* in Inria Sophia, Dec. 2014

Antoine ROUSSEAU was invited to the *Société Informatique de France* annual workshop **SIF 2014** to participate to a round table on scientific outreach

Antoine ROUSSEAU is member of the national Inria network for scientific outreach *Médiation scientifique*

Arnaud Duran gave a public lecture for high school students at Collège Jean Bène (Pézénas, France), Feb 2014.

## LIFEWARE Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. General chair, scientific chair

- François Fages was co-Chair of **BPPC'14**, Fifth International Workshop in Bin Packing and Placement Constraints, associated to CPAIOR'14, Cork Ireland, May 2014.

##### 9.1.1.2. Member of the organizing committee

- François Fages was member of the organizing committee and session co-chair of **SFC'14**, the 44ième Congrès de la Société Francophone de Chronobiologie, ESPCI ParisTech, Oct. 29-31 2014.

#### 9.1.2. Scientific events selection

##### 9.1.2.1. Chair of conference program committee

- François Fages was co-PC-Chair of **FMMB'14**, First International Conference on Formal Methods for Macro Biology, joint to ICSB'14, Noumea, Nouvelle Calédonie, September 2014.

##### 9.1.2.2. Member of the conference program committee

- François Fages was member of the program committees of :
  - **CMSB'14**, Twelfth International Conference on Computational Methods in Systems Biology – Nov. 17-19, Manchester, 2014.
  - **WCB'14** 10th Workshop on Constraint-based methods for Bioinformatics, associated to CP, Lyon France, September 2014.
  - **VEMDP'14** The 1st International Workshop on Verification of Engineered Molecular Devices and Programs – An affiliated workshop of CAV 2014 hosted in Vienna, Austria on July 17, 2014.
  - **HSB'14** Third workshop Hybrid Systems Biology – Vienna Summer of Logic, July 23-24, 2014.
  - **CHR'14** 11th International Workshop on Constraint Handling Rules — Vienna Summer of Logic, July 18, 2014.
- Grégory Batt was member of the program committee of **HSB'14**, the third workshop on Hybrid Systems Biology – Vienna Summer of Logic, July 23-24, 2014.

##### 9.1.2.3. Reviewer

- Grégory Batt was member of the review panel of ERASynBio, an ERA-NET from the seventh framework program for the development and coordination of synthetic biology in the European research area (Lisbon, Jan 2014).
- François Fages was reviewer for the Luxembourg National Research Fund.

#### 9.1.3. Journal

##### 9.1.3.1. Member of the editorial board

- François Fages is member of
  - the Editorial Board of the Computer Science area of the Royal Society Open Science journal since 2014
  - the Steering Committee of the international conference series Computational Methods in Systems Biology since 2008
  - the Editorial Board of the journal RAIRO OR Operations Research since 2004

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Lifeware is affiliated to the Doctoral school of Mathematical Science of the University Paris Diderot, and to the interdisciplinary Doctoral school "Frontières du Vivant" of the University Paris Descartes.

The following courses have been given by members of Lifeware:

Master: course C2-19 on *Computational Methods for Systemic and Synthetic Biology*, Master Parisien de Recherche en Informatique (MPRI) François Fages (responsible, 12h), Grégory Batt (12h), Denis Thieffry (12h).

Master: Interdisciplinary Master in Life Science at the Ecole Normale Supérieure, Paris. Denis Thieffry (coordinator), Grégory Batt (6h).

Master: course C2-35-1 on *Constraint Programming*, Master Parisien de Recherche en Informatique (MPRI) Sylvain Soliman (responsible, 24h) [beginning of the 2013-2014 academic year].

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

Master: *Statistics* at *Master Approches Interdisciplinaires du Vivant* (AIV), Valentina Peschetola (24h).

Grégory Batt has been selected to participate to the first workshop on 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 2014, Paris).

### 9.2.2. Supervision

HDR: Grégory Batt, *Design, optimization and control in systems and synthetic biology*, Université Paris Diderot, March 7, 2014. Jury: Vincent Danos (Edinburgh U), Frédéric Devaux (Paris5 U), Hidde de Jong (Inria), Olivier Gandrillon (CNRS), Mustafa Khammash (ETHZ), and Reiner Veitia (Paris7).

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

PhD: Xavier Duportet, *Developing new tools and platforms for mammalian synthetic biology: from the assembly and chromosomal integration of large genetic circuits to the engineering of artificial intercellular communication systems*, Université Paris Descartes (Oct. 2010), Paris, Dir. Grégory Batt and Ron Weiss (MIT), Nov 14, 2014. Jury: Grégory Batt, Diego di Bernardo (Tigem), Tim Lu (MIT), Didier Mazel (Pasteur), Franck Molina (CNRS), Reiner Veitia (Paris 7), and Ron Weiss

PhD: David Fournier, *Metro Regenerative Braking Energy Optimization through Rescheduling: Mathematical Model and Greedy Heuristics Compared to MILP and CMA-ES*, Université Paris Diderot, Paris (Oct 2011), Dir. François Fages and Denis Mulard (General Electric), 27 Nov 2014. Jury: Thierry Benoist (Innovation24), Xavier Delorme (Ecole des Mines de Saint Etienne), Roberto Di Cosmo (U. Paris-Diderot), François Fages, Narendra Jussien (Telecom Lille), Denis Mulard (General Electric).

PhD in progress : 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, defense in March 2015

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

PhD in progress : Artemis Llamosi, Université Paris Diderot, Paris, Nov 2012, Dir. Grégory Batt and Pascal Hersen

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

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

### 9.2.3. Juries

- HDR Pascal Hersen, Université Paris-Diderot, Examiner: François Fages
- PhD Adrien Basso-Blandin, Université d'Evry, November 2014, Examiner: François Fages
- PhD Benjamin Gyori, National University of Singapore, October 2014, Reviewer: Grégory Batt
- PhD Santiago Videla, Université de Rennes, July 2014, Reviewer: Grégory Batt
- PhD Alejandro Vignoni, Universitat Politecnica de Valencia, May 2014, Reviewer: Grégory Batt

### 9.3. Popularization

- Grégory Batt has been an invited speaker at the citizen science workshop Worldviews and Values in Synthetic Biology, Paris, June 2014.
- Grégory Batt had a stand at *Rencontres Inria Industries*, Lyon, May 2014.
- Xavier Duportet has been invited to speak at the *4th Congreso del Futuro* (Santiago, Chili), together with renown change makers (e.g. J. Rifkin, T. Piketty)
- Xavier Duportet is the cofounder and president of Hello Tomorrow, an international non-profit organization to promote technology entrepreneurship, with hubs in more than 80 cities worldwide and organizing one of the largest global startup competition.
- Xavier Duportet is the vice president of *Osons La France*, a forum to promote scientific innovation (Grand Palais, Paris, Dec 2014).
- Xavier Duportet has been featured in *Le Monde*, *L'Obs*, *Europe1*, *L'Opinion* (2x), *SoonSoonSoon*, *L'Atelier*, and *Widoobiz*.
- François Fages gave an invited talk at *Forum des Lauréats en Informatique et Mathématiques Appliquées*, Collège de France, Paris, Dec 2014.
- François Fages gave an invited talk at *Deuxième Journée Biologie et Mathématiques sur la Montagne*, Collège de France, Paris, Oct 2014.
- Artémis Llamosi is the co-fondeur and general secretary of the OpenLab, and organizer of related events on product industrialization. He provides scientific expertise to hosted startups.

Our research has also been presented at many scientific venues, in invited talks at the

- 21<sup>st</sup> European Conference on Artificial Intelligence, ECAI'14 (Prague, Aug 2014, François Fages),
- 10<sup>th</sup> International Conference on Distributed Computing and Internet Technology ICDCIT'14 (Bhubanesvar, Feb 2014, François Fages),

contributed talks

- in LyonSysBio conference (Nov. 2014, François Bertaux),
- International Workshop on Image-based Systems Biology (Jena, Sept. 2014, Szymon Stoma),

invited seminars

- IriSa Rennes and LISBP Toulouse (Grégory Batt),

and posters at

- the Systems Biology of Human Diseases workshop (Harvard, June 2014, François Bertaux),
- q-bio summer conference (Santa Fe, Aug. 2014, François Bertaux),
- Stochastic Biology (IST Austria, May 2014, François Bertaux),
- Image Bioinformatics (Leuven, Oct. 2014, Szymon Stoma),
- European Conference on Computational Biology (Strasbourg, Sep 2014, Denis Thieffry, Pauline Traynard),
- International Conference on Systems Biology (Melbourne, Sep 2014, François Fages, Pauline Traynard).



## M3DISIM Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

Dominique Chapelle

- Member of the editorial boards of journals *Computers & Structures* and *M2AN*
- Program committee of conference “Functional Imaging and Modeling of the Heart 2015”
- Invited lecturer in workshops “Model Order Reduction and Data” (Jacques-Louis Lions Lab, Paris 6, 6–8 Jan.), and “Modeling and Simulation in Biomechanics” (Graz Univ., 15–17 Sept.)
- Member of the Academic Senate of FCS Paris-Saclay
- Member of the board of directors of the VPH Institute

Philippe Moireau

- Member of the Inria Saclay-Ile de France CR2 Jury
- Reviewer this year for Region Aquitaine Grants
- Reviewer of the PhD Thesis of Atte Alto on *Infinite Dimensional Systems: Passivity and Kalman Filter Discretization*

Sébastien Imperiale

- Reviewer in Inverse problem, SIAM journal on Numerical Analysis, Geophysics, Journal of Computational Physics

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

Dominique Chapelle

Lectures on cardiac biomechanical modeling in Master’s programs SIM (Univ. Créteil) and BME (Paris 5 and ParisTech)

Philippe Moireau

Bachelor’s degree: “MA103 - Introduction aux EDP et à leur approximation numérique”, 14h, M1, ENSTA ParisTech, France

Master’s: “MA201 - La méthode des éléments finis”, 14h classes, M2, ENSTA ParisTech, France

Master’s: “Data assimilation module”, 6h lectures, Paris VI University, France

Sébastien Imperiale

Master’s: “MA201 - La méthode des éléments finis”, 12h, M2, ENSTA ParisTech, France

Master’s: “Simnum - Simulation numérique en C++”, 36h, M1, ENSTA ParisTech, France

Annabelle Collin

Oral examination: “Algebra and Geometry”, Paris 6 University, spring 2012

Bachelor’s degree: “Multivariable Calculus”, Paris 6 University, fall 2012

### **8.2.2. Supervision**

PhD defended in October: Annabelle Collin, “Dimensional reduction and electro-mechanical coupling for the modeling of electrophysiology and muscle contraction”, UPMC, started September 2011, advisors D. Chapelle and J.-F. Gerbeau

PhD in progress: Bruno Burtshell, “Mechanical modeling and numerical methods for poromechanics: Applications to cardiac perfusion”, Ecole Polytechnique, started October 2013, advisors D. Chapelle and P. Moireau

### **8.2.3. Juries**

Dominique Chapelle: member of PhD committees of J. Mullaert (Paris 6, 17 Dec.) and C. Dupont (Ecole Polytechnique, 18 Dec., chairman)

Philippe Moireau: member of PhD committee of A. Collin

## **8.3. Popularization**

D. Chapelle interviewed for article in “Usine Nouvelle” on cardiac modeling

D. Chapelle invited at “Futur en Seine” event for presentation and debate on predictive systems

P. Moireau presentation for the Inria Direction of Financial Affairs on the “heart forecasting”

## **MAGIQUE-3D Project-Team**

## **9. Dissemination**

### **9.1. Promoting Scientific Activities**

#### **9.1.1. Scientific events selection**

##### *9.1.1.1. responsable of the conference program committee*

Sébastien Tordeux was member of the program committee of the 7th International Conference on Mathematical Modeling (ICMM-2014) that was held in Yakutsk, Russia.

#### **9.1.2. Journal**

##### *9.1.2.1. reviewer*

Juliette Chabassier has been reviewer for SIAM Journal on Scientific Computing (SISC), Acta Acustica united with Acustica and the Journal of the Acoustical Society of America.

Victor Péron has been reviewer for ESAIM : Mathematical Modelling and Numerical Analysis, Journal of Computational and Applied Mathematics, Zentralblatt MATH.

Lionel Boillot has been reviewer for ESAIM Proceedings, Congrès SMAI 2013, Volume 45, September 2014

Marc Duruflé has been reviewer for ESAIM : Mathematical Modelling and Numerical Analysis

#### **9.1.3. Administrative Activities**

- Mohamed Amara is President of the Université de Pau et des Pays de l'Adour.
- Hélène Barucq is vice-chair of the Inria evaluation committee. She participated to the national jury of Inria competitive selection for Senior Researchers (DR2) and to the local jury of Inria competitive selection for Young Graduate Scientists (CR2) in Bordeaux. She participated to the selection committee for Research (Grant and Senior) Positions. She participated to the selection committee for a Professor position at the University of Rouen and at the University of Lille. She is member of the board of the Laboratory of Mathematics of Pau and of the research federation IPRA which are both under the administrative supervision of CNRS. She is the scientific head of the project DIP.
- Julien Diaz is elected member of the Inria evaluation committee. He participated to the local juries for Young Graduate Scientists (CR2) in Bordeaux and Lille. He participated to the selection committee for an Assistant-Professor position at the University of Toulouse. He is elected member of the CLHSCT (Comité Local Hygiène et Sécurité) of Inria Bordeaux Sud-Ouest and appointed member of the CDT (Commission de Développement Technologique), of the CUMI (Commission des Utilisateurs des Moyens Informatiques) and of the Center Committee of Inria Bordeaux Sud-Ouest.
- Sébastien Tordeux is elected member of the 26th section of the CNU (Conseil National des Universités). He is also responsible of the first year of the Master of Applied Mathematics of Pau University.
- Victor Péron is appointed member of the CJC (Commission Jeunes Chercheurs) of Inria Bordeaux Sud-Ouest.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Licence : Vincent Darrigrand, Initiation à la modélisation statistique, 21h eqTD, L2, UPPA, France  
 Licence : Vincent Darrigrand, Suites et fonctions d'une variable, 24.38h eqTD, L1, UPPA, France  
 Licence : Victor Péron, Mathématiques Appliquées, 15 Eq. TD, L1, UPPA, France  
 Licence : Victor Péron, Compléments d'analyse, 19,5 Eq. TD, L2, UPPA, France  
 Licence : Victor Péron, Calcul intégral, 19,5 Eq. TD, L3, UPPA, France  
 Licence : Victor Péron, Mathématiques pour les Sciences de la Matière, 19,5 Eq. TD, L2, UPPA, France  
 Master : Victor Péron, Analyse numérique fondamentale, 75 Eq. TD, M1, UPPA, France  
 Master : Victor Péron, Analyse, 28 Eq. TD, M1, UPPA, France  
 Master : Marc Duruflé, Outils informatiques pour le calcul scientifique, 80 Eq. TD, M1, Bordeaux INP, France  
 Master : Sébastien Tordeux, Analyse Numérique Fondamentale, 34 eqTD, M1, UPPA, FRANCE  
 Master : Sébastien Tordeux et Julien Diaz, Introduction aux phénomènes de propagation d'ondes, 60 eqTD, M2, UPPA, FRANCE

### 9.2.2. Supervision

PhD : Lionel Boillot, Contributions à la modélisation mathématique et à l'algorithmique parallèle pour l'optimisation d'un propagateur d'ondes élastiques en milieu anisotrope, UPPA, 12/12/2014, Hélène Barucq et Julien Diaz  
 PhD : Vanessa Mattesi, Propagation des ondes dans un milieu comportant de petites hétérogénéités: analyse asymptotique et calcul numérique, UPPA, 11/12/2014, Sébastien Tordeux  
 PhD : Florent Ventimiglia, Schémas numériques d'ordre élevé en temps et en espace pour l'équation des ondes du premier ordre. Application à la Reverse Time Migration, UPPA, 05/06/2014 Hélène Barucq and Julien Diaz.  
 PhD in progress : Julen Alvarez, *hp*-adaptive inversion of magnetotelluric measurements, October 2011, Hélène Barucq and David Pardo.  
 PhD in progress : Izar Azpiroz, Approximation des problèmes d'Helmholtz couplés sur maillages virtuels, October 2014, Hélène Barucq, Julien Diaz and Rabia Djellouli.  
 PhD in progress : Théophile Chaumont-Frélet, High Order Methods for Helmholtz Problems in Highly Heterogeneous Media, October 2012, Hélène Barucq and Christian Gout.  
 PhD in progress : Marie Bonnasse-Gahot, Simulation de la propagation d'ondes élastiques et visco-élastiques en régime harmonique par des méthodes Galerkin discontinues d'ordre élevé en maillage non-structuré adaptées au calcul haute performance, October 2012, Julien Diaz and Stéphane Lantéri (EPI Nachos, Inria Sophia Antipolis-Méditerranée).  
 PhD in progress : Aralar Erdozain, Fast inversion of 3D Borehole Resistivity Measurements using Model Reduction Techniques based on 1D Semi-Analytical Solutions, October 2013, Hélène Barucq, David Pardo and Victor Péron.  
 PhD in progress : Florian Faucher, Méthodes d'inversion sismique dans le domaine fréquentiel, October 2014, Hélène Barucq.  
 PhD in progress : Jérôme Luquel, RTM en milieu hétérogène par équations d'ondes élastiques, November 2011, Hélène Barucq and Julien Diaz.  
 PhD in progress : Vincent Popie, Détermination de l'impédance effective d'une plaque multiperforée, September 2012, Sébastien Tordeux and Estelle Piot

### 9.2.3. Juries

Victor Péron : Aliénor Burel (Université Paris-Sud XI) "Contributions à la simulation numérique en élastodynamique : découplage des ondes P et S, modèles asymptotiques pour la traversée de couches minces", July 4th 2014

### **9.3. Popularization**

Juliette Chabassier has written a contribution for interstices, “Le piano rêvé des mathématiciens” (see [https://interstices.info/jcms/ni\\_76925/le-piano-reve-des-mathematiciens](https://interstices.info/jcms/ni_76925/le-piano-reve-des-mathematiciens))

Juliette Chabassier has contributed to “Visages des Sciences”, a series of postcards which are portraits of scientists.

## MAGNOME Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Journal

#### 9.1.1.1. Member of the editorial board

Pascal Durrens is :

member of the editorial board of the journal ISRN Computational Biology  
expert in Genomics for the Fonds de la Recherche Scientifique-FNRS (FRS-FNRS), Belgium

David Sherman is :

member of the editorial board of the journal Computational and Mathematical Methods in Medicine

#### 9.1.1.2. Reviewer

Pascal Durrens and David Sherman reviewed numerous papers for international journals, including BMC Genomics, Nucleic Acids Research, and Genome Biology and Evolution.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Supervision

PhD: Anna Zhukova, “Knowledge-based generalization for metabolic models,” 2011-4, Sherman

PhD: Razanne Issa, “Analyse symbolique de données génomiques,” 2010–, Sherman

### 9.2.2. Juries

David Sherman was a member of the juries of:

PhD: Anna Zhukova, “Knowledge-based generalization for metabolic models,” December 18, 2014

HDR: Sofian Maabout, “Contributions à l’optimisation de requêtes multidimensionnelles,” December 12, 2014

## 9.3. Popularization

David Sherman works with Didier Roy and Pierre-Yves Oudeyer of the Flowers project-team to develop tools and courseware for helping elementary school students explore robotics. David has developed software for communicating between the Scratch 2 visual programming language and the Thymio-II educational robot, and examples for use in the classroom.

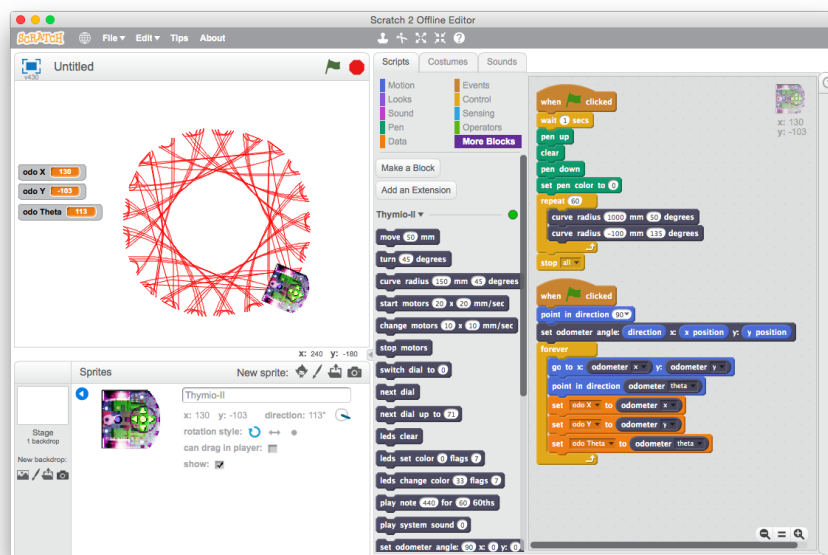


Figure 4. Piloting the Thymio-II robot with Scratch 2

## MAMBA Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Journal

##### 9.1.1.1. member of the editorial board

- Scientific World Journal (Dirk Drasdo)

##### 9.1.1.2. reviewer

- J. Clairambault in 2014 for PLoS Comp Biol, Seminars Canc Biol, Cancer Research, MMNP, Canc Cell Intl, J Theor Biol, Bull Math Biol, J Math Biol, Future Medicine, Math BioSci, Math BioSci Eng, Non Linear Biomed Physics, Theor Biol Med Modelling
- M. Doumic in 2014 for Ann. IHP Non-Linear, Journal of Mathematical Biology, Proc. London Math. Society, habilitation of M. Ribot.
- D. Drasdo in 2014 for e.g. Nature, Bioinformatics, PLoS Comput Biol, habilitation of A. Zinovyev (Inst. Curie, habil. at ENS Rue d'Ulm), CaSyM Roadmap (Coordinating Action Systems Medicine: Implementation of Systems Medicine across Europe)

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

Licence: J. Clairambault, Modélisation de la croissance cellulaire et tissulaire, 2 h de cours magistral, L2 Parcours Médecine-Sciences UPMC, France

Master: J. Clairambault, Mathematical biology, M2 Mathématiques appliquées, 6 h de cours magistral (in English), UPMC, France

Master: J. Clairambault, Modélisation de l'optimisation thérapeutique en cancérologie, 4 h de cours magistral, M2 Pharmacologie, Rennes, France

Doctorat: J. Clairambault, Modélisation de la croissance cellulaire et tissulaire, 2 h de cours magistral, DESC Oncologie, UPMC, France

Summer/Winter schools: J. Clairambault, Winter school BIOMAT La Falda (Córdoba, Argentina), August 2014, 3 h of conference classes (en castellano)

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" (24h)

#### 9.2.2. Supervision

HdR: Nicolas Vauchelet, "Contributions mathématiques à l'étude de modèles décrivant le mouvement de particules confinées et de micro-organismes", UPMC, 08/12/2014

PhD: Hadjer Wafaâ Haffaf, "Analyse de l'agrégation des protéines dans les maladies neurodégénératives amyloïdes - Application aux maladies à prion", UPMC, defended 14/10/17, Marie Doumic

PhD in progress: Aurora Armiento, "Inverse problems for aggregation kinetics", begun September 2013, M. Doumic and P. Moireau (Inria Saclay, M3DISIM team)

PhD in progress: Sarah Eugène, "Stochasticity in nucleation dynamics", begun September 2013, M. Doumic and P. Robert (Inria Paris-Rocquencourt, RAP project-team)



PhD in progress: Adélaïde Olivier, “Nonparametric estimation of the division rate in branching process”, begun September 2012, M. Doumic and M. Hoffmann (Prof. Univ. Paris-Dauphine)

PhD in progress: Thibault Bourgeron, “Linear and nonlinear structured population models”, begun September 2012, M. Doumic and B. Perthame

PhD in progress: Ján Eliaš, “p53 intracellular spatio-temporal dynamics”, begun October 2012, J. Clairambault and B. Perthame

PhD in progress: Casimir Emako-Kazianou, L. Almeida and N. Vauchelet

PhD in progress: Antonin Prunet, begun October 2014, L. Almeida and A. Escargueil

PhD in progress: Andrada Maran, “Modelling early leukaemogenesis”, begun March 2014, J. Clairambault and B. Perthame

PhD in progress: Cécile Taing, begun October 2014, A. Lorz and B. Perthame

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

PhD in progress: Noémie Bossier (since November 2013), supervision by Dirk Drasdo and Irene Vignon-Clementel

PhD in progress: Géraldine Cellière (since October 2012), supervision by Dirk Drasdo, Andrei Zinovyev and Emmanuel Barillot (Institut Curie)

PhD in progress: Adrian Friebel (since June 2011), supervision by Dirk Drasdo and Stefan Hoehme

PhD in progress: Johannes Neitsch, Univ. Leipzig (since June 2011), supervision by Dirk Drasdo and Paul Van Liedekerke

### 9.2.3. *Juries*

- J. Clairambault: José Luis Avila, PhD defence, 02/07/2014, Paris XI (Applied mathematics)
- J. Clairambault (Reviewer) : Hossein Ayoub, PhD defence, 04/07/2014, Bordeaux (Applied mathematics)
- J. Clairambault: Nathalie Eymard, PhD defence, 04/12/2014, Lyon (Applied mathematics)
- J. Clairambault: Niklas Hartung, PhD defence, 15/12/2014, Marseille (Applied mathematics)
- M. Doumic: H.W. Haffaf, PhD defence, 17/10/2014, UPMC (Applied mathematics)
- M. Doumic: N. Vauchelet, habilitation thesis, 8/12/2014, UPMC (Applied mathematics)
- M. Doumic: M. Ribot, habilitation thesis, 12/12/2014, UPMC (Applied mathematics)
- D. Drasdo: A. Zinovyev, habilitation thesis, 04/04/2014, ENS (Computational Biology)

### 9.3. Popularization in international bulletins

- Article Clairambault, J. “My personal journey in mathematical biology and medicine”. Society for Mathematical Biology Newsletter 28(1):11-12, January 2015 [27], <http://www.smb.org/publications/newsletter/vol28no1.pdf>
- Article Clairambault, J. “Perspectives on new and less new opportunities for mathematical biology as applied to biological and clinical medicine”. Society for Mathematical Biology Newsletter 27(2):14-15, May 2014 [26], <http://www.smb.org/publications/newsletter/vol27no2.pdf>

## **MASAIE Project-Team**

### **7. Dissemination**

#### **7.1. Teaching - Supervision - Juries**

##### **7.1.1. Supervision**

- PhD in progress: Mouhamadou Diaby, "Etude mathématique de l'évolution temporelle et spatiale de certaines épidémies. Applications à la Bilharziose (schistosomiase).", 2010, A. Iggidr.
- PhD in progress: Mamadou Lamine Diouf, "Modélisation, observation et contrôle de la propagation de certaines épidémies en Afrique Subsaharienne.", 2010, A. Iggidr.

## MNEMOSYNE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Collective responsibilities

- F. Alexandre is member of the Inria Evaluation Committee; Vice-head of the Project Committee of Inria Bordeaux Sud-Ouest; Corresponding scientist for Bordeaux Sud-Ouest of the Inria COERLE ethical committee; Member of the local Inria committee for invited professors, for young researchers hiring; Member of the steering committee of the regional Cluster on Information Technology and Health; of the regional Cluster on Robotics; Expert of the ITMO 'Neurosciences, Sciences Cognitive, Neurologie, Psychiatrie'
- N. Rougier is member of the Inria Evaluation Committee; Responsible of the local Inria committee for invited professors
- Thierry Viéville is in charge, at the Inria national level, of the institute science outreach actions and depends on the Direction de la Recherche for this part of his work.

### 8.1.2. Scientific events organisation

#### 8.1.2.1. general chair, scientific chair

Organization of a scientific day common to Inria and the Next Generation Internet Foundation, about bodyware, Bordeaux, May 12 (N. Rougier).

#### 8.1.2.2. member of the organizing committee

F. Alexandre participated to the organization of the workshop Bordeaux Computational Biology and Bioinformatics, Bordeaux, Nov. 25-26 ; of the Braincamp on Innovation and Cognitive Sciences, Paris, March 21.

All the permanent members of the team participated to the organization of LACONEU 2014, the third Summer School in Computational Neuroscience, in Valparaiso, Chile, from 13 to 31 Jan. 2014.

### 8.1.3. Scientific events selection

#### 8.1.3.1. member of the conference program committee

Member of the program committee of SAB, ICANN (F. Alexandre)

#### 8.1.3.2. reviewer

Reviewing for the Conicyt (Chile), the ANR, the FRM (Foundation for Medical Research), the Hospital of Rennes (F. Alexandre)

### 8.1.4. Journal

#### 8.1.4.1. reviewer

Reviewer for PlosOne, Frontiers in Neurorobotics, Cognitive Computation, Applied Intelligence (F. Alexandre)

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Many courses are given in universities and schools of engineers at different levels (LMD) by most team members, in computer science, in applied mathematics, in neuroscience and in cognitive science.

All the permanent members of the team gave lectures at LACONEU 2014, the third Summer School in Computational Neuroscience, in Valparaiso, Chile, from 13 to 31 Jan. 2014.

F. Alexandre gave a tutorial at the summer school on Robotics and Social Interactions (May 19-23), Moliets et Maa (France) and was an invited speaker to the Sino-French International Workshop on Computational Neuroscience in Shanghai (June); to the scientific day Inria/Fing on Bodyware (May 12); to the NeuroSTIC conference (July, 1-2, Cergy).

### **8.2.2. *Juries***

We participate to many juries each year.

## **8.3. Popularization**

For a multi-disciplinary team as Mnemosyne, science popularization is not a nice and useful contribution to the dissemination of scientific knowledge but also a necessity since we work with colleagues from bio-sciences with whom sharing profound ideas in computer science is mandatory for a real collaboration.

- Thierry Viéville is half-time involved in popularization actions both at a concrete level (including on Mnemosyne subjects) and at the methodological level. This explains the amount of references to these external subjects in this document.
- Nicolas Rougier: Invited talk on “The role of the body in human cognition” in the 13<sup>th</sup> Forum des Sciences Cognitives, Paris, March 2014; Participation to a round-table meeting on the digital society at the Futur en Seine festival; Article in Linux Mag on scientific visualization [21]
- PhD students participated to the regional exhibition Aquitec (C. Héricé and Maxime Carrere ) and to “Fête de la Science” C. Héricé).

## MODEMIC Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organization

##### 8.1.1.1. member of the organizing committee

C. Lobry has been coordinator of six one-week “Bernoulli” workshops (see 7.3.4.1 ).

F. Campillo was co-organiser of a workshop on “Stochastic Models for Biology”, see Section 7.1.1 .

C. Casenave and F. Campillo were in the organizing committee of the meeting of the MIA<sup>0</sup> Division of INRA in March 2014, and have organized a session on “spatio-temporal models and methods”.

#### 8.1.2. Scientific events selection

##### 8.1.2.1. reviewer

European Control Conference, IFAC World Congress, IEEE Conference on Decision and Control.

#### 8.1.3. Journal

##### 8.1.3.1. reviewer

Automatica, BioMath, Bulletin of Mathematical Biology, Computers and Mathematics with Applications, Differential Equations and Dynamical Systems, J. of Advances Research in Differential Equations, J. of Biological Dynamics, J. of Process Control, Math. Biosciences and Eng.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

#### Engineering degree

A. Rapaport, “Introduction to modelling”, 12 hours, 1st year, SupAgro Montpellier.

#### Master

F. Campillo, “Stochastic modelling of ecosystems”, 20 hours, Master 2 in Biostatistics, Univ. Montpellier II.

A. Rapaport, “Practical Mathematics”, 27 hours, Master 1 in Mathematics, Univ. Montpellier II.

#### PhD

F. Campillo and C. Fritsch, “Object oriented programming: probabilistic modeling and statistical numerics for biology”, 20 hours, Doctoral lectures, Univ. Montpellier II.

C. Casenave and A. Rapaport, “Modelling for biology and ecology, mathematical and computational methods”, 20 hours, Doctoral lectures, Univ. Montpellier II.

### 8.2.2. Supervision

Amine Charfi

PhD: Etude d’un procédé membranaire de traitement des eaux usées : effet des paramètres biotiques et abiotiques sur le colmatage de la membrane.

Univ. Carthage, Dec. 2014.

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<sup>0</sup><http://www.mia.inra.fr/>

Advisors: N. Ben Amar (ENIT-LAMSIN, Tunis) and J. Harmand.

Coralie Fritsch

PhD: Simulation et analyse de modèles individu-centrés d'écosystèmes bactériens pour des procédés biotechnologiques.

Univ Montpellier II, dec. 2014.

Advisors: F. Campillo and J. Harmand.

Walid Bouhafis

PhD in progress: Commande optimale des réacteurs biologiques séquentiels discontinus. ENIT (Tunis), since 2010.

Advisors: N. Abdellatif (ENIT-LAMSIN, Tunis), F. Jean (ENSTA) and J. Harmand.

Sonia Hassam

PhD in progress: Réduction de modèles biotechnologiques : application à la digestion anaérobie.

Univ. Tlemcen, since 2011.

Advisors: B. Cherki (Univ. Tlemcen) and J. Harmand.

Amel Ghouali

PhD in progress: Analyse et commande optimale d'un bioréacteur de dépollution des eaux usées

cotutelle Univ Montpellier II/Univ. Tlemcen (Algeria), since Nov. 2011.

Advisors: J. Harmand and T. Sari (UMR ITAP, Montpellier).

Guilherme Pimentel

PhD in progress: Modélisation dynamique, analyse et supervision d'un réacteur membranaire.

cotutelle Univ. Montpellier II/Univ. Mons (Belgique), since Nov. 2011. Defense scheduled in Feb. 2015.

Advisors: A. VandeWouwer (Univ. Mons) and A. Rapaport.

Victor Riqueleme

PhD in progress: Commande optimale pour la préservation de ressources hydriques exploitées.

cotutelle Univ. Montpellier II/Univ. Chile, since Sept. 2013.

Advisors: H. Ramirez (Univ. Chile) and A. Rapaport.

Alejandro Rojas-Palma

PhD in progress: Etude de quelques problèmes dans la modélisation et l'optimisation de bioprocédés.

cotutelle Univ. Montpellier II/Univ. Chile, since Sept. 2014.

Advisors: H. Ramirez (Univ. Chile) and A. Rapaport.

Yessmine Daoud

PhD in progress: Analyse de modèles de la digestion anaérobie : application à l'optimisation de la production du biogaz.

cotutelle ENIT (Tunis)-Univ. Montpellier II, since sep. 2014.

Advisors: N. Abdellatif (ENIT, Tunis) and J. Harmand.

Mohsen Chebbi

PhD in progress: Modélisation stochastique de procédés membranaires de traitement des eaux usées.

ENIT (Tunis) , since sep. 2014.

Advisors: S. Toumi (ENIT, Tunis) and F. Campillo.

Oussama Hadj-Abdelkader

PhD in progress: Filtrage particulière pour le chemostat.

Univ. Tlemcen, since sep. 2014.

Advisors: A. Hadj-Abdelkader (Univ. Tlemcen) and F. Campillo.

Zeyneb Khedim

PhD in progress: Modélisation et contrôle de la digestion anaérobie : vers une meilleure prise en compte des phénomènes d'inhibition.

cotutelle Univ. Tlemcen - Univ. Montpellier II, since nov. 2014.

Advisors: B. Benyahia (Univ. Tlemcen) and J. Harmand.

Anne Bisson

PhD in progress: Modélisation probabiliste du fonctionnement d'écosystèmes considérés comme des assemblages de communautés.

Univ. Montpellier II, since Dec. 2014.

Advisors: B. Jaillard (UMR Eco & Sols, Montpellier) and A. Rapaport.

The team has supervised the MsC and Engineering School internships [49], [50], [51], [54], [56].

### 8.2.3. *Juries*

M. Abouzlam. "Optimisation d'un procédé de traitement des eaux par ozonation catalytique", Thèse de Doctorat, Univ. Poitiers, Jan. 2014 (referee : J. Harmand).

Y. Chen. "Inférence bayésienne dans les modèles de croissance de plantes pour la prévision et la caractérisation des incertitudes", Thèse de Doctorat, Ecole Centrale, Paris, Jun. 2014 (referee : F. Campillo).

H. Sedrakyan. "Comportement limite des systèmes singuliers et les limites de fonctions valeur en contrôle optimal", Thèse de Doctorat, Université Paris VI, Dec. 2014 (referee : T. Bayen).

G. François. "Optimisation en temps Réel : Optimiser les Performances des Procédés Chimiques malgré l'Incertain et les Erreurs de Modélisation", Habilitation à diriger des recherches, Univ. Lorraine, Dec. 2014 (referee : A. Rapaport).

S. Martin. "D'oxymore en oxymore : du développement durable au contrôle complexe." Habilitation à diriger des recherches, Univ. B. Pascal, Jan 2015 (referee : A. Rapaport).

## 8.3. Popularization

Jointly with Inria project-team LEMON, MODEMIC has participated to the elaboration of a "serious" game for learning how to purify fast and well a water reservoir, in the scope of the international initiative Mathematics of Planet Earth and the french consortium Cap'Maths (see 5.1 ).

## 8.4. Institutional commitment

F. Campillo is member of the NICE Inria committee (long term invited scientists selection); deputy elected member of the Inria Scientific Council; member of the internal communication working group of Inria for the redesign of the national intranet; member the "support group to researchers" of Inria Sophia Antipolis.

J. Harmand is member of the steering committee of the Inra/MEM meta-program (Métagénomique des écosystèmes microbiens); member of the EA department of Inra; member of the "commissions scientifiques spécialisées" STEA-Inra.

A. Rapaport is member of the scientific committee of BIOS dept. of CIRAD, and is member of the scientific committee of Ecotechnologies department of Irstea.

## **MOISE Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. general chair, scientific chair*

- C. Prieur and L. Viry co-organized a research school on uncertainty quantification at Ecole de Physique des Houches (ASPEN 2013, 2014).

#### *9.1.1.2. member of the organizing committee*

- M. Nodet and E. Blayo (with S. Ricci, G. Desroziers and M. Bocquet) co-organised the Data Assimilation National Conference in Toulouse.

### **9.1.2. Scientific events selection**

- C. Prieur was a member of the jury for the PhD prize Jacques Neveu.

#### *9.1.2.1. member of the conference program committee*

- M. Nodet and E. Blayo (with S. Ricci, G. Desroziers and M. Bocquet) co-organised (with others, see above) the program of the Data Assimilation National Conference in Toulouse.

#### *9.1.2.2. reviewer*

- M. Nodet is a reviewer for the international conference "Emerging Trends in Applied Mathematics : Dedicated to the Memory of Sir Asutosh Mookerjee", Calcutta February 12-14, 2014, proceedings of the conference from Springer.

### **9.1.3. Journal**

#### *9.1.3.1. reviewer*

- E. Blayo: reviewer for Ocean Modelling, Monthly Weather Review, Nonlinear Processes in Geophysics.
- L. Debreu: reviewer for Ocean Modelling, Applied Mathematical Modelling.
- A. Vidard: reviewer for Ocean Modelling, Tellus A, Inverse problems, Monthly Weather Review
- M. Nodet: reviewer for the journals Esaim COCV and Non Linear Processes in Geophysics.
- E. Kazantsev: reviewer for the Journal of Comp. Phys., World Journal of Modelling and Simulation.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

- Licence : C. Prieur, Statistics for biologists, 113.5, niveau L2, Grenoble, FRANCE
- Licence : C. Prieur, Statistics, 52, niveau L1, Ensimag (Grenoble), FRANCE
- Licence : M. Nodet, Mathématiques pour l'ingénieur, 80h, L1, UJF Grenoble
- Licence : M. Nodet, Statistiques pour la biologie, 80h, L2, UJF Valence
- Master : M. Nodet, Inverse methods and data assimilation, 30h, M2, UJF Grenoble
- Master : C. Prieur, Stochastic approaches for uncertainty quantification, 27, niveau M2, Grenoble, France Laurent Debreu, Modélisation numérique de l'océan, 8h eq TP, M2, Université de Brest, FRANCE



- Doctorat : Laurent Debreu, Formation doctorale nationale Modélisation numérique de l'océan et de l'atmosphère, 24-28 novembre 2014, Grenoble, France. With T. Dubos (LMD/Ecole Polytechnique, Paris), G. Rouillet (Brest University), F. Hourdin (LMD/CNRS, Paris)
- Doctorat : Eric Blayo, Arthur Vidard, Introduction to Data Assimilation, 20h, University of Grenoble, France

### 9.2.2. Supervision

- PhD : Pierre-Antoine Bouttier, Assimilation variationnelle de données altimétriques dans le modèle océanique NEMO : Exploration de l'effet des non-linéarités dans une configuration simplifiée à haute résolution , University of Grenoble, 2014, [1].
- PhD : Jérémie Demange, Schémas numériques d'advection et de propagation d'ondes de gravité dans les modèles de circulation océaniques, University of Grenoble, 21 octobre 2014, L. Debreu, P. Marchesiello.
- PhD : V. Chabot, Étude de représentations parcimonieuses des statistiques d'erreur d'observation pour différentes métriques. Application à l'assimilation d'images. UJF Grenoble, A. Vidard et M. Nodet [2]
- PhD in progress : Nelson Feyeux, Application du transport optimal pour l'assimilation de données images, novembre 2013, Arthur Vidard, Maëlle Nodet
- PhD in progress : Thomas Capelle, Calibration of LUTI models, octobre 2013, Peter Sturm, Arthur Vidard
- PhD in progress : Mehdi-Pierre Daou, Développement d'une méthodologie de couplage multi-modèles avec changements de dimension. Validation sur un cas-test réaliste en dynamique littorale, May 2013, E. Blayo and A. Rousseau
- PhD in progress : Rémy Pellerej, Assimilation de données pour les modèles couplés, octobre 2014, Arthur Vidard, Florian Lemarié
- PhD in progress : L. Gilquin, Uncertainty quantification for LUTI models, Oct. 2013, C. Prieur and E. Arnaud (STEEP)
- PhD in progress : P. Tencaliec, Oct. 2013, multivariate risk for Durance streamflow data, C. Prieur and A.-C. Favre (LTHE, hydrology lab in Grenoble)
- PhD in progress : S. Nanty, Uncertainty quantification for functional and dependent inputs, Oct. 2012, C. Prieur and C. Helbert (Centrale Lyon).
- PhD in progress : C. Pelletier, Etude mathématique et numérique de la formulation des modèles de climat global, Décembre 2014, E. Blayo, F. Lemarié, P. Braconnot

### 9.2.3. Juries

- E. Blayo
  - 21 janvier 2014 - PhD thesis of Mélanie Rochoux, Ecole Centrale de Paris (reporter)
  - 23 janvier 2014 - PhD thesis of Natacha Djath, University of Grenoble (president)
  - 2 jun 2014 - HDR thesis of Jean-Michel Brankart, University of Grenoble (president)
  - 2 octobre 2014 - PhD thesis of Pierre Jolivet, University of Grenoble (president)
  - 13 octobre 2014 - PhD thesis of Laurent Berenguer, University of Lyon 1 (examiner)
  - 28 nov 2014 - PhD thesis of Gildas Mainsant, University of Grenoble (president)
  - 8 dec 2014 - PhD thesis of Abdoulaye Samake, University of Grenoble (president)
- C. Prieur
  - 11 déc. 2014 — PhD thesis of Jeremy Chardon, Université Grenoble Alpes (president)
  - 26 nov. 2014 — PhD thesis of Stéphane Veys, Université Grenoble 1 (examiner)
  - 13 nov. 2014 — PhD thesis of Prashant Rai, Ecole Centrale de Nantes (president)

- 28 nov. 2014 — PhD thesis of Henri Sohier, ONERA Toulouse (external reporter)
- 13 oct. 2014 — PhD thesis of Philomène Favier, Irstea Grenoble (examiner)
- 16 avr. 2014 — PhD thesis of Julie Oger, University François Rabelais, Tours (reporter)
- A. Vidard
  - 4 fev. 2014 — PhD thesis of Pierre-Antoine Bouttier, University of Grenoble (examinateur)
  - 16 dec. 2014 — PhD thesis of Yin Yang, University of Rennes (reporter)

### 9.3. Popularization

- Since 2010, Ch. Kazantsev is the Director of the IREM of Grenoble <http://www-irem.ujf-grenoble.fr/irem/accueil/>. The Institute is under rapid development now, joining about 30 teachers of secondary schools of the Grenoble region and 15 university professors. They work together 16 times a year on the development of the teaching strategy for the educational community. In addition to this, IREM is the editor of two journals: "Grand N" destined to primary schools teachers and "Petit x" – to the secondary schools. As a director and as an animator of IREM, Ch. Kazantsev has participated at
  - the week of Mathematics, the 17 and 21 March 2014,
  - the festival "Remue-Méninges", Echirolles, 22-25 April 2014,
  - the internship MATHC2+ in June and in October 2014,
  - the "Journées Nationales de l'APMEP": presentation of two workshops with M. Gandit "Sky: between historical and simulated data",
  - the "Fête de la science" with workshops "28 nuances de sciences" and "Récréation mathématique pour tous".
- M. Nodet gave talks and made posters to explain how the "problem-based learning" (a special case of "active learning") approach was introduced in mathematics for Grenoble university undergraduates, see e.g. [75] and [61].
- M. Nodet (in collaboration with A. Rousseau and S. Minjeaud) wrote a chapter of an outreach book "Brèves de maths" [59].
- M. Nodet gave outreach talks about "mathematics for environmental modelling" in various occasions: for the Grenoble maths Olympiades awards, twice for the "Science Fair 2014" (one for undergraduate students, one for secondary school pupils), for a daily visit of highschool students at Valence university.
- M. Nodet supervises a maths club "Math en Jeans" for secondary school pupils at two schools around Grenoble, which consists in proposing open research subjects to the students and supervising them over the year, in collaboration with the teachers.
- E. Blayo gave several outreach talks, in particular for the inauguration of the Fédération Rhône-Alpes-Auvergne de Mathématiques (Lyon, February 28), for the ceremony of the Christian Le Provost prize of the French Academy of Science (Saint Briec, April 18), and for MathC2+ internships.

## **MORPHEME Project-Team**

# **7. Dissemination**

## **7.1. Promoting Scientific Activities**

### **7.1.1. Scientific events organisation**

#### *7.1.1.1. general chair, scientific chair*

Laure Blanc-Féraud was General Program chair of the conference IEEE ISBI 2014 in Beijing.

#### *7.1.1.2. member of the organizing committee*

Eric Debreuve was member of the organizing committees of ICIP 2014 (International Conference on Image Processing) as Area chair and of EUSIPCO 2015 (European Signal Processing Conference) as Area chair.

Xavier Descombes was member of organization board for the "OPTITECH Event 2015".

### **7.1.2. Scientific events selection**

#### *7.1.2.1. responsable of the conference program committee*

Laure Blanc-Féraud was General Program chair of the conference IEEE ISBI 2014 in Beijing.

#### *7.1.2.2. member of the conference program committee*

Eric Debreuve was member of program committee of RFIA 2014 (congrès national sur la Reconnaissance des Formes et l'Intelligence Artificielle).

Xavier Descombes was associated editor for the conference ICIP 2014.

Laure Blanc-Féraud was associate editor of the workshop on New Computational Methods in Inverse Problems - NCMIP 2014 (NCMIP ) in ENS Cachan.

Grégoire Malandain was an associate editor for the conference ISBI 2015.

#### *7.1.2.3. reviewer*

Eric Debreuve was reviewer for ISBI 2014 (International Symposium on Biological Imaging).

Xavier Descombes was reviewer for ISBI 2014, ICIP 2014 ,ICASSP 2014.

Laure Blanc-Féraud was reviewer the conferences ISBI 2014, ICIP 2014 ,ICASSP 2014.

### **7.1.3. Journal**

#### *7.1.3.1. member of the editorial board*

Xavier Descombes is associated editor of DSP (Digital Signal Processing).

Laure Blanc-Féraud is Associate Editor of SIAM Journal Imaging Sciences and Traitement du Signal Journal.

#### *7.1.3.2. reviewer*

Eric Debreuve was reviewer for IEEE Transactions on Medical Imaging, Journal of Mathematical Imaging and Vision (Springer), Journal of Computational Physics (Elsevier), Pattern Recognition (Elsevier).

Xavier Descombes was reviewer for IEEE TMI, IEEE IP, ...

### **7.1.4. Scientific animation**

Xavier Descombes is associated member of IEEE BISP (Biomedical Imaging Signal Processing), member of the Scientific Committee of the competitiveness pole Optitech, expert for the MESR within the CIR program. He was in the jury of a MdC recruitment jury in Paris V and in the committee for Transverse master fellowship at Inria CRI-SAM.

Laure Blanc-Féraud is director of GdR 720 ISIS of CNRS. She is member of the IEEE BISP (Biomedical Imaging Signal Processing) Technical Committee, she is member of the scientific steering committee of ANR for Defi 7 on "société de l'information et de la communication), she was part of the group of the SNR (national research strategy) for defining the strategy of the MENESR concerning the défi 7, she was member of the scientific council of Institute INS2I of CNRS, invited member of the scientific council of Institute INSIS of CNRS (till september 2014), member of "bureau du comité des projets" Inria SAM (till july 2014). She is part of the scientific committee of laboratory GreyC (UMR CNRS 6072) and of "Institut des Technologies Avancées en sciences du Vivant" (ITAV, USR CNRS 3505). She is part of the evaluation committee of ONERA DTIM department. She is expert member of the Italian Ministry for Education.

Grégoire Malandain is member of the IEEE/EMB Technical Committee on Biomedical Imaging and Image Processing (BIIP). He is an invited member of the Scientific Committee of the MIA department of INRA. From september the 1st, he is the head of the committee "Comité de suivi doctoral" of the Inria CRI-SAM.

## **7.2. Teaching - Supervision - Juries**

### **7.2.1. Teaching**

Master: Laure Blanc-Féraud, Fluorescence image restoration, 18h, M2 Computational Biology , University Nice Sophia Antipolis, France

Master: Laure Blanc-Féraud, Image restoration, 12h, M2 ISAB, University Nice Sophia Antipolis, France

Master: Laure Blanc-Féraud, Traitement numérique des images, 12h Eq. TD, M2 VIM , EPU University Nice Sophia Antipolis, France

DUT: Marine Breuilly, Télécommunications: Initiation à la mesure du signal, 64h Eq. TD, niveau DUT 1ère année, IUT de Nice Côte d'Azur , France

DUT: Marine Breuilly, Acquisition et codage de l'information, 6h Eq. TD, niveau DUT 1ère année, IUT de Nice Côte d'Azur , France

Master: Eric Debreuve, Inverse problems in image processing, 28.5h Eq. TD, master 2, Université de Nice Sophia Antipolis, France.

Master: Eric Debreuve, Basis of image processing, 13h Eq. TD, master 2, Université de Nice Sophia Antipolis, France.

Master : Xavier Descombes, Traitement d'images, Analyse de données, Techniques avancées de traitement d'images, 30h Eq. TD, Niveau M2, ISAE, France.

Master : Xavier Descombes, Traitement d'images, master ISAB, 12h Eq. TD, Niveau M2, Université de Nice Sophia Antipolis, France.

Master : Xavier Descombes, Traitement d'images, master VIM, 12h Eq. TD, Niveau M2, Université de Nice Sophia Antipolis, France.

Master : Xavier Descombes, Bio-imagerie, master IRIV, 6h Eq. TD, Niveau M2, Université de Strasbourg, France

Master : Xavier Descombes, Support Vector Machines, 3h Eq. TD, Niveau M2, ENSHEEIT, France.

Master: Emmanuel Soubies, Traitement Numérique des Images, 10h Eq. TD, Niveau M2, EPU, Université de Nice Sophia Antipolis, France.

Master: Emmanuel Soubies, Imagerie Numérique, 6h Eq. TD, Master 2 ISAB, Université de Nice Sophia Antipolis, France.

Licence: Emmanuel Soubies, Images et Filtres, 54h Eq. TD, Niveau L3 , EPU, Université de Nice Sophia Antipolis, France.

Master: Caroline Medioni, Microscopie appliquée à la biologie, 20h Eq. TD, Niveau M2, Université de Nice Sophia Antipolis, France.

License: Caroline Medioni, Microscopy and Cell Biology courses, 20h, Niveau L3, Université de Nice Sophia Antipolis, France.

License: Alexis Zubiolo, Introduction to Computer Science, 18h Eq. TD, L1, Université de Nice Sophia Antipolis, France.

License: Alexis Zubiolo, Web Programming, 48h Eq. TD, L1, Université de Nice Sophia Antipolis, France.

### 7.2.2. Supervision

PhD: Alejandro Mottini, Axon Morphology Analysis: from Image Processing to Modelling, Nice Sophia Antipolis university, defended october the 30th, Xavier Descombes (advisor), Florence Besse (co-supervisor).

PhD in progress: Lola Baustista, Fluorescence confocal microscopy image restoration, 1st november 2013, Laure Blanc-Féraud.

PhD in progress: Gaël Michelin, Quantitative tools for morphogenesis study, 1st october 2013, Grégoire Malandain (advisor).

PhD in progress: Agustina Razetti, Modelling and characterizing axon growth from in vivo data, 1st november 2014, Xavier Descombes (advisor), Florence Besse (co-supervisor).

PhD in progress: Emmanuel Soubies, MA-TIRF reconstruction, 1st october 2013, Laure Blanc-Féraud and Sébastien Schaub.

PhD in progress, Alexis Zubiolo, Statistical Machine Learning for Automatic Cell Classification, 1st october 2012, Eric Debreuve (advisor).

### 7.2.3. Internships

Manon Linder: 4th year of Institut Supérieur des BioSciences, Quantitative comparison of micro-vasculatures, Supervisor: G. Malandain.

Emmanuelle Poulain: M1 Paris VI. Image segmentation using graph cut and MPP. Supervisor: X. Descombes.

### 7.2.4. Juries

Florence Besse participated as referee to the PhD thesis committee of Alejandro Mottini (Nice Sophia Antipolis university)

Laure Blanc-Féraud participated as chair to the PhD thesis committee of A. Drogoul (JAD of UNS), as reviewer of the HDR of Hervé Carfantan (Toulouse University) and PhD thesis of Makhlad Chahid (Bordeaux university).

Eric Debreuve participated as reviewer to the PhD thesis committee of A. Emilien (Bordeaux university)

Xavier Descombes was in the jury of A. Mottini PhD defense at University of Nice Sophia Antipolis. He was reviewer for two PhD dissertation in France (S. Rigaud at Rennes University and J. Gul Mohammed at Paris VI university) and for one PhD dissertation in England (D. Nam at Bristol University).

Grégoire Malandain participated as chair to the PhD thesis committee of J. Legrand (ENS Lyon), as reviewer to the PhD thesis of G. Brunel (Montpellier 2 univ.), and as reviewer to the HdR of F. Rousseau (Strasbourg univ.).

### 7.2.5. Participation to workshops, conferences, seminars, invitations

- Florence Besse made an oral presentation on "Imp promotes axonal remodeling by regulating profilin mRNA during brain development" during the EMBO workshop on neuronal remodeling (March 2014, Ein-Gedi, Israel).

- Caroline Medioni made an oral presentation on "mRNA transport and axonal remodeling" during the Neuronal network days (June 2014, Paris, Institut du Fer à Moulin)
- Caroline Medioni made an oral presentation on "Live imaging of mRNA transport and axonal remodeling using two photon microscopy" during the Journée CoRéBio in Marseille (November 2014, CIML, Luminy).
- Caroline Medioni and Grégoire Malandain organized a practical on "Imaging axonal regrowth: from data acquisition to image treatment" during the microscopy school MIFOBIO (October 2014, Seignosse, France).
- Grégoire Malandain gave a lecture on "registration methods for multimodal imaging" during the microscopy school MIFOBIO (October 2014, Seignosse, France).
- Grégoire Malandain gave a lecture on "Towards population studies in embryogenesis: a cell-to-cell mapping method for ascidian embryos" at a Colloquium Centre Blaise Pascal-Laboratoires Joliot-Curie (november 2014, ENS, Lyon).

### **7.3. Popularization**

Eric Debreuve was invited to give a presentation for the seminar series "Café-in", Inria CRI SA-M, November 2014.

## MYCENAE Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. Member of the organizing committee:

- **Kick-off Meeting of the GdR REPRO**, April 7th, 2014  
F. Clément together with Olivier Kah (CNRS), Florian Guillou (INRA), Yves Combarous (CNRS) and Joëlle Cohen-Tannoudji (University Paris VII).
- **Second workshop “Biologie & Mathématiques sur la Montagne”**, October 28, 2014.  
J. Touboul together with : Gérard Berry (Collège de France), Amaury Lambert (UPMC), Alain Prochiantz (Collège de France)
- Workshop **Multi-scale models, slow-fast differential equations, averaging in ecology and neuroscience**, November 17-21, 2014  
M. Desroches, together with Olivier Faugeras (Inria Sophia-Antipolis Méditerrané), Claude Lobry (Nice University) and Tewfik Sari (IRSTEA), as a part of a thematic semester on mathematical ecology (July-December 2014), Bernoulli Centre of the EPFL (Lausanne, Switzerland).

#### 8.1.2. Journal

##### 8.1.2.1. Reviewer:

*Electronic Journal of Probability, Physica D, Frontiers in Neuroscience, Journal of Statistical Physics, Mathematical Biosciences, Mathematics and Computers in Simulation, Nonlinear Dynamics, Nonlinearity, SIAM Journal on Applied Dynamical Systems, SIAM Journal on Applied Mathematics*

#### 8.1.3. Participation in committees and examination boards

##### 8.1.3.1. F. Clément:

- member of the direction board of the **GdR REPRO** (Integrative and translational approaches of human and animal reproduction)
- appointed member of the scientific board of the BCDE (Cell Biology, Development and Evolution) ITMO (Multi OrganizationThematic Institute) of the French National Alliance for Life and Health Sciences <http://www.aviesan.fr/en>
- Inria Research Director open competitions (admission)
- Selection committee for the Assistant Professor position no 4240, 26-MC-0375 in Université Pierre & Marie Curie

## 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 2014) 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

Benjamin Aymard, Numerical study of multiscale non conservative transport equations modeling cell kinetics [14], Université Pierre & Marie Curie, October 10th, 2014, supervisors: Marie Postel and Frédérique Clément.

Elif Köksal Ersoz, Synchronization of GnRH neurons: a multiscale mathematical study, since November 2013, Université Pierre & Marie Curie, supervisors: Frédérique Clément and Jean-Pierre Françoise, 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, supervisors: Jean-Pierre Françoise 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, supervisors: Marie Postel and Frédérique Clément.

Luis Carlos García del Molino, Dynamics of randomly connected networks and spectral theory of random matrices, since September 2012, Université Denis Diderot, supervisor: Khashayar Pakdaman (Jacques Monod Institute), co-supervisor: Jonathan Touboul.

Cristóbal Quiñinao, Mean-field limits in non fully connected networks and noise-induced synchronization, since September 2012, Université Pierre & Marie Curie, supervisor: Benoît Perthame, co-supervisors: Stéphane Mischler (CEREMADE) and Jonathan Touboul.

### 8.2.3. Juries

J. Touboul: evaluation of the ENS Ulm PhD scholarships

## 8.3. Popularization

- M. Desroches is section-chief editor of the media gallery of DSWeb, a website dedicated to dynamical systems <http://www.dynamicalsystems.org/pi/>.
- Participation to the scientific popularization book “La Reproduction animale et humaine” [29]



## NEUROMATHCOMP Project-Team

## 7. Dissemination

### 7.1. Promoting Scientific Activities

#### 7.1.1. Scientific events organisation

##### 7.1.1.1. general chair, scientific chair

Olivier Faugeras is the General Chair of the [1st International Conference on Mathematical Neuroscience](#), to be held in Antibes-Juan les Pins, June 8-10 2015.

##### 7.1.1.2. member of the organizing committee

Romain Veltz and James Inglis are members of organizing committee of the [1st International Conference on Mathematical Neuroscience](#), to be held in Antibes-Juan les Pins, June 8-10 2015.

#### 7.1.2. Scientific events selection

##### 7.1.2.1. responsable of the conference program committee

Bruno Cessac has organized the symposium “FROM STATISTICAL PHYSICS TO NEURONAL NETWORKS DYNAMICS” in Sophia Antipolis, November 6th 2014.

##### 7.1.2.2. member of the conference program committee

Pascal Chossat is a member of the program committee of the [1st International Conference on Mathematical Neuroscience](#), to be held in Antibes-Juan les Pins, June 8-10 2015.

Pierre Kornprobst was a member of the program committee of the 22nd International Conference on Pattern Recognition (ICPR) and of the 8th International Conference on Bio-inspired Information and Communications Technologies (formerly BIONETICS).

##### 7.1.2.3. reviewer

Bruno Cessac was a reviewer for the Netherlands Organisation for Scientific Research (NWO) and for the Journal of Mathematical Biology.

#### 7.1.3. Journal

##### 7.1.3.1. member of the editorial board

Olivier Faugeras is the co-editor in chief of the open access [Journal of Mathematical Neuroscience](#).

##### 7.1.3.2. reviewer

Bruno Cessac was a reviewer for the Journal of Mathematical Biology.

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Licence: Pierre Kornprobst, Modélisations mathématiques, 24h, Université Nice Sophia Antipolis, France.

Licence 2 : Rodrigo Cofre, Traitement du signal, 50h, L2, Université Nice Sophia Antipolis, France.

Licence 3 : Hassan Nasser, Electronique numérique, 36h, L3, Université Nice Sophia Antipolis, France

License 3 : Hassan Nasser, Microprocesseurs, 28h, L3, Université Nice Sophia Antipolis, France

Master 2: Bruno Cessac, *Neuronal dynamics*, 36 hours, Master of Computational Biology and Biomedicine, Université Nice Sophia Antipolis, France.

Master 2: Romain Veltz, *Mathematical Methods for Neuroscience*, 24h, M2, ENS Paris, France.

Summer school: Bruno Cessac, *Neural Networks Dynamics.*, 3h, Lecture given in the LACONEU School 2014, Jan 2014, Valparaiso, Chile.

Researchers: Bruno Cessac, *Mean-Field Models in neuroscience* [42], 6h, Lecture given in the Mathemac workshop organized at Inria Sophia, 14-16 May 2014.

### 7.2.2. Supervision

PhD : Hassan Nasser, "Analysis of large scale spiking networks dynamics with spatio-temporal constraints: application to Multi-Electrodes acquisitions in the retina", Université de Nice, defence 14-03-14, supervised by Bruno Cessac.

PhD : Rodrigo Cofre, "Neuronal Networks, Spike Trains Statistics and Gibbs Distributions. Dynamical Systems", Université de Nice, defence 05-11-14, supervised by Bruno Cessac.

PhD in progress: Theodora Karvouniari, «Retinal waves in the retina: theory and experiments», defence planned in October 2017, supervised by Bruno Cessac.

PhD in progress: Kartheek Medathati, « Perception du mouvement et attention: Des neurosciences à la vision artificielle », defence planned in 2016, co-supervised by Pierre Kornprobst and Guillaume S. Masson (Institut de Neurosciences de la Timone, UMR 6193, CNRS, Marseille, France).

### 7.2.3. Juries

Bruno Cessac. Reviewer of Jules Lalouette's thesis, "Modélisation des réponses calciques de réseaux d'astrocytes : relations entre topologie et dynamiques" (supervision Hugues Berry). INSA Lyon, 05-12-14.

Pierre Kornprobst. Reviewer of Julian Quiroga Sepulveda's thesis "Scene flow from RGDB Images". Université de Grenoble, France, 07-11-2014.

Pierre Kornprobst. Jury member of Hassan Nasser's Thesis, "Analysis of large scale spiking networks dynamics with spatio-temporal constraints: application to Multi-Electrodes acquisitions in the retina", Université Nice Sophia Antipolis, France, 14-03-2014.

## NEUROSYS Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. Organizing committee membership:

- openVibe Workshop as a satellite event of the international conference on Brain-Computer Interfaces on September 15th, 2014 in Graz (with BrainProduct, TMSi, g.tec) (L. Bougrain & G. Serrière)
- BCI competition, IEEE Neural Engineering Conference, Montpellier, 2015 (L. Bougrain).

#### 8.1.2. Scientific events selection

##### 8.1.2.1. Conference program committee membership:

IEEE International Conference on Systems, Man, and Cybernetics (SMC2014<sup>0</sup>) special sessions on Brain-Machine Interfaces, October 5-8, San Diego (L. Bougrain)

##### 8.1.2.2. Reviewer:

Programme H2020 (L. Buhry)

#### 8.1.3. Journal

##### 8.1.3.1. Editorial board membership:

Journal of Proteomics & Computational Biology (A. Hutt)

##### 8.1.3.2. Reviewing activities:

Nonlinearity, Neurocomputing, Neural Computation, Journal of Computational Neuroscience, SIAM Journal of Applied Dynamical Systems, Journal of Mathematical Neuroscience, Frontiers in Neurology, Biological Cybernetics, Physical Review E, Physical Review Letters, Journal of Neuroscience, PLoS One, IEEE Transactions on Biomedical Engineering (A. Hutt); Neural Computation, Journal of Computational Neuroscience, Journal of Neural Engineering, Neurocomputing, CCSP (Circuits, Systems & Signal Processing) (L. Buhry)

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Engineer school : L. Bougrain, *Artificial Intelligence*, 109h, (3rd year) Telecom Nancy, France

Engineer school : L. Bougrain, *Brain-Computer interfaces*, 4.5h, (3rd year) Supélec, France

Licence: L. Buhry, *Applications en Sciences Cognitives*, 3h en équivalent TD, niveau L1 MIASHS, University of Lorraine

Licence: L. Buhry, *Programmation Python*, 37h en équivalent TD, niveau L1 MIASHS, University of Lorraine

Licence : L. Buhry, *IA et Résolution de problèmes*, 25h en équivalent TD, niveau L3 MIASHS, University of Lorraine

Licence : L. Bougrain, *mobile development*, 35h, Licence of computer science (3st year), University of Lorraine, France

Licence : L. Bougrain, *artificial intelligence*, 35h, Licence of computer science (3st year), University of Lorraine, France

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<sup>0</sup><http://smc2014.org>

Licence : L. Bougrain, *optimization*, 37.5h, Licence of computer science (3st year), University of Lorraine, France

Master : L. Buhry, *Algorithmique pour l'intelligence artificielle (IA)*, 31h en équivalent TD, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine

Master : L. Buhry, *IA fondamentale et fouille de données*, 18h en équivalent TD, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine

Master: L. Buhry, *Formalismes de Représentation et Raisonnement*, 25h en équivalent TD, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine

Master: L. Buhry, *Memory and Machine Learning* (in English), 38h en équivalent TD, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine

Master : L. Buhry, *Neurosciences Computationnelles*, 25h en équivalent TD, niveau Master 2 SCMN, University of Lorraine

Master : L. Bougrain, *Machine learning*, 18h, Master of computer science (2st year), University of Lorraine, France

Master : L. Bougrain, *Human factors*, 30h, Master of computer science (1st year), University of Lorraine, France

Master : A. Hutt, *Pépites Algorithmiques*, 9h, niveau M1, École des Mines Nancy

### 8.2.2. Supervision

PhD in progress : Meysam Hashemi, *A cortico-thalamic model to describe the power spectrum of EEG under anaesthesia*, May 2012, A. Hutt

PhD in progress : Mariia Fedotenkova, *Detection of EEG-signal features for pain under general anaesthesia*, November 2013, A. Hutt

PhD in progress : Cecilia Lindig-Leon, *Multilabel classification for a 3D control of a robotic arm using band-specific EEG markers associated with a motor task*, November 2013, L. Bougrain and A. Hutt

PhD in progress : Francesco Giovannini, *Mathematical modelling of the memory system under general anesthesia*, October 2014, L. Buhry and A. Hutt

Spring-Summer 2014 internship: Francesco Giovannini (Laure Buhry)

Summer 2014 internship: Sébastien Rimbart, *Immobility and anesthesia* (L. Bougrain)

Summer 2014 internship: Thomas Tassone *Client-server solution using  $\Theta MQ$  to allow a communication between OpenViBE and the API of the JACO robotic arm* (L. Bougrain)

### 8.2.3. Juries

- PhD defense of Cornelia Petrovic, University of Muenster, January 31 2014, reviewer and committee member (Axel Hutt)
- Recruitment of permanent Inria junior researchers (CR2) at Inria Sophia-Antipolis (Axel Hutt).

### 8.2.4. Comitees

- Member of the CDT (Commission de Développement Technologique) at Inria Nancy–Grand-Est (Laure Buhry)
- Member of the IES committee (Commission Information et Edition Scientifique) at Inria Nancy–Grand-Est (Laurent Bougrain)
- Member of Inria committee COST-GTRI to evaluate Inria Associate Teams (Axel Hutt).

## 8.3. Popularization

- TV interview for France 3 Lorraine, April 7 2014 (L. Buhry)

- Interview for the "Interstices" podcast, May 22 2014 (L. Buhry)
- Brain week: Comment lire dans les pensées d'autrui ? 12 March 2014, central hospital, Nancy (L. Bougrain)
- Exhibit on *controlling a robotic arm using EEG* at Researchers' Film Festival, June 10-15, 2014, Parc de la Pépinière, Nancy (L. Bougrain)
- Computational neuroscience, Inria Scientific Days, June 2014 (Laure Buhry)
- OpenViBE, Inria Scientific Day, June 2014, Lille (L. Bougrain)
- Is it really statistically significant? « Dynamics of neural circuits » NETT workshop, March 2014, Florence (L. Bougrain)
- Multiclass approaches to identify motor imageries, LAGIS sem., Jun. 2014, Lille (L. Bougrain)
- *Additive noise in neural populations on multiple scales*, Bernstein Center for Computational Neuroscience, Berlin, July 2014 (A. Hutt)
- *Modelling neural population activity under anaesthesia*, Humboldt University Berlin, July 2014 (A. Hutt)
- *Pattern storage and transient dynamics in heterogeneous neural fields in the context of cognition*, 3rd International Conference on Neural Field Theory (ICNFT), Reading, June 2014 (A. Hutt)
- *Additive noise tunes the stability in nonlinear delayed systems*, Conference on Random Dynamics and Stochastic Numerics, Mannheim, June 2014 (A. Hutt)
- *Additive noise tunes the stability in nonlinear systems*, Inhomogeneous random systems, Paris, January 2014 (A. Hutt)
- *Additive noise in neural populations on multiple scales*, Fluctuations in Population Biology, Epidemiology and Evolution, Leiden, August 2014 (A. Hutt)

## NUMED Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

P. Vigneaux: ANR's ARP workshop Simulation of avalanches : modelling and numerics, in Seville (March 11-14) 2014. <http://arpavalanche14.sciencesconf.org/>

P. Vigneaux: 12th French-Romanian Conference on Applied Mathematics (August 25-30, 2014. Lyon) CFR2014: invited to organize the Special Session on Numerical Analysis.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

E. Grenier is professor at ENSL and teaches in L3 and agregation (PDE, Topology, Modeling).

P. Vigneaux is assistant professor at ENSL and teaches in M2 and agregation (Modeling, PDE).

V. Calvez teaches in M2 (modeling and PDE).

### 8.2.2. Supervision

- E. Bouin defended its thesis in novembre 2014 under the supervision of V. Calvez.

## 8.3. Popularization

V. Calvez is responsible of "Math à Lyon", a serie of conferences in high school.

E. Grenier gave a public conference in Nancy in november 2014 on "mathematics and drugs".

P. Vigneaux took part of a general book "Brèves de Maths - Mathématiques pour la planète Terre. Nouveau Monde" éditions. ISBN 9782365838962. Octobre 2014. 255p. Patronage de l'INSMI-CNRS, Inria, SMAI, SMF, SFdS

P. Vigneaux is a member of the board of "Images des Maths", a pedagogic website.

## PARIETAL Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

- Gaël Varoquaux: PRNI, Euroscopy
- Philippe Ciuciu: ISBI

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

P.Ciuciu: ICASSP 2014, Associate Editor of the BISP (Bio Imaging Signal Processing) section

#### 9.1.2.2. Reviewer

- Bertrand Thirion: IEEE ISBI, IPMI, MICCAI, IEEE PRNI, MLINI, NIPS
- Gaël Varoquaux: IPMI, MICCAI, IEEE PRNI, MLINI
- Philippe Ciuciu: MICCAI, IEEE ICASSP, IEEE ISBI, EUSIPCO, IEEE EMBC, IEEE PRNI

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- Bertrand Thirion: Frontiers in Neuroscience, Brain Imaging Methods
- Gaël Varoquaux: NeuroImage, Frontiers in NeuroInformatics and Frontiers in Brain Imaging methods
- Philippe Ciuciu: Frontiers in Neuroscience, Brain Imaging Methods

#### 9.1.3.2. Reviewer

- Bertrand Thirion: Medical Image Analysis, IEEE Transactions on Medical Imaging, NeuroImage, Human Brain Mapping, PNAS, Nature Neuroscience.
- Gaël Varoquaux: HBM, MedIA, TMI, Frontiers in NeuroInformatics, Frontiers in Brain Imaging methods, Trends in cognitive science
- Philippe Ciuciu: SIAM Journal on Imaging Science, IEEE Trans Image Processing, IEEE Trans Medical Imaging, Proceedings of the IEEE, Signal Processing, NeuroImage, Journal of Neuroscience Methods, Plos One, MAGMA, Human Brain Mapping, Journal of Neural Systems, Journal of Neuroscience.

### 9.1.4. Scientific workshop

Bertrand Thirion took part to the CCC Brain workshop, Washington DC, Dec. 3-5.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Gael Varoquaux

- Stat Course cogmaster (3 × 3H)
- Python course Inria Rocquencourt et Rennes: 8Hrs each time
- Optimization tutorial at Euroscipy: 2H
- Scikit-learn tutorial at Scipy: 4H
- Functional connectivity course at OHBM: 30mn
- MSR TechDays 2014 : Scikit-Learn: Machine Learning en Python (2H)

Bertrand Thirion

- Master MVA, Imagerie fonctionnelle cérébrale et interface cerveau machine, 12h + 3h, M2, ENS Cachan, France.
- Functional connectivity course at ISMRM: 30mn
- Machine learning course, cortical mapping course at OHBM: 2 × 30 mn.

Philippe Ciuciu

- Master 2 Biomedical Engineering Université Paris V & Télécom Paris-Tech
- Master 2 Imagerie Médicale Université Paris-Sud

### 9.2.2. Supervision

PhD defense:

- Viviana Siless: July 8th, *Multi-modal registration of T1 brain image and geometric descriptors of white matter tracts.*
- Nicolas Zilber: March 10th, *ERF and scale-free analyses of source-reconstructed MEG brain signals during a multisensory learning paradigm.*
- Hao Xu: March 31st, *Probabilistic atlas statistical estimation with multimodal datasets and its application to atlas based segmentation.*

### 9.2.3. Juries

Bertrand Thirion was reviewer in the following PhD thesis committees:

- Mathieu Ruiz
- Ben Cassidy, university of South Wales, Australia
- Kasper Winther Andersen, April 22nd, DTU, Denmark

He was Examiner in the following PhD thesis committee:

- Hugo Raguét, Sept 22nd, Université Paris Dauphine.

## 9.3. Popularization

- Bertrand Thirion has taken part to the *Autour de la question* broadcast program on Feb. 24th.
- Bertrand Thirion co-authored the popularization paper : "Le décodage cérébral : exemple de la vision" in *Clefs CEA*, issue 62.
- Gaël Varoquaux gave a tutorial on scikit learn at the Microsoft Tech Days (February).



## POMDAPI Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organization

M. Kern, with H. Ben Ameer (ENIT-Lamsin, Tunis), I. Ben Gharbia (IFPEN) and V. Martin (Université de Technologie de Compiègne) organized the Conference *Modeling and simulation in porous media*, 8-9 Dec 2014, Rocquencourt. The conference was held in honor of Jean Roberts and Jérôme Jaffré, and gathered 14 internationally recognized scientists. It was attended by about 60 participants. Talks can be found on the event web page <http://mspm-jrjj2014.sciencesconf.org/>.

M. Kern is Deputy Director of **Maison de la Simulation**, a joint project between CEA, CNRA, Inria, Université de Paris 11 and Université de Versailles-St-Quentin-en-Yvelines, focused on applications of high-end computing.

M. Kern is a member of the Scientific Committee of **Orap** (ORganisation Associative du Parallélisme).

M. Kern is a member of the Scientific Board of **GDR Calcul**.

M. Kern is a member of the jury and executive board of **Label C3I**.

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 prize committee for the Interpore society.

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. Vohralík started to co-organize, from September 2013, together with Irène Vignon-Clementel from the project-team **REO**, the monthly *Modeling and Scientific Calculation Seminar* of the Inria Paris-Rocquencourt research center, see the web page [https://www.inria.fr/modelisation\\_et\\_calcul\\_scientifique/en/](https://www.inria.fr/modelisation_et_calcul_scientifique/en/).

##### 8.1.1.1. member of the editorial board

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>.

##### 8.1.1.2. reviewer

M. Kern was reviewer for the journals *Transport in Porous Media*, *Computational Geosciences* and *Mathematics and Computers in Simulation*.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Training: F. Clément, *Mise en œuvre de techniques numériques d'inversion de paramètres distribués*, 12 h, M2, LEME, Université de Paris 10, France.

Master: J. Ch. Gilbert, *Optimisation différentiable — Théorie et algorithmes*, 42 h, M1, **Ensta ParisTech**, France.

Master: C. Josz, *Optimisation différentiable — Théorie et algorithmes*, 30 h, M1, **Ensta ParisTech**, France.

Master: C. Josz, *Analyse convexe et optimisation non différentiable*, 6 h, M2, **Ensta ParisTech**, France.

Licence: C. Jozs, *Analyse hilbertienne*, 24 h, L3, Université de Paris 1, France.

Master: M. Kern, *Éléments finis*, 30 h, M1, Mines ParisTech, France.

Master: M. Kern, *Problèmes inverses*, 26 h, M1, Mines ParisTech, France.

Master: M. Kern, *Écoulements dans la géosphère*, 18 h, M2, Master Modélisation et Simulation, Fondation de coopération scientifique du campus du plateau de Saclay.

Master: M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, M2, Laboratoire Jacques-Louis Lions (Université de Paris 6), France.

Master: M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, M2, Department of Numerical Mathematics, Charles University in Prague, Czech Republic.

### 8.2.2. Supervision

PhD: Viatcheslav Vostrikov, *Numerical simulation of two-phase multicomponent flow with reactive transport in porous media*, Université de Pau et des Pays de l'Adour, defended on December 15th, 2014, B. Amaziane and M. Kern.

PhD in progress: Sarah Ali Hassan, *A posteriori error estimates and stopping criteria for domain decomposition solvers with local time stepping*, November 2013, M. Vohralík.

PhD in progress: N. Birgle, *Écoulements souterrains, méthodes numériques, et calcul haute performance*, October 2012, J. Jaffré.

PhD in progress: F. Cheikh, *Identification de failles dans un milieu poreux par une méthode d'indicateurs*, December 2011, J. E. Roberts and H. Ben Ameer.

PhD in progress: C. Jozs, *Optimisation globale des flux d'énergie dans un réseau de transport d'électricité*, May 2013, J. Ch. Gilbert.

PhD in progress: M. H. Riahi, *Identification de paramètres hydrogéologiques dans un milieu poreux*, December 2011, J. Jaffré and H. Ben Ameer.

### 8.2.3. Juries

M. Kern was part of the PhD thesis committee of *Feng Xing*, Université de Lille (December 2014).

M. Vohralík has been in the PhD thesis committee of *Karel Tůma*, Charles University in Prague, Czech Republic (April 4th, 2014).

## 8.3. Popularization

J. Ch. Gilbert has written the following page on Wikipedia.fr in 2014: [Optimisation quadratique](#).

M. Kern participated in a meeting with high school students during the "Fête de la Science" (CNAM, Paris, October 3rd, 2014), and gave presentations on the theme "Mathematics and Simulation for Underground Water" to middle school and high school students.

## POPIX Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Journal

##### 9.1.1.1. Member of the editorial board

Bertrand Maury is Associate Editor of *M2AN*

##### 9.1.1.2. Reviewer

POPIX members reviewed articles for *Bioinformatics*, *Journal of Statistical Software*, *Computational Biology and Chemistry*, *European Journal of Clinical Pharmacology*, *Ecological Modelling*, *Scientia Iranica*, *Computers in Biology and Medicine*, *Communications in Mathematical Sciences*, *SIAM journal of Scientific Computing*, *Computational Statistics and Data Analysis*, *Statistical Sciences*.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

Masters: Astrid Decoene, Elements finis et optimisation sous contraintes, Master EDPCS, Paris-Sud University.

Licence: Astrid Decoene, Licence Sciences Technologie Santé, mention mathématiques, Paris-Sud University.

Masters: Marie-Anne Poursat, Coordinator of the Mathematical Engineering course, Paris-Sud University

Masters: Marc Lavielle, Modèles Mixtes et Approche de Population, 24 hours, Paris-Sud University.

Masters: Bertrand Maury, Finite element method and optimization, modeling of the respiratory system, Paris-Sud University.

Masters: Bertrand Maury, Computational Fluid Dynamics, Numerical Analysis and Optimization, Ecole Polytechnique.

Miscellaneous: Marc Lavielle, Population approach and Mixed effects models: PAGE meeting 2014 (Alicante, Spain); University of Manchester (UK); University of Buffalo (USA).

#### 9.2.2. Supervision

- Célia Barthélémy, was a PhD student working under the supervision of Marc Lavielle. She decided to stop her PhD in September 2014.
- Bertrand Maury co-supervises several PhD students: J. Fouchet-Incaux, A. Preux, G. Le Poutier, L. Lacouture, C. Etchegarai.
- Astrid Decoene co-supervises the PhD thesis of L. Lacouture.

#### 9.2.3. Juries

- Marc Lavielle was referee for the HDR of Nicolas Savy (Toulouse 3) and the PhD of Charlotte Baey (ECP)
- Marc Lavielle was member of the jury for the HdR of Rémi Choquet (Montpellier 2) and for the PhD of Claire Christophe (Toulouse 3) and Nicklas Hartung (Marseille).

### 9.3. Popularization

- Marc Lavielle was invited to give a talk for the "Olympiades des Mathématiques" in Cachan
- Marc Lavielle was invited to participate to the "Nuit des Sciences" at ENS and give a talk about statistics and GMO.

## REO Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

- Matteo Aletti
  - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- Laurent Boudin
  - Co-organizer of the M2S2 workshop (Mathematical Models for Social Sciences), with J.-P. Nadal
- Miguel Ángel Fernández Varela
  - Organizer of the CEA-EDF-Inria summer school on Numerical methods for interface problems in fluid and solids with discontinuities, Cadarache, France (with P. Massin and J. Segré), 2014
  - Organizer of the International workshop on numerical methods and applications in fluid-structure interactions, November 24-25, 2014, Grenoble, France (co-organized with G.-H. Cottet, J-F. Gerbeau and E. Maitre)
- Jean-Frédéric Gerbeau
  - Organizer of the International workshop on numerical methods and applications in fluid-structure interactions, November 24-25, 2014, Grenoble, France (with G.-H. Cottet, M. Fernández and E. Maitre)
- Jessica Oakes
  - Assistant Organizer for the 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease
  - Student Forum Leader: International Society of Aerosol Medicine
- Sanjay Pant
  - Co-organizer of the 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, May 21st-22nd, Rocquencourt, France
- Elisa Schenone
  - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- I. Vignon-Clementel
  - Organizer of the monthly seminar at Inria Paris-Rocquencourt on “modeling and scientific computing”
  - Organizer of the 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, May 21st-22nd, Rocquencourt, France. This event was co-organized with the School of Medicine, Stanford University & REO. It was a great success! Over 70 participants came from all over the world, from the USA and France, but also from as far as Japan, Turkey or Australia. Participants particularly liked the mixture of mathematics/engineering and clinical research presented in an understandable way for both communities. This fostered lively discussions after talks and at the poster session. Three young investigators received awards from the *Fondation Sciences Mathématiques de Paris*; one of them is Stephanie Lindsey, a visiting PhD student at REO from Cornell University. <http://www.rocq.inria.fr/engfrontiersped>

- Organizer of the 5th general meeting of the Transatlantic Network of Excellence for Cardiovascular Research MOCHA, May 22nd-24th, Rocquencourt, France.

### **9.1.2. Journal editorial boards**

- Jean-Frédéric Gerbeau
  - Editor-in-Chief of Mathematical Modelling and Numerical Analysis (M2AN).
  - 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.
- I. Vignon-Clementel
  - Review Editor of Frontiers in Pediatric Cardiology.

### **9.1.3. Conferences**

- Chloé Audebert
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
  - PhD students seminar, Université Paris-Decartes, February 20th, 2014, Paris, France
  - Poster session, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Inria Paris-Rocquencourt, May 21-22, 2014, Paris, France
- Laurent Boudin
  - Invited speaker at Workshop "PDE models in social sciences", closure of Peter Markowich's chair at FSMP, Paris, France, January 2014.
  - Seminar, Numerical analysis and PDEs, LMPP, Univ. Lille 1, France, March 2014.
  - Seminar, Applied Mathematics, IMB, Univ. Bordeaux, France, March 2014.
  - Seminar, Mathematics and applications, Irmarr, ENS Rennes, France, April 2014.
  - Invited speaker at Conference "Problems on kinetic theory and PDEs", Univ. Novi Sad, Serbia, September 2014.
  - Invited speaker at Workshop "Kinetic models for complex gases", Univ. Bordeaux, France, October 2014.
- Muriel Boulakia
  - Contributed talk, Hybrid Inverse Problems, Paris, February 2014
  - Contributed talk, LJLL-Shanghai Meeting, Paris, July 2014
  - Contributed talk, GDR Metice workshop, Paris, November 2014
- Miguel Ángel Fernández Varela
  - Invited plenary lecture, 12th Franco-Romanian conference on applied mathematics, Lyon (France) August 2014.
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
  - Seminar, University of Caen, October, 2014, France
- Benoit Fabrèges
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
  - Contributed talk, International workshop on numerical methods and applications in fluid-structure interactions, November 24-25, Grenoble, France, 2014.
- Justine Fouchet-Incaux

- Contributed talk, CANUM, Carry-le-Rouet, France, April 2014.
- Poster, IXème congrès de Physiologie, de Pharmacologie et de Thérapeutique, Poitiers, April 2014.
- Jean-Frédéric Gerbeau
  - Invited plenary lecture, ESCO 2014, Pilsen (Czech Republic), June 2014
  - Invited plenary lecture, CARI 2014, Saint-Louis (Senegal), October 2014
  - Invited lecture, International Symposium Modeling and Simulation of the Cardiovascular System, Heidelberg (Germany), February 2014
  - Invited seminar, Collège de France, June 2014
  - Invited lecture, Workshop GDR Mecabio, Paris, 2014
  - Invited lecture, Workshop on Model Order Reduction and Data, Paris, 2014
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
  - Minisymposium talk, 7th World Congress of Biomechanics (WCB ), July 6-11, 2014, Boston, USA.
- Céline Grandmont
  - Seminar, Nancy Univ., april 2014.
  - Invited speaker, PhD student day, sept. 2014.
- Mikel Landajuela
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
  - Seminar, UCL/Inria Workshop on embedded interfaces, London, UK, February 25-26, 2014
  - Poster, International workshop on numerical methods and applications in fluid-structure interactions, Grenoble, France, November 24–25, 2014;
- Damiano Lombardi
  - Seminar scientific computing , IMB Bordeaux, september 25
  - GDR Metice, Paris, 19-11-2014,
  - International Workshop on Fluid Structure Interaction, 24 novembre 2014, Grenoble
- Jessica Oakes
  - Invited Seminar Talk at Technion - Israel Institute of Technology, Haifa Israel July 2014.
  - Seminar Talk at University of California Berkeley, Berkeley California USA, September 2014
  - Seminar Talk at Inria@SiliconValley Workshop, Paris France July 2014.
  - Poster and Podium Talk at the International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease. May 2014, Paris France.
  - Podium Talk at Second Aerosol Dosimetry Conference, October 2014. Irvine, California, USA.
  - Podium Talk at American Physics Society, Division of Fluid Dynamics, November 2014. San Francisco, California, USA
- Stephanie Lindsey
  - Contributed talk at "American Physical Society Division of Fluid Dynamics 67th Annual Meeting", November 23-25, 2014 San Francisco, California

- Invited speaker, "4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart", May 21-22, 2014 Paris, France
- Invited speaker, Junior Seminar, Inria, January 22, 2014 Paris, France.
- Sanjay Pant
  - Contributed talk, Mathematics and Biology: 2nd Young Investigators International Workshop, Paris, France, April 3-4, 2014.
  - Poster, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, France, May 21-22, 2014.
  - Contributed talk, 5th Annual Meeting of the Leducq Foundation Network of Excellence in Modeling of Single Ventricle Hearts Inria, Paris-Rocquencourt, France, May 22-24, 2014.
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
- Elisa Schenone
  - Poster, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, May 21-22 2014
  - Seminar, Inria-Rocquencourt Junior Seminar, Paris, June 17th 2014
  - Seminar, PhD students working group of Jacques-Louis Lions Laboratory of UPMC, Paris, March 21st 2014
- Marc Thiriet
  - Invited Speaker, CASTS-LJLL Workshop on Applied Mathematics and Mathematical Sciences. National Taiwan University, May 26 - 29, 2014
  - Keynote speaker, CompIMAGE'14, Sept. 3-5, Pittsburgh, USA
  - Invited Speaker, International Conference on Progress in Fluid Dynamics and Simulation, National Taiwan University, October 25-27, 2014
  - Miraucourt O, G enevaux O, Szopos M, Thiriet M, Talbot H, Salmon S, Passat N. s. 2014 IEEE International Symposium on Biomedical Imaging, Beijing, China, April 29 - May 2, 2014
  - M Thiriet, M Solovchuk, TWH Sheu, HIFU , CompIMAGE'14, Sept. 3-5, Pittsburgh, USA
  - Solovchuk M, Sheu TWH, Thiriet M, 1st Global Conference on Biomedical Engineering (GCBME 2014) and 9th Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2014), Oct. 9-12, 2014, NCKU, Tainan **Young Investigator award**
  - Solovchuk M, Sheu TWH, Thiriet M., International Conference on Progress in Fluid Dynamics and Simulation, National Taiwan University October 25–27, 2014
- Marina Vidrascu
  - Modeling and scientific computing seminar at Inria Paris-Rocquencourt on January 7th, 2014.
  - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
  - Seminar at Univ Compi egne, October 7th, 2014.
- Ir ene Vignon-Clementel
  - Invited talk, Navier-Stokes workshop “une equation lumineuse” , Ecole Polytechnique, March 12th, Palaiseau, France.
  - Invited talk, Institute of Child Health, University College London, April 3rd, London, UK.
  - Invited talk, Notocord workshop, Inria Paris-Rocquencourt, June 6th, 2014, France.

- Talk, Inria-Dassault System meeting, Oct. 29th, 2014, Paris, France .

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

DUT :

- Justine Fouchet-Incaux 1ère année: Mathématiques S1, 28h, IUT d'Orsay, département Mesures Physiques, Université Paris-Sud,
- Justine Fouchet-Incaux 2ème année: Mathématiques S4, 33h, IUT d'Orsay, département Mesures Physiques, Université Paris-Sud

Licence :

- Chloé Audebert
  - "Calculus" (72h), L1 - undergraduate, Université Paris 6 UPMC, France (1st semester 2014-2015).
  - Numerical ressources for Small Private Online Classes (SPOC), L1 - undergraduate, Université Paris 6 UPMC, France.
- Laurent Boudin
  - Multivariable calculus and multiple integrals (114 h), L2, UPMC.
  - Shared studies supervision in mathematics licence for approximately 500 students (30h), L2-L3, UPMC.
- Muriel Boulakia
  - Scilab (35h), L2, UPMC
  - Hilbertian analysis (45h), L3, Polytech'Paris,
- Miguel Ángel Fernández Varela
  - Scientific computing, 30h, L3, École des Ponts ParisTech,
- Céline Grandmont
  - Numerical Analysis, 36 h, L3, UPMC
  - EDO, 24 h, L3, UPMC
- Damiano Lombardi
  - Linear Algebra TD, 32h, L1 Physique-Chimie, UP-SUD
- Irène Vignon-Clementel
  - Mathematics for biology, 64h ETD, L1 - undergraduate, Univ. de Versailles Saint Quentin

Master :

- Laurent Boudin
  - Basics for numerical methods (72h), M1, UPMC.
  - Studies supervision in mathematics master for 15 students (20h), M1, UPMC.
- Muriel Boulakia
  - Preparatory course for teaching admission examination Agrégation (60h), M2, UPMC,
- Jean-Frédéric Gerbeau
  - Numerical methods in hemodynamics (20h), M2, UPMC / Univ Paris-Sud / Ecole Polytechnique.
- Miguel Ángel Fernández Varela



- Numerical methods in bio-fluids, 6h, M2, University of Vigo, Spain.
- Damiano Lombardi
  - Numerical Methods, 48h, Paris Polytech, M1 Robotique

Engineering schools:

- Irène Vignon-Clementel. Numerical simulations of blood flow, 1h30, as part of the undergraduate "continuum mechanics" class at AgroParisTech, France

### 9.2.2. Supervision

PhD: Grégory Arbia, *Multi-scale Modeling of Single Ventricle Hearts for Clinical Decision Support*, Univ Paris 6 UPMC, defended December 16, 2014. Supervisors: J-F. Gerbeau & I. Vignon-Clementel, [13].

PhD: Jimmy Mullaert, *Fluid-structure interaction*, Univ Paris 6 UPMC, defended on December 17 . Supervisors: M.A. Fernández Varela & Y. Maday, [14].

PhD: Elisa Schenone, *Inverse problems in electrocardiology*, Univ Paris 6 UPMC, defended on November 28. Supervisors: J-F. Gerbeau & M. Boulakia, [15].

PhD: Saverio Smaldone, *Numerical methods for cardiac hemodynamics*, Univ Paris 6 UPMC, defended on October 13, Supervisors: J-F. Gerbeau & M.A. Fernández Varela, [16].

PhD in progress: Chloé Audebert, *Modeling of liver hemodynamics*, since October 2013. Supervisors: J-F. Gerbeau & I. Vignon-Clementel.

PhD in progress: Justine Fouchet-Incaux, *Mathematical and numerical modeling of the human breathing*, since October 2011. Supervisors: C. Grandmont & B. Maury.

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 & Damiano 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: Stéphane Liwarek, *Air flow in the nasal cavity*, October 2010-September 2014. Supervisors: M.A. Fernández Varela & J-F. Gerbeau.

### 9.2.3. Juries and hiring committees

- Laurent Boudin
  - Member of the PhD committees of Galina Vinogradova (SciencesPo, december 2014)
- Muriel Boulakia
  - Hiring committee: UPMC and Univ. Paris-Diderot
- Jean-Frédéric Gerbeau
  - PhD committees: Guilhem Lepoutier, Univ. Orsay (referee), Liesbeth Taelman, Univ. Gand, Belgique (referee), Adela Puscas, Univ. Paris-Est (referee), Christophe Chnafa, Univ. Montpellier 2 (referee), Agnès Leroy, Univ. Paris-Est. (member)
  - Hiring committee: Univ Orsay, CR2 Inria Paris-Rocquencourt, CR1 Inria.
- Céline Grandmont
  - Hiring committee: Lyon Univ. (Assitant Professor position).
  - Head habilitation (HDR) committee: B. Mauroy, Nice univ.
- Marina Vidrascu

- Member of the Hiring committee Perpignan (professor)
- Member of the PhD committee of Claire Dupont and Jimmy Mullaert
- Irène Vignon-Clementel
  - Member of the PhD committee of Xiaofei Wang, UPMC, Oct. 17th
  - PhD referee of Alessia Baretta, LaBS, Politecnico di Milano, Italy, Oct 21st.
  - Member of the PhD committee of Grégory Arbia, UPMC, Dec 16th.

### 9.3. Service activities

- 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.
- Muriel Boulakia
  - Supervisor of the teaching of mathematics at the engineer school Polytech Paris-UPMC
- 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 the Faculty of Science, University Versailles Saint-Quentin; 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.
- Marc Thiriet
  - President of thematic committee 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 1501 (Genes, Cells and Molecules), 1502 (Biological Systems and Functions), 1504 (Chemistry), 1507 (Computer Science), 1508 (Mathematics and Statistics), 1511 (Materials and Chemical Eng.), and mainly 1512 (Mechanical Eng., both Solids and Fluids sections).
  - Member of Scientific Council of DiscInNet
- Marina Vidrascu
  - Member of the post-docs selection committee, Inria Paris-Rocquencourt
- Irène Vignon-Clementel
  - Member of the PhD grant committee, Inria Paris-Rocquencourt
  - Mediator between PhD students and their supervisors for Inria Paris-Rocquencourt

### 9.4. Popularization

- Matteo Aletti

- presentation at "Incontro Neo-Laureati" (Conférence jeunes diplômés) at Politecnico di Milano
- presentation about REVAMMAD project at ArtVerona
- Céline Grandmont
  - Popularization paper "Inspiration mathématique: la modélisation du poumon", in *Mathématique l'explosion continue*, edited by SFdS, SMAI, SMF.
  - Conference «Nuit des Sciences, ébullition», ENS Paris, June 2014
  - Conference «Mathematic Park a Bobigny», 300 students (high school level), Oct. 2014
  - Conference «Filles et Maths: une equation lumineuse», 60 students, (high school level), Oct. 2014.
- Irene Vignon-Clementel
  - Conference in High School Blanche de Castille, March 25th, Le Chesnay

## SAGE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific committees and review of conferences

- J. Erhel is a member of the international advisory committee of the parallel CFD conferences (Trondheim, Norway, May 2014).
- J. Erhel was reviewer for the CARI conference.

### 8.1.2. Organization of workshops

- J. Erhel organized with Klaus Johannsen, from University of Bergen, the session "High-performance computing, visualization and scientific workflow", at the international conference "Computational Methods in Water Resources (CMWR, Stuttgart, Germany, May 2014).
- G. Pichot organized two workshops in Rennes (April, 28-30, 2014 and June, 24-26, 2014) funded by the Brittany council (see 7.1.1) and Inria to prepare the Future and Emerging Technology (FET) Open proposal, called GEOPRISM, submitted in september 2014.
- G. Pichot organized with A. Fumagalli (Politecnico di Milano, Italy) a mini-symposium session (6 countries, 7 speakers) at the SIAM Annual Meeting AN14, within the SIAM Geosciences track, on *Modeling and Numerical Issues for fractured porous media.*

### 8.1.3. Editorial Boards

- B. Philippe is one of the four chief-editors of the electronic journal ARIMA (revue Africaine de la Recherche en Informatique et Mathématiques Appliquées).
- B. Philippe is managing editor of the electronic journal ETNA (Electronic Transactions on Numerical Analysis).
- J. Erhel and G. Pichot are editors of the proceedings of Domain Decomposition XXI (LNCSE, Springer) [29]
- J. Erhel is member of the editorial board of ETNA.
- J. Erhel is member of the editorial board of ESAIM:Proceedings.

### 8.1.4. Steering committees

- J. Erhel is a member of the steering committee of the Réseau National des Systèmes Complexes.
- J. Erhel is the scientific coordinator of the website Interstices (since June 2012). See <http://www.interstices.info>.

### 8.1.5. Review of papers

- É. Canot was reviewer for the journals EABE, ASME-JHT.
- J. Erhel was reviewer for the journals ADWR, ETNA, SISC.
- M. Oumouni was reviewer for the journal JOMP.
- G. Pichot was reviewer for the journal ADWR.

### 8.1.6. Review of proposals

- J. Erhel was reviewer for proposals submitted to ACSPRF, ANR (ASTRID call), Shell-NWO-FOM.

### 8.1.7. Inria, IRISA and University committees

- É. Canot is member of the CLHSCT (Comité Local Hygiène Sécurité Conditions de Travail), of Inria-Rennes, from September 2010.
- J. Erhel was member of the Comité Technique d'Etablissement Public of Inria, until December 2014.
- J. Erhel was member of Conseil d'Administration of Inria, until December 2014.
- G. Pichot is responsible for the domain "environment" at IRISA.
- G. Pichot is member of the Conseil de département MAM of Polytech Lyon.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- S. Khalfallah is teaching assistant (permanent position since September 2012) in mathematics at the University of Kairouan, Tunisia.
- L. Lenôtre is teaching assistant (contrat doctoral avec mission d'enseignement) in mathematics at the University of Rennes 1.
- É. Canot and J. Erhel: Master M2; title: Cours de modélisation et calcul scientifique; 12 hours; INSA, Rennes, France.
- É. Canot and G. Lecourt: Master M2; title: TP de modélisation et calcul scientifique; 12 hours; INSA, Rennes, France.
- É. Canot: Master M2; one week; ENIT, Tunis, Tunisia.

### 8.2.2. Supervision

PhD: S. Sabit, University of Rennes 1, May 2014, advisors J. Erhel with É. Canot.

PhD in progress: S. Khalfallah, University of Rennes 1 and University of Tunis, October 2009, co-advisors J. Erhel and A. ben Abda.

PhD in progress: L. Lenôtre, University of Rennes 1, October 2012, co-advisors A. Lejay (Inria Nancy) and G. Pichot, with J. Erhel.

PhD in progress: S. Mansour, University of Rennes 1 with LIU and AUB (Beiruth, Lebanon), January 2013, co-advisors É. Canot, M. Muhieddine and N. Nassif.

PhD in progress: L.-B. Nguenang, University of Yaoundé 1, October 2011, advisors E. Kamgnia with B. Philippe.

PhD in progress: M. ben Refifa, University of Tunis, October 2013, advisors Rachida Bouhlila with J. Erhel and É. Canot.

### 8.2.3. Juries

- PhD: S. Moufawad, University of Paris 6, Mathematics, December 2014. Reviewer J. Erhel.
- PhD: V. Vostrikov, University of Pau, Mathematics, December 2014. Reviewer and chair J. Erhel.
- PhD: S. Scialò, Politecnico di Torino, 2014. Reviewer G. Pichot.

## 8.3. Popularization

- J.-R. de Dreuzy, J. Erhel and G. Pichot presented a poster entitled "Une eau souterraine très sollicitée", at Rencontres de la Transition Ecologique en Bretagne, January 2014 [39].
- J. Erhel gave a talk entitled "la terre se met aux maths", at lycée Descartes, Rennes, in March 2014 [38].
- J. Erhel participated in the panel on "Parle-t-on d'informatique comme on parle des autres sciences?", congrès SIF, Poitiers, France, Feb 2014
- The text "Henry Darcy et sa loi" from J. Erhel was published in the book brèves de maths [37]
- É. Canot, J. Erhel and L. Lenôtre, with M.-O. Cordier, N. Lacaux, C. Lafon and J. Stainer, were in charge of the two stands Inria and Interstices at Village des sciences, Chartres de Bretagne, Sep 2014.
- J. Erhel and M.-O. Cordier, with Espace des Sciences de Rennes, invited J.-P. Delahaye to celebrate the ten years of Interstices and to give a conference about the bitcoin, Rennes, October 2014.
- L. Lenôtre gave a talk at Conf'Lunch, Inria Rennes, December 2014.

## SERPICO Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. Member of the organizing committee

Charles Kervrann was member of the organizing committee of the international Quantitative BioImaging 2015 (QBI) conference, Institut Pasteur, January 2015 (180 participants).

Perrine Paul-Gilloteaux was member of the organizing committees:

- Second edition of the European Bio-Image analyst Symposium: EUBIAS Taggathon workshop organized on the 8th and 9th of December 2014 for the creation of a webtool [biii.info](http://biii.info) referencing bio image analysis workflows (20 participants invited over 2 days), and of the EuBIAS community meeting for bio-image analysts on the 5th and 6th of January (118 participants).
- Microscopy school MiFoBio'2014 (Seignosse, October 2014): Organization of advanced modules and round tables with Alain Dieterlen (Laboratoire MIPS-uha Mulhouse).

Patrick Bouthemey was member of the “comité de pilotage” for the organization of RFIA'2014.

Frédéric Lavancier is head of the workshop “Spatio-temporal models and statistics”, IRMAR University of Rennes 1, LMJL University of Nantes, ENSAI, University of Rennes 2, INRA Rennes, Inria Rennes.

#### 9.1.2. Scientific events selection

##### 9.1.2.1. Member of the conference program committee

Charles Kervrann: Associated editor for the conference ISBI'2015, PC member for ISBI'2014, member of scientific committee of “Journées d’Imagerie Optique Non-Conventionnelle” (JIONC'2014).

Patrick Bouthemey: Area chair for the conference ICIP'2014, PC member for ICPRAM'2014.

Thierry Pécot: Associated editor for the conference ISBI'2015.

##### 9.1.2.2. Reviewer

Charles Kervrann: reviewer for ICIP'2014, ICASSP'2014, SSVM'2015, RFIA'2014, EUSIPCO'2014, EMM-CPRV'2015.

Patrick Bouthemey: reviewer for ECCV'2014, ISBI'2014, ISBI'2015, RFIA'2014.

Perrine Paul-Gilloteaux: reviewer for ISBI'2015, expert for the project evaluation in the framework of France-Brazil cooperation COFECUB (Comité Français d’Évaluation de la Coopération Scientifique et Universitaire avec le Brésil).

#### 9.1.3. Journal

##### 9.1.3.1. Member of the editorial board

Charles Kervrann is guest editor of the special issue entitled “Advanced Signal Processing in Microscopy and Cell Imaging” of the IEEE Selected Topics in Signal Processing Journal (publication in 2015).

##### 9.1.3.2. Reviewer

Charles Kervrann: reviewer in 2014 for Bioinformatics, Digital Signal Processing, IEEE Transactions on Image Processing, Journal Mathematical Imaging and Vision, Medical Image Analysis, Traitement du Signal.

Patrick Bouthemey: reviewer in 2014 for IEEE Transactions on Image Processing, IEEE Transactions on Medical Imaging, Medical Image Analysis.

Frédéric Lavancier : reviewer since September 2014 for Bernoulli, Climate Dynamics, Metrika, Statistics and Probability Letters.

Perrine Paul-Gilloteaux: reviewer for PLoS One.

#### 9.1.4. Participations in seminars, invitations, awards

Charles Kervrann was invited to give a talk entitled “Tracking and motion analysis in fluorescence microscopy” at the microscopy school MiFoBio’2014 (Seignosse, October 2014), “Localization, classification and estimation of membrane dynamics in TIRFM image sequences” at the Quantitative BioImaging 2015 (QBI 2015) (Institut Pasteur, Paris January 2015), “Patch-based methods and algorithms for breaking the signal-to-noise ratio in fluorescence microscopy” at the Max-Planck Institute Munich (Biochemistry Department, Martinsried, Germany, December 2014), “Conditional Random Fields for tubulin-microtubule segmentation in cryo-electron tomography” at the special session on Electron Microscopy, Image Processing Problems and Applications in Biology: From Structure to Dynamics of the IEEE International Conference on Image Processing (ICIP’2014) (Paris, October 2014), “Approximate Bayesian computation, stochastic algorithms and non-local means for complex noise models” at the special session on Photon-Limited Image Reconstruction of the IEEE International Conference on Image Processing (ICIP’2014) (Paris, October 2014).

Frédéric Lavancier was invited to give a talk entitled “Inference for union of interacting discs” at JSTAR, Rennes, October 2014.

Thierry Pécot was invited to give a talk entitled “Space-time representation imaging and cellular dynamics of molecular complexes and MobyLe platform”, at EuBIAS meeting, Institut Curie, Paris in January 2015 and at the BioGenouest meeting - Imaging Platforms on February 2014.

Thierry Pécot and Charles Kervrann organized a practical on “Image processing methods for motion analysis of particles” for microscopy school MiFoBio’2014 (Seignosse, October 2014).

Perrine Paul-Gilloteaux was invited to give a talk entitled “Microscopy images life cycle management in biology: knowledge mining from an image database” at the INRA seminar “Open Data” on the Curie image data base including development realized in collaboration with SERPICO for automatic processing on clusters from the database (Saint Martin des Combes, December 2014).

Perrine Paul-Gilloteaux (with F. Waharte) organized a practical on “Molecular dynamics in microscopy based on fluorescence image correlation” for microscopy school MiFoBio’2014 (Seignosse, October 2014).

#### 9.1.5. Responsibilities

Charles Kervrann:

Member of the IEEE BISP “Biomedical Image and Signal Processing” committee.

Member of executive board of the GdR MIV (2588 - Microscopie Fonctionnelle du Vivant) CNRS,

Member of the scientific committee of the Interdisciplinary MiFoBio School CNRS (<http://www.mifobio.fr>).

Member of the executive board of the project committee of the Inria Rennes - Bretagne Atlantique centre.

Member of the Scientific Council of the INRA Rennes Research Centre.

Patrick Bouthemy:

Head of Excellence Lab CominLabs since April 2014.

Deputy member of the board of directors and member of the Selection and Validation Committee of the Images & Réseaux competitiveness cluster.

Deputy member of the board of directors of IRT (Technological Research Institute) B-com.

President of AFRIF (Association Française pour la Reconnaissance et l’Interprétation des Formes) and member of the board of the GRETSI (Groupement de Recherche en Traitement du Signal et des Images).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Charles Kervrann:

Master: From BioImage Processing to BioImage Informatics, 5 hours, coordinator of the module (30 hours), Master 2 Research IRIV, Telecom-Physique Strasbourg & University of Strasbourg.

Master: Geometric Modeling for Shapes and Images, 6 hours, Master 2 Research SISEA, University of Rennes 1.

Engineer Degree and Master 2 Statistics and Mathematics: Statistical Models and Image Analysis, 37 hours + 15 hours (TP, Hoai Nam Nguyen), 3rd year, Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes.

Patrick Boutheymy:

Master: Analysis of Image Sequences, 18 hours, Master 2 Research SISEA, ISTIC & University of Rennes 1.

Master: Video Indexing, 9 hours, Master 2 Research Computer Science, ISTIC & University of Rennes 1.

Engineer Degree and Master 2 Research IRIV: Motion Analysis, 12 hours, Telecom-Physique Strasbourg & University of Strasbourg.

### 9.2.2. Supervision

*PhD defense*: Philippe Roudot (May 2014), Lifetime estimation of moving vesicles in FLIM microscopy, started in October 2010, supervised by Charles Kervrann and Francois Waharte (UMR 144 CNRS-Institut Curie, STED team) (see [9]).

*PhD defense*: Denis Fortun (July 2014), Optical flow computing, aggregation methods and statistical methods: application to time-lapse fluorescence microscopy, started in October 2010, supervised by Charles Kervrann and Patrick Boutheymy (see [8]).

*PhD in progress*: Antoine Basset, Event detection and recognition in video-microscopy and applications in cell biology, started in October 2012, supervised by Patrick Boutheymy and Charles Kervrann in collaboration with Jérôme Boulanger and Jean Salamero (UMR 144 CNRS-Institut Curie, STED team).

*PhD in progress*: Hoai Nam Nguyen, Methods and algorithms for tissue microarrays image analysis, started in October 2013, supervised by Charles Kervrann and Vincent Paveau (Innopsys company).

*PhD in progress*: Vincent Briane, Statistical methods and models for image registration, started in October 2014, supervised by Charles Kervrann and Myriam Vimond (ENSAI-CREST)

*PhD in progress*: Bertha Mayela Toledo Acosta, Methods and algorithms for 3D image registration, started in October 2014, supervised by Patrick Boutheymy.

*PhD in progress*: Christophe Biscio, Statistical aspects of determinantal point processes, started in October 2012, supervised by Frédéric Lavancier.

### 9.2.3. Juries

*Member of a jury for the recruitment of an assistant professor*: University of Paris Descartes (Section CNU 26) [C. Kervrann].

*Referee of Habilitation thesis*: B.M. Jedynek (University of Lille) [Patrick Boutheymy].

*Chair of Habilitation jury*: O. Le Meur (University of Rennes 1) [Patrick Boutheymy].



*Referee of PhD thesis:* F.Z. Benamar (University of Picardie and University Mohammed V Agdal Rabat, supervised by D. Aboutajdine and E.M. Mouaddib [Patrick Bouthemy], P R. Kumar (University of Nice Sophia-Antipolis, supervised by M. Thonnat and G. Charpiat) [P. Bouthemy], S. Rigaud (University of Pierre et Marie Curie, supervised by D. Rococeanu and L.J. Hwee) [P. Bouthemy], M. Maggioni (Tampere University of Technology, supervised by A. Foi) [C. Kervrann], J. Gul-Mohammed (University of Pierre et Marie Curie, supervised by T. Boudier) [C. Kervrann], G. Trigui (University of Paris Sud, supervised by B. Dubreucq and A. Trubuil) [C. Kervrann].

*Chair of PhD thesis juries:* P.-H. Conze (Insa Rennes, supervised by L. Morin and P. Robert) [C. Kervrann], B. Delabarre (PhD, committee president, University of Rennes 1, supervised by E. Marchand) [P. Bouthemy], N. Morsli (Université de Grenoble, supervised by J.-F. Coeurjolly) [F. Lavancier]

## SHACRA Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. ISBMS 2014

The 6<sup>th</sup> International Symposium on Biomedical Simulation 2014 (for detailed information, <http://www.isbms.org>) took place in Strasbourg on the 16 – 17<sup>th</sup> October. Stéphane Cotin and all the team in Strasbourg organized the conference with help from the IHU Strasbourg. The conference was followed by a "SOFA Day". This event was a real success: 65 persons attended the conference and participants gave very positive feedback for both ISBMS conference and "SOFA Day".

#### 8.1.2. Scientific events organisation

##### 8.1.2.1. General chair, scientific chair

- Stéphane Cotin was member of the HCERES (Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur).

#### 8.1.3. Scientific events selection

##### 8.1.3.1. Chair of conference program committee

Stéphane Cotin was chair of ISBMS 2014 (6<sup>th</sup> International Symposium on Biomedical Simulation).

##### 8.1.3.2. Member of the conference program committee

- Stéphane Cotin was:
  - members of the organizing committee of the 6<sup>th</sup> ISBMS conference,
  - member of the organizing committee of the 2<sup>nd</sup> workshop MICCAI DBSMC (Deep Brain Stimulation Methodological Challenges),
  - scientific member of the 3<sup>rd</sup> Workshop Francophone M-DBS (Modèles en Stimulation Cérébrale Profonde) - Planning, Implantation et Evaluation Post-opératoire.
- Christian Duriez was co-chair of:
  - EuroHaptics 2014 in Paris,
  - VRIPHYS 2014.
- Jeremie Dequidt was PC member of:
  - AFIG'2014,
  - ISBMS 2014.
- Alexandre Bilger was member of the organizing committee of the 2<sup>nd</sup> workshop MICCAI DBSMC (Deep Brain Stimulation Methodological Challenges),
- All members of the team SHACRA were involved in the organization of the ISBMS conference.

##### 8.1.3.3. Reviewer

- Stéphane Cotin has been reviewer for:
  - MICCAI,
  - IPCAI.
- Christian Duriez has been reviewer for:
  - EuroHaptics 2014,
  - VRIPHYS 2014,

- IROS 2014,
- ICRA 2014,
- ISBMS 2014,
- SIGGRAPH ASIA 2014.
- Jeremie Dequidt has been reviewer for:
  - EuroHaptics 2014,
  - VRIPHYS 2014,
  - MICCAI 2014.

### 8.1.4. Journal

#### 8.1.4.1. Member of the editorial board

- Stéphane Cotin was:
  - editor of the proceeding of the 6th International Symposium, ISBMS 2014, Strasbourg, France, October 16-17, 2014, Lecture Notes in Computer Science, Vol. 8789 (Theoretical Computer Science and General Issues) - Bello, Fernando, Cotin, Stéphane (Eds.),
  - editor for Information processing in computer-assisted interventions, IJCARS. 2014; 9(5): 755–757 (Dean Barratt,corresponding author Pierre Jannin, Gabor Fichtinger, and Stephane Cotin).
- Christian Duriez was editor of the proceedings EuroHaptics 2014.

#### 8.1.4.2. Reviewer

- Stéphane Cotin has been reviewer for:
  - Media,
  - and IJCARS.
- Christian Duriez has been reviewer for:
  - the international journal CVIU (Computer Vision and Image Understanding),
  - IEEE Transaction on Haptics (3 papers),
  - ACM Transaction on Medical Imaging,
  - The Visual Computer Journal.
- Jeremie Dequidt has been reviewer for:
  - the French journal REFIG,
  - he international journal CMPB (Computer Methods and Programs in Biomedicine),
  - ACM Transaction on Medical Imaging,
  - the international journal MedIA (Medical Image Analysis)
- Hugo Talbot has been reviewer for the IBBWIO journal.

## 8.2. Teaching - Supervision - Juries - Invited Talks - Events

### 8.2.1. Teaching

- Christian Duriez taught:
  - FEM (32h) at the ICAM school in Lille,
  - real-time simulation (20h - Image Visualization and Interaction MASTER 2 Lille1).
- Jeremie Dequidt taught:
  - Programming in C (44h - Polytech Lille),
  - Advanced Programming (14h - Polytech Lille),

- Introduction to Android (6h - Polytech Lille),
- Computation Theory (24h - Polytech Lille),
- Collision Detection (4h - Master2 Univ Lille 1).
- Alexandre Bilger was the supervisor of an intern at Tohoku University,
- Zhifan Jiang taught:
  - Programming in C (32h - Polytech Lille),
  - Introduction to Database (17.76h Polytech Lille).

### 8.2.2. Supervision

- Stéphane Cotin supervised:
  - PhD : Alexandre Bilger, *Patient-Specific Biomechanical Simulation for Deep Brain Stimulation*, Université des Sciences et Technologie de Lille - Lille I, December 2014,
  - PhD : Hugo Talbot, *Interactive Patient-Specific Simulation of Cardiac Electrophysiology*, Université des Sciences et Technologie de Lille - Lille I, July 2014,
  - PhD : Ahmed Yureidini, *Robust Blood Vessel Surface Reconstruction for Interactive Simulations from Patient Data*, Université des Sciences et Technologie de Lille - Lille I, May 2014,
  - PhD in progress : Christoph Paulus (co-supervision),
  - PhD in progress : Rosalie Plantefève (co-supervision).
- Christian Duriez supervised:
  - PhD : Guillaume Kazmitcheff, *Minimal Invasive Robotics dedicated to Otological Surgery*, Université des Sciences et Technologie de Lille - Lille I, June 2014,
  - PhD (co-supervision) : Alexandre Bilger, *Patient-Specific Biomechanical Simulation for Deep Brain Stimulation*, Université des Sciences et Technologie de Lille - Lille I, May 2014,
  - PhD in progress : Julien Bosman,
  - PhD in progress : Frédérick Largililière,
  - PhD in progress : Zhifan Jiang.
- Jeremie Dequidt co-supervised the PhD in progress of Nazim Haouchine.

### 8.2.3. Juries

- Stéphane Cotin was in the examination committee of:
  - the PhD of Elsa Flechon (as president of the jury),
  - the PhD of Christian Herlin (as reviewer).
- Stéphane Cotin participated in the evaluation of LIRIS lab (December 2014).
- Christian Duriez was member of the jury of:
  - the PhD of Hugo Talbot (as invited member),
  - the PhD of Coralie Escande (as reviewer),
  - the PhD of Xavier Faure (as reviewer),
  - the PhD of Achille Melingui (as president of the jury).
- Jeremie Dequidt was
  - invited member in the PhD jury of Ahmed Yureidini,
  - jury member of the Android Competition for EESTEC

### 8.2.4. Invited talks

Séphane Cotin has been invited speaker:

- at the Advanced Laparoscopy and Computer Vision group (ISIT, UMR 6284 CNRS, Clermont Ferrand, France),
- at winter school (Medical Robotics, March 2014, Strasbourg, France),
- at summer school (July 2014, Design and Development of Medical Training Systems, Lyon, France).

Christian Duriez has been invited speaker:

- at JRL (AIST Lab) Tsukuba in October 2013,
- at BIRDS Workshop in February 2014,
- at Festo Company in march 2014,
- at ICRA workshop on Soft Robots in June 2014.

### **8.2.5. Special events**

This year, Stéphane Cotin, team leader of the team, became research director DR1 and Christian Duriez got a position of research director during the competitive evaluation of spring 2014. Congratulations to them !

Christian Duriez also created a new research team: DEFROST working around the soft robotics: model, simulation, control and software.

Jeremie Dequidt was the team Leader of RBQT (from Polytech Lille), which has been involved in two major competitions (German Open Cup and World Cup in Brazil). Jeremie was also nvolved in the organization of the robotic competition for primary schools (CREP: \*Coupe de Robotique des Ecoles Primaires) which has gathered more than 300 kids in Polytech Lille.

## **8.3. Popularization**

### **8.3.1. Talk at College de France**

Our project leader Stéphane Cotin made a talk at the College de France entitled "*Simulation en médecine : présent et futur*". This was done the 17<sup>th</sup> June 2014 in the scope of the Informatic chair, led by Nicholas Ayache.

### **8.3.2. Journée Francaise de Radiologie, JFR**

The SHACRA team was par of the JFR 2014 event in Paris from the 18<sup>th</sup> to the 20<sup>th</sup> October. Hugo Talbot and Rosalie Plantefève presented their work and the project developed by the team.

### **8.3.3. Interaction Healthcare**

The company Interaction Healthcare organized an event on the 3rd of April 2014 taking place in Paris. With this conference, the company aimed at promoting the field of serious games and virtual simulation training. At this occasion, Hugo Talbot presented the latest version of the training simulator for electrocardiology: "Electrophysiology simulation for RF-ablation of ventricular arrhythmia".

### **8.3.4. IHU Scientific Days**

At the occasion of the IHU Scientific days, we visited the IHU Strasbourg and a talk was done by Stéphane Cotin.

### **8.3.5. Visit to the Mentice company**

In december 2014, the training simulator for electrocardiology inteventions was presented to the Mentice company in Göteborg (Sweden). This was the opportunity to discuss our mutual technologies and compare our simulators.

### **8.3.6. Euratechnologie**

The team presented simulations in the Inria showroom at Euratechnologie in Lille all year long. This was the opportunity to get very positive and interesting feedback from visitors.

## **SISTM Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. Member of the organizing committee*

BMW (Bordeaux Modeling Workshop), a two days workshop was organized (with 30 participants).  
8th French Clinical Epidemiology Conference EPICLIN

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Member of the conference program committee*

RT is a member of the scientific committee of IWHOD International Workshop on HIV Observational Databases from 2013,

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

Lifetime Data Analysis (DC)  
Stat Surveys (DC)  
Journal de la Société Française de Statistique (DC)

#### *9.1.3.2. Reviewer*

The members of the team reviewed numerous papers for the following international journals :

AIDS (RT)  
Biometrical (BL)  
Biometrics (DC)  
Annals of applied Statistics (DC)  
Briefings in Bioinformatics (RG)  
Health Services and Outcome Methodology (DC)  
Information Science (RG)  
International Journal of Epidemiology (DC)  
Journal of Multivariate Analysis (RG)  
Journal of the Royal Statistical Society: Series A (DC)  
Machine Learning (RG)  
Neurocomputing (RG)  
Statistics in Medicine (MA, DC, RT)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master : MA teaches in the two years of the Master of Public Health at ISPED, Univ. Bordeaux, France. Furthermore, she is head of the first year of the master.

Master : DC, teaches occasionally in the Biostatistics specialty of the second year of the Master of Public Health.

Master : RG, teaches in the two years of the Master of Public Health.

BL teaches at the School of Mathematics and Physics (The University of Queensland, Australia).

Master : RT, teaches in the two years of the Master of Public Health, and he is head of the Epidemiology specialty of the second year of the Master of Public Health.

#### E-learning

MA is head of the first year of the e-learning program of the Master of Public Health, and teaches in it.

RG teaches in the first year of the e-learning program of the Master of Public Health.

RT is head of the Epidemiology specialty of the second year of the e-learning program of the Master of Public Health, and teaches in it.

### 9.2.2. Supervision

PhD in progress : Ana Jarne, *Modélisation d'interventions sur le système immunitaire pour le traitement et les vaccins contre le VIH*, from Nov 2012, co-directed by Daniel Commenges & Rodolphe Thiébaud

PhD in progress : Boris Hejblum, *Analyse intégrative de données de grande dimension appliquée à la recherche vaccinale*, Oct 2011, co-directed by Rodolphe Thiébaud & François Caron

PhD in progress : Marie-Quitterie Picat, *Analyse des biomarqueurs dans les troubles immunologiques des maladies du système immunitaire*, from Nov 2012, directed by Rodolphe Thiébaud

PhD in progress : Perrine Soret, *Modélisation de données longitudinales en grande dimension*, from Oct 2014, directed by Marta Avalos

Master internship : Damien Chimits, *Analyse par groupe de gènes de données longitudinales d'expression génique*, from Mar 2014 to Sep 2014, co-directed by Rodolphe Thiébaud & Boris Hejblum

Master internship : Edouard Lhomme, *Modélisation de la dynamique de la réponse immunitaire précoce au vaccin VIH*, from Mar 2014 to Sep 2014, directed by Rodolphe Thiébaud

Master internship : Mélanie Née, *Consommation médicamenteuse et risque d'accident de la route : exploration par simulation de schémas d'études épidémiologiques applicables à partir des données médico-administratives*, from Mar 2014 to Sep 2014, co-directed by Marta Avalos & Ludivine Orriols

Master internship : Chloé Pasin, *Modelling the immune response to HIV vaccine*, from Feb 2014 to Sep 2014, directed by Rodolphe Thiébaud

### 9.2.3. Juries

Members of the team were involved in 6 PhD juries, 2 professorships and 2 HDR.

**SISYPHE Project-Team (section vide)**



## STEPP Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events selection

##### 9.1.1.1. member of the conference program committee

Peter Sturm was Associate Editor for the IEEE/RSJ International Conference on Intelligent Robots and Systems and member of the Program Committee of the German Conference on Pattern Recognition.

#### 9.1.2. Journal

##### 9.1.2.1. member of the editorial board

Peter Sturm is Associate Editor of the IEEE Transactions on Pattern Analysis and Machine Intelligence, the Journal of Mathematical Imaging and Vision, and the Image and Vision Computing Journal.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

*E. Arnaud, Image processing, 18h, M2, University of Grenoble, France.*

*E. Arnaud, Statistics for biologist, 39h, L1, University of Grenoble, France.*

*E. Arnaud, Advising students on apprenticeship, 15h, M2, University of Grenoble, France.*

*P. Sturm, Computer vision, 13.5h, M2, University of Grenoble, France.*

### 9.2.2. Supervision

PhD in progress:

*Thomas Capelle, Research on optimization methods for setting up integrated models of transportation and land use, started in October 2013, P. Sturm and A. Vidard (MOISE)*

*Jean-Yves Courtonne, Analyse d'impacts environnementaux et aide à la décision sur des territoires locaux, du bassin d'emploi à la région, started in xxx, P.-Y. Longaretti and D. Dupré (CERAG)*

*Laurent Gilquin, Sensitivity analysis of a macroeconomic LUTI model, started in October 2013, E. Arnaud and C. Prieur (MOISE)*

*Anthony Tschirhard, Calibration and sensitivity analysis of a micro-simulation LUTI model, Oct 2012, E. Prados, E. Arnaud, P. Sturm*

### 9.2.3. Juries

E. Prados, Reviewer of PhD thesis, Bruno Belin, University of Nantes angers Le Mans (title: "Conception interactive d'environnements urbains durables à base de résolution de contraintes").

P. Sturm, President of the AFRIF Thesis Award Committee (French Association for Research in Pattern Recognition and Interpretation)

P. Sturm, Reviewer of habilitation thesis, Xavier Savatier, Université de Rouen

P. Sturm, Reviewer of PhD thesis, Behrooz Nasihatkon, The Australian National University

P. Sturm, President of PhD thesis, Julian Quiroga, Grenoble University

P. Sturm, President of PhD thesis, Lilian Calvet, Université de Toulouse

## TONUS Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events selection

##### 9.1.1.1. Chair of conference program committee

Emmanuel Frénod : AIMS Conference - Special Session “Homogenization Based Numerical Methods - Madrid - 7 - 11 juillet, 2014

#### 9.1.2. Journal

##### 9.1.2.1. Member of the editorial board

Emmanuel Frénod : Chinese Journal of Mathematics and Discrete and Continuous Dynamical Systems - Series S from July 2014.

Emmanuel Frénod : invited editor to a special issue in DCDS-S, « Numerical Methods Based on Two-Scale Convergence and Homogenization », to appear in 2015.

##### 9.1.2.2. Reviewer

Michel Mehrenberger for the journals: Journal of Computational Physics, Journal of Graphics Tools, Communications in Computational Physics, Electronic Journal of Qualitative Theory of Differential Equations, Applied Mathematics and Computation, Computer Physics Communications, Journal of Computational and Applied Mathematics.

Philippe Helluy for the journals: maths reviews, SINUM, IJFV, Computers and Fluids, International Journal for Numerical Methods in Fluids, ESAIM Procs, PIER Journal, Journal of Mechanical Science and Technology,

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence :

Philippe Helluy: Calcul scientifique, 69 h eq. TD, L2, Université de Strasbourg, France.

Laurent Navoret, Calcul scientifique, 65 h eq. TD, L3, Université de Strasbourg, France.

Michel Mehrenberger, Analyse Mathématique d'une variable réelle, 87.5 h eq. TD, L1, Strasbourg, France.

Michel Mehrenberger, Outils mathématiques, 26.25h eq. TD, L3, Strasbourg France.

Michaël Gutnic, Mathématiques pour les sciences du vivant, 60 h eq. TD, L1 Sciences du Vivant, Université de Strasbourg, France.

Michaël Gutnic, Statistiques pour les biologistes, 117 h eq. TD, L2 Sciences du Vivant, Université de Strasbourg, France.

Master:

Philippe Helluy, Préparation à l'agrégation, 24 h eq. TD, M2 Agrégation, Université de Strasbourg, France.

Laurent Navoret, Calcul scientifique, 31 h eq. TD, M2 Agrégation, Université de Strasbourg, France.

Michel Mehrenberger, TP Calcul Scientifique Agrégation S3, 28h eq. TD, M2 Agrégation, Strasbourg France.

Ingénieur :

Michaël Gutnic, Probabilités et Statistiques, 30 h eq. TD, Formation d'ingénieur en informatique en apprentissage, Institut des Techniques d'Ingénieur de l'Industrie, Centre de Formation d'Apprentis de l'Industrie, Conservatoire national des arts et métiers, France.

### **9.2.2. Supervision**

PhD in progress : Thi Trang Nhung Pham, Méthodes numériques pour Vlasov, October 2012, Université de Strasbourg, Advisors: Philippe Helluy, Laurent Navoret.

PhD in progress : Thomas Strub, Résolution des équations de Maxwell tridimensionnelles instationnaires sur architecture massivement multicœur, October 2011, Université de Strasbourg, Advisor: Philippe Helluy.

### **9.2.3. Juries**

Nicolas Besse was referee in the PhD defense committee of Christophe Steiner.

Philippe Helluy and Michel Mehrenberger were in the PhD defense committee of Pierre Glanc and of Christophe Steiner.

Emmanuel Frénod was member of the HdR defense committee of Evans Gouno, January 31, 2014.

Philippe Helluy was referee or in the defense committee of: T. Volkert, J. Karel, M. Etancelin, Y. Dugout, M. Mounier.

## **9.3. Popularization**

Philippe Helluy has given a conference at the "Maison des sciences" in Strasbourg. This event is proposed for the formation of middle and high school teachers. The title of the conference was "Modèles mathématiques pour la météo".

## VIRTUAL PLANTS Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. general chair, scientific chair

- Yann Guédon was the chair of the Agropolis workshop: Modeling plant development from the cellular to the organ scale (Montpellier, March 27-28th).

#### 8.1.1.2. member of the organizing committee

- Christophe Godin is a member of the scientific board of the FSPM series of conferences.
- Christophe Godin is co-organizing with Patrick Lemaire the "interdisciplinary spring school on plant and animal morphogenesis", gathering students and professors during one week of lectures, debates and practicals.

### 8.1.2. Scientific events selection

#### 8.1.2.1. member of the conference program committee

- Sarah Cohen-Boulakia is member of the following PC Conferences : SIGMOD 2015, ICDE 2015, DILS 2014 (Data integration in the life sciences), BPM 2015 (Business Process Management) and PC Workshops : TAPP (Theory and Practice of Provenance) 2014 and 2015, Sweet 2014 (Int. sigmod Workshop on scalable workflow enactment engines and technologies), BeyondMR 2015 (ICDT workshop on Algorithms and Systems for MapReduce and Beyond).

#### 8.1.2.2. reviewer

- Frédéric Boudon was referee for papers submitted to the Eurographics conference.
- Christophe Godin was referee for papers submitted to the SIGGRAPH conference.

### 8.1.3. Journal

#### 8.1.3.1. member of the editorial board

- Sarah Cohen-Boulakia is member of the Editorial board of the Journal of Data Semantics (Springer)
- Christophe Godin is an associate editor of the journal Frontiers in Plant Sciences
- Christophe Godin was a guest editor of the special issue of Annals of Botany on Functional-Structural Models of Plants (FSPMs).

#### 8.1.3.2. reviewer

- Frédéric Boudon was referee for papers submitted to Computers and Electronics in Agriculture, Agronomy and JZUS-C (Computers and Electronics).
- Yann Guédon reviewed a paper for the Journal de la Société Française de Statistique.
- Christophe Pradal reviewed a paper for the Journal Annals of Botany.
- Christophe Godin reviewed papers for PNAS, PLoS Computational Biology, Annals of Botany and reviewed a book on mathematical models of plant growth.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- Master Computer Science: Frédéric Boudon, Christophe Godin, Christophe Pradal, Benjamin Gilles [ICAR, LIRMM] and Loïc Barthe [IRIT, Toulouse], Geometric modelling, 30h, M2, University Montpellier 2, France.
- Master Biostatistics. Jointly with Montpellier 1, Montpellier 2 Universities and Agro-Montpellier. Yann Guédon teaches the stochastic modeling course <http://www.agro-montpellier.fr/um2/um1/masterbiostatistique>. This involves 21h of M2 classes.
- Christophe Godin gave a class of Master 2 on 'Phyllotaxis' in the Master of Biology at the University of Montpellier 2 (M2 - 4h).
- Christophe Godin and Yann Guédon participated to the module iPlant in the Master of bioinformatic and biomathematics (University Cheikh AntaDiop, Dakar, Sénégal) (M2 - 12h).
- Christophe Godin participated to an "Ecole Jeunes Chercheurs" organized by the Doctoral School SEVAB in Toulouse on "multiscale modeling of biological systems", 2h.
- Christophe Godin gave a series of 4 lectures on modeling in plant biology (10 hours) during 1 week at the Ecole of Physics des Houches on integrated structural cell biology.

### 8.2.2. Supervision

- PhD : Mathilde Balduzzi, "*Geometric modeling of plant canopy from 3D scanner images: Combined use of 3D information and reflected intensity for meshing*", Montpellier 2 University, 24 Nov. 2014, C. Godin.
- PhD : Jonathan Legrand, "*Vers une compréhension multi-échelle du développement floral: des réseaux auxiniques aux patrons de la dynamique cellulaire*", ENS Lyon, 7 Nov. 2014, A. Boudaoud, Y. Guédon.
- PhD : Pierre Fernique, "*A statistical modeling framework for analyzing tree-index data*", Montpellier 2 University. 10 Dec. 2014, Y. Guédon, J.-B. Durand.
- PhD : Maryline Lièvre, "*Analyse et modélisation multi-échelle de la croissance foliaire chez Arabidopsis thaliana: mise au point et test d'un pipeline d'analyses permettant une analyse intégrée du développement de la cellule à la pousse entière*", Montpellier SupAgro, 15 Dec. 2014, C. Granier, Y. Guédon.
- PhD in progress : Léo Guignard, "*Segmentation, visualization and mechanical modeling of embryonic development in the ascidian*", Montpellier 2 University, C. Godin, P. Lemaire.
- PhD in progress : Guillaume Garin, "*Développement d'un cadre générique de modélisation du couple plante – agent pathogène dans OpenAlea et d'une méthodologie de transfert vers un Outil d'Aide à la Décision*", ANRT Ciffre ITK, C. Robert, B. Andrieu, C. Pradal, C. Fournier.
- PhD in progress : Jean-Philippe Bernard, "*Adaptive mechanical model of early flower development based on 4D imaging*", Montpellier 2 University, C. Godin, B. Gilles.
- PhD in progress : Beatriz Moreno Ortega, "*Analysis and modeling of metabolic and hormonal controls of lateral root growth during their ontogeny. Application to the impact of water stress on the root architecture*", Montpellier SupAgro, B. Muller, Y. Guédon.
- PhD in progress : Sixtine Passot, "*Adaptation of millet root architecture : Phenotyping and spatio-temporal analysis of growing root systems*", Montpellier 2 University, L. Laplaze, Y. Guédon.

### 8.2.3. Juries

- Yann Guédon was a member of the Juries of his PhD students Pierre Fernique, Maryline Lièvre and Jonathan Legrand
- Frédéric Boudon was a member of the jury of the PhD defense of Jonathan Legrand, ENS Lyon.
- Christophe Godin was a member of the Jury of his PhD student Mathilde Balduzzi
- Christophe godin was a member of the Jury of the Habilitation (HDR) of Géraldine Morin ()

### **8.3. Popularization**

- Christophe Godin and Frédéric Boudon presented the Secret Code of Flowers in the context of an Inria initiative at the Science Festival in October.
- Christophe Godin gave two classes on Fractals in science at Lycée Pompidou (Castelnau-Le-Lez).
- Yann Guédon gave a class about the analysis of plant architecture for high-school students "Math C2+" organized by Montpellier 2 University.

## VISAGES Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. General chair, scientific chair

- C. Barillot co-Chair of Miccai 2014, Boston MA - Sept 14-18 2014

#### 9.1.2. Scientific events selection

##### 9.1.2.1. Chair of conference program committee

- C. Barillot Program Committee Chair of Miccai 2014, Boston MA - Sept 14-18 2014

##### 9.1.2.2. Member of the conference program committee

- C. Barillot was area chair of SPIE Medical Imaging: Image Processing, IEEE ISBI, TPC member of ESMRMB.

##### 9.1.2.3. Reviewer

- O. Commowick was TPC member of MICCAI'2014, IEEE ISBI'2014.

#### 9.1.3. Journal

##### 9.1.3.1. Member of the editorial board

- C. Barillot is member of Editorial Boards of IEEE Transactions on Medical Imaging, Medical Image Analysis, Current Medical Imaging Reviews, ISRN Signal Processing and is Editor-in-Chief of Frontiers in ICT: Computer Image Analysis.

##### 9.1.3.2. Reviewer

- IEEE TIP (CB), IEEE TMI (OC, PM), Medical Image Analysis (CB, SP, OC), NeuroImage (CB, OC), Neuroimage clinical (CB), Computer Methods and Programs in Biomedicine (CB), Comput. Med Im & Graph (CB), Comp Meth & Prog in Biomed (CB), IEEE Signal Proc. Let. (CB), Sensors (CB), Magnetic Resonance in Medicine (EC), Plos-ONE (CB, EC), IJCT (CB), IJSISE (CB), IICVR (CB), Journal of Mathematical Imaging and Vision (PM), Neurobiology of Aging (IC).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Teaching on 3D Medical Imaging (visualization, segmentation, fusion, management, normalization) in the following tracks:

Master 2 SIBM, University of Angers-Brest-Rennes: 26h (C. Barillot, O. Commowick, S. Prima, I. Corouge, E. Bannier, J.-Y. Gauvrit):

C. Barillot is responsible for one semester.

J.-Y. Gauvrit is the coordinator for the Master.

Master 1 SIBM, University of Rennes: 5h (S. Prima)

Ecole Supérieure d'Ingénieur de Rennes (ESIR): 60h in medical imaging (P. Maurel)

Other topics:

Ecole Supérieure d'Ingénieur de Rennes (ESIR): 60h in general image processing (P. Maurel) and 60h in algorithmics and complexity (P. Maurel)

ENS Cachan-Bretagne: 24h in introduction to image processing (P. Maurel)

### 9.2.2. Supervision

PhD Hrishikesh Deshpande, Dimensionality Reduction and Statistical Learning for Computational Modeling of Natural Evolution of Brain Pathologies, Inria, from December 2012, Christian Barillot, Pierre Maurel

PhD Renaud Hédouin, Biomarker discovery in brain imaging by using diffusion MRI, Inria/Inserm, from November 2013, Christian Barillot, Olivier Commowick

PhD Yogesh Karpate, Quantitative analysis of MRI in Multiple Sclerosis in the context of the clinically isolated syndrome, INSERM, from December 2011, Christian Barillot, Olivier Commowick

PhD Lea Itmi, Quantitative Analysis Of Arterial Spin Labeling MRI For Robust Parametric Information Of Perfusion Maps, Inria / Siemens, from Mar 2014, Christian Barillot, Pierre Maurel

PhD Lorraine Perronnet, Neurofeedback Using Virtual Reality And Combining Eeg-Mri For Brain Rehabilitation, Inria/CominLabs Hemisfer project, from Dec 2013, Christian Barillot, Maureen Clerc (Inria Sophia-Antipolis), Anatole Lecuyer (HYBRID project), Fabien Lotte (Inria Bordeaux)

PhD Hélène Raoult, "Angio-RM morphologique et dynamique sans injection de produit de contraste dans l'exploration des pathologies neurovasculaires", CHRU Rennes, Nov. 2011, defended in October 2014, Elise Bannier, Jean-Yves Gauvrit

### 9.2.3. Juries

- C. Barillot: PhD, Reviewer, Maxime Taquet, University of Louvain, Jan 2014
- C. Barillot: PhD, President, Celine Louarpe, Univ. Pierre et Marie Curie, Jan 2014
- C. Barillot: PhD, Reviewer, Viviana Siless, Université Paris Sud, July 2014
- C. Barillot: HDR, President, François Rousseau, June 2014
- C. Barillot: PhD, Reviewer, Zehan Wang, Imperial College, London, Nov. 2014
- C. Barillot: PhD, Reviewer and President, Erin Stretton, Mines Paris-Tech, Nov. 2014
- C. Barillot: PhD, President, Aurélie Emilien, Univ. of Bordeaux, Dec. 2014

## 9.3. Popularization

- Conférence/débat public "Le partage de données d'imagerie en santé: Noeud FLI-IAM", Journées Françaises de Radiologie
- Conférence/débat public "Les biomarqueurs d'imagerie" Collège de France
- Conférence/débat public Technoférence "E-santé", Pôle Image et Réseaux
- Exposition Stand démonstration Inria, Journées Françaises de Radiologie
- Presse écrite "Equipe de recherche Visages et ses projets innovants", Revue CAPITAL
- Site web de vulgarisation "Projet Hemisfer", lettre d'information Emergences Inria
- Site web de vulgarisation : reportage photo Serimedis/inserm
- Site web de vulgarisation Emergence Inria: <http://emergences.inria.fr/emergences-2014/newsletter-n30/L30-SHANOIR>



## ALGORILLE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Organizing committee membership

Lucas Nussbaum was a member of the organizing committee for Reppar (1st International Workshop on Reproducibility in Parallel Computing, held together with Euro-Par 2014).

Martin Quinson was a member of the organizing committee for the Fourth SimGrid Users' Days (Le Bono, Brittany, France), and of the PUF/JLPC Summer school on Performance Metrics, Modeling and Simulation of Large HPC Systems (Sophia Antipolis, France).

### 8.1.2. Scientific events selection

#### 8.1.2.1. Conference program committee membership

Lucas Nussbaum was a member of the PC for Reppar (1st International Workshop on Reproducibility in Parallel Computing, held together with Euro-Par 2014), CloudCom'2014 (HPC on Cloud track), WETICE'2014 (Convergence of Distributed Grid, Cloud and their Management track), Grid'5000 Spring School 2014, and ComPAS'2014.

Martin Quinson was a member of the PC for IPDPS'14 (ACM/IEEE International Parallel and Distributed Processing Symposium), SimulTech'14 (In cooperation with ACM SIGSIM) and PADS'14 (ACM SIGSIM Workshop on Principles of Advanced Discrete Simulation).

### 8.1.3. Journal

#### 8.1.3.1. Editorial board membership

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

In 2014, the **episcience** platform for open access journals has been created in a joint effort by Inria and CNRS. DMTCS will be one of the first journals passing to this platform and we have been a driving force in the definition and debugging of the new platform, see [16].

Since 2013, M. Quinson is a member of the editorial board of the *Interstices* journal (edited by Inria in collaboration), aiming at increasing the scientific outreach of informatic.

#### 8.1.3.2. Reviewing Activities

Jens Gustedt has served as a reviewer for *Social Network Analysis and Mining* and *IEEE Transactions on Parallel and Distributed Systems*.

Lucas Nussbaum was a reviewer for *Security and Communication Networks*, and *IEEE Transactions on Emerging Topics in Computing*.

Sylvain Contassot-Vivier is a regular reviewer for the *Engineering Applications of Artificial Intelligence* journal.

### 8.1.4. Standardization

Since Nov. 2014, Jens Gustedt is a member of the ISO working group SC22-WG14 for the standardization of the C programming language.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

IUT Nancy-Charlemagne, Université de Lorraine: Lucas Nussbaum, Installation of Linux, 20 ETD, Licence pro ASRALL (L3), Université de Lorraine, France.

IUT Nancy-Charlemagne, Université de Lorraine: Lucas Nussbaum, Outils Libres, 16 ETD, Licence pro ASRALL (L3), Université de Lorraine, France.

IUT Nancy-Charlemagne, Université de Lorraine: Lucas Nussbaum, Administration des infrastructures avancées, 12 ETD, Licence pro ASRALL (L3), Université de Lorraine, France.

École CNRS "Informatique pour le calcul scientifique": Lucas Nussbaum, Gestion de versions avec Git, 3h.

TELECOM Nancy, Université de Lorraine: Lucas Nussbaum, Introduction au Logiciel Libre et au projet Debian, 2h.

TELECOM Physique Strasbourg: Jens Gustedt, parallélisme, 10h ETD.

ENSIIE Strasbourg: Jens Gustedt, programmation avancée, 20h ETD.

Département Informatique, Université de Strasbourg: Jens Gustedt, systèmes concurrents, 20h ETD.

TELECOM Nancy, Université de Lorraine: Martin Quinson, "Algorithmique et Programmation," 48 ETD, 1ere année (L3), Université de Lorraine, France.

TELECOM Nancy, Université de Lorraine: Martin Quinson, "Langage C et programmation shell," 48 ETD, 1ere année (L3), Université de Lorraine, France.

TELECOM Nancy, Université de Lorraine: Martin Quinson, "Programmation Système," 24 ETD, 2ème année (M1), Université de Lorraine, France.

Faculté des Sciences et Technologies, Université de Lorraine: Sylvain Contassot-Vivier, "Architectures logicielles avancées", 19 ETD, M2, Université de Lorraine, France.

Faculté des Sciences et Technologies, Université de Lorraine: Sylvain Contassot-Vivier, "Informatique graphique", 63.5 ETD, L1, Université de Lorraine, France.

Faculté des Sciences et Technologies, Université de Lorraine: Sylvain Contassot-Vivier, "Sécurité", 10 ETD, L3, Université de Lorraine, France.

TELECOM Nancy, Université de Lorraine: Sylvain Contassot-Vivier, "Algorithmique Parallèle", 35 ETD, 2ème année (M1), Université de Lorraine, France.

Faculté des Sciences et Technologies, Université de Lorraine: Sylvain Contassot-Vivier, "Algorithmique et Programmation", 16 ETD, L1, Université de Lorraine, France.

Faculté des Sciences et Technologies, Université de Lorraine: Sylvain Contassot-Vivier, "Algorithmique et Programmation", 12 ETD, L2, Université de Lorraine, France.

Faculté des Sciences et Technologies, Université de Lorraine: Sylvain Contassot-Vivier, "Algorithmique et Programmation", 32.5 ETD, L3, Université de Lorraine, France.

### 8.2.2. Supervision

PhD in progress: Tomasz Buchert, *Orchestration of experiments on distributed systems*, since Oct 2011, Jens Gustedt & Lucas Nussbaum.

PhD in progress: Marion Guthmuller, *Dynamic verification of distributed applications, using a model-checking approach*, since Oct 2011, Sylvain Contassot-Vivier & Martin Quinson.

PhD in progress: Mariem Saied, *Ordered Read-Write Locks for Multicores and Accelerators*, since Nov 2013, Jens Gustedt & Gilles Muller.

Internship: Raphaël Rieu-Helft, *Étude de la multiplication binaire et approches dynamiques pour la factorisation de nombres*, June and July 2014, Sylvain Contassot-Vivier & Nazim Fatès (MAIA team).

### 8.2.3. Juries

Lucas Nussbaum was a member of the recruitment committee for an associate professor (MCF) in computer science at ENS Lyon.

Sylvain Contassot-Vivier was member and president of the PhD committee of Carlos Carvajal. He is also the Loria referent of several PhD students (referents have to follow and check the regular progress of the PhD).

### 8.3. Popularization

Jens Gustedt is regularly blogging about efficient programming, in particular about the **C programming language**. He also is an active member of the **stackoverflow community** a technical Q&A site for programming and related subjects. A book about **modern C** is in preparation.

In collaboration with G. Oster, Coast team of Inria Nancy Grand-Est, M. Quinson develops a **pedagogic platform**. This tool aims at providing an environment that is both appealing for the student, easy to use for the teacher, and efficient for the learning process. Since 2014, an Inria ADT project aims at changing this practical tool into an experimental platform to study the didactic of programming.

M. Quinson is co-leading a working group on the teaching of computer science in the LORIA laboratory. He served both as a program chair and a local chair for a nation-wide two-days workshop gathering about hundred people involved in the introduction of computer science in the French secondary education: university lecturers in charge of teaching to the prospective CS teachers, regional heads of the Education minister accompanying this reform and producer of teaching resources. He also served both as a program chair and local chair for a regional gathering of CS teachers of the secondary wanting to exchange their good practices. This initiative, initiated in Nancy, will spread in several other French cities in 2015.

Either as a speaker or as a co-organizer, M. Quinson participated in several events that aim the popularization of computer science. These targeted a large variety of public, kids and pupils (Telecom Nancy in November), university students (Inria in March), mathematics teachers (APMEP Lorraine in March), CS teachers (SIF-ISN day in June), or the general public (Fête de la science in November).

S. Contassot-Vivier has participated to Loria animation days towards high-school visitors. In this context he has used the material and games co-designed by M. Quinson and others in the context of unplugged computer science teaching.

## ALPINES Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. General chair, scientific chair

- Laura Grigori: Co-Chair, Parallel Matrix Algorithms and Applications Workshop, Lugano, Switzerland, June 2014.
- Laura Grigori: Program Director of the SIAM SIAG on Supercomputing (SIAM special interest group on
- Frédéric Hecht: Organizing the 6th FreeFem++ days (December 2014, paris)
- Frédéric Hecht: responsable de la session Maillage, Horizon Maths 2014, FSMP and IFPen, Reuil-Malmaison. supercomputing), January 2014 - December 2015.

##### 8.1.1.2. Member of the organizing committee

- Laura Grigori: Member of organizing committee, SIAM Conference on Parallel Processing and Scientific Computing, February 2014, Portland, USA.
- Laura Grigori: Member of Organizing Committee, Combinatorial Scientific Computing Workshop, Lyon 2014.

#### 8.1.2. Scientific events selection

##### 8.1.2.1. Responsible of the conference program committee

- Laura Grigori: Chair of Parallel Numerical Algorithms Area, EuroPar Conference September 2014.

##### 8.1.2.2. Member of the conference program committee

- Laura Grigori: Member of Program Committee of IEEE International Parallel and Distributed Processing Symposium, IPDPS 2015.
- Laura Grigori: Member of Program Committee of HiPC 2014, 19th IEEE Int'l Conference on High Performance Computing.

#### 8.1.3. Journal

##### 8.1.3.1. Member of the editorial board

- 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://www.siam.org/books/series/se.php>. Since March 2014.
- Frédéric Nataf: Member of the editorial board of Journal of Numerical Mathematics since 2012.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence : Xavier Claeys, 2MOI1: Orientation et Insertion Professionnelle, 40 hrs de travaux pratiques, niveau L2, Université Pierre et Marie Curie, France

Master : Xavier Claeys, MM009: Informatique de base, 72 hrs de travaux pratiques en programmation C++, niveau M1, Université Pierre et Marie Curie, France

Master : Xavier Claeys, NM406: Résolution des EDP par la méthode des éléments finis, 18 hrs de travaux pratiques en programmation C++, niveau M2, Université Pierre et Marie Curie, France

Master : Xavier Claeys, MM031: Informatique Scientifique, 44 hrs de de cours magistral, niveau M1, Université Pierre et Marie Curie, France

Master: Laura Grigori, Course on *Calcul haute performance, algorithmes parallèles d'algèbre linéaire à grande échelle, stabilité numérique*, Master 2 Mathématiques & Applications, UPMC, 24 hours.

Master : Frederic Hecht, Tutorials of practical C++ programming for the course *Informatique de Base*, 36 hours, Master 1 Mathématiques et Applications, UPMC, France

Master : Frederic Hecht, Course on Numerical methods for fluid mechanics, 30 hours, Master 2 Mechanics, UPMC, France.

Master : Frederic Hecht, From PDEs to their resolution by finite element methods, 36 hours per year, Master 2 UPMC, France.

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.

### 8.2.2. Supervision

PhD : Pierre Jolivet, defended September 2014, University of Grenoble, advisors F. Nataf, C. Prudhome and F. Hecht

PhD : Sophie Moufawad, Enlarged Krylov Subspace Methods and Preconditioners for Avoiding Communication, defended December 2014, UPMC, advisor L. Grigori

PhD : Nicole Spillane, (funded by Michelin), co-advisor F. Nataf

PhD : Sylvain Auliac, defended 2014, UPMC, advisor F. Hecht

PhD : Pierre-Henri Tournier, defended 2015, UPMC, advisor F. Hecht and M. Comte

PhD in progress : Sebastien Cayrols, since October 2013 (funded by Maison de la simulation), advisor L. 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

### 8.2.3. Juries

- Laura Grigori: Phd thesis, Laurent Berenguer, Rapportrice, Université Claude Bernard, Lyon 1, Mathématiques Appliquées, defended October 2014.
- Laura Grigori: HDR habilitation of Clement Pernet, Rapportrice, Université de Grenoble, Informatique, defended November 2014.
- F. Nataf: HDR habilitation of Michel Belliard, Rapporteur, Université de Marseille, Applied Mathematics, defended in November 2014.
- F. Nataf: HDR habilitation of Marion Darbas, Université de Picardie, defended in December 2014.
- F. Nataf: Phd thesis, Abdoulaye Samake, Université de Grenoble, Applied Mathematics, defended in December 2014.
- F. Hecht: HDR habilitation of Mme. Naïma Debit, Rapporteur, Université Claude Bernard Lyon I, defended in December 2014.
- F. Hecht: Phd thesis, M. Ange Toulougoussou Université Pierre et Marie Curie , defended in December 2014.
- F. Hecht: Phd thesis, M. Jimmy Mullaert, Université Pierre et Marie Curie, defended in December 2014.
- F. Hecht: Phd thesis, M. Stéphane Veys Université Joseph Fourier, Grenoble , defended in November 2014.
- F. Hecht: Phd thesis, M. Jeremy Veysset, CEMEF - Mines ParisTech, Sophia Antipolis Grenoble , defended in November 2014.
- F. Hecht: Phd thesis, M. Jad Dakroub, Université Pierre et Marie Curie et Université Saint Joseph de Beyrouth defended in October 2014.

## ASAP Project-Team

# 9. Dissemination

## 9.1. Promoting scientific activities

Davide Frey served in the program committees of the following conferences:

*13th IEEE International Conference on Peer-to-Peer Computing (P2P)*, London, England, Sep 2014.

*ACM/IFIP/USENIX International Conference on Middleware (Middleware)*, Bordeaux, France, Dec 2014.

*Middleware for Next Generation Internet Computing (MW4NG)*, Bordeaux, France, Dec 2014.

*34th International Conference on Distributed Computing Systems (ICDCS)*, Madrid, Spain, Jul 2014.

*IEEE International Parallel & Distributed Processing Symposium (IPDPS)*, Phoenix, Arizona, USA, May 2014.

George Giakkoupis organized the *Workshop on Randomized Algorithms for Distributed Computing and Networks (RADICON)*, Rennes, France, Jul 2014.

George Giakkoupis served in the program committees of the following conferences:

*21st International Colloquium on Structural Information and Communication Complexity (SIROCCO)*, Takayama, Japan, Jul 2014.

*28th International Symposium on Distributed Computing (DISC)*, Austin, TX, USA, Oct 2014.

George Giakkoupis served in the conference committee of the *ACM Symposium on Principles of Distributed Computing (PODC)*, Paris, France, Jul 2014.

Anne-Marie Kermarrec is a member of the *Academia Europea* since 2013.

Anne-Marie Kermarrec is a member of the scientific committee of the *Société Informatique de France*.

Anne-Marie Kermarrec is a member of the *Inria scientific board (Bureau du comité des projets)* in Rennes.

Anne-Marie Kermarrec was the chair of the *ACM Software System Award Committee* in 2014.

Anne-Marie Kermarrec is a member of the *ACM Software System Award Committee* since 2009.

Anne-Marie Kermarrec is a member of the *ERC panel for Consolidator Grants* since 2013.

Anne-Marie Kermarrec is an associate editor of *IEEE Internet Computing*.

Anne-Marie Kermarrec is an associate editor of the *Springer Computing Journal*.

Anne-Marie Kermarrec was a member of the hiring committee at EPFL in 2014.

Anne-Marie Kermarrec is the vice-chair of *ACM Eurosys*.

Anne-Marie Kermarrec served in the program committees of the following conferences:

*International Conference on Distributed Computing Systems (ICDCS)*, Madrid, Jul 2014.

*International Conference on Extending Database Technology (EDBT)*, Athens, Greece, Mar 2014.

*International Colloquium on Automata, Languages and Programming (ICALP)*, Copenhagen, Sweden, Jul 2014.

*ACM/IFIP/USENIX International Conference on Middleware (Middleware)*, Bordeaux, France, Dec 2014.

*International Conference on Networked Systems (NETYS)*, Marrakech, Morocco, May 2014.

*ACM Eurosys*, Amsterdam, The Netherlands, Apr 2014.

*ACM International Systems and Storage Conference (SYSTOR)*, Haifa, Israel, Jun 2014.

*International Conference on Distributed Computing Systems (ICDCS)*, Madrid, Jul 2014.

*International Conference on Extending Database Technology (EDBT)*, Athens, Greece, Mar 2014.

Anne-Marie Kermarrec is a member of the steering committees of *ACM Eurosys*, *Middleware*, and the *Winter School on Hot Topics in Distributed Systems*.

Anne-Marie Kermarrec is a member of the technical committee of the *ACM Conference on Online Social Networks*.

Anne-Marie Kermarrec co-organized the *Workshop Inria/Technicolor on Distributed Storage Systems*, Rennes, Dec 2014.

Anne-Marie Kermarrec co-organized the *Web Alter-Ego Workshop*, EPFL, Lausanne, Switzerland, Jan 2014.

Anne-Marie Kermarrec participated in the Forum Liberation de Rennes, Apr 2014.

Anne-Marie Kermarrec wrote two articles on the gender gap in computer science: (i) *Informatique [nom féminin]*, on the blog of the SIF Binaire on Mar 2014 (<http://binaire.blog.lemonde.fr/2014/03/07/informatique-nom-feminin-2/>); (ii) *Computer Science: Too young to fall into the gender gap*, IEEE Internet Computing [15].

Michel Raynal was in the editorial board of the journals: *IEEE Transactions on Computers*, *Journal of Parallel and Distributed Computing*, *Journal of Computer Systems Science and Engineering*, *Foundations of Computing and Decision Sciences*.

Michel Raynal served as a PC co-chair of the *International Conference on Networked Systems (NETYS)*, Marrakech, Morocco, May 2014.

Michel Raynal served in the program committee of the *ACM Symposium on Principles of Distributed Computing (PODC)*, Paris, France, Jul 2014.

Michel Raynal was the Award chair of the *IEEE Symposium on Reliable Distributed Systems (SRDS)* 2014.

Michel Raynal was a *European Representative in the IEEE Technical Committee on Distributed Computing*.

Michel Raynal was an international liaison co-chair of *ICDCS 2013*.

François Taïani served in the program committees of the following conferences:

*34rd International Conference on Distributed Computing Systems (ICDCS)*, Madrid, Spain, Jun 2014.

*33rd IEEE Symposium on Reliable Distributed Systems (SRDS)*, Nara, Japan, Oct 2014.

*14th International IFIP Conference on Distributed Applications and Interoperable Systems (DAIS)*, Berlin, Germany, Jun 2014.

François Taïani served as PC Co-Chair of the *15th ACM/IFIP/USENIX Middleware Conference (Middleware)*, Dec 2014, Bordeaux, France.

François Taïani is a member of the Steering Committee of the *International IFIP Conference on Distributed Applications and Interoperable Systems (DAIS)* since 2013.

Juan Manuel Tirado Martin was a program co-chair of the conferences:

*17th IEEE International Conference on Computation Science and Engineering (CSE)*, Chengdu, China, 2014.

*6th IEEE International Conference on Cloud Computing Technology and Science (Cloud-Com)*, Singapore, 2014.

*Middleware for Next Generation Internet Computing (MW4NG)*, Bordeaux, France, 2014.

## 9.2. Invited talks

George Giakkoupis. *Rumor spreading and graph expansion*. CS and SE Seminar, Concordia Univ., Montreal, Canada, Mar 10 2014.

Anne-Marie Kermarrec. *Privacy-preserving distributed collaborative filtering*. Lecture at NICTA, Sydney, Australia, Jan 2014.

Anne-Marie Kermarrec. *Catch me if you can: Privacy-preserving micro-blogging*. Workshop on Distributed Systems, Univ. of Sydney, Jan 2014.

Anne-Marie Kermarrec. Scalable infrastructures for personalization. Morgenstern Colloquium, Inria Sophia-Antipolis, Apr 2014.

Anne-Marie Kermarrec. *Privacy-preserving distributed collaborative filtering*. Spring School METIS 2014, Marrakech, May 2014.

Anne-Marie Kermarrec. *Scalable Infrastructures for Personalization: from and ERC Grant to a startup*. Symposium on the Future of Cloud Computing, EIT-ICT Labs, Rennes, Jun 2014.

Anne-Marie Kermarrec. *Scalable infrastructures for personalization*. Yandex, Moscow, Jun 2014

Anne-Marie Kermarrec. *Scalable infrastructures for personalization*. MPI SWS Distinguished Lecture, Saarbrücken, Nov 2014.

Michel Raynal. *What can be computed in a distributed system?* Workshop “From Programs to Systems: The Systems Perspective in Computing” in honor of Turing Award Winner Professor Joseph Sifakis, Apr 2014.

Michel Raynal. *From Turing to the clouds (on the computability power of distributed systems)*. 21th International Colloquium on Structural Information and Communication Complexity (SIROCCO), Jul 2014.

## 9.3. Teaching, supervision, juries

### 9.3.1. Teaching

Licence (bachelor) courses:

Simon Bouget, APF (Algorithmique et Programmation Fonctionnelle), 40 HEQTD (2 x 10 séances de 2 heures de TP), L1, Univ. Rennes 1 (ISTIC), France.

Davide Frey, Scalable Distributed Systems, 10 hours, M1, EIT/ICT Labs Master School, Univ. Rennes 1, France.

Davide Frey, Scalable Distributed Systems, 5 hours, M2, Univ. Rennes 1, France.

Michel Raynal, Introduction to distributed computing, 20h, M1, Univ. Rennes, France.

Michel Raynal, Distributed Computability, 20h, M2, Univ. Rennes, France.

François Taïani, Introduction to Operating Systems, 16h, 1st year of Engineering School (L3), ESIR / Univ. Rennes 1, France.

Master courses:

François Taïani, Synchronization and Parallel Programming, 48h, 2nd year of Engineering School (M1), ESIR / Univ. Rennes 1, France.



François Taïani, Distributed Systems, 48h, 3rd year of Engineering School ( M2), ESIR / Univ. Rennes 1, France.

François Taïani, Programming Technologies for the Cloud, 32h, M2, Univ. Rennes 1, France.

### 9.3.2. Supervision

PhD: Arnaud Jégou. *Harnessing the power of the implicit and explicit social networks through decentralization*. Sep 23 2014. Supervised by Davide Frey and Anne-Marie Kermarrec.

PhD in progress: Fabien André. *Calcul sur des données hétérogènes et modifiables dans les plateformes à large-échelle*. Started Nov 18 2013. Supervised by Anne-Marie Kermarrec (and Nicolas Le Scouarnec).

PhD in progress: Simon Bouget. *EMILIO: Emergent Middleware for extra-Large-scale self adaptation*. Started Sep 1 2014. Supervise by François Taïani

PhD in progress: Resmi Ariyattu Chandrasekharannair. *Towards decentralized federations for plug-based decentralized social networks*. Started Dec 1 2013. Supervised by François Taïani.

PhD in progress: Stéphane Delbruel. *Towards a decentralized embryomorphic storage System*. Started Oct 1 2013. Supervised by François Taïani and Davide Frey (since Oct 1 2014).

PhD in progress: Ali Gouta. *Caching and prefetching for efficient video services in mobile networks*. Started Jan 2 2012. Supervised by Anne-Marie Kermarrec (and Yannick Le Louédec).

PhD in progress: Nupur Mitall. *Infrastructure et algorithmes pour la recommandation de contenus cross application*. Started Dec 1 2013. Supervised by George Giakkoupis and Anne-Marie Kermarrec.

PhD in progress: Javier Olivares. *Web-Alter-Egos Platform: A peer-sourcing infrastructure for personalized privacy-aware event processing*. Started Sep 1 2013. Supervised by Anne-Marie Kermarrec.

PhD in progress: Antoine Rault. *Privacy through decentralization*. Started Oct 1 2012. Supervised by Davide Frey and Anne-Marie Kermarrec.

PhD in progress: Pierre-Louis Roman. *Epidemic distributed convergence for decentralized social networking*. Started Oct 1 2014. Supervised by Davide Frey and François Taïani.

PhD in progress: Julien Stainer. *Calculabilité distribuée*. Started Oct 1 2011. Supervised by Michel Raynal.

### 9.3.3. Juries

Anne-Marie Kermarrec was a member of the PhD juries for:

Ercan Ucan. *Data storage, transfers and communications in personal clouds*. ETH, Zurich, Feb 28 2014.

Oana Gog. *Matching user accounts across online social networks: Methods and application*. Univ. Paris 6, May 21 2014.

Abdelberi Chaabane. *Online social networks: Is it the end of privacy?*. Univ. Grenoble, May 22 2014.

Anne-Marie Kermarrec was a member of the HDR jury for Xavier Bonnaire. *Adaptabilité dans les systèmes répartis à large-échelle*. Univ. Paris 6, Jul 2014.

François Taïani was a member of the PhD juries for:

Bassem Debbabi. *Cube: A decentralised architecture-based framework for software self-management*. Univ. Grenoble (LIG), Jan 28 2014.

Adel Noureddine. *Towards a better understanding of the energy consumption of software systems*. Univ. Lille 1 (LIFL / Inria Lille), Mar 19 2014.

Romarc Ludinard. *Caractérisation locale de fautes dans les systèmes large échelle*. Univ. Rennes 1 (Inria Rennes - Bretagne Atlantique), Oct 2 2014.

François Taïani was a member of the HDR juries for:

Sébastien Gambs. *Respect de la vie privée dans la société de l'information*. Univ. Rennes 1, Jun 23 2014.

Yérom-David Bromberg. *Towards interoperable distributed systems* Univ. Bordeaux, Nov 28 2014.

## ASCOLA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- A. Lebre and M. Sellami organized cloudDays@Nantes. Supported by the ASR System consortium and the Inria Large Scale Initiative Hemera, this two day national event gathered 25 researchers and phd students to discuss about latest results in Virtualization and Cloud Computing <sup>0</sup>.
- A. Lebre was local chair of the 2014 Simgrid Users Days (30 participants).
- J.-C. Royer and M. Sellami were co-chair of the first PACS track (Privacy and Accountability for Software and Cloud Services) at WETICE 2014.

#### 9.1.1.2. Member of the organizing committee

- Green Lab Center: T. Ledoux and J.-M. Menaud are members of the board of the Green Lab Center association. This association promotes and disseminates Green IT practices and research prototypes to the world of education, research and companies <sup>0</sup>.
- M. Südholt has been a member of the steering committee of the international conference Modularity.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- A. Lebre was member of the program committees of IEEE IC2E 2014, SCRAMBL 2014, IEEE BigData 2014, IEEE CloudCom 2014, and IEEE BDCloud 2014.
- T. Ledoux was member of the program committees of the following conferences: the 29th Symposium On Applied Computing (SAC'14) - track Software Engineering Aspects of Green Computing, the 3rd International Conference on Eco-friendly Computing and Communication Systems (ICECCS'14), the 13th Workshop on Adaptive and Reflective Middleware (ARM'14) @ Middleware, the workshop CrossCloud'14 @ INFOCOM, the workshop CrossCloud Brokers'14 @ Middleware, the 3rd International Workshop on Green and Sustainable Software (GREENS'14) @ ICSE.
- J.-M. Menaud has served on the program committee of the third SMARTGREENS 2014, IEEE ICC SAC, The Fifth CLOUD COMPUTING 2014, the third CAGing 2014, the IEEE Globecom 2014, the 5th IEEE ICICS, the first SDS, VHPC'14 and CFSE-10.
- J. Noyé has been a member of the program committee of Modularity '14.
- J.-C. Royer was a member of the program committees of WETICE 2014, CAL 2014, CIEL 2014, ICIS 2014, and JLDP 2014. He participated in the evaluation of a project for the Israel Science Foundation.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- M. Südholt has been a member of the editorial board of the Springer journal "Transactions of Aspect-Oriented Software Development" (TAOSD).

#### 9.1.3.2. Reviewer

- A. Lebre has been a reviewer for the JPDC and the Cluster Computing Journals.

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<sup>0</sup>CloudDays@Nantes, 2014.

<sup>0</sup>Green Lab Center

- J. Noyé has been a reviewer for “Transactions on Aspect-Oriented Software Development”, “Software: Practice and Experience” and “Science of Computer Programming”.
- M. Südholt has been a reviewer for IEEE “Transactions in Software Engineering” (TSE) and the Springer journal “Transactions on Aspect-Oriented Software Development” (TOASD).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

The team is involved in the following undergraduate and graduate-level programs at Mines Nantes and University of Nantes (the institutions all of eaching staff belongs to):

- The team is a main contributor to the **engineering program of EMN**.
- Within this engineering program, the team is steering, chairing and the main contributor to a two-year **graduate-level informatics specialization**. H. Grall is managing this program.
- Since 2009 our team has defined and set up a new three-year **engineering program on software engineering**. T. Ledoux is managing this program.

The team has also been involved in the following MSc programs that have been carried out with partners from French and foreign universities:

- The team participates in the **MSc program “Alma”** on software architecture and distributed systems, a joint program steered by colleagues from University of Nantes. In this context, we are responsible for a 48-hour module on advanced software composition and take part in the program’s governing board. M. Südholt is managing the participation of Mines Nantes in this program.
- Members of the team have taught different **courses at different study levels in Rennes** mainly organized by University of Rennes and the research institutes IRISA and Inria.

ASCOLA members have taught for about 210 hours on average in 2014 (hours of presence in front of students). Hereby, we have taken into account that researchers and some professors have not taught at times. In addition, another significant part of the program is taught by temporary and external staff, whose participation is managed by ASCOLA members.

In addition, J. Noyé was deputy for teaching of the Computer Department until March, 31.

### 9.2.2. Supervision

The team has been supervising 18 PhD thesis in 2014, of which six have been co-supervised with external partners (three with foreign partners from U. Chile; TU Darmstadt, Germany; VU Brussel, Belgium), two with another Inria team (Myriads from Rennes) and one with the French TASC team from Mines Nantes.

Six PhD theses have been defended this year. Mayleen Lacouture on chemical programming for the web; Guilhem Jaber on the extension of logics for theorem provers using forcing; Diana Allam on service interoperability and securing service compositions; Guillaume Le Louët on energy management in data centers; Ismaël Figueroa on formal approaches for correct software composition; Charles Prud’homme on the structuring of constraint solvers.

Two members of the team have been preparing an HDR in 2014 for a defense in 2014.

### 9.2.3. Juries

- J.-C. Royer was a member of the PhD committees of Cosmin Dumitrescu (Université Paris I), Hamzeh Eyal Salman (Université de Montpellier II), Diana Allam (Mines de Nantes), Ahmad Kheir (Université de Nantes and Université Libanaise), and Hamza Samih (Université de Rennes I).
- A. Lebre was a member of the PhD committee of Alexandre Lissy, “Utilisation de méthodes formelles pour garantir des propriétés de logiciels au sein d’une distribution : exemple du noyau Linux”, University of Tours, March 2014.

- J.-M. Menaud was a reviewer of the PhD of : Gueérout Tom (Dec. 5, 2014 on “Ordonnement sous contraintes de Qualite´ de Service dans les Clouds” in Toulouse), Sébastien Schinella (Dec. 2, 2014 on “Contribution a` l’étude de l’Efficacite´ énergetique des Services TIC” in Paris), Aurélien Wailly (Sep. 15, 2014 on “Architecture de se´curite´ de bout-en-bout pour les environnements cloud” in Paris), Djawida Dib (Jul. 7, 2014 on “Optimizing PaaS Provider Profit under Service Level Agreement Constraints” in Rennes), Tran Giang Son (Jun. 4, 2014 on “Cooperative Resource Management in the Cloud” in Grenoble), Amit Sangroya (Apr. 24, 2014 on “Towards Dependability and Performance Benchmarking for Cloud Computing Services” in Grenoble).
- M. Südholt has served as reporting member of the examination committee of Mohamed Aly at TU Darmstadt, Germany, in Nov. 2014.

## ATLANMOD Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

The AtlanMod team has coorganized the following events:

- A. Gómez was publicity co-chair for the 10th European Conference on Modelling Foundations and Applications (ECMFA 2014).
- M. Tisi has coorganized the Scalable Model Driven Engineering Workshop (BigMDE'14) within the STAF federated conference.
- J. Cabot coorganized the CloudMDE workshop within the MoDELS Conference and was the demo co-chair for the International Conference on Web Engineering (ICWE)

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

J. Cabot was the PC Cochair for the 10th European Conference on Modelling Foundations and Applications (ECMFA 2014)

#### 8.1.2.2. Member of the conference program committee

Participation to conference program committees/boards:

- Jordi Cabot:
  - International: International Conference on Model-Driven Engineering Language and Systems, European Conference on modeling foundations and applications, International Conference on Web Engineering, International Conference on Advanced Information Systems Engineering, International Conference on Model Transformations, Automated Software Engineering Conference, OCL workshop.
  - National: French national conference on MDE, Spanish national conference on MDE.
- Massimo Tisi:
  - International: International Conference on Model Transformation (ICMT2014), Software Language Engineering conference (SLE2014 - Industrial Track), Transformation Tool Contest (TTC2014), International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM2014)
- Gerson Sunye:
  - International: International Conference on Model Transformation (ICMT2014), International Conference on Software Engineering and Knowledge Engineering, International Workshop on Large-Scale Testing, International Workshop on Testing The Cloud.
- Salvador Martínez:
  - International: Metamodelling for Healthcare Systems (MMHS) Workshop
- Javier Canovas:
  - International: European Conference on Modelling Foundations and Applications, International Conference on Web Engineering, International Conference on Model Driven Engineering Languages and Systems, International Conference on Automated Software Engineering, Workshop on Modeling Social Media
- Abel Gómez:
  - International: 23rd International Conference on Information Systems Development.
- Hugo Bruneliere:
  - International: 8th Symposium on the Maintenance and Evolution of Service-Oriented Systems and Cloud-Based Environments

### 8.1.2.3. Reviewer

- Abel Gómez:
  - International: 40th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM 2015) (external reviewer).

## 8.1.3. Journal

### 8.1.3.1. Member of the editorial board

Jordi Cabot is on the editorial board of the Journal of Object Technology and Software and Systems Modeling journals

### 8.1.3.2. Reviewer

AtlanMod members have collaborated in the reviewing process for the following journals this year

- Javier Canovas: Software and Systems Modeling Journal.
- Jordi Cabot: IEEE Software, IEEE Transactions on Software Engineering Journal, Journal of Systems and Software, Information and Software Technology Journal, Software and Systems Modeling Journal, Science of Computer Programming journal, Journal of Software: Evolution and Process
- Massimo Tisi: Transactions on Software Engineering Journal (TSE), Journal of Logic and Algebraic Programming (JLAP), Journal of Software: Evolution and Process (JSEP), NeuroComputing, Journal on Web Engineering (JWE)
- Gerson Sunyé: Transactions on Software Engineering Journal (TSE), IBM Journal of Research and Development, Journal of System and Software, Distributed Computing Journal, Software: Practice and Experience Journal.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

License: M. Tisi, Projet Integrateur PRIME, 12h, L3, Ecole des Mines de Nantes

License: M. Tisi, Projet IPIPIP, 8h, L3, Ecole des Mines de Nantes

Master: M. Tisi, Bases de Données, 30h, M1, Ecole des Mines de Nantes

Master: M. Tisi, Interaction Homme-Machine, 14h, M1, Ecole des Mines de Nantes

Master: M. Tisi, Model-Driven Engineering II, 45h, M2, Ecole des Mines de Nantes, Formation par Apprentissage

Master: M. Tisi, Sensibilisation Recherche, 12h, M2, Ecole des Mines de Nantes, Formation par Apprentissage

Master: J. Cabot, Model-Driven Engineering I, 45h, M2, Ecole des Mines de Nantes, Formation par Apprentissage

Master: G. Sunye, Model-Driven Engineering, 30h, M2, Université de Nantes

Master: G. Sunye, Software Engineering, 48h, M1, Université de Nantes

Master: G. Sunye, Software Testing, 48h, M1, Université de Nantes

Master: G. Sunye, Software Development, 24h, M1, Université de Nantes

License: S. Martínez, Bases de Données, 28h, L3, Ecole des Mines de Nantes

License: S. Martínez, Interaction Homme-Machine, 14h, L3, Ecole des Mines de Nantes

Master: S. Martínez, Master MIAGE - Model Transformations, 6h, Université de Nantes

License: S. Martínez, Domain Specific Languages, 3h, L3, Ecole des Mines de Nantes

### 8.2.2. Supervision

MSc: Pau Martí: Generación de Familias de Documentos en DPL: Soporte a componentes parcialmente instanciados, Universitat Politècnica de València, September 2014, M. Carmen Penadés and Abel Gómez.

PhD in progress: Ahmed Ezzat Labib, Automatic reconstruction and analysis of semantic network security policies from deployed security components, Universitat Politècnica de València, José H. Canós, Abel Gómez

PhD in progress: Amine Benellam, Scalability of model transformations, Jordi Cabot, Massimo Tisi and Gerson Sunye.

PhD in progress: Gwendal Daniel, Efficient storage of large models, Jordi Cabot, Massimo Tisi and Gerson Sunye.

PhD in progress: Michel Albonico, Model-driven testing of cloud environments, Jordi Cabot and Gerson Sunye.

PhD in progress: Mohamed Boussaa, An Architecture for Testing Large-Scale Dynamic Distributed Systems, Université de Rennes 1, Benoit Baudry, Olivier Barais, Gerson Sunyé.

PhD in progress: Kevin Corre, Model-based Trust, Université de Rennes 1–Orange, Olivier Barais, Gerson Sunye, Jean-Michel Crom, Vincent Frey

PhD : Carlos A. González, Pragmatic Model Verification, Jordi Cabot. Thesis defended on October 2014

PhD : Salvador Martínez Pérez, Automatic reconstruction and analysis of semantic network security policies from deployed security components, Jordi cabot and Frédéric Cuppens. Thesis defended on July 2014

### 8.2.3. *Juries*

Jordi Cabot was a reviewer for the thesis of Jokin Garcia (Basque Country University), Oscar Sanchez (University of Murcia) and Eugene Doma (University of Sydney) and member of the jury for the thesis of David Aguilera (Technical University of Catalonia).

Massimo Tisi was a member of the ph.d. jury of Mehdi IRAQI HOUSSAINI (Arts et métiers ParisTech).

Gerson Sunyé was a member of the Ph.D jury of Jorge Augusto Meira (University of Luxembourg).

## 8.3. Popularization

In January 2014 the team participated to the Rencontres Inria - Industrie on the theme Répondre aux Défis de L'Ingénierie Logicielle, in which we notably presented our MoDisco project and collaboration<sup>0</sup>. The seminar had many participants from both industry and academia. Moreover, since several years, the AtlandMod team is already very involved in the open source community, notably via its constant activity within the context of the Eclipse Foundation. This activity actually takes different forms: creation and leading/development of Eclipse projects (under *Eclipse.org* or *Eclipse Labs*), participation to the major worldwide community events (i.e.; EclipseCon North America, EclipseCon Europe and EclipseCon France), organization of events targeting the local community (i.e. Eclipse DemoCamps), etc. This year again, the team has been active and visible in terms of concrete contributions to the community. The main remarkable items are the following ones:

- Leading of the MDT MoDisco project (Hugo Bruneliere), the Eclipse reference project concerning model-driven reverse engineering;
- Commitment to other projects directly under *Eclipse.org*: MMT ATL and EMFT EMF Facet (Hugo Bruneliere);
- Commitment to other projects under *EclipseLabs*: EMFToCSP (Jordi Cabot, Carlos Gonzalez) and EMF Views (Juan David Villa Calle, Jokin Garcia Perez, Hugo Bruneliere);

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<sup>0</sup><http://videos.rennes.inria.fr/InriaMeito/index-HugoBruneliere.html>



- Creation and development of a new incubation project under *Eclipse Labs: Collaboro* (Javier Canovas);
- Publication of a paper about our experience and feedback on developing and promoting open source projects in Eclipse [23], presented during the Open Source Software for MDE workshop at MODELS 2014 Conference (Hugo Bruneliere and Jordi Cabot);
- Presentation of talks during two main Eclipse events (Hugo Bruneliere): at EclipseCon North America 2014 about EMF Views [36], at EclipseCon France 2014 about Neo4EMF [35].
- In the context of the ARTIST EU collaborative project, we are strongly involved in the official ARTIST Open Source Release <sup>0</sup>, notably by developing and making available several (MoDisco-based) model discovery components from Java and SQL.

Generally, the team visible presence under Eclipse is also an efficient way to continue active collaborations with industrial partners, such as Mia-Software (Sodifrance) on MoDisco - EMF Facet, and Obeo on ATL.

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<sup>0</sup><http://www.artist-project.eu/open-source-package>

## **AVALON Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. general chair, scientific chair*

Laurent Lefevre and Frédéric Desprez were general chairs of the Grid 5000 Spring School 2014, Lyon, June 17-19, 2014.

F. Desprez: BigDataCloud (workshop within EuroPAR)

L. Lefevre :

- Co-Workshop organizer of TASUS 2014: Techniques and Applications for Sustainable Ultrascale Computing Systems, held during EUROPAR 2014, Porto, Portugal, August 25-26, 2014
- Co-organizer of the Green Days @ Rennes event: "Avalanche of data, virtual machines and connected objects : energy efficiency is mandatory - Impact on architectures, systems and networks", Rennes, July 1-2, 2014
- Co-Workshop chair of ExtremeGreen 2014 : Extreme Green & Energy Efficiency in Large Scale Distributed Systems , Chicago, IL, USA, May 2014

#### *9.1.1.2. member of the organizing committee*

G. Fedak: Publicity Chair for SBAC-PAD'14

Eddy Caron and Laurent Lefevre: co-organizer for the Inria booth at SC'14.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. member of the conference program committee*

E. Caron: HCW 2014, IPDPS 2014, CCA-2014

F. Desprez: Closer, IPDPS, CCGRID, VECPAR, Supercomputing, ComPAS, HotCloud, BigData, Cluster.

G. Fedak: AINA, EuroPar, CloudCom, HPDC

JP. Gelas: ExtremeGreen.

O. Glück: ExtremeGreen, PDP.

L. Lefevre : IEEE CCGrid15, AusPDC15, CLOUDNET14, EuroMPI/ASIA 2014, IEEE HPCC14, Greencom14, ICA3PP14, ENA-HPC14, Globecom14 SAC Green Communication Systems and Networks. ICCCN14 (DCBC), ICT4S14

C. Perez: Cloud Control Workshop, CCGRID'15, Cluster, EuroPar, VECPAR.

F. Suter: EuroPar, EuroMPI/Asia, VECPAR, VDTC.

#### *9.1.2.2. reviewer*

E. Caron: Hotcloud'14

JP. Gelas: ExtremeGreen.

O. Glück: EuroPar, Cluster.

F. Suter: CCGrid, Cluster.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- F. Desprez: Scalable Computing: Practice and Experience
- G. Fedak: Journal of Cluster Computing
- L. Lefevre : Associate editor of IEEE Transactions on Cloud Computing (TCC)

#### 9.1.3.2. reviewer

E. Caron: JPDC, TPDS, Cluster Computing, Engineering Applications of Artificial Intelligence  
 F. Desprez: Parallel Computing  
 G. Fedak: Computer  
 C. Perez: Parallel Computing.  
 F. Suter: Parallel Computing, CCPE, JPDC, FGCS, GPAA.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: Olivier Glück, Initiation Réseaux, 2x9h, niveau L2, Université Lyon 1, France  
 Licence: Olivier Glück, Réseaux, 2x70h, niveau L3, Université Lyon 1, France  
 Master: Olivier Glück, Services et Protocoles Applicatifs sur Internet, 40h, niveau M2, Université Lyon 1, France  
 Master: Olivier Glück, Services et Protocoles Applicatifs sur Internet, 24h, niveau M2, IGA Casablanca, Maroc  
 Master : Olivier Glück, Administration des Systèmes et des Réseaux, 16h, niveau M2, Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Analyse de performance, 6h, niveau M2, Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Réseaux, 48h, niveau M2 (CCI), Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Système d'exploitation, 30h, niveau M2 (CCI), Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Architecture des routeurs, 6h, niveau M2, Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Systèmes embarqués (Linux, Android), 85h, niveau M2, Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Routage et IPv6, 45h, niveau M2, Université Lyon 1, France  
 Master: Jean-Patrick Gelas, Routage et IPv6, 45h, niveau M2, Université Lyon 1, France  
 Master: Frédéric Desprez, Parallélisme, 30h, niveau M1, Université Lyon 1, France  
 Master: Eddy Caron, Gilles Fedak, Laurent Lefèvre, and Christian Perez, Grid and Cloud Computing, 36h, niveau M2, Ecole Normale Supérieure de Lyon, France  
 PhD.: G. Fedak, MapReduce Programming Model, Formation doctorale, 7h, Université Paris XIII, Villetaneuse, France  
 Master: G. Fedak, MapReduce and Big Data, Master, 9h, University of Babes-Bolyai, Romania

### 9.2.2. Supervision

HdR : Frédéric Suter, Bridging a gap between research and production, contributions to scheduling and simulation, École Normale Supérieure de Lyon, December 10, 2014.  
 PhD in progress: Semen Marchuk, *Contribution pour la conception d'algorithmes d'ordonnancement de taches de calcul dans le domaine de l'animation 3D*, 10/2014, Eddy Caron (dir), Pierre Biecher (CapRézo society, co-dir) and Rodolphe De Carini (CapRézo society, co-dir)

PhD in progress: Radu Carpa, *Efficacité énergétique des échanges de données dans une fédération d'infrastructures distribuées à grande échelle*, 10/2014, Laurent Lefèvre (dir), Olivier Glück (co-dir).

PhD in progress: Sylvain Gault, *Improving MapReduce Performance on Clusters*, 11/2010, Frédéric Desprez (dir), Christian Pérez (co-dir).

PhD in progress: Maurice Djibril Faye, *Déploiement auto-adaptatif d'intergiciel sur plateforme élastique*, Eddy Caron (dir), Ousmane Thiaré (Université Gaston Berger, St Louis, Sénégal, co-dir)

PhD in progress, Vincent Lanore, *Adaptation et dynamique dans les modèles à composants logiciels pour les applications scientifiques*, C. Pérez.

PhD in progress, Arnaud Lefray, *Mission fonctionnelle et de sécurité dans une informatique en nuage*, Eddy Caron (dir), Christian Toinard (ENSIB, co-dir)

PhD in progress : Anthony Simonet, *Exécution efficace d'applications de traitement intensif de données sur des infrastructures distribuées hybrides*, 10/2011, Gilles Fedak.

PhD in progress: Jonathan Pastor (Nantes), *Conception d'un système de gestion autonome, coopérative et distribué pour les centrales numériques à large échelle*, 11/2012, Frédéric Desprez, Adrien Lèbre (Ascola, Nantes, co-dir).

PhD in progress: Pedro Silva, *Application model and co-scheduling algorithm for dynamic and evolutive data-intensive application*, 10/2014, Christian Perez (dir), Frédéric Desprez (co-dir).

PhD in progress: Violaine Villebonnet, *Proportionnalité énergétique dans les systèmes distribués à grande échelle*, 9/2013, Laurent Lefevre (dir), Jean-Marc Pierson (IRIT, Toulouse, co-dir)

PhD in progress: Daniel Balouek Thomert, *Ordonnancement et éco-efficacité dans les environnements virtualisés*, Eddy Caron (dir), Laurent Lefevre (co-dir), Gilles Cieza (NewGen society, co-dir)

PhD in progress: Jérôme Richard, *Conception of a software component model with task scheduling for many-core based parallel architecture, application to the Gysela5D code*, 11/2014, Christian Perez (dir), Julien Bigot (CEA, co-dir).

### 9.2.3. Juries

Eddy Caron has been member of the following PhD Juries:

- Gautier Berthou. "Vers des communications anonymes et efficaces", Grenoble, January 2014, examinateur.
- Mandicou Ba. " Vers une structuration auto-stabilisante des réseaux ad hoc: cas des réseaux de capteurs sans fil.", Université de Reims, May 2014, examinateur.
- Vianney Kengne Tchendji. "Solutions parallèles efficaces sur le modèle CGM d'une classe de problèmes issus de la programmation dynamique", Université de Picardie Jules Verne en cotutelle avec l'Université de Yaoundé, June 2014, exminateur.

Frédéric Desprez has been member of the following PhD Juries:

- Amit Sangroya, "Towards Dependability and Performance Benchmarking for Cloud Computing Services", Grenoble, April 2014, rapporteur.
- Shubhabrata Roy, "A Complete Framework for Modelling Workload Volatility of VoD System-a Perspective to Probabilistic Management", Lyon, June 2014, examinateur.
- Loic Letondeur, "Planification pour la gestion autonome de l'élasticité d'applications dans le cloud", Lyon, October 2014, examinateur.
- Rachid Habel, "", Mines Paris, October 2014, président.
- Radu Tudoran, "High Performance Big Data Management Across Cloud Data Centers", Rennes, December 2014, rapporteur.

- Andra Hugo, "Composability of parallel codes on heterogenous architectures", Bordeaux, December 14, rapporteur.
- Damien Genet, "Design of Generic Modular solution for PDE solvers for modern architectures", Bordeaux, December 2014, examinateur.
- Lionel Boillot, "Contributions à la modélisation mathématique et à l'algorithmique parallèle pour l'optimisation d'un propagateur d'ondes élastiques en milieu anisotrope", Pau, December 2014, rapporteur.

Laurent Lefevre has been member of the following PhD Juries:

- Truong Khoa Phan: "Design and Management of Networks with Low Power Consumption", University of Nice, France, September 2014, Rapporteur.
- Frédéric Pinel: "Energy - Performance optimization for the Cloud", University of Luxembourg, July 2014, Examineur
- Thiam Chekhou : "Anti Load Balancing for Energy-Aware Distributed Scheduling of Virtual Machines", University of Toulouse, France, July 2014, Rapporteur
- Felipe Diaz: "Cloud brokering : new value added services and pricing models", Telecom ParisTech, France, February 2014, Rapporteur

Christian Perez has been member of the following PhD Jury:

- Damien Gros: "Protection obligatoire répartie Usage pour le calcul intensif et les postes de travail", University of Orléans, France, June 2014, Rapporteur.
- Hélène Coullon: "Modélisation et implémentation de parallélisme implicite pour les simulations scientifiques basées sur des maillages", University of Orléans, France, September 2014.
- Clément Quinton: "Cloud Environments Selection and Configuration: A Software Product Lines-Based Approach", University of Lille, France, October 2014.

Frédéric Suter has been member of the following PhD Jury:

- Vinicius Pinheiro: "The management of multiple submissions in parallel systems: the fair scheduling approach", University of Sao Paulo, Brasil, February 2014, rapporteur.

### **9.3. Popularization**

Eddy Caron has been interview by New Screens Magazine (N°9) edited by Imaginove. "Pipeline de production pour l'animation: Optimisation des temps de calcul et parallélisme", June 2014.

Gilles Fedak is a member of the Maison des Mathématiques et de l'Informatique steering committee.

Laurent Lefevre has been interviewed by Atlantico Web News Magazine on "Gadget ou véritable promesse ? Comment Amazon compte se chauffer grâce à l'énergie dégagée par les datas centers", September 21, 2014

## CIDRE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

Nicolas Prigent served as a member of the organization committees of the following conferences and workshops:

- SSTIC 2014 (Symposium sur la Sécurité des Systèmes d'Information et des Réseaux 2014).
- VizSec 2014 (Visualization for Cyber-Security), official workshop of IEEE VIS 2014.

Frédéric Tronel served as a member of the organization committee of the following conference:

- SSTIC 2014 (Symposium sur la Sécurité des Systèmes d'Information et des Réseaux 2014).

Ludovic Mé served as a member of the organization committee of the following conference:

- C&ESAR 2014 (Computers & Electronics Security Applications Rendez-vous).

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

Emmanuelle Anceaume served as a member of the program committees of the following conferences:

- 14th IEEE International Conference on Computer and Information Technology (CIT-2014), 11-13 September 2014
- 13th IEEE International Conference on Ubiquitous Computing and Communications (IUCC-2014), 19-21 December, 2014
- 13th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom). September 24th-26th, 2014.

Sébastien Gambis served as a member of the program committees of the following conferences and workshops:

- 6th IEEE International Workshop on Security and Social Networking (SESOC 2014), 28 March 2014, Budapest, Hungary.
- 9ème Conférence sur la Sécurité des Architectures Réseau et des Systèmes d'Information (SAR-SSI 2014), 13-16 May 2014, Saint-Germain-Au-Mont-d'Or, France.
- 10th European Dependable Computing Conference (EDCC 2014), 13-16 May 2014, Newcastle Upon Tyne, UK.
- IEEE ICC 2014 - Communication and Information Systems Security Symposium, 10-14 June 2014, Sydney, Australia.
- 5ème Atelier sur la Protection de la Vie Privée (APVP 2014), 15-18 June 2014, Cabourg, France.
- 12th Annual Conference on Privacy, Security and Trust (PST 2014), 23-24 July 2014, Toronto, Canada.
- IEEE Workshop on Privacy and Anonymity in Digital Economy (PADE 2014), September, Edmonton, Canada.
- 9th DPM International Workshop on Data Privacy Management (DPM 2014), 10 September 2014, Wrocław, Poland.
- 5th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN 2014), 22-25 September, Halifax, Canada.
- 15th Joint IFIP TC6 and TC11 Conference on Communications and Multimedia Security (CMS 2014), 25-26 September 2014, Aveiro, Portugal.
- 7th International Symposium on Foundations & Practice of Security (FPS 2014), 3-5 November 2014, Montréal, Canada.

Michel Hurfin was a member of the program committee of

- the 6th IEEE International Symposium on UbiSafe Computing (UbiSafe 2014) in conjunction with the 13th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom 2014), 24-26 September 2014, Beijing, China. <http://trust.csu.edu.cn/conference/ubisafe2014/>
- the 12th African Conference on Research in Computer Science and Applied Mathematics (CARI'2014), 16-23 October, 2014, Saint Louis, Senegal. <http://www.cari-info.org/>
- the 6th International Workshop on Workflow Management in Cloud and Big Data (WMCB 2014) in conjunction with the International Conference on Big Data and Cloud Computing (BDCloud 2014), 3-5 December 2014, Sydney, Australia. <http://wmc2014.sinaapp.com/index.html>

J.-F. Lalande served as a member of the program committees of the following conferences and workshops:

- International Conference on Emerging Security Information, Systems and Technologies (IARIA SECURWARE 2014)
- International Conference on High Performance Computing & Simulation (IEEE HPCS 2014)
- International Conference on High Performance and Communications (IEEE HPCC 2014)
- International Workshop on Methods for Establishing Trust with Open Data (IEEE METHOD 2014)
- International Workshop on Security and High Performance Computing Systems (Workshop SHPCS 2014)
- International Workshop on Secure Peer-to-Peer Intelligent Networks & Systems (Workshop SPINS 2014)

Nicolas Prigent served as a member of the program committees of the following conferences and workshops:

- SSTIC 2014 (Symposium sur la Sécurité des Systèmes d'Information et des Réseaux 2014).
- VizSec 2014 (Visualization for Cyber-Security), official workshop of IEEE VIS 2014.

Guillaume Piolle served as a member of the program committees of the following conferences and workshops:

- First International Workshop on Agents and CyberSecurity (ACySe 2014). <https://sites.google.com/site/acyseamas2014/home>
- 16ème Colloque CREIS-TERMINAL. <http://www.lecreis.org/?p=1789>
- 9ème Conférence sur la Sécurité des Architectures Réseau et des Systèmes d'Information (SAR-SSI 2014). <http://sarssi14.liris.cnrs.fr/>

Eric Totel was a member of the program committee of:

- the 6th IEEE International Symposium on UbiSafe Computing (UbiSafe 2014) in conjunction with the 13th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom 2014), 24-26 September 2014, Beijing, China. <http://trust.csu.edu.cn/conference/ubisafe2014/>

Frédéric Tronel was a member of the program committee of:

- SSTIC 2014 (Symposium sur la Sécurité des Systèmes d'Information et des Réseaux 2014).

Gilles Guette served as a member of the program committees of the following conferences:

- 1st International Conference on Information Systems Security and Privacy (ICISSP-2015), 9-11 February 2015,
- 9ème Conférence sur la Sécurité des Architectures Réseaux et des Systèmes d'information (SARSSI 2014), 13-16 mai 2014.

Christophe Bidan was a member of the program committees of the following conferences and workshops:

- the Fourth International Workshop on Information Systems Security Engineering (WISSE 2014), in conjunction with the 26th International Conference on Advanced Information Systems Engineering (CAiSE'14), 17th June 2014, Thessaloniki, Greece. <http://gsya.esi.uclm.es/WISSE2014/>
- the 10th International Conference on Security and Privacy in Communication Networks (SecureComm2014), September 24–26, 2014 Beijing, China. <http://securecomm.org/2014/show/home/>

Ludovic Mé served as a member of the program committee of the following conference:

- ACNS 2014 (Applied Cryptography and Network Security),
- CARI 2014 (Conférence Africaine sur la recherche en Informatique),
- C&ESAR 2014 (Computers & Electronics Security Applications Rendez-vous),
- SAR-SSI 2014 (Conférence sur la Sécurité des Architectures Réseaux et des Systèmes d'Information),
- WESSI 2014 (Workshop sur l'Enseignement de la Sécurité des Systèmes d'Information).

#### 9.1.2.2. reviewer

- Sébastien Gambs acts as an external reviewer for EDBT 2014, DSN 2014 and PETS 2014.
- Michel Hurfin acts as a reviewer for the following conferences: UbiSafe 2014 and CARI'2014.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- Sébastien Gambs is member of the editorial board of the International Journal of Data Mining, Modelling and Management and a member of the editorial board of the International Journal of Privacy and Health Information Management.
- Michel Hurfin belongs to the editorial board of the Springer open access journal of Internet Services and Applications (<http://www.springer.com/computer/communications/journal/13174>).

#### 9.1.3.2. reviewer

- Emmanuelle Anceaume served as a reviewer for the Journal of Parallel and Distributed Computing and the Transactions on Parallel and Distributed Systems Journal.
- Sébastien Gambs served as reviewer for the following journals: Nature Communications, Pervasive and Mobile Computing, Neurocomputing, IEEE Internet Computing and Journal of Selected Topics in Signal Processing.
- Michel Hurfin acts as a reviewer for the following journals: IEEE Transactions on Computers (TC) and Springer Journal of Internet Services and Applications (JISA).
- Guillaume Piolle acts as a reviewer for the following journals: International Journal of Information Security (IJIS), Interstices.
- Gilles Guette acts as a reviewer for the journal Security and Communication Networks and Sensor Networks Journal.
- Nicolas Prigent acts as a reviewer for the Lavoisier TSI journal and the SAR-SSI 2014 conference.
- Ludovic Mé acts as a reviewer for the following journals: IEEE Transactions on Network and Service Management, and Logical Methods in Computer Science.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master 2: Emmanuelle Anceaume, responsable du module BIB, 35 h. equiv. TD

Master: Sébastien Gambs, *Protection of Privacy*, 16 hours of lectures, M2 - Master Pro SSI, Université de Rennes 1, France.

Master: Sébastien Gambs, *Topics on Authentication*, 16 hours of lectures, M2 - Master Pro SSI, Université de Rennes 1, France.

Master: Sébastien Gambs, *Introduction to Computer Security*, 8 hours of lectures and 4 hours of practical works, M2 - Master Pro SSI, Université de Rennes 1, France.



Licence: Eric Totel, *Models and programming languages*, 19.5 hours including 10.5 hours of lecture, L3 - first year of the engineer degree, Supélec, France

Licence: Eric Totel, *Foundations of computer science, data structures and algorithms*, 6 hours, L3 - first year of the engineer degree, Supélec, France

Master: Eric Totel, *Computer systems architecture*, 30 hours, M1 - second year of the engineer degree, Supélec, France

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

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

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

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

Master: Eric Totel, *Intrusion Detection*, 6 hours of lecture, M2 - M2 - mastère spécialisé CS (Cyber Security), Supélec, France

Master: Eric Totel, *Intrusion Detection*, 8 hours of lecture, M2 - master 2 degree, University of Rennes 1, France

Master: Eric Totel, *Intrusion Detection*, 4 hours of lecture, M2 - master 2 degree, University of Rennes 1, France

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

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

Licence: Frédéric Tronel, *Software engineering*, 40h30, L3 - first year of the engineer degree, Supélec, France.

Master: Frédéric Tronel, *Operating systems*, 18h, M2 - third year of the engineer degree, Supélec, France .

Master: Frédéric Tronel, *Compilers*, 26h, M2 - third year of the engineer degree, Supélec, France.

Master: Frédéric Tronel, *Automatic reasoning*, 8h, M2 - third year of the engineer degree, Supélec, France.

Master: Frédéric Tronel, *Buffer overflow vulnerabilities (theory and practice)*, 16h30, M2 - third year of the engineer degree, Supélec, France.

Master: Frédéric Tronel, *Buffer overflow vulnerabilities (theory and practice)*, 7h30, M2 - third year of the engineer degree, Telecom Bretagne, France.

Master: Frédéric Tronel, *Firewall*, 7h30, M2 - third year of the engineer degree, Supélec, France.

Master: Frédéric Tronel, *Calculability in distributed systems*, 9h, M2, jointly with University of Rennes 1 and Supélec, France.

Licence: Guillaume Piolle, *Programming models and languages*, 18 hours, L3 - first year of the engineering degree, Supélec, France;

Licence: Guillaume Piolle, *Foundations of computing, data structures and algorithms*, 31.5 hours, L3 - first year of the engineering degree, Supélec, France;

Licence: Guillaume Piolle, *Software engineering*, 24 hours, L3 - first year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Modelling, algorithms and programming*, 23.7 hours, M1 - second year of the engineer degree, Supélec, France;

Master: Guillaume Piolle, *Computer security and privacy for the engineer*, 6 hours, M1 - second year of the engineer degree, Supélec, France;

Master: Guillaume Piolle, *Security policies*, 4.5 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Network supervision in Java*, 3 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Computer networks*, 3 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *C++/Qt*, 12 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Symbolic artificial intelligence*, 4.5 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Network access protection*, 6 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Web development*, 9 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Privacy protection*, 4.5 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Guillaume Piolle, *Privacy protection*, 2.25 hours, course for computing high school teachers, Académie de Rennes, France;

Master: Guillaume Piolle, *Discovering Tor*, 1.5 hours, course for computing high school teachers, Académie de Rennes, France;

Doctorat: Guillaume Piolle, *Privacy and data protection*, 9 hours, doctoral course, Matisse doctoral school, France;

Licence: Nicolas Prigent, *Models and programming languages*, 19.5 hours including 12 hours of lecture, L3 - first year of the engineer degree, Supélec, France.

Licence: Nicolas Prigent, *Foundations of computer science, data structures and algorithms*, 12 hours, L3 - first year of the engineer degree, Supélec, France.

Master: Nicolas Prigent, *Operating systems*, 18h, M2 - third year of the engineer degree, Supélec, France.

Master: Nicolas Prigent, *Automatic reasoning*, 8h, M2 - third year of the engineer degree, Supélec, France.

Master: Nicolas Prigent, *Web development*, 12 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Nicolas Prigent, *Applied Cryptography*, 4,5 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Nicolas Prigent, *Python Programming*, 6 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Nicolas Prigent, *Advanced Java Programming*, 1,5 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Nicolas Prigent, *Penetration Testing*, 12 hours, M2 - third year of the engineering degree, Supélec, France;

Master: Nicolas Prigent, *IDS and Visualization*, 2 hours, M2, ESIR, France.

Master: Nicolas Prigent, *Virtualization and Cloud Computing*, 4 hours, M2, ESIR, France.

Master: Nicolas Prigent, *MS Windows Configuration and Administration*, 16 hours, Mastère CS - Specialization year, Supélec Campus de Rennes, France.

Master: Nicolas Prigent, *MS Windows Configuration and Administration*, 8 hours, CQP - Specialization year, Supélec Campus de Gif, France.

Master: Nicolas Prigent, *Cryptography, Cryptographic Protocols and Applications*, 16 hours, CQP - Specialization year, Supélec Campus de Gif, France.

Master: Nicolas Prigent, *Supervision of student project*, 2 projects, M1 - second year of the engineer degree, Supélec, France.

Master: Nicolas Prigent, *Supervision of student project*, 2 project, M2 - third year of the engineer degree, Supélec, France.

Master: Nicolas Prigent, *Supervision of student project*, 1 project, Mastère CS - Specialization year, Supélec, France.

Master: Gilles Guette, *Infrastructure Network*, 22 hours, M2 - third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Security*, 18 hours, M2 - third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network and System Security*, 15 hours, M2 - third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Dimensionning*, 6 hours, M2 - third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Administration*, 50 hours, second year of the engineer degree, ESIR, France;

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

Master: Gilles Guette, *Network Routing*, 35 hours, second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Supervision of student Project*, 3 projects, third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Supervision of student Project*, 2 projects, second year of the engineer degree, ESIR, France;

Master: Jean-Francois Lalande, *Programmation orientée objet avancée: Java*, 16 hours, M2 - third year of the engineer degree, INSA Centre Val de Loire, France;

Master: Jean-Francois Lalande, *Atelier Sécurité Android*, 2 days, master degree students of ENSA de Kénitra (conférence CISSI 2014) and ENSA de Khouribga (conférence CISTIC 2014), Maroc;

Licence: Christophe Bidan, *Programming models and languages*, 18 hours, L3 - first year of the engineering degree, Supélec, France;

Licence: Christophe Bidan, *Network and Operating Systems*, 6 hours, L3 - second year of the engineering degree, Supélec, France;

Master: Christophe Bidan, *Introduction to security*, lab work (4h30), M2 - third year of the engineer degree, Supélec, France

Master: Valérie Viet Triem Tong, *Games Theory*, 18 hours, M1 - second year of the engineering degree, Supélec, France;

Master: Valérie Viet Triem Tong, *Certified Programming using Coq*, 9 hours, M2 - third year of the engineering degree, Supélec, France;

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

Master: Valérie Viet Triem Tong, *Small elements of decidability*, 7h30 hours, M2 - third year of the engineering degree, Supélec, France;

Licence: Ludovic Mé, *Software Engineering*, 15h, L3 - first year of the engineer degree, Supélec, France

Master: Ludovic Mé, *Introduction to Computer Security and Privacy*, 6.75 hours, M1 - second year of the engineer degree, Supélec, France

Master: Ludovic Mé, *Information systems*, 6 hours, M1 - second year of the engineer degree, Supélec, France

Master: Ludovic Mé, *Supervision of student project*, 1 project, M1 - second year of the engineer degree, Supélec, France

Master: Ludovic Mé, *Supervision of student project*, 1 project, M2 - third year of the engineer degree, Supélec, France

Master: Ludovic Mé is responsible for the module “Secured information systems”, M2 - third year of the engineer degree, Supélec, France

Licence: Guillaume Hiet, *Models and programming languages*, 11 hours, L3 - first year of the engineer degree, Supélec, France

Licence: Guillaume Hiet, *Foundations of computer science, data structures and algorithms*, 15 hours, L3 - first year of the engineer degree, Supélec, France

Master: Guillaume Hiet, *Computer security and privacy for the engineer*, 10 hours including 4,5 hours of lecture, M1 - second year of the engineer degree, Supélec, France

Master: Guillaume Hiet, *Buffer overflow vulnerabilities*, lab work (16h), M2 - third year of the engineer degree, Supélec.

Master: Guillaume Hiet, *Pentest*, lab work (9h00), M2 - third year of the engineer degree, Supélec, France

Master: Guillaume Hiet, *Introduction to Linux*, lab work (3h), M2 - mastère CS (Cyber Security), Supélec, France

Master: Guillaume Hiet, *Java Security*, lecture (3h), M2 - mastère CS, Supélec, France

Master: Guillaume Hiet, *Linux Security*, lab work (6h), M2 - mastère CS, Supélec, France

Master: Guillaume Hiet, *Linux Security*, lecture (3h) and lab work (3h), third year of the engineer degree, Supélec, France

Master: Guillaume Hiet, *Intrusion Detection*, lecture (6h) and lab work (6h), M2 - mastère CS, Supélec, France

Master: Guillaume Hiet, *Intrusion Detection*, lecture (3h) and lab work (6h), M2 - third year of the engineer degree, M2 research degree of University of Rennes 1, Supélec

Master: Guillaume Hiet, *Intrusion Detection*, lecture (8h) and lab work (12h), M2, University of Rennes 1, France

Master: Guillaume Hiet, *Intrusion Detection*, lecture (4h) and lab work (6h), M2 - third year of the engineer degree, ESIR, France

Master: Guillaume Hiet, *Intrusion Detection*, 6 hours of lecture, M2, Université de Limoges, France

Master: Guillaume Hiet, *Firewall*, lecture (4h), M2, University of Rennes 1, France

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

Master: Guillaume Hiet, *Supervision of student project*, 1 project, M2 - third year of the engineer degree, Supélec, France

### 9.2.2. Supervision

HdR: Sébastien Gambs, Protection de la vie privée dans la Société de l’Information, Université de Rennes 1, 23 June 2014.

PhD: Romaric Ludinard, Caractérisation locale de fautes dans les systèmes large échelle, Université Rennes I, Defense: 02/10/2014, Emmanuelle Anceaume and Bruno Sericola

PhD: Radoniaina Andriatsimandefitra, Caractérisation et détection de malware Android basées sur les flux d'information, SUPELEC, Defense: 15/12/2014, Valérie Viet Triem Tong and Ludovic Mé.

PhD: Georges Bossert, Exploiting Semantic for the Automatic Reverse Engineering of Communication Protocols, SUPELEC, Defense: 17/12/2014, Guillaume Hiet and Ludovic Mé.

PhD in progress: Mounir Assaf, "Calcul de propriétés dans des programmes C de grande taille", supervised by Eric Total (50%) and Frederic Tronel (50%);

PhD in progress: Laurent Georget, "Formal validation of an information flow monitor", started in October 2014, supervised by Valérie Viet Triem Tong (25%), Frédéric Tronel (25%), Guillaume Piolle (25%) and Mathieu Jaume (25%);

PhD in progress: Erwan Godefroy, "Corrélation d'alertes dirigée par la connaissance de l'environnement", started in November 2012, supervised by Eric Total (50%), Ludovic Mé (30%), and Michel Hurfin (20%);

PhD in progress: Mouna Hkimi, "Détection d'intrusion dans les systèmes distribués", started in October 2013, supervised by Eric Total (50%) and Michel Hurfin (50%);

PhD in progress: Paul Lajoie-Mazenc, "Privacy preserving reputation system in large scale and self organizing systems", started in october 2012, supervised by Emmanuelle Anceaume (50%) and Valérie Viet Triem Tong (50%);

PhD in progress: Pierre Obame, "Dependability issues in large scale systems", started in February 2012, supervised by Emmanuelle Anceaume (50%) and Frédéric Tronel (50%);

PhD in progress: Regina Paiva Melo Marin, "Privacy protection in distributed social networks", started in November 2011, supervised by Christophe Bidan (20%) and Guillaume Piolle (80%).

PhD in progress: Simon Boche, "Réputation et respect de la vie privée dans les réseaux auto-organisé", started in September 2012, supervised by Christophe Bidan (30%), Gilles Guette (35%) and Nicolas Prigent (35%);

PhD in progress: Florian Grandhomme, "Études de protocoles de routage dynamique externe de type BGP dans un environnement réseaux tactiques adhoc mobiles : faisabilité, performances, qualité de service, et passage à l'échelle", started in October 2014, supervised by Adlen Ksentini (25%), Gilles Guette (50%) and Thierry Pless (25%);

PhD in progress: Christopher Humphries, "Visualisation d'évènements de sécurité", started in December 2011, supervised by Christophe Bidan (20%) and Nicolas Prigent (80%).

PhD in progress: Deepak Subramanian, "Multi-level Information Flow Monitoring", started in January 2013, supervised by Christophe Bidan (20%) and Guillaume Hiet (80%).

PhD in progress: Julien Lolive, "Entwining identification and privacy mechanisms", started in December 2012, supervised by Caroline Fontaine (50% - Télécom-Bretagne) and Sébastien Gams (50%).

PhD in progress: Solenn Brunet, "Privacy-preserving location-based services", started in October 2014, supervised by Sébastien Gams (50%) and Jacques Traoré (50% - Orange Labs Caen).

PhD in progress: Antoine Guellier, "Utilisation de la cryptographie homomorphe pour garantir le respect de la vie privée", started in October 2013, supervised by Christophe Bidan (50%) and Nicolas Prigent (50%).

Some members of the team also participate to the supervision of external PhD students. Sébastien Gams is co-supervising Raghavendran Balu (PhD student for LinkMedia, Inria Rennes) and Moussa Traore (PhD student from LAAS-CNRS, Toulouse).

### 9.2.3. Juries

- Emmanuelle Anceaume was a member of the PhD committee for the PhD of Nagham Alhadad entitled "Bridging the gap between social and digital worlds: system modeling and trust evaluation", prepared at LINA, Nantes, June 20th 2014.
- Michel Hurfin was a member of the PhD committee (reviewer) for the PhD of Linda Zeghache entitled 'Tolérance aux pannes dans les systèmes d'agents mobiles transactionnels', prepared at Université des sciences et de la Technologie Houari Boumediene (USTHB), Algeria, April 27th 2014.
- Jean-François Lalande was a member of the PhD committee for the PhD of Nicolas Moro entitled "Sécurisation de programmes assembleur face aux attaques visant les processeurs embarqués", prepared at Université Pierre et Marie Curie, Paris, November 13rd 2014.
- Eric Total was a member of the PhD committee (reviewer) for the PhD of Aurélien Wailly entitled "Architecture de bout en bout et mécanismes d'autoprotection pour les environnements Cloud", prepared at Telecom Sud Paris, Paris, September 30th 2014.
- Christophe Bidan was a member of the PhD committee (reviewer) for the PhD of Nesrine Kaaniche entitled "Cloud Data Storage Security based on Cryptographic Mechanisms", prepared at Telecom Sud Paris, Paris, December 15th 2014.
- Christophe Bidan was a member of the HDR committee (examiner) for the HDR of Julien Iguchi-Cartigny entitled "Contributions à la sécurité des Java Card", prepared at Université de Limoges, Limoges, December 4th, 2014.
- Sébastien Gambs was a member of the jury of the Gilles Kahn PhD award for 2014. This award is given each to the best French PhD thesis in computer science.
- Ludovic Mé was a member of the PhD committee (president) for the PhD of Romaric Ludinard entitled "Caractérisation locale de fautes dans les systèmes large échelle", prepared at Université de Rennes 1, Rennes, October 2nd 2014.
- Eric Total was a member of the mid-term evaluation committee of Vincent Laporte (PhD student of the university of Rennes), July 2014.
- Ludovic Mé was a member of the mid-term evaluation committee of Florent Marchand de Kerchove (PhD student of the university of Nantes), June 2014.
- Emmanuelle Anceaume was a member of the mid-term evaluation committee of Nicolo Rivetti (PhD student of the university of Nantes), June 2014.
- Sébastien Gambs was a member of the mid-term evaluation committee of George Nassopoulos (PhD student of the university of Nantes), June 2014.
- Michel Hurfin was a member of the mid-term evaluation committee of Ghada Arfaoui (PhD student of the university of Orléans, Cifre Orange Labs), January 2014.
- Christophe Bidan was a member of the mid-term evaluation committee of Mickaël Salaun (PhD student of Telecom Sud Paris), March 2014.
- Christophe Bidan was a member of the mid-term evaluation committee of Malek Belhaouane (PhD student of Telecom Sud Paris), March 2014.

### 9.3. Popularization

Guillaume Piolle has participated to two scientific popularization activities, both oriented towards secondary education pupils. In both cases, his participation consisted in presentations about the objectives, methods and results of research activities in computer security and privacy (including, but not limited to our activities in CIDRE):

- *Les cordées de la réussite* : national program aimed at facilitating access to higher education for pupils from various social backgrounds ;
- *A la découverte de la recherche* : local program aimed at providing high school pupils with insights of research issues and activities.

Nicolas Prigent made a Tutorial Presentation at OSSIR Bretagne dealing with Visualization for Security.

Sébastien Gambs has participated to the event “A la découverte de le recherche”, in which he did five presentations in high school in order to raise the awareness of teenagers on privacy issues related to information technologies and to explain them the research on this topic.

## COAST Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Organizing committee membership

- Claudia-Lavinia Ignat was member of the organizing committee of the workshop IWCES (International Workshop on Collaborative Editing Systems) in 2014 in conjunction of CSCW 2014 conference.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

Co-organisation of the first ISCRAM MED conference on Information Systems for Crisis Response and Management in Mediterranean countries in Toulouse <http://irit.fr/ISCRAMMED2014/>

- Olivier Perrin was demonstration program co-chair of ICSOC 2014

#### 8.1.2.2. Conference program committee membership

- Claude Godart was member of the conference program committee of BPM (Business Process Management), BPMDS (Business Process Modeling, Development and Support), CBI (IEEE Conference on Business Informatics), IEEE CLOUD Computing, EDOC (The enterprise computing conference), ESOCC (European Services Oriented and Cloud Computing), ICSOC (International Conference on Services Oriented Computing), ICWS (IEEE International Conference on Web Services), Inforsid, RCIS (Research challenges in Information Systems), and SCC (IEEE International Conference on Services Computing) conferences.
- Claudia-Lavinia Ignat was or is a PC member of CSCW (International Conference on Computer Supported Cooperative Work and Social Computing) 2015 and 2016, SIGMOD Demo 2014 and CDVE (International Conference on Cooperative Design, Visualization and Engineering) 2014
- Olivier Perrin was PC Member of ICSOC 2014, I3E 2014 (13th IFIP Conference on e-Business, e-Services and e-Society), VECOS (8th International Workshop on Verification and Evaluation of Computer and Communication Systems) 2014, SITIS 2014, KASA (International Workshop on Knowledge Aware Service Oriented Applications) 2014, WSS (Web Service Symposium) 2014
- François Charoy was PC Member of ICEBE (International Conference on Business Engineering) 2014, CTS 2014 (International Symposium on Collaborative Technologies and Systems), DG.O (International Conference on Digital Government Research) 2014, IEEE International Conference on Business Information Systems and of several workshops.
- Gérard Oster was a PC member of CoopIS 2014 (International Conference on Cooperative Information Systems).

### 8.1.3. Journal

#### 8.1.3.1. Editorial boards membership

- Claude Godart is member of the editorial board of “IEEE transaction on Service Computing”, “International Journal of Services Computing”, “International Journal of Cloud Computing” and “International Journal of E-adoption”.
- Claudia-Lavinia Ignat is member of the editorial board of Journal of CSCW (Computer Supported Cooperative Work).



- François Charoy is member of the editorial board of Service Oriented Computing and Applications Journal (Springer).

#### 8.1.3.2. Reviewer

- Claude Godart was member of the review board of the “International Journal of Next Generation Computing”.
- Claudia-Lavinia Ignat reviewed in 2014 papers for Concurrency and Computation: Practice and Experience journal.
- François Charoy reviewed papers for ACM Transaction on the Web and IEEE Transactions on Network and Service Management.
- Olivier Perrin reviewed papers for Transactions on Services Computing.
- Gérald Oster reviewed paper in Oxford Computer Journal.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Permanent members of the Coast team are leading teachers in their respective institutions. They are responsible of lecture in disciplines like software engineering, database systems, object oriented programming and design, distributed systems, service computing and even more advanced topics at all levels and in all kind of departments in the University. Most of the PhD Students have also teaching duties in the same institutions. As a whole, the Coast team accounts for more than 2500 hours of teaching. Members of the Coast team are also deeply involved in the pedagogical and administrative life of their departments.

- G r me Canals is the head of the Computer science department of the Nancy University Institute of Technology (IUT Nancy Charlemagne) since sept. 2010, and is responsible for the professional licence degree “Web application programming” since sept. 2001.
- Claude Godart is responsible for the Computer Science department of the engineering school ESSTIN. He was study director of the master degree “Distributed Services, Security and Networks” until September 2013. Claude Godart is member of the board of directors and the recruitment committee of the engineering school ESSTIN.
- Khalid Benali is responsible for the professional Master degree speciality “Distributed Information Systems” of MIAGE and of its international branch in Morocco.
- Fran ois Charoy is responsible of the Software Engineering specialisation at the TELECOM Nancy Engineering School of University of Lorraine.
- G rald Oster is responsible of the 3rd year internship program at the TELECOM Nancy Engineering School of University of Lorraine.
- Pascal Urso is responsible for the “Security, Services, Systems and Network” track of the master degree in computer science at University of Lorraine from September 2013.

### 8.2.2. Supervision

PhD in progress : Quang Vinh Dang, Trust-based large scale collaboration, started in 10/2014, Claudia-Lavinia Ignat and Fran ois Charoy

PhD in progress: Luc Andr , R plication et Maintien de la Coh rence en Temps R el dans les R seaux Pair- -pair, started in 9/2011, Fran ois Charoy and G rald Oster

PhD in progress: Mehdi Ahmed Nacer, Title: Evaluation of CRDT for optimistic replication, started in 9/2011, Fran ois Charoy and Pascal Urso

PhD in progress: Elio Goettelman, Ex cution en confiance de processus dans le cloud, started in 9/2011, Claude Godart

PhD in progress: Ahmed Bouchami , S curit  des donn es collaboratives d’une plateforme PaaS, started in 11/2012, Olivier Perrin

PhD in progress: Adrien Devresse , Study of effective sharing and analysis of very large metadata repositories: application to the High Energy Physics computing community, started on 11/2011, Olivier Perrin

PhD in progress: Jordi Martori i Adrian, Data constraints for large-scale collaboration, started in 10/2013, François Charoy and Pascal Urso

### 8.2.3. *Juries*

- Claudia-Lavinia Ignat was a member of the jury for the recruitment in 2014 of permanent Inria junior researchers at Inria Nancy-Grand Est.

Coast members were members of the following PhD and HDR defense committees:

- Walid Gaaloul, HDR, Université Pierre et Marie Curie, September 2014 (Claude Godart)
- Kahina Bessai, PhD, Université de Paris 1 Panthéon-Sorbonne, December 2014 (Claude Godart)
- Samuel Kaluvuri, PHD, EURECOM, November 2014 (François Charoy)
- Mohamadou Lamine DIOUF, Université de Rennes, October 2014 (François Charoy)
- Juan Li, PhD, INSA de Lyon (Olivier Perrin)
- Samu Yangui, PhD TELECOM Sud Paris (Olivier Perrin)
- Michael Mrissa, HDR Université de Lyon 1 (Olivier Perrin)

## 8.3. Institutional commitment

- Claudia-Lavinia Ignat is in charge of European affairs for Inria Nancy Grand-Est. She is the Delegate of International Relations for Inria Nancy-Grand Est. She is member of the Inria Nancy-Grand Est COMIPERS researchers committee. She is member of the Inria Nancy - Grand Est committee for health, safety and working conditions.

## 8.4. Collective Responsibilities outside Inria

Claude Godart is member of the “Conseil d’administration” and “Commission de choix” of the engineering school ESSTIN.

Claude Godart was member of the LIRIS laboratory evaluation committee for the HCERES.

François Charoy is head of the “Commission de choix” of TELECOM Nancy.

Gérald Oster is member of the Administration Council of TELECOM Nancy.

Gérald Oster is member of the “Commission de choix” of TELECOM Nancy.

Olivier Perrin is co-responsible of the “Commission de mention Informatique“ of Doctoral School IAEM.

## COATI Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

Jean-Claude Bermond :

Mediterranean Days 2014, March 12-14 (<http://campus.sophiatech.fr/meddays2014/>)

Frédéric Giroire :

ResCom'14 : school of the *pôle ResCom of GDR ASR of CNRS* on "Network Science", Furiani, Corsica, May 12-16, 2014

Workshop "Energy Aware Networks" of the labex UCN@Sophia (<http://www.ucnlab.eu/fr/node/66>), Sophia Antipolis, October 14, 2014

Nicolas Nisse :

GRASTA'14 : 6th Workshop on GRaph Searching, Theory and Applications [54], Cargèse, Corsica, France, March 31th-April 4th, 2014

#### 9.1.1.2. Member of the organizing committee

Christelle Caillouet :

ResCom'14 : school of the *pôle ResCom of GDR ASR of CNRS* on "Network Science", Furiani, Corsica, May 12-16, 2014

Frédéric Havet :

Bondy is 70 : Paris, France, November 17, 2014;

### 9.1.2. Scientific events selection

#### 9.1.2.1. Chair of conference program committee

David Coudert :

Co-chair of ResCom'14, school of the *pôle ResCom of GDR ASR of CNRS* on "Network Science", Furiani, Corsica, May 12-16, 2014

#### 9.1.2.2. Member of the conference program committee

David Coudert :

ROADEF'14 : 15ème congrès annuel de la Société française de recherche opérationnelle et d'aide à la décision, Bordeaux, France

ONDM'14 : 18th International Conference on Optical Networking Design and Modeling, Stockholm, Sweden, May 19-22, 2014

IEEE ICC'14 : IEEE International Conference on Communications, Sydney, Australia, June 10-14, 2014

IEEE Globecom'14 : IEEE Global Communications Conference, Austin, TX, USA, December 8-12, 2014

Frédéric Havet :

WG'14 : 40th International Workshop on Graph-Theoretic Concepts in Computer Science, Orléans, France, June 25-27, 2014;

ICGT'14 : 9th International Colloquium on Graph Theory and combinatorics, Grenoble, France, June 30-July 4, 2014;

BGW'14 : Bordeaux Graph Workshop, Bordeaux, France, November 19-22 2014;

Nicolas Nisse :

16es Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (AlgoTel 2014), Ile de Ré, France, 3-6 June, 2014.

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

Jean-Claude Bermond :

Combinatorics Probability and Computing

Computer Science Reviews

Discrete Applied Mathematics

Discrete Mathematics

Discrete Mathematics, Algorithms and Applications

Journal of Graph Theory

Journal of Interconnection Networks (Advisory Board)

Mathématiques et Sciences Humaines

Networks (Wiley)

Parallel Processing Letters

SIAM book series on Discrete Mathematics, Transactions on Network Optimization and Control, Discrete Mathematics, Algorithms and Applications

David Coudert :

Discrete Applied Mathematics (Elsevier)

Networks (Wiley)

Frédéric Havet :

Discrete Mathematics and Theoretical Computer Science

### **9.1.4. Steering committees**

David Coudert :

Pôle ResCom du GDR ASR du CNRS (since 2005)

Rencontres francophones sur les aspects algorithmiques des télécommunications (Algo-Tel)

Frédéric Havet :

GT Graphes du GDR IM du CNRS

Ecole de Printemps de Théorie des Graphes

Journée Combinatoire et Algorithmes du Littoral Méditerranéen

### **9.1.5. Participation in conferences**

ICDCN : 15th International Conference on Distributed Computing and Networks, January 4-7 2014, Coimbatore, India. Attended by Nicolas Nisse.

ROADEF : 15ème congrès annuel de la Société française de recherche opérationnelle et d'aide à la décision, Bordeaux, France, February 26-28. Attended by David Coudert and Alvinice Kodjo (speaker);

STACS : 31st Symposium on Theoretical Aspects of Computer Science, March 5-8 2014, Lyon, France. Attended by Nicolas Nisse.

GRASTA : 6th Workshop on GRAPh Searching, Theory and Applications, March 31th-April 4th, 2014, Cargèse, Corsica, France. Attended by David Coudert (speaker), Nicolas Nisse (speaker and organiser), and Stéphane Pérennes.

Nice Workshop on Random Graphs : May 14-15, 2014, Nice, France. Attended by Nicolas Nisse.

ResCom : school of the *pôle ResCom of GDR ASR of CNRS* on "Network Science", Furiani, Corsica, May 12-16, 2014. Attended by David Coudert (Lecturer)

AlgoTel : 16es Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (AlgoTel 2014), 3-6 June, 2014, Ile de Ré, France. Attended by Fatima Zahra Moataz (speaker), David Coudert, Nicolas Nisse, T. K. Phan (speaker);

WG : 40th International Workshop on Graph-Theoretic Concepts in Computer Science, Orléans, France (June 25-27, 2014). Attended by Frédéric Havet;

SEA : Symposium on Experimental Algorithms, Copenhagen, Denmark, June 29 - July 1st, 2014. Attended by David Coudert (speaker).

ICGT : 9th International colloquium on graph theory and combinatorics, June 30-July 4, 2014, Grenoble, France. Attended by Frédéric Havet and Nicolas Nisse.

MAC : Moving and Computing. Research Meeting on Distributed Computing by Mobile Robots, July 26th 2014, Hida Takayama, Japan. Attended by Nicolas Nisse.

IWOCA : 25th International Workshop on Combinatorial Algorithms, Duluth, Minnesota, USA (October 15-17, 2014). Attended by Benjamin Momège (speaker);

BGW : Bordeaux Graph Workshop, Bordeaux, France, November 19-22 2014. Attended by Frédéric Havet;

Globecom : IEEE Global Communications Conference, Austin, United States (December 8-12, 2014). Attended by Frédéric Giroire (speaker)

### 9.1.6. Participation in scientific meetings

STINT : Kick off meeting of ANR STINT, Lyon, February 17-18, 2014. Attended by Jean-Claude Bermond, Frédéric Havet and Stéphane Pérennes;

FIA : Future Internet Assembly, Athens, Greece, March 18-20, 2014. Attended by David Coudert;

EULER : Plenary meeting of FP7 STREP EULER, Paris, France (March 27-28, 2014). Attended by David Coudert;

JSInria : Journées Scientifiques Inria, Lille, France, June 25-27, 2014. Attended by David Coudert (speaker);

EULER : Final review meeting of FP7 STREP EULER project, Brussels, Belgium (August 29, 2014). Attended by David Coudert;

STINT : workshop of ANR STINT, Vercors, France, September 24-26 2014. Attended by Frédéric Havet

Seminar Orange/Inria : Common seminar Orange/Inria, Paris, France, October 28, 2014 Attended by Joanna Moulhierac;

Inria-Industrie : Rencontre Inria Industrie "Télécoms du futur", November, 13 2014. Attended by Joanna Moulhierac.

### 9.1.7. Participation in committees

Jean-Claude Bermond :

Expert for DRTT, and various projects outside France (Canada, Italie, ...)

David Coudert :

Expert for the Future and Emerging Technologies Open Scheme (FET-Open) European program, and the ANR

Frédéric Giroire :

Elected member of I3S laboratory committee since 2012

Frédéric Havet :

Responsible of Pôle ComRed of I3S laboratory;

Expert for the ANR and its Czech analogues;

Nicolas Nisse :

Expert for the ANR

Michel Syska :

Expert for DRTT PACA

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### Licence

Alvinice Kodjo, *Informatique Pratique*, 40h ETD, Level L1, UNS;

Alvinice Kodjo, *Réseaux (Couches supérieures)*, 15h ETD, Level L3, UNS;

Fatima Zahra Moataz, *Programmation avec Python*, 12h ETD, Level L1, Université Nice-Sophia Antipolis;

Fatima Zahra Moataz, *Systèmes Informatiques*, 24h ETD, Level L1, Université Nice-Sophia Antipolis;

Christelle Molle-Caillouet, *IT Tools*, 53h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

Christelle Molle-Caillouet, *Database and advanced information system*, 36h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Christelle Molle-Caillouet, *Operations Research*, 81h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Christelle Molle-Caillouet, *Delivery Optimization*, 30h ETD, Level L3, IUT Nice Côte d'Azur, UNS;

Benjamin Momège, *Mathématiques Discrètes*, 75h ETD, Level L3, Polytech'Nice Sophia, UNS;

Joanna Moulhierac, *Algorithms and Programming*, 100h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

Joanna Moulhierac, *Networks, basics and Advanced Networks*, 150h ETD, Level L1 and L2, IUT Nice Côte d'Azur, UNS;

Michel Syska, *Introduction to Operating Systems*, 40h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

Michel Syska, *Operating Systems : Advanced Programming*, 60h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

Michel Syska, *Bash Scripting*, 40h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Michel Syska, *Introduction to Algorithms*, 30h ETD, Level L3, IUT Nice Côte d'Azur, UNS;

Michel Syska, *Linux Systems Administration*, 40h ETD, Level L3, IUT Nice Côte d'Azur, UNS;

#### Master

David Coudert, *Algorithms for Telecoms*, 32h ETD, stream UbiNet of Master 2 IFI and Master RIF, UNS;

Frédéric Giroire, *Algorithmics of Telecommunications*, 18h ETD, stream UbiNet of Master 2 IFI and Master RIF, UNS;

Frédéric Giroire, *Green Networks*, 15h ETD, stream UbiNet of Master 2 IFI, UNS;

Frédéric Giroire, *Introduction to probability and statistics*, 15h ETD, International Master 1, UNS;

Frédéric Havet, *Optimisation combinatoire*, 24 ETD, Master 1 and 2, UNS, France;

### School

David Coudert, *the notion of hyperbolicity in graphs*, 2h ETD, Summer school ResCom;

## 9.2.2. Teaching administration

Collaboration Inria-Lycée International de Valbonne

Nicolas Nisse : co-responsible of the Computer Science course of MPSI;

IUT Nice Côte d'Azur

Joanna Moulierac, Directrice d'études of Semestre 2 décalé at IUT Nice Côte d'Azur, Computer Science Department since september 2013;

Michel Syska, responsible of the Computer Science Department of IUT form September 2011 till September 2014. He has organized the national meeting of the 46 CS departments, Nice, October 16-17.

Stream Ubinet, Master 2 IFI (<http://ubinet.unice.fr>)

Jean-Claude Bermond, member of the scientific committee;

Frédéric Giroire, responsible of the Internships, since October 2011;

International Master 1 (<http://computerscience.unice.fr/master1>)

Jean-Claude Bermond, member of the scientific committee of the international track of the M1

## 9.2.3. Supervision

### 9.2.3.1. HdR

Nicolas Nisse, "Algorithmic complexity: Between Structure and Knowledge How Pursuit-evasion Games help" [17], Université Nice Sophia Antipolis, May 23, 2014

### 9.2.3.2. PhD

Alvinice Kodjo, "Design and Optimization of Wireless Backhaul Networks" [13], Université Nice Sophia Antipolis, December 18, 2014. Supervisor: David Coudert

Aurélien Lancin, "Étude de réseaux complexes et de leurs propriétés pour l'optimisation de modèles de routage" [14], Université Nice Sophia Antipolis, December 9, 2014. Supervisor: David Coudert

Bi Li, "Tree Decompositions and Routing Problems" [15], Université Nice Sophia Antipolis, November 12, 2014. Supervisors: David Coudert and Nicolas Nisse Computer Science, date de soutenance, encadrant(s)

Ana Karolinna Maia De Oliveira, "Subdivisions of Digraphs" [16], Université Nice Sophia Antipolis, November 5, 2014. Supervisor: Frédéric Havet

Truong Khoa Phan, "Design and Management of Networks with Low Power Consumption" [18], Université Nice Sophia Antipolis, September 25, 2014. Supervisors: David Coudert and Joanna Moulierac

### 9.2.3.3. PhD in progress

Guillaume Ducoffe, "Metric properties of large graphs", since September 2014. Supervisor: David Coudert

Nicolas Huin, "Energy-Efficient Software Defined Networks", since October 2014. Supervisor: Frédéric Giroire and Dino Lopez (I3S)

Fatima Zahra Moataz, "Design and optimization of networks subject to failure and link capacity variations", since October 2012. Supervisor: David Coudert

Sebastien Felix, "Smart transports : optimisation du trafic dans les villes", since January 2011. Supervisors: Jean-Claude Bermond and Jérôme Galtier

#### 9.2.3.4. Internship

Paul Bertot (IUT Nice Côte d'Azur, France), "distributed computing of the diameter of large graphs", November-February (3 months). Supervisor: Michel Syska;

Eneina Gjata (Master 2 IFI, parcours ubinet, University Nice-Sophia Antipolis, France), "Analysis of protocols for Data Redundancy Elimination", March-August 2014 (6 months). Supervisor: Joanna Moulhierac

Nicolas Huin (Master 2 RIF, University Nice-Sophia Antipolis, France), "Study of a Distributed Live Video Streaming System", March-August 2014 (6 months). Supervisor: Frédéric Giroire

Flavian Jacquot (IUT Nice Côte d'Azur, France), "distributed computing frameworks for large graphs", November-March (4 months). Supervisor: Luc Hogie;

William Lochet (ENS, Lyon, France), pre-doctoral internship on "Subdivision of oriented cycles in digraphs", October-December 2014 (3 months). Supervisor: Frédéric Havet

Alexandros Panagiotidis (International Master 1, University Nice-Sophia Antipolis, France), "Connectivity Inference in Structural Proteomics", May-August 2014 (4 months). Supervisors: David Coudert, Christelle Caillouet

Thomas Wattrelot (Master 1 MAM, Polytech'Nice, UNS), "Comparison of algorithms for the traveling salesman problem", July-August 2014 (2 months). Supervisor: David Coudert

#### 9.2.4. Juries

David Coudert :

Member of the HdR jury of Nicolas Nisse, Univ. Nice Sophia Antipolis, May 23, 2014

Member of the PhD jury of François Clad, Univ. Strasbourg, September 22, 2014

Member of the PhD jury of Truong Khoa Phan, Univ. Nice Sophia Antipolis, September 25, 2014

Member of the PhD jury of Bi Li, Univ. Nice Sophia Antipolis, November 12th, 2014

Referee and member of the PhD jury of Massinissa Merabet, Univ. Montpellier, December 5, 2014

Member of the PhD jury of Aurélien Lancin, Univ. Nice Sophia Antipolis, December 9, 2014

Referee and member of the PhD jury of Stéphane Raux, Univ. Paris Diderot, December 12, 2014

Member of the PhD jury of Alvinice Kodjo, Univ. Nice Sophia Antipolis, December 18, 2014

Frédéric Giroire :

Member of the PhD jury of Alain Julé, Université de Cergy-Pontoise, March 7, 2014

Frédéric Havet :

Referee and member of the PhD jury of Julien Bensmail, University of Bordeaux, June 10, 2014



Referee and member of the PhD jury of Remi Watrigant, University Montpellier 2, October 2, 2014

Member of the PhD jury of Ana Karolinna Maia De Oliveira, Univ. Nice Sophia Antipolis, November 5, 2014

Referee and member of the PhD jury of Maxime Cochefert, University of Metz, December 18, 2014

Joanna Moulierac :

Member of the PhD jury of Truong Khoa Phan, Univ. Nice Sophia Antipolis, September 25, 2014

Nicolas Nisse :

Member of the PhD jury of Bi Li, Univ. Nice Sophia Antipolis, November 12, 2014

### 9.2.5. Participation in committees

Jean-Claude Bermond :

Member of the Ph.D. committee of the University of Marseille

Responsible of the Attractivity for Inria Sophia Antipolis - Méditerranée and more generally for the Campus Sophia Tech

David Coudert :

Member of doctoral committee (CSD) of Inria Sophia Antipolis - Méditerranée, since 2009

Nicolas Nisse :

Member of a comité de sélection of 27me section, Univ. Aix-Marseille

Frédéric Havet :

President of a *comité de sélection* of 27eme section of UNS;

Member of a *comité de sélection* of 27eme section of Aix-Marseille Université;

Joanna Moulierac

Member of the *comité de sélection 27e section* of Univ. Nice Sophia Antipolis

## 9.3. Popularization

- Fête de la Science

Frédéric Giroire presented the stand "Mathémagie" (Magie et Mathématiques) at Rians, France, October 13-18, 2014;

Frédéric Havet organized the "Village des Sciences de Rians", October 13-18 (900 attendants) and created several stands and trained some people to conduct them;

Frédéric Havet presented the stand "Pavages: art, preuves et jeux" at Rians, France, October 13-18, 2014.

- Institut Esope - Maison des Sciences de Rians

Frédéric Havet is vice-president of the association Esope 21 whose aim is scientific and literary popularization. He organized many local events and conducted various discovery workshops in elementary and secondary schools. In total, he spoke in front of about 30 classes on various topics (Mathematics, Computer Science, Astronomy, Ornithology, Job in research, etc.).

## CTRL-A Exploratory Action

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

Eric Rutten is

- Workshops chair for the 12th IEEE International Conference on Autonomic Computing, ICAC, July 7-10, 2015 in Grenoble, France <http://icac2015.imag.fr> ;
- proposing the DCDS 2015 Special Session on Dependable Discrete control for adaptive and reconfigurable computing systems <http://www.gdl.cinvestav.mx/dc2015/submission.html> may 2015 ;
- organizer of the two editions of the Grenoble Workshop on Autonomic Computing and Control, 27 may and 4 november 2014 <https://persyval-lab.org/en/exploratory-project/taars> ;
- organizer, with Thierry Monteil and Khalil Drira (LAAS), of the workshop autonome, 16 - 17 oct. 2014 au LAAS, Toulouse (invited keynote speaker : Xiaoyun Zhu, VMware) <http://projects.laas.fr/autonome> ;
- organizer of the WODES 2014 Special Session on Discrete control for adaptive and reconfigurable computing systems, 14 may 2014 <http://wodes2014.lurpa.ens-cachan.fr/special-sessions/> ;
- organizer, with J. Buisson (IRISA), of the Atelier Informatique Autonome, satellite of the colloque COMPAS 2014, 22 avril 2014, Neuchatel <http://compas2014.unine.ch/atelier2> ;
- organizer of the Seminar (Grenoble and Rhône-Alpes region, Lyon, Valence, Annecy) on Supervisory control Techniques for Autonomic, Adaptive and Reconfigurable computing Systems <https://team.inria.fr/ctrl-a/members/eric-rutten/labex/taars-seminars-html/>

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

Eric Rutten is program co-chair of the IEEE International Conference on Cloud and Autonomic Computing, CAC 2015, MIT, USA, September 2015 (<http://autonomic-conference.org>), Part of FAS\* - Foundation and Applications of Self\* Computing Conferences, Collocated with: the IEEE Self-Adaptive and Self-Organizing System Conference, the IEEE Peer-to-Peer Computing Conference.

#### 9.1.2.2. member of the conference program committee

Eric Rutten is PC member for: 5th IFAC Conference on Analysis and Design of Hybrid Systems (ADHS) October 14-16, 2015, Georgia Tech, Atlanta, Georgia, USA (<http://adhs15.gatech.edu> ; 12th IEEE International Conference on Autonomic Computing, ICAC 2015, July 7-10, 2015 in Grenoble, France (<http://icac2015.imag.fr>) ; 5th IFAC international workshop on Dependable Control of Discrete Systems , DCDS, Cancun, Mexico, may 27-29, 2015 (<http://www.gdl.cinvestav.mx/dc2015>) ; 6th Workshop on Adaptive and Reconfigurable Embedded Systems (APRES 2014) April 14, 2014, Berlin, Germany ; Collocated with the CPSWeek (<http://www.mrtc.mdh.se/apres2014>) ; ESLsyn 2014 The 2014 Electronic System Level Synthesis Conference, May 31 - June 1, 2014, San Francisco, CA, USA, co-located with DAC (<http://www.ecsi.org/eslsyn>)

Nicolas Marchand is PC member for Feedback Computing 2015 10th International Workshop on Feedback Computing Co-located with CPSWeek 2015 April 13th, Seattle, WA, USA (<http://cpslab.cs.mcgill.ca/feedbackcomputing15/>)

#### 9.1.2.3. reviewer

Eric Rutten, Nicolas Marchand, Bogdan Robu are reviewers for the IFAC World congress 2014.

### 9.1.3. Journal

#### 9.1.3.1. reviewer

Eric Rutten is reviewer for ACM Transactions on Autonomous and Adaptive Systems ; Science of Computer Programming ; Journal of Systems and Software.

### 9.1.4. Invited Conferences

- Eric Rutten was invited to give talks at :
  - groupe de travail COSMAL (<http://gdr-gpl.cnrs.fr/Groupes/COSMAL>), journées du GDR GPL, CNAM Paris du 10 au 13 juin
  - Journée Architectures Logicielles pour la Robotique Autonome, les Systèmes Cyber-Physiques et les Systèmes Auto-Adaptables, 1er décembre 2014, LIP6 Paris (<http://www.lirmm.fr/gtcar/index.php/autres-workshop/workshop-cps-gdr-gpl-robotique>)
  - 11th International Conference on Distributed Computing and Internet Technology (ICDCIT-2015). (<http://www.icdcit.ac.in/>), Bhubaneswar, India, February 5–8, 2015.
- Nicolas Marchand, Bogdan Robu were invited to give talks at the Workshop in Cloud Control, May 7 to May 9, 2014, Lund, Sweden (<http://www.lccc.lth.se/index.php?page=may-2014-2>)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Supervision

- PhD : Soguy Geye ; Coordination Modulaire de Gestionnaires Autonomes par Contrôle Discret ; Université de Grenoble, 3 dec. 2014 ; E. Rutten, N. de Palma (LIG)
- PhD in progress : Adja Ndeye SYLLA ; Generation of coordination rules from an automaton, in the context of the redeployment of distributed contra; applications ; fall 2014 ; E. Rutten, F. Pacull and M. Louvel (CEA)
- PhD in progress : Naweiluo Zhou ; Application-aware policies and control for transactional memory systems ; oct. 2013 ; E. Rutten, G. Delaval, J.F. Mehaut (LIG)
- PhD in progress : Mengxuan Zhao ; Discrete Control in the Internet of things and Smart Environments through a Shared Infrastructure ; nov. 2011 ; E. Rutten, H. Alla (Gipsa-lab), G. Privat (Orange labs)

## DANTE Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- Márton Karsai was organiser of the Computational Social Science, ECCS 2014 satellite.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Chair of conference program committee

- Paulo Gonçalves is officer of the local liaison board of EURASIP
- Anthony Busson was TPC (Technical Program Chair) of ISNCC 2014
- Isabelle Guérin Lassous was Program co-Chair of ACM International Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks (PE-WASUN 2014)

#### 9.1.2.2. Member of the conference program committee

- Paulo Gonçalves is PC member of IWCMC - TRAC 2014.
- Christophe Crespelle is PC member of AlgoTel 2014
- Éric Fleury is PC member of Networking 2014
- Éric Fleury is PC member of NetSciCom 2014
- Isabelle Guérin Lassous is PC member of MSWiM 2014, IPDPS 2014, ICC 2014, Globecom 2014 and MedHocNet 2014.
- Márton Karsai is PC member of CSS ECCS'14

#### 9.1.2.3. Invited talks

- Márton Karsai was invited lecturer at RESCOM Summer School - (May 2014, Furiani, Corsica, France)
- Márton Karsai was invited speaker at TNetSphys'14 - NetSci'14 Symposium (June 2014, University of California, Berkeley, CA, USA)
- Márton Karsai was invited speaker at Complex Networks and Dynamics - ICCSA'14 Satellite meeting (June 2014, Le Havre, France)
- Márton Karsai was invited speaker at Institute of Research and Development (October 2014, Bondy, Paris, France)
- Paulo Gonçalves was invited keynote speaker at the international conference CLOSER 2014.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- Isabelle Guérin Lassous is a member of the editorial board of: Computer Communications (Elsevier), Ad Hoc Networks (Elsevier) and Discrete Mathematics & Theoretical Computer Science.

#### 9.1.3.2. Reviewer

- Márton Karsai was acting as reviewer in Physical Review X, EPJ Data Science, New Journal of Physics, PLoS ONE, Transactions on Network Science and Engineering, Nature Scientific Reports, Physica Scripta, Network Science, Europhysics Letters
- P. Gonçalves was reviewer for *IEEE Signal Processing* (transactions on, letters), *EURASIP J. on Advances in Signal Processing*.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### 9.2.1.1. Teaching by *Éric Fleury*

Éric Fleury is Professor at the Computer Science department of ENS de Lyon and holds a Inria chair.

Master : CR15 - Complex Networks, 18H, M2, ENS de Lyon, France

Licence/Master : Alter-disciplinary course, Complexe network: an interdisciplinary approche 6H, L3, M1, M2, ENS de Lyon, France

#### 9.2.1.2. Teaching by *Thomas Begin*

Licence : "Networks", 18h, Bachelor (L3), University Lyon 1, France

Master : "Networking", 63h, Master (M1), University Lyon 1, France

Master : "Advanced Networks", 50h, Master (M2), University Lyon 1, France

Master : "Computer Networks", 12h, Master (M1), ENS de Lyon, France

#### 9.2.1.3. Teaching by *Christophe Crespelle*

Master : "Introduction to Graph Algorithms", 21h, Master (1st year), Institute of Mathematics Hanoi, Vietnam

Licence : "Combinatorial Optimization", 12h, Bachelor (4th year), Vietnam National University of Hanoi, Vietnam

Master : "Introduction to Graph Algorithms", 30h, Master (1st year), Institute of Mathematics Hanoi, Vietnam

#### 9.2.1.4. Teaching by *Isabelle Guérin Lassous*

Professor at Université Claude Bernard Lyon 1 in the Computer Science since 2006. She lectures at the University.

Master : "Networking", 20h, Master (M1), University Lyon 1, France

Master : "QoS and Multimedia Networks", 30h, Master (M2), University Lyon 1, France

Master : "Wireless Networks", 15h, Master (M2), University Lyon 1, France

Master : "Introduction to Networking", 30h, Master (M2), University Lyon 1, France

#### 9.2.1.5. Teaching by *Márton Karsai*

Márton Karsai is an Assistant Professor at ENS Lyon in the Computer Science Department since 2013 and holds a Inria Chair. He is the co-responsible for the Complex Networks Master 2 program. His lectures in 2014:

Master : CR15 - Complex Networks, 18H, M2, ENS de Lyon, France

Master : Dynamical Processes on Networks, 4H, M2, ENS de Lyon, France

Master : Modelling Social Systems, 6H, M2, ENS de Lyon, France

Licence/Master : Alter-disciplinary course, Complexe network: an interdisciplinary approach 4H, L3, M1, M2, ENS de Lyon,

#### 9.2.1.6. Teaching by Paulo Gonçalves

Postgraduate level: Course (theory and practice) on Signal Processing (80 hours Eq. TD), CPE Lyon, France.

### 9.2.2. Supervision

#### 9.2.2.1. Defended

Shubhabrata Roy, A Complete Framework for Modelling Workload Volatility of a VoD System: a Perspective to Probabilistic Management, Université de Lyon, June 2014, P. Gonçalves and T. Begin

#### 9.2.2.2. In Progress

- Thiago Abreu, Modeling and performance analysis of IEEE 802.11-based chain networks, Université de Lyon, defense scheduled on Mars 2015, I. Guérin-Lassous and T. Begin
- Lucie Martinet, Dynamic contact networks and diffusion process, Oct 2011, E. Fleury and C. Crespelle
- Benjamin Girault, Signal processing on graph, Oct 2012, E. Fleury and P. Gonçalves
- Matteo Morini, New tools for understanding the dynamics of social networks, Oct 2013, E. Fleury, P. Jensen and M. Karsai
- Yannick Leo, Diffusion process and community structure in complex networks, Oct 2013, E. Fleury, C. Crespelle, and M. Karsai
- Huu Nghi Nguyen, Admission control and controllers allocation for SDN networks, Sept 2014, I. Guérin Lassous, A. Busson and T. Begin
- Mohammed Amer, Optimisation and planning of Wi-Fi based networks: SDN paradigm, Nov 2014, I. Guérin Lassous, A. Busson
- Elie Rotenberg, An approach for a reliable estimation of the properties of the Internet topology, September 2010, Matthieu Latapy and Christophe Crespelle
- Laurent Reynaud, Optimized mobility strategies for interference tolerance and energie saving in wireless networks, Oct 2013, . Guérin Lassous

### 9.2.3. Juries

Eric Fleury was member of the PhD examination board of: Nicolas Tremblay, Daniel Bernades.

Eric Fleury was member of the HdR examination board of: Michael Hauspie, Pierre Borgnat.

Anthony Busson was reviewer and member of the PhD examination board of: Sebastien Faye, Salim Allal.

Christophe Crespelle was member of the PhD examination board of Pham Van Trung, Vietnam Academy of Science and Technology.

Isabelle Guérin Lassous was member of the PhD examination board of: Jordan Augé (reviewer)

Isabelle Guérin Lassous was member of the HdR examination board of: Nadjib Achir (reviewer), Hervé Rivano, Tara Ali Yahya (reviewer), Marco Fiore.

Paulo Gonçalves was reviewer and member of the PhD examination board of Sergey Kirgizov.

## 9.3. Popularization

- Interview of E. Fleury for X:ENIUS on arte TV: *Big data : opportunity or curse ?* (<http://www.arte.tv/guide/fr/051094-020/x-enius>)
- Interview of M. Karsai for Campus Channel TV: *Master 2 program of Complex Networks* (<https://www.youtube.com/watch?v=k7I1m1NCbTU>)

## 9.4. Institutional commitment

- Éric Fleury is Vice-Chairman of the Inria Grenoble Rhône Alpes projects committee
- Éric Fleury is member of the Inria Evaluation Committee and member of the board.
- Éric Fleury is member of the junior research position (CR2) jury at Inria Sophia
- Éric Fleury is member of the research (CR1) jury at Inria Sophia
- Éric Fleury is member of the Starting Research Position and Advanced Research position jury
- Paulo Gonçalves is scientific correspondent of the International Relations for Inria Grenoble - Rhône-Alpes
- Paulo Gonçalves is member of the *Comité de Développement Technologique* of Inria Grenoble - Rhône-Alpes
- Isabelle Guérin Lassous is member of the researcher support commission of the Inria Grenoble Rhône Alpes

## 9.5. Collective Responsibilities outside Inria

- Éric Fleury is Co-chair of the Networking group ResCom of the CNRS GDR ASR. He is also a member of the scientific committee of the GDR ASR.
- Éric Fleury is in the in the Executive Committee of the IXXI – Rhône-Alpes Complex Systems Institute.
- Éric Fleury has been an expert for the Fund for Scientific Research - FNRS.
- Paulo Gonçalves is scientific correspondent of the International Relations for the Computer Science Department at ENS Lyon.
- Isabelle Guérin Lassous is member of the CNRS National Committee for section 06 (Computer Science).
- Isabelle Guérin Lassous was the chair of the AERES expert committee of CALMIP.
- Christophe Crespelle is member of the Council of the LIP laboratory.
- Christophe Crespelle is member of the steering committee of the IXXI – Rhône-Alpes Complex Systems Institute.
- Christophe Crespelle was expert for Nafosted (National funding agency for research in Vietnam) in Computer Science in 2014.
- Thomas Begin is an elected member of the Council of the LIP laboratory.
- Thomas Begin is an elected member of the Advisory Committee for the department Computer Science for University Lyon 1.
- Márton Karsai is the co-responsible of the Complex Networks Master 2 program at ENS Lyon.

## DIANA Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

Walid Dabbous is member of the ns-3 consortium. He co-organizes the ns-3 workshop in May 2015. He is member of the scientific council of the Inria Bell-Labs laboratory on Communication networks of the future.

Thierry Turletti, Senior ACM and IEEE member, served in 2014 in the program committees of the following international workshops: 1st ACM Workshop on Wireless and Mobile Technologies for Smart Cities (WiMobCity) at MobiHoc, the 2nd Workshop on Emulation Tools, Methodology and Techniques at SIMU-Tools, the 5th Workshop on ns-3 and the 5th ICCE, Special Session on Software Defined Networking. He co-chaired the 1st Workshop on Software-Defined Internets of the future (WSDIF'14), Philadelphia, Pennsylvania on October 28 2014. He is member of the Editorial Boards of the Journal of Mobile Communication, Computation and Information (WINET) published by Springer Science and of the Advances in Multimedia Journal published by Hindawi Publishing Corporation.

Chadi Barakat is on the editorial board of the Computer Networks journal, on the Technical Program Committee for the Traffic Monitoring and Analysis (TMA) 2015 workshop and Publicity Co-Chair for ACM SIGCOMM 2015. He is currently the scientific referee for international affairs at Inria Sophia Antipolis and member of the Conseil d'Orientation Scientifique et Technologique (COST) at Inria within the working group of international affairs (COST-GTRI).

Arnaud Legout on the editorial board of the Computer Networks journal, and was PC member of the ACM/Usenix IMC'2014 conference. Arnaud Legout is the president of the Commission of the users of IT resources of Sophia Antipolis Inria research center.

Damien Saucez is member of the TPC of CCNC 2015, BMSGs' 2015, and AINA-2015. Damien Saucez is secretary and document shepherding at the IETF LISP working group (details about the secretary and shepherd roles can be found in RFC 2418 and RFC 4858). Damien Saucez is secretary of the Project Committee (CP) at Inria Sophia Antipolis Méditerranée.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master Ubinet: Chadi Barakat and Walid Dabbous, Evolving Internet, 31.5 hours, M2, université, University of Nice-Sophia Antipolis, France.

Master Ubinet: Chadi Barakat and Walid Dabbous, Internet Measurements and New Architectures, 31.5 hours, M2, University of Nice-Sophia Antipolis, France.

Master 1 International: Chadi Barakat, Algorithms for Networking, 27 hours, M1, University of Nice-Sophia Antipolis, France.

Master CAR: Chadi Barakat, Information Centric Networking, 4.5 hours, Telecom Paris Tech, France.

Master Estel: Chadi Barakat, Voice over IP, 9 hours, University of Nice-Sophia Antipolis, France.

Master RISM: Chadi Barakat, Mobility and wireless networking, 10.5 hours, University of Avignon, France.

Master Ubinet: Arnaud Legout, From BitTorrent to Privacy, 36 hours, M2, University of Nice-Sophia Antipolis, France.

Master 1 International: Arnaud Legout, Scientific Communication, 22.5 hours, M1, University of Nice-Sophia Antipolis, France.



Master IUP GMI: Damien Saucez, Security and privacy in networks, 38h, M2, University of Avignon, France.

IUT : Damien Saucez, Advanced Network Services and Operator Network Technologies, 27h, L1 and L2, University of Nice-Sophia Antipolis, France.

### **E-learning**

Mooc: Arnaud Legout and Thierry Parmentelat, Python : des fondamentaux à l'utilisation du langage, 7 weeks, FUN (<https://www.france-universite-numerique-mooc.fr/>), Inria, 9166 registered persons (for elementary school to PhD), 500 finished the course, 100 did the miniproject.

### **8.2.2. Supervision**

PhD in progress: Riccardo Ravaioli works on "Active and Passive Inference of Network Neutrality" since October 2012. His thesis is co-supervised by Chadi Barakat.

PhD in progress: Luigi Vigneri works on "Vehicles as a Mobile Cloud: Leveraging mobility for content storage and dissemination" since April 2014. His thesis is co-supervised by Chadi Barakat.

PhD in progress: Maksym Gabielkov works on "Information propagation in social networks" since October 2012. His thesis is supervised by Arnaud Legout.

PhD in progress: Alina Quereilhac works on "Unified Evaluation environment of Networking Protocols for Simulators and Testbeds", since 2011. Her thesis is co-supervised by Walid Dabbous and Thierry Turletti.

PhD in progress: Xuan Nam Nguyen works on "Software Defined Networking in challenged environments", since October 2012. His thesis is co-supervised by Thierry Turletti and Walid Dabbous.

PhD in progress: Hardik Soni works Software Defined Networking in challenged environments since September 2014. His thesis is co-supervised by Thierry Turletti and Walid Dabbous.

### **8.2.3. Juries**

Walid Dabbous served as jury member of Vincent Roca HDR thesis, "Codes AL-FEC et protocoles de diffusion robustes de contenus" defended in June 2014 at University of Grenoble.

Chadi Barakat served as president and jury member of Rachad Maallawi PhD thesis, "Mechanisms, Protocols, and Architectures for the Offloading control in the heterogeneous networks context" defended in January 2014 at Orange Labs Issy-les-Moulineaux.

Walid Dabbous served as reviewer of Wei You PhD thesis, "A Content-Centric Networking Node for Realistic Efficient Implementation and Deployment" defended in January 2014 at Telecom Bretagne, Lannion.

Chadi Barakat served as jury member of Wissam Chahin PhD thesis, "Réseaux hétérogènes tolérants aux délais" defended in March 2014 at IUP Avignon.

Walid Dabbous served as reviewer of Nada Sbihi PhD thesis, "Gestion du trafic dans les réseaux orientés contenus" defended in March 2014 at UPMC, Paris.

Walid Dabbous served as jury member of Tien-Thinh Nguyen PhD thesis, "Optimization of Mobility Mechanisms for IP based Multicast Flows" defended in May 2014 at Eurecom, Sophia Antipolis.

Walid Dabbous served as reviewer of Alexandru-Florin Tatar PhD thesis, "Predicting user-centric behavior: Content popularity and mobility" defended in July 2014 at UPMC, Paris.

Arnaud Legout served as reviewer of Arnaud Jégou PhD thesis, "Harnessing the power of implicit and explicit social networks through decentralization" defended in 2014 at University of Rennes.

Walid Dabbous served as jury member of Mahmoud El Chamie PhD thesis, "Optimization, Control, and Game Theoretical Problems in Consensus Protocols" defended in October 2014 at University of Nice Sophia Antipolis.

Thierry Turletti served as reviewer of Rosa Vilardi PhD thesis, "Traffic Monitoring and Measurements in modern Networks", defended in January 2014 at Politecnico di Bari.

Thierry Turletti served as reviewer of Shubhabrata Roy PhD thesis, "A Complete Framework for Modelling Workload Volatility of a VoD System: a Perspective to Probabilistic Management", defended in May 2014 at ENSL.

Thierry Turletti served as examiner of Rui Pedro Ferreira da Costa PhD thesis, "Mobility Architecture for Next Generation Networks", defended in May 2014 at Eurecom.

Thierry Turletti served as reviewer of Tara Ali Yahya HDR thesis, "Allocation des Ressources et Gestion d'Interférences dans les Réseaux 4G", defended in May 2014 at Université de Paris Sud.

Thierry Turletti served as examiner of Siwar en Hadj Said PhD thesis, "Contextual Connectivity in Multi-Access Architectures", defended in December 2014 at Télécom Bretagne.

### **8.3. Popularization**

Walid Dabbous presented Future Internet challenges to high school students at Lycée de Valabre Gardanne in April 2014 and at CIV in October at CIV for the Science Week (Fête de la science).

Walid Dabbous made a presentation on Software Defined Networking and Network Functions Virtualization at the Inria Industry Day in Paris on the theme "Télécoms du futur".

Chadi Barakat presented ACQUA at the Inria Industry Day in Paris on the theme "Télécoms du futur". See <http://www.inria.fr/en/centre/paris-rocquencourt/innovation/rii-telecoms-du-futur/program>.

## **DIONYSOS Project-Team**

# **8. Dissemination**

## **8.1. Promoting Scientific Activities**

### **8.1.1. Scientific events organisation**

#### *8.1.1.1. Member of the organizing committee*

Pierre L'Ecuyer was a member of the following groups:

- Steering Committee for the IMACS Seminar on Monte Carlo Methods (biennial conference), since 2009.
- Steering Committee for the International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, since 2006.
- Selection committee for the INFORMS Simulation Society Distinguished Service Award, 2012-2015.

G. Rubino and B. Tuffin are members of the Steering Committee of the International Workshop on Rare Event Simulation (RESIM).

### **8.1.2. Scientific events selection**

#### *8.1.2.1. Chair of conference program committee*

- Bruno Sericola served as Program Chair of ASMTA 2014, 21th International Conference on Analytical and Stochastic Modelling Techniques and Applications, Budapest, Hungary, July 2014.
- Adlen Ksentini served as Technical Program Committee Chair of the 3rd IEEE Workshop on Telecommunication Standards: From Research to Standards, hold in conjunction with IEEE Globecom 2014.

#### *8.1.2.2. Member of the conference program committee*

Bruno Sericola served in the Program Committee of the following conferences:

- MACOM 2014, 7th International Workshop on Multiple Access Communications, Halmstad, Sweden, 27-28 August 2014.
- ACCESS 2014, 5th International Conference on Access Networks, Seville, Spain, 22-26 June 2014.

Pierre L'Ecuyer was a member of the program committee of the following events:

- SIMULTECH'2014: International Conference on Simulation and Modeling Methodologies, Technologies and Applications, Vienna, Austria, Aug. 2014.
- MCQMC'2014: Eleventh International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Leuven, Belgium, April 2014.
- ICORES'2014: International Conference on Operations Research and Enterprise Systems, Angers, France, March 2014.

Adlen Ksentini was a member of the program committee of the following events:

- IEEE ICC 2014 Adhoc and Sensors and Wireless Networks Symposium, Sydney, Australia 2014.
- IEEE Globecom 2014 Adhoc and Sensors Symposium, Austin, USA 2014.
- IEEE WCNC 2014, Istanbul, Turkey 2014.

Yassine Hadjadj-Aoul was a member of the program committee of the following events:

- IEEE ICC 2014, Adhoc and Sensor Networking Symposium, Sydney, Australia 2014.
- IEEE Globecom 2014, Wireless networking Symposium, Austin, USA 2014.
- IEEE WCNC 2014, Mobile and Wireless Networks track, Istanbul, Turkey 2014.
- IEEE ICNC 2014, Wireless Ad hoc and sensor networks symposium, Honolulu, Hawaii, USA

Bruno Tuffin was a member of the program committee of the following events:

- 3rd Workshop on Smart Data Pricing (SDP 2014), Workshop of IEEE INFOCOM 2014, Toronto, Canada, May 2, 2014.
- 2014 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (ACM SIGSIM PADS 2014), Denver, Colorado, USA, May 18-21, 2014.
- RAWNET/WNC3 2014 - 10th International Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks, Hammamet, Tunisia, June 2014.
- W-PIN+NetEcon 2014: The joint Workshop on Pricing and Incentives in Networks and Systems, Austin, TX, USA, in conjunction with ACM SIGMETRICS.
- Workshop on QoE-centric Network and Application Management (QoENAM 2014), co-located with the IEEE ICC 2014 conference, Sydney, Australia, June 2014.
- 10eme Atelier de performance, Sophia Antipolis, France, 11-13 Juin 2014.
- 10th International Workshop on Rare Event Simulation (RESIM 2014), August 27-29, 2014, Amsterdam, Netherlands.
- 4th International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH), Vienna, Austria, 2-4 September 2014.

Gerardo Rubino was a member of the program committee of the following events:

- Networking 2014: IFIP Networking 2014 Conference, Trondheim, Norway, Jun 2–4
- Resim 2014: 10th International Workshop on Rare Event Simulation, Amsterdam, Netherlands, Aug 27–29, 2014.
- QEST 2014: 11th International Conference on Quantitative Evaluation of SysTems, Florence, Italy, Sep 8–12, 2014.
- CLEI 2014: XL Conferencia Latinoamericana de Informática (Latin-American Informatics Conference), Montevideo, Uruguay, Sep 15–19, 2014.

### **8.1.3. Journal**

#### *8.1.3.1. Member of the editorial board*

Adlen Ksentini was guest editor for the Special Issue in IEEE Wireless Communication Magazine on Research & Standards: Leading the Evolution of Telecom Network Architectures.

Bruno Sericola is an associate editor for the following journals:

- Open Operational Research Journal.
- International Journal of Stochastic Analysis.
- IISRN Probability and Statistics.

Bruno Tuffin is an associate editor for the following journals:

- INFORMS Journal on Computing, since 2007.
- Mathematical Methods of Operations Research, since November 2008.
- ACM Transactions on Modeling and Computer Simulation, since July 2009.

Pierre L'Ecuyer is an associate editor for the following journals:

- ACM Transactions on Mathematical Software, since August 2004.
- Statistics and Computing (Springer-Verlag), since June 2003.
- International Transactions in Operational Research, since May 2007.
- Cryptography and Communications - Discrete Structures, Boolean Functions and Sequences (Springer-Verlag), since December 2006.

#### 8.1.3.2. Reviewer

Bruno Tuffin has reviewed papers in 2014 for Operations Research, Telecommunication Systems, IEEE Transaction on Reliability, IEEE/ACM Transaction on Networking, Annals of Telecoms, International Transaction in Operational Research, etc. Bruno Tuffin was also a reviewer in 2014 for the Natural Sciences and Engineering Research Council of Canada (NSERC) and for CIFRE contracts (France).

César Viho has reviewed project proposals for the ANR and for CIFRE contracts for the ANRT. He has reviewed papers for the journals IEEE Transaction on Wireless Communication, IEEE Transactions on Vehicular Communications, IEEE Communications Magazine, and for the following international conferences: IWCNC'14, Globecom'14, ICTSS'14, VTC Fall 2014.

Adlen Ksentini has reviewed papers in 2014 for Transaction Paralel Distributed Systems-TPDS, Transaction on Wireless Communication - TWC, Transaction on Vehicular Technology - TVT, Wireless Communication Magazine, Elsevier Computer Communication.

Yassine Hadjadj-Aoul has reviewed papers in 2014 for Transaction on Vehicular Technology-TVT, Wireless Communication Magazine, Elsevier Computer Communication and for the following international conferences: Globecom'14, ICC'14, WCNC'14.

Gerardo Rubino has reviewed papers for IEEE Wireless Communications Magazine, Neural Computation, Journal of Applied Probability, Networking 2014, XL Latin American Computing Conference (CLEI 2014), Latin American Symposium on Computing and Society, 11th International Conference on Quantitative Evaluation of SysTems (QEST 2014).

#### 8.1.4. Seminar and talks

- W. Chan, G. Koole, and P. L'Ecuyer, "Dynamic Call Routing Policies Using Call Waiting Times and Agent Idle Times", The Optimization Days, Montreal, May 2014.
- N. Chapados and P. L'Ecuyer, "Hierarchical Bayesian State-Space Model for Call Center Arrival Rate Forecasting", The Optimization Days, Montreal, May 2014.
- R. Ibrahim, P. L'Ecuyer, H. Shen, "Service Times in Call Centers: A Data-Based Perspective", INFORMS Annual Meeting, San Francisco, Nov. 2014.
- P. L'Ecuyer, "Challenges in Stochastic Modeling of Service Systems: Illustrations with Call Centers", Rotman School of Management, University of Toronto, Nov. 2014.
- P. L'Ecuyer, Discussion of 2014 Markov Lecture of Peter W. Glynn: "Perspectives on Traffic Modeling", INFORMS Annual Meeting, San Francisco, Nov. 2014.
- P. L'Ecuyer, "Challenges in Stochastic Modeling of Call Centers", Ecole Centrale de Paris, Châtenay-Malabry, France, June 2014.
- P. L'Ecuyer, "Multiple Streams of Random Numbers for Parallel Computers: Design and Implementation", Centre d'Énergie Atomique (CEA), Saclay, France, June 2014.
- P. L'Ecuyer, "Challenges in Stochastic Modeling of Service Systems: Illustrations with Call Centers", invited plenary talk, 10th Workshop on Performance Evaluation (AEP 2014), Inria Sophia-Antipolis, France, June 2014.
- P. L'Ecuyer, "On the Distribution of Integration Error with Randomly-Shifted Lattice Rules", invited talk, Latrobe University, Melbourne, Australia, Feb. 2014.

- P. L'Ecuyer, "Static Network Reliability Estimation Under the Marshall-Olkin Copula", School of Mathematics, University of New South Wales, Sydney, Feb. 2014.
- M. Pelleau, L.-M. Rousseau, P. L'Ecuyer, and L. Delorme, "Agent Scheduling from Forecasts of Future Call Arrivals at Hydro-Quebec Call Centers", The Optimization Days, Montreal, May 2014.
- G. Rubino and B. Tuffin. "Introduction to Monte Carlo methods". One-day course/seminar at ALSTOM, France, May 2014.
- N. Stier-Moses, P. L'Ecuyer, P. Maillé, and B. Tuffin, "Revenue-Maximizing Rankings for Online Platforms with Quality-Sensitive Consumers", Yahoo Inc., June 2014.
- T. A. Ta, P. L'Ecuyer, and F. Bastin, "Staffing Optimization with Chance Constraints in Call Centers", The Optimization Days, Montreal, May 2014.
- M. Thiongane and P. L'Ecuyer, "Waiting Time Prediction in Multiskill Call Centers with Callback Options", The Optimization Days, Montreal, May 2014.
- B. Tuffin. "La neutralité du Net." Tr@nspolo: transparence politique et organisationnelle dans les sociétés numériques, Avignon, July 2014.
- B. Tuffin. "Importance Sampling and variance reduction techniques". Summer school on Modeling and Numerical Methods for Uncertainty Quantification (MNMUQ 2014), Porquerolles Island, France, 1-5 September 2014.
- A. Ksentini, "Quand les réseaux mobiles rencontrent le Cloud", au Laboratoire LIF de Marseille, Mars 2014.
- G. Rubino, "Analyzing rare events with Monte Carlo: advanced methods", Center for Uncertainty Quantification, Annual Workshop, Kaust, Saudi-Arabia, January 8, 2014.
- G. Rubino, "New developments around PSQA", at the Applied Science and Technology Research Institute, Hong Kong, June 17, 2014
- G. Rubino, "Discrete Event Simulation: generalities and the particular case of rare event analysis", in CSS'2014: the 3rd International Cybernetics Summer School, Ostrava, Czech Republic, June 2014.
- G. Rubino, "Automatic measuring of perceptual quality on the Internet", plenary talk at the First International Congress on Telematics, Computing and Communications (CITELC 2014), Mexico DF, Mexico, August 23, 2014.
- G. Rubino, "Monte Carlo y los eventos raros (Monte Carlo and rare events)", in the 3rd International AMMA Workshop, Technical University Federico Santa María, Valparaíso, Chile, December 2, 2014.

### **8.1.5. Managing research activities**

- Bruno Sericola is responsible for the Inria Rennes - Bretagne Atlantique budget.
- Bruno Sericola is a member of the Inria Evaluation Committee which role is to assess the calibre of research conducted at Inria and to guarantee the quality of its hiring and internal promotions.
- Bruno Sericola is the leader of the research group MAPI (Math Appli Pour l'Info) the goal of which is to improve the collaboration between computer scientists and mathematicians.
- Adlen Ksentini was elected as secretary of the IEEE ComSoc Technical Committee on Software.
- Adlen Ksentini was elected as secretary of the IEEE ComSoc France Section.
- R. Marie and G. Rubino are members of the IFIP WG 7.3 (Working Group in Computer Performance Modeling and Analysis).
- Gerardo Rubino is a member of the Technical Committee on Multimedia Communications of IEEE.
- G. Rubino has been appointed as the Inria representative at the Scientific Committee of the IFCAM (Indo-French Center for Applied Mathematics), a joint international unit between Indian Ministry of Science and Technology and several French institutions including CNRS, Inria, École Polytechnique, École Normale Supérieure, Inria, Nice Sophia Antipolis University and University of Toulouse III.

- Gerardo Rubino is a member of the Research Commission of TELECOM Bretagne (advisory board for the research activities of the institution).
- Gerardo Rubino is a member of the CSV (Selection and Validation Committee) of the “Images et Réseaux” (Images and networks) cluster in the French Brittany Region. The cluster includes most companies and academic institutions working in networking and in image-based applications in Western France.
- César Viho is deputy director of the MATISSE (Mathematics, Electronics and Computer Sciences) doctoral school in charge of managing the recruitment of PhD students and their activities during their doctorate, in all the concerned areas of the doctoral school.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence L2: Probability and Statistics, 40 hours, University of Science and Technology, Hanoi, Vietnam

Licence L3: Introduction to networks, 20 hours, Istic/University of Rennes 1, France

Master M1: Computer networks, 24 hours, Esir/University of Rennes 1, France

Master M1: Simulation, 18 hours, Université de Rennes 1, France

Master M1: Wireless Networks, 48 hours, Esir/University of Rennes 1, France

Master M1: Performance and dependability evaluation of computer systems, 54 hours M1, Istic/University of Rennes 1, France

Master M1: Introduction to graph theory, 14 hours, Esir/University of Rennes 1, France

Master M1: Networks and protocols, 24 hours, Istic/University of Rennes 1, France

Master M2: Simulation, 5 hours, Telecom Bretagne, France

Master M2: Logistic and performance, 8 hours, Faculté de Sciences économiques/University of Rennes 1, France

Master M2: Multimedia transmission, 36 hours, Istic/University of Rennes 1, France

Master M2: Multimedia streaming over IP (MMR), 50 hours, Esir/University of Rennes 1, France

Master M2: Multimedia services in IP networks (RSM), 29 hours, Esir/University of Rennes 1, France

Master M2: Software Defined Networks, 4 hours, Istic/University of Rennes 1, France

Master M2: Performance evaluation, 26 hours, ESIR/University of Rennes 1, France

Master M2: Performance Evaluation, 9 hours, M2, Université de Rennes 1, France

Master M2: Algorithms on graphs, 40 hours, Istic/University of Rennes 1, France

Master M2: Multimedia Networking, 8 hours, Istic/University of Rennes 1, France

### 8.2.2. Supervision

Master: Thuy Dung Mai, Economics of CDNs, Université de Rennes 1, 2014, supervised by Bruno Tuffin.

PhD: Romaric Ludinard, “Caractérisation locale de fautes dans les systèmes large échelle”, Université de Rennes 1, 2/10/2014; advisors: Bruno Sericola and Emmanuelle Anceaume. See [10].

PhD: Leslie Murray, “New variance reduction methods in Monte Carlo rare event simulation”, University of the Republic (UDELAR), Uruguay, 17/9/2014; advisors: Héctor Cancela (UDELAR) and Gerardo Rubino. See [11].

PhD: Claudio Risso, “Using GRASP and GA to design resilient and cost-effective IP/MPLS networks”, University of the Republic (UDELAR), Uruguay, 5/5/2014; advisors: Franco Robledo (UDELAR) and Gerardo Rubino. See [12].

PhD in progress: Laura Aspirot, “Fluid Approximations for Stochastic Telecommunication Models”, University of the Republic (UDELAR), Uruguay, started in December 2011; advisors: Ernesto Mordecki (UDELAR) and Gerardo Rubino.

PhD in progress: Damien Le Quéré, “Conception et étude des performances d’une solution auto-configurable pour les réseaux de transport du futur”, started in January 2012; advisors: B. Sericola and A. Ksentini.

PhD in progress: Btissam Er-Rahmadi, Cifre Grant, Orange Labs, “Coopération et auto-\* dans un réseau de small cells network”, started on January 2013; advisors: C. Viho and A. Ksentini, University Rennes 1.

PhD in progress: Osama Arouk, “Cellular-based M2M communication: congestion control”, started on December 2012; advisors: C. Viho and A. Ksentini, University Rennes 1.

PhD in progress: Farouk Messaoudi, “Orchestration et la virtualisation des ressources de terminaux, la vision Global OS”, started on October 2014; advisor: A. Ksentini, University Rennes 1.

PhD in progress: Florient Grandhomme, “Etudes de protocoles de routage dynamique externe de type BGP dans un environnement réseaux tactiques adhoc mobiles : faisabilité, performances, qualité de service, et passage à l’échelle”, started on October 2014; advisors: A. Ksentini, G. Guette, University Rennes 1.

PhD in progress: Jean-Michel Sanner, Cifre Grant, Orange Labs, “SDN technologies for network services performances adaptation of carriers networks”; started on January 2013; Advisors: Y. Hadjadj-Aoul and G. Rubino, University Rennes 1.

PhD in progress, Yue Li; Cifre Grant, Orange Labs; title: “Elaboration d’une architecture réseau unifiée, ouverte et flexible”, started on October 2013; Advisors: Y. Hadjadj-Aoul and G. Rubino.

PhD in progress: Quang Pham Anh Tran, “QoE-based adaptive algorithms for wireless sensor networks”, started on October 2013; advisors: C. Viho, University Rennes 1.

### 8.2.3. *Juries*

- B. Sericola was a member of the juries for the recruitment of young graduate scientists and senior researchers at Inria.

Bruno Tuffin was a member of the following PhD defense committees:

- Mariem Krichen, “Modèle technico-économique pour le déploiement d’un réseau femto avec partage de ressources”, Université de Versailles Saint-Quentin, 2014, rapporteur.
- Luca Rose, “Decisional Process for Ad Hoc Networks”, SUPELEC, Gif-sur-Yvette, January 2014, rapporteur.
- Tim Bereton, “Monte Carlo Methods for Complex Stochastic Models”, The University of Queensland, Australia, 2014, rapporteur.
- Mohamed Lamine Lamali, “Qualité de Service et calcul de chemins dans les réseaux inter-domaine et multicouches”, Université de Versailles Saint-Quentin, Septembre 2014, président.
- Vladimir Fux, “Game-theory approaches to study and influence interactions among self-interested agents in wireless networks”, TELECOM Bretagne, November 2014, président.

Adlen Ksentini was a member of the following PhD defense committees:

- Malik Mubashir Hassan, “Gestion de la qualité de service dans les réseaux maillés IEEE 802.11s”, Université de Versailles Saint-Quentin, Juin 2014, rapporteur.
- Shengyang Chen, “A Cross-layer Content-aware Energy-efficient Rich Media Application Delivery Scheme in Heterogeneous Wireless Networks”, DCU, Dublin, Irlande, Octobre 2014, rapporteur.
- Petros Anaplotis, “Content-Aware Networking in Virtualised Environments for Optimised Resource Exploitation”, Université de Bordeaux, December 2014, rapporteur.



Cesar Viho was a member of the following PhD defense committees:

- Hassan Ali Ahmad, “Design and Analysis of Distributed Mobility Management in IPv6 Mobile Networks”, Telecom Bretagne, January 2014, president.
- Arnab Sinha, “Self-describing objects with tangible data structures”, IRISA/Université Rennes 1, May 2014.
- Hamza Samih, “Test basé sur les modèles appliqué aux lignes de produits”, IRISA/Université Rennes 1, December 2014, president.
- Siwar Ben Hadj Said, “Contextual Connectivity in Multi-Access Architectures”, Telecom Bretagne, December 2014, president.

Gerardo Rubino was a member of the following PhD defense committees:

- José-Manuel Martínez, “Modelos Markovianos de Sistemas Computacionales y de Telecomunicaciones: Métodos Matemáticos y Algoritmos de Implementación”, UFTSM (Universidad Técnica Federico Santa María), Valparaíso, Chile, November 11, rapporteur.
- Benoît Barbot, “Accélération pour le Model Checking Statistique”, École Normale Supérieure de Cachan, November 20, rapporteur.
- Ait Solaht, “Chaînes de Markov incomplètement spécifiées : analyse par comparaison stochastique et application à l'évaluation de performance des réseaux”, Université de Versailles Saint-Quentin, October 3, rapporteur.

### 8.3. Popularization

- In their position paper [79], Bruno Tuffin and his co-author Patrick Maillé discuss for a large audience the issues and challenges of network neutrality in response to the European parliament text voted in April 2014.
- G. Rubino makes regular presentations to high school students about the research work in general, and specific technical topics in particular. Current talks:
  - Randomness as a tool
  - Internet as a research problem
  - Great challenges in maths: the Riemann Hypothesis
  - Great challenges in math/computer science: the “P versus NP” problem

## **DIVERSE Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. general chair, scientific chair*

Benoit Combemale:

- chair for the program committee of SLE'14, the 7th International Conference on Software Language Engineering (SLE), Sweden, October 2014.
- co-chair of the demonstration track of the 17th International Conference on Model Driven Engineering Languages and Systems (MODELS), Spain, October, 2014.
- co-chair of the workshop GEMOC, co-located with the 17th International Conference on Model Driven Engineering Languages and Systems (MODELS), Spain, October, 2014.
- co-chair of the Dagstuhl seminar #14412 on *Globalizing Domain-Specific Languages*, Germany, October, 2014.
- co-chair of MDD4DRES 2014, the International School on Model-Driven Development for Distributed Realtime Embedded Systems, France, September, 2014.

Benoit Baudry:

- Co-chair of the PC, New Ideas and Emerging Results (NIER) track at ICSE'14
- Chair of the doctoral symposium, International Conference on Model Driven Engineering, Languages and Systems (MODELS)
- Member of the Steering committee, International Conference on Model Driven Engineering, Languages and Systems (MODELS)

Jean-Marc Jézéquel:

- co-chair of the Dagstuhl seminar #14412 on *Globalizing Domain-Specific Languages*, Germany, October, 2014.

#### *9.1.1.2. member of the organizing committee*

Mathieu Acher has organized the SPLTea workshop (co-located with the Software Product Line Conference) and Journée ligne de produits (7th edition) in Paris (Sorbonne).

### **9.1.2. Scientific events selection**

#### *9.1.2.1. responsible of the conference program committee*

Jean-Marc Jézéquel has been a member of the program board:

- MODELS 2014, The 17th International Conference on Model Driven Engineering Languages and Systems Valencia, Spain, October 2014 (PB)
- ICSE 2014 The 36th International Conference on Software Engineering, Hyderabad, India, June 2014 (PB)

Benoit Baudry:

- Member of the Steering committee, International Conference on Model Driven Engineering, Languages and Systems (MODELS)

*9.1.2.2. member of the conference program committee*

Benoit Baudry:

- International Conference on Automated Software Engineering (ASE)
- International Conference on Model Driven Engineering, Languages and Systems (MODELS)
- International Working Conference on Requirements Engineering: Foundation for Software Quality (REFSQ)

Mathieu Acher:

- ICSE'15 (NIER) : 37th International Conference on Software Engineering - New Ideas and Emerging Results (NIER)
- ICSE'14 (NIER) : 36th International Conference on Software Engineering - New Ideas and Emerging Results (NIER)
- ICSE'14 (SEIP) : 36th International Conference on Software Engineering - Software Engineering In Practice (SEIP)
- SPLC'14 : 18th International Software Product Line Conference
- SEAA'14 : Euromicro Conference series on Software Engineering and Advanced Applications
- FOSD'14 : Sixth International Workshop on Feature-Oriented Software Development (at ASE)
- SPLTea : First International Workshop on Software Product Line Teaching
- REVE'14 : 2nd International Workshop on Reverse Variability Engineering (at SPLC)
- JLDP'14 : Journee Lignes de Produits (Luxembourg)

Olivier Barais:

- HPCC'14, The 16th IEEE International Conference on High Performance Computing and Communications, Paris, France
- SEAA'14, The 40th Euromicro Conference on Software Engineering and Advanced Applications (SEAA 2014) Verona, Italy 2014
- SAC'14, The 29th Symposium On Applied Computing Gyeongju, Korea.
- SPLat 2014, The 1st International Workshop on Software Product Line Analysis Tools, Convitto della Calza, sala Franciabigio
- VAO'14, The 2nd Workshop on View-Based, Aspect-Oriented and Orthographic Software Modelling, York, United Kingdom
- WEITICE'2014, the 23rd IEEE International Conference on Collaboration Technologies and Infrastructure University Campus Parma, Italy
- CIEL'14, the 3rd French Conference in Software Engineering. CNAM, Paris,
- CAL'14, the 5th French Conference in Software Architecture. Paris,

Arnaud Blouin:

- IEEE International Workshop on User Centered Design and Adaptive Systems (UCDAS), 2014

Johann Bourcier:

- PECCS 2013

Benoit Combemale:

- APSEC'14, The 21st Asia-Pacific Software Engineering Conference, Korea, 2014.
- ICMT'14, The 7th International Conference on Model Transformation, UK, 2014.
- ECMFA'14, The 10th European Conference on Modelling Foundations and Applications, UK, 2014.
- VOLT workshop on Verification Of Model Transformation (VOLT), at STAF'14, UK, 2014.
- CSP Trask at the WEITICE'14, Italy, 2014.

Jean-Marc Jézéquel:

- Formal Demonstrations of ICSE 2014 The 36nd International Conference on Software Engineering, Hyderabad, India, June 1-7, 2014
- VaMoS 2014 The 8th International Workshop on Variability Modelling of Software-intensive Systems January 22-24, 2014 - Nice, France
- SLE 2014 7th International Conference on Software Language Engineering (SLE) September 15-16, 2014 Västerås, Sweden
- GPCE 2014 13th International Conference on Generative Programming: Concepts & Experiences September 15-16, 2014 Västerås, Sweden

Noël Plouzeau:

- CBSE 2014, Component Based Software Engineering, Lille, France, june 2014.

#### 9.1.2.3. reviewer

Arnaud Blouin:

- EICS'14, ACM SIGCHI symposium on Engineering interactive computing systems.
- NordiCHI'14, Nordic Conference on Human-Computer Interaction.
- IHM'14, French speaking conference on human-computer interaction.
- ASPEC'14, Asia-Pacific Software Engineering Conference.

Benoit Combemale: external reviewer for ICSE'13 (International Conference on Software Engineering).

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

Benoit Baudry is an Associate Editor of the following journal:

- Journal of Systems and Software (JSS)
- Journal on Software and System Modeling (SoSYM)

Jean-Marc Jézéquel is Associate Editor-in-Chief of

- Journal on Software and System Modeling (SoSYM)

Jean-Marc Jézéquel is an Associate Editor of the following journal:

- IEEE Computer
- Journal of Systems and Software (JSS)
- Journal of Object Technology: JOT

Noël Plouzeau is chief editor of a special issue of the TSI French research journal, dedicated to software engineering.

Benoit Combemale is a member of the editorial board of the following journal:

- Elsevier's International Journal on Computer Languages, Systems and Structures (COMLAN)

#### 9.1.3.2. reviewer

Mathieu Acher: reviewer for journals: ACM Computing Surveys, Information and Software Technology (IST), IEEE Software, Automated Software Engineering: An International Journal (ASE), Journal of Ambient Intelligence and Smart Environments (JAISE), Journal in Computers in Biology and Medicine (CBM), International Journal on Software Tools for Technology Transfer (STTT), Journal of Systems and Software (JSS), Journal of Software and Systems Modeling (SoSyM).

Olivier Barais: external reviewer for IEEE Transactions on Software Engineering, Journal of Software and Systems Modeling (SoSyM), Journal of Software System (JSS), ACM TaaS (Transactions on Autonomous and Adaptive Systems), STVR (Software Testing, Verification and Reliability).

Arnaud Blouin: external reviewer for SoSyM (Journal of Software and Systems Modeling).

Johann Bourcier: external reviewer for TaaS (Transactions on Autonomous and Adaptive Systems), and JSS (Journal of Systems and Software).

Benoit Combemale: external reviewer for IEEE Transactions on Software Engineering, Journal of Software and Systems Modeling (SoSyM).

Noël Plouzeau: external reviewer for JSS (Journal of Systems and Software).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

The DIVERSE team bears the bulk of the teaching on Software Engineering at the University of Rennes 1 and at INSA Rennes, at the levels M1 (Project Management, Object-Oriented Analysis and Design with UML, Design Patterns, Component Architectures and Frameworks, Validation & Verification, Human-Computer Interaction) and M2 (Model driven Engineering, Aspect-Oriented Software Development, Software Product Lines, Component Based Software Development, Validation & Verification, *etc.*).

Each of Jean-Marc Jézéquel, Noël Plouzeau, Olivier Barais, Johann Bourcier, Arnaud Blouin, and Mathieu Acher teaches about 200h in these domains, with Benoit Baudry and Benoit Combemale teaching about 50h, for a grand total of about 1300 hours, including several courses at ENSTB, Supelec and ENSAI Rennes.

Noël Plouzeau is the leader of the final year of the Master Pro in Computer Science at the University of Rennes 1.

Johann Bourcier is co-manager of the Home-Automation option at the ESIR engineering school in Rennes.

Mathieu Acher is in charge of teaching services of ISTIC.

The DIVERSE team also receives several Master and summer trainees every year.

### 9.2.2. Supervision

HDR: Olivier Barais: *Utilisation de la modélisation à l'exécution : objectif, challenges et bénéfices*, 2014

HDR: Olivier Beaudoux: *Vers une programmation des systèmes interactifs centrée sur la spécification de modèles exécutables*, 2014

PhD: Joao Bosco Ferreira Filho, *Variability modeling in software-intensive systems*, thèse 2011-2014, O. Barais, B. Baudry and M. Acher

PhD: Emmanuelle Rouillé, *Processus Logiciels dirigés par les intentions*, thèse CIFRE avec Sod-iFrance, 2010-2014, J.-M. Jézéquel, B. Combemale and O. Barais

PhD: Julien Richard-Foy, *A DSL factory for modular Web oriented architecture*, thèse CIFRE avec Zenexity, 2011-2014, J.-M. Jézéquel and O. Barais

PhD: Hamza Samih, *Extending model-based testing with variability and security management*, thèse CIFRE avec All4Tec, 2011-2014, B. Baudry

PhD in progress: Erwan Bousse, *Intégration et combinaison des techniques de V&V dans un contexte d'ingénierie système*, thèse, 2012-2015, B. Baudry and B. Combemale

PhD in progress: Valéria Lelli, *On Testing Interactive Systems*, thèse 2012-2015, B. Baudry and A. Blouin

PhD in progress: Kwaku Yeboah-Antwi, *Runtime emergence of software diversity*, thèse 2013-2016, B. Baudry and O. Barais

PhD in progress: Sana Ben Nasr, *Modeling variability in regulatory requirements*, thèse 2013-2016, B. Baudry and M. Acher

PhD in progress: Guillaume Bécan, *Reverse Engineering and Evolution of Variability-intensive Software Systems*, thèse 2013-2016, B. Baudry and M. Acher

PhD in progress : Mohamed Boussaa, *An Architecture for Testing Large-Scale Dynamic Distributed Systems*, thèse 2013-2016, B. Baudry and O. Barais

PhD in progress : Thomas Degueule, *Next Generation of MDE Tooling Support*, thèse 2013-2016, O. Barais and A. Blouin

PhD in progress : David Mendez Acuna, *Variability in Modeling Languages*, thèse 2013-2016, B. Baudry and B. Combemale

PhD in progress : Ivan Paez Anaya, *Proactive Adaptation in Pervasive Environment*, thèse 2012-2015, J. Bourcier, N. Plouzeau and J.-M. Jézéquel

PhD in progress : Inti Gonzalez, *Ressources reservation in Pervasive Middleware*, thèse 2012-2015, J. Bourcier, O. Barais

PhD in progress : Jacky Bourgeois, *Automatic Synchronization of Energy Production and Consumption*, thèse 2012-2015 co-tutelle avec the Open University, J. Bourcier, B. Baudry and G. Kortuem

PhD in progress : Francisco Acosta, *Automatic Deployment and Reconfigurations in Internet of Things*, thèse 2013-2016 co-encadrement avec l'équipe ACES, J. Bourcier, F. Weis

PhD in progress : Pierre Laperdrix, *Secretless moving target against browser fingerprinting*, thèse 2014-2017, B. Baudry

PhD in progress : Johan Pelay, *Langage pour une programmation incrémentale de réseau*, thèse 2014-2017 co-encadrement avec le laboratoire B-COM, O. Barais, F. Guillemin

PhD in progress : Kévin Corre, *Modélisation de la confiance dans les services sociaux et conversationnels*, thèse 2014-2017 co-encadrement avec l'équipe AtanMod, O. Barais, G. Sunye

### **9.2.3. Juries**

#### *9.2.3.1. Benoit Combemale*

was in the examination committee of the following PhD thesis:

- Emmanuelle Rouillé, April 2014, University of Rennes (Co-supervisor)
- Jean-Christophe Bach, September 2014, University of Nancy (Member)
- Faiez Zalila, December 2014, University of Toulouse (Member)

#### *9.2.3.2. Jean-Marc Jézéquel*

was in the examination committee of the following HDR:

- Olivier Beaudoux, August 2014, ESEO, President
- Rémi Cozot, September 2014, University of Rennes, President
- Laurent Amsaleg, November 2014, University of Rennes, President
- Maud Marchal, November 2014, University of Rennes, President
- Olivier Barais, December 2014, University of Rennes, member

#### *9.2.3.3. Jean-Marc Jézéquel*

was in the examination committee of the following PhD thesis:

- Emmanuelle Rouillé, April 2014, University of Rennes, Supervisor
- Cyrille Jegourel, November 2014, University of Rennes, President
- Minh Tu Ton That, October 2014, Université de Bretagne-Sud, President
- Julien Richard-Foy, December 2014, University of Rennes, Supervisor

#### *9.2.3.4. Olivier Barais*

was in the examination committee of the following PhD thesis:

- Emmanuelle Rouillé, April 2014, University of Rennes, Supervisor
- Julien Richard-Foy, December 2014, University of Rennes, Supervisor
- Bosco Ferreira, December 2014, University of Rennes, Supervisor

#### 9.2.3.5. *Benoit Baudry*

was in the examination committee of the following HDR:

- Olivier Barais, December 2014, University of Rennes, member

#### 9.2.3.6. *Benoit Baudry*

was in the examination committee of the following PhD thesis:

- Hamza Samih, December 2014, University of Rennes, Supervisor
- Bosco Ferreira, December 2014, University of Rennes, Supervisor
- Jérémie Tatibouet, October 2014, University of Paris-Sud, Referee
- Boris Baldassari, June 2014, University of Lille, Referee

#### 9.2.3.7. *Mathieu Acher*

was in the examination committee of the following PhD thesis:

- Ebrahim Abbasi, February 2014, University of Namur (Belgium), Referee
- Bosco Ferreira, December 2014, University of Rennes

#### 9.2.3.8. *Johann Bourcier*

was in the examination committee of the following PhD thesis:

- Koutheir Attouchi, July 2014, University of Paris 6,

### 9.3. Popularization

Our recent work on diversity against browser fingerprinting and the associated web site <sup>0</sup> have been demonstrated in two open source forums (OWF'14 <sup>0</sup> and FOSSA'14 <sup>0</sup>). Following this, our work has been mentioned in general-audience press. In particular the Clubic magazine published a complete article about our work <sup>0</sup>, which was followed by 6000 unique visits on our web site in the following 24 hours. The work was also mentioned in Le Monde <sup>0</sup>.

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<sup>0</sup><https://amiunique.org/>

<sup>0</sup><http://www.openworldforum.paris/>

<sup>0</sup><https://fossa.inria.fr/>

<sup>0</sup><http://pro.clubic.com/webmarketing/publicite-en-ligne/actualite-742853-fingerprinting-cookies.html>

<sup>0</sup>[http://abonnes.lemonde.fr/sciences/article/2014/11/24/le-fossa-bazar-techno-participatif\\_4528568\\_1650684.html](http://abonnes.lemonde.fr/sciences/article/2014/11/24/le-fossa-bazar-techno-participatif_4528568_1650684.html)

## DYOGENE Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events selection

##### 9.1.1.1. Chair of conference program committee

Marc Lelarge: ACM Sigmetrics TPC co-chair

##### 9.1.1.2. Member of the conference program committee

Ana Bušić: IFIP Performance, Valuetools, IEEE SmartGridComm

Marc Lelarge: ESA, WiOpt, WEIS

##### 9.1.1.3. Reviewer

The members of the team have served as reviewers for numerous international conferences.

#### 9.1.2. Journal

##### 9.1.2.1. Member of the editorial board

Marc Lelarge: IEEE's Transactions on Network Science and Engineering, Bernoulli Journal, Queueing Systems.

##### 9.1.2.2. Reviewer

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

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Anne Bouillard (Cours) et Thomas Nowak (TD) *Structures et algorithmes aléatoires* 80heqTD, L3, ENS, France.

Licence : Marc Lelarge (Cours) et Anne Bouillard (TD) *Théorie de l'information et du codage* 50heqTD, L3, ENS, France.

Master : Bartek Błaszczysz (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 Błaszczysz (with Laurent Decreusefond), *Graduate Course on Spatial Stochastic Modeling of Wireless Networks* (master program "Advanced Communication Networks), 45h, l'X and Telecom ParisTech, Paris.

Master : Anne Bouillard (Cours + TD) *Graphes aléatoires* 18heqTD, M1, ENS Cachan, France.

Master : Ana Bušić and Florian Simatos *Modèles et algorithmes de réseaux*, 50heqTD, M1, ENS, Paris, France.

Master: Ana Bušić, *Foundations of network models*, 18heqTD, M2, MPRI, France.

Licence : Marc Lelarge, *Théorie de l'information et codage*, 40h, L3, ENS, Paris, France.

Master : Marc Lelarge, *Algorithms for Networked Information*, 40h, M2, Ecole Polytechnique, France.

Doctorat : Francois Baccelli, *Stochastic Geometry*, Essen Lectures 2014 (May 12-16), Uppsala University, Sweden, <http://www.math.uu.se/Esse/EsseLectures2014/>.



### **9.2.2. Supervision**

HdR : Anne Bouillard, *Algorithms and efficiency of Network Calculus* [1], ENS (Paris), 8 April 2014

PhD in progress :

- Kumar Gaurav, *Convex comparison of network architectures*, started in October 2011, advisor B. Blaszczyszyn;
- Miodrag Jovanović, *Evaluation and optimization of the quality perceived by mobile users for new services in cellular networks*, started in January 2012, advisor B. Blaszczyszyn, co-advisor M.Karray;
- 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 Bušić.

### **9.2.3. Juries**

- B. Blaszczyszyn was a reviewer of the PhD thesis of Andres Altieri [Supelec]
- M. Lelarge: External Examiner for PhD: Jiaming Xu (UIUC) 2014.
- M. Lelarge: membre du jury de recrutement CR2 Inria Paris-Rocquencourt.

## FOCUS Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

**M. Bravetti:** Program Committee member of the following conferences. BigData 2014 (IEEE International Conference on Big Data), WWV 2014 (10th International Workshop on Automated Specification and Verification of Web Systems), WS-FMDS 2014 (4th WorkShop on Formal Methods in the Development of Software), SEFM 2014 (12th International Conference on Software Engineering and Formal Methods), WS-FM 2014 (11th Workshop on Web Services and Formal Methods), ESOC 2014 (3rd European Conference on Service-Oriented and Cloud Computing).

Invited speaker at MOD\* 2014 (1st Int. Workshop on Logics and MODEL-checking for self-\* systems).

Organiser of Int. Workshop on Contracts for Efficient and Reliable Services.

**U. Dal Lago:** Program Committee co-chair and main organiser for FOPARA 2013: Third International Workshop on Foundational and Practical Aspects of Resource Analysis (August 29th to 31st, 2013, Bertinoro, Italy).

Program Committee member of the conferences RTA-TLCA 2014, LOLA 2014 and IFIP-TCS 2014.

PC chair for DCM 2014.

Invited speaker at the "Mathematical Structures of Computation" event in Lyon.

Lecturer at the school BISS 2014, Bertinoro, Italy, March 2014.

**D. Hirschhoff:** Co-organiser of the international event on 'Concurrency, Logic and Types', as part of the 'Mathematical Structures of Computation', in february 2014 in Lyon (see <http://smc2014.univ-lyon1.fr/doku.php?id=week5>). Several Focus members took part in the event.

**E. Giachino:** Program Committee member of the conference iFM 2014 and the workshops BEAT 2014 and ICE 2014.

Workshop chair for the iFM and FACS 2014.

**I. Lanese:** Program Committee member of the following workshops and conferences: EXPRESS/SOS 2014 (Combined 21st International Workshop on Expressiveness in Concurrency and 11th Workshop on Structured Operational Semantics), WS-FM:FASOCC 2014 (11th International Workshop on Web Services and Formal Methods: Formal Aspects of Service-Oriented and Cloud Computing), IFIP TCS 2014 (Theoretical Computer Science 2014), SAC 2014 (Service Oriented Architectures and Programming track of the 29th Annual ACM Symposium on Applied Computing).

Steering committee for the Service Oriented Architectures and Programming (SOAP) track of the Annual ACM Symposium on Applied Computing (SAC), the International Symposium on Formal Aspects of Component Software (FACS).

Co-chair of the conferences 11th International Symposium on Formal Aspects of Component Software (FACS 2014), and 7th Interaction and Concurrency Experience (ICE 2014).

Member of the editorial board of the Scientific World Journal, the Open Journal of Communications and Software, and the journal of Scientific Programming.

**C. Laneve:** Tutorialist at the PhD School: SFM-14:ESM (14th International School on Formal Methods for the Design of Computer, Communication and Software Systems: Executable Software Models)

**M. Gabbrielli:** Member of the editorial board of the Int'l Journal Theory and Practice of Logic Programming.

**S. Martini:** Program Committee member of International Workshop Linearity 2014. Invited speaker at the Symposium on History and Philosophy of Computing (Annual Meeting of the International Association for Computing and Philosophy), Thessaloniki, Greece.

**F. Montesi:** Invited speaker at WS-FM: FASOCC (11th International Workshop on Web Services and Formal Methods: Formal Aspects of Service-Oriented and Cloud Computing)

Track program chair for 28th ACM Symposium on Applied Computing (SAC) track on Service-Oriented Applications and Programming track (SOAP).

**D. Sangiorgi:** Member of the editorial board of the journals: Logical Methods in Computer Science, Acta Informatica, Distributed Computing, Foundations and Trends in Programming Languages, and RAIRO Theoretical Informatics and Applications.

Invited speaker at the workshops "Mathematical Structures of Computation" (Lyon, February 2014), CMCS'14 (12th International Workshop on Coalgebraic Methods in Computer Science), and "Open Problems in Concurrency Theory" (Bertinoro, Italy, June 2014).

Program Committee member of the conferences FOSSACS'14 (17th International Conference on Foundations of Software Science and Computation Structures) and LATA'14 (8th International Conference on Language and Automata Theory and Applications).

**V. Vignudelli:** Invited talks at the workshop "Mathematical Structures of Computation" (Lyon, February 2014), at the workshop "Open Problems in Concurrency Theory", Bertinoro, Italy, June 2014, and at the seminar series "CHoCoLa", at ENS Lyon, September 2014.

**G. Zavattaro:** Program Committee member of the following conferences and workshops: 11th International Workshop on Web Services and Formal Methods: Formal Aspects of Service-Oriented and Cloud Computing (WS-FM:FASOCC'14); 2014 European Conference on Service-Oriented and Cloud Computing (ESOCC'14); 2nd Workshop on Dependability and Interoperability in Heterogeneous Clouds (DIHC14), Porto, Portugal, August 25-29, 2014; 2nd IEEE International Workshop on Formal Methods Integration (FMi 2014); 7th IEEE International Conference on Cloud Computing (CLOUD 2014); 16th International Conference on Coordination Models and Languages (COORDINATION'14).

General chair of the joint conferences 11th International Symposium on Formal Aspects of Component Software (FACS 2014) and 11th International Conference on Integrated Formal Methods (iFM 2014, Bertinoro, Italy, 9–12 September 2014).

Organiser of iFM and FACS 2014 (Bertinoro, Italy, 9–12 September 2014).

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Below are the teaching activities of the Focus members during 2014.

- Mario Bravetti
  - Undergraduate: "Tecnologie Web", 66 hours, 3rd year, University of Bologna, Italy.
  - Master: "Applicazioni e Servizi Web", 54 hours, 2nd year, University of Bologna, Italy.
- Ugo Dal Lago
  - Undergraduate: "Introduction to Programming in Python", 20 hours, 1st year, University of Bologna, Italy.
  - Undergraduate: "Optimization", 36 hours, 2nd year, University of Bologna, Italy.
- Maurizio Gabbrielli
  - Undergraduate: "Programming languages", 40 hours, 2nd year, University of Bologna, Italy.
  - Master: "Artificial Intelligence", 60 hours, 2nd year, University of Bologna, Italy.

- Elena Giachino  
Undergraduate: “Programmazione”, 40 hours, 1st year, University of Bologna, Italy.
- Ivan Lanese  
Undergraduate: “Programmazione”, 32 hours, 1st year, University of Bologna, Italy.  
Master: “Business Process Management”, 22 hours, 2nd year, University of Bologna, Italy.
- Cosimo Laneve  
Undergraduate: “Programmazione”, 70 hours, 1st year, University of Bologna, Italy.  
Master: “Analisi di Programmi”, 42 hours, 1st year, University of Bologna, Italy.
- Simone Martini  
Undergraduate: “Introduction to programming in Python”, 58 hours, 1st year, University of Bologna, Italy.  
Undergraduate: “Computer abilities for biologists”, 8 hours, 1st year, University of Bologna, Italy.  
Master: “Logical Foundations of Computer Science”, 48 hours, 2nd year, University of Bologna, Italy.  
PhD: “Proof theory for computer scientists”, 20 hours, University of Bologna, Italy.
- Jacopo Mauro  
Undergraduate: “Algoritmi e strutture dati”, 20 hours, 1st year, University of Bologna, Italy.
- Giulio Pellitta  
Undergraduate: “Laboratorio di Operating Systems”, 36 hours, 2nd year, University of Bologna, Italy.  
Undergraduate: “Attività di supporto alla didattica universitaria di Informatica nell’ambito della Piattaforma di e-learning A3”, 140 hours, 1st year, University of Bologna, Italy.
- Davide Sangiorgi  
Undergraduate: “Operating Systems”, 110 hours, 2nd year, University of Bologna, Italy.  
Master: “Models for concurrency”, 15 hours, 2nd year, University of Bologna, Italy.
- Marco Solieri  
Master: “Administration Système”, 29 hours, 3rd year, école d’ingénieurs, Institut Galilé, Université Paris 13, France  
Master: “Intranet, Internet et Web”, 35 hours, 2nd year, école d’ingénieurs, Institut Galilé, Université Paris 13, France
- Gianluigi Zavattaro  
Master: “Linguaggi di Programmazione e Modelli Computazionali”, 120 hours, 1st year, University of Bologna, Italy.

### 8.2.2. Supervision

PhD thesis completed in 2014:

- Michele Alberti, “On operational properties of quantitative extensions of the  $\lambda$ -calculus”. December 2014. Joint degree: Docteur en Mathématiques, Aix-Marseille Université; Dottorato in Informatica, University of Bologna. Supervisors: L. Regnier, S. Martini.
- Ornela Dardha, “Type Systems for Distributed Programs: Components and Sessions”, May 2014. University of Bologna. Supervisor: D. Sangiorgi.
- Tudor Alexandru Lascu, “Automatic deployment of applications in the cloud”, May 2014. University of Bologna. Supervisor: G. Zavattaro.
- Giulio Pellitta, “Extending Implicit Computational Complexity and Abstract Machines to Languages with Control”, May 2014. University of Bologna. Supervisors: U. Dal Lago and S. Martini.

Below are the details on the PhD students in Focus: starting date, topic or provisional title of the thesis, supervisor(s). These are all PhDs in progress.

- Roberto Amadini, January 2012, Constraint Programming, M. Gabbrielli.
- Ferdinanda Camporesi, January 2009, Analysis of system biology, R. Cousot (Ecole Normale, Paris) and M. Gabbrielli
- Alberto Cappai, January 2013; Security, ICC and probabilistic bisimulation, U. Dal Lago.
- Abel Garcia, January 2014, Analysis of Cloud Computing Systems, C. Laneve.
- Saverio Giallorenzo, January 2013, Safe-adaptive services and choreography languages, M. Gabbrielli.
- Jean-Marie Madiot, September 2011, Types, proofs and proof techniques for process calculi, D. Hirschhoff and D. Sangiorgi.
- Alessandro Rioli, January 2012; Bisimulation equivalence in quantum lambda calculi, U. Dal Lago.
- Marco Solieri, December 2011; Géométrie de l'interaction, réseaux, et lambda-calcul, S. Guerrini (Paris Nord) and S. Martini.
- Valeria Vignudelli, January 2014, Probabilities in Higher-Order languages, D. Sangiorgi.

### 8.2.3. *Juries*

U. Dal Lago has been rapporteur and member of the PhD evaluation committee for Marc Bagnol (University Aix-Marseille) and Michele Alberti (University Aix-Marseille).

D. Hirschhoff has been rapporteur for the PhD defense of J.B. Midez (December 2014, Université Aix Marseille).

G. Zavattaro has been member of the 2014 PhD evaluation committee at the department of Computer Science of the University of Genova, Italy.

## 8.3. Popularization

Simone Martini has carried out extended work of scientific divulgation:

- member of the technical committee of Olimpiadi del Problem Solving (at Italian Ministry of Education), <http://www.olimpiadiproblemsolving.com>;
- member of the technical committee of two national projects of Italian Ministry of Education, founded by ESF - European Social Fund: “Robotica educativa”, and “Informatica nei licei”;
- various talks at institutes and workshops on the teaching methods for Computer Science.
- coordinator of some initiatives for the ‘Hour of Code’, see [italia.code.org](http://italia.code.org) and [programmailfuturo.it](http://programmailfuturo.it).

D. Hirschhoff takes part in several popularization activities in schools, in Lyon (association "Maths en Jeans").

## 8.4. Institutional commitment

Maurizio Gabbrielli has been elected Head of the Doctoral School in the EIT ICT Labs.

## FUN Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. general chair, scientific chair

- Nathalie Mitton is/was general chair for AdHocNets 2014 and 2015 and IoT-IP 2014.
- Nathalie Mitton is demo chair for MobiCom 2015
- Valeria Loscri was publicity chair for IoT-IP 2014 and Wisarn 2014.
- Viktor Toldov is publicity chair for IndiaCom 2015.
- Riccardo Petrolo is publicity chair for AdHocNets 2015.

#### 8.1.1.2. member of the organizing committee

- Valeria Loscri was organisation chair for SwanSity 2014.

### 8.1.2. Scientific events selection

#### 8.1.2.1. responsible of the conference program committee

- Nathalie Mitton is/was program chair for AdHocNets 2014 and 2015 and IoT-IP 2014 and chair of special sessions at HPCC 2014 and IndiaCom 2015.
- Valeria Loscri is/was program chair for e-banet 2014, special track at BodyNets 2014.
- Dimitrios Zormpas was program chair of WAMN'14.

#### 8.1.2.2. member of the conference program committee

- Nathalie Mitton is/was in the Technical Program Committee (TPC) for Algotel'14 and 2015, AWSN 2014 and 2015, WPMC'14, SecAN'14, WinSys 2014, BDA 2014, MDM 2014, SensorNets 2014 and NTMS 2014.
- Tahiry Razafindralambo is/was in the Technical Program Committee (TPC) for PE-WASUN 2014 and MSWIM 2014.
- Valeria Loscri is/was in the Technical Program Committee (TPC) for BodyNets 2015 and 2014, CSWD 2015 and 2014, ICARSC 2015, TENSYPMP 2015, ICC 2015, BodyNets 2014, IDCS 2014, WiMob 2014, MoWNet 2014, SwanSity 2014, WiSARN 2014, IoTip 2014, ICWMC 2014 and NTMS 2014.
- Karen Miranda is/was in the Technical Program Committee (TPC) for IndiaCom 2015 and WAMN 2014.

#### 8.1.2.3. invited speaker in scientific event

- Nathalie Mitton was invited speaker at the French-India Architecture and Technological Trends and Issues in NGN event in New Delhi in April 2014.

### 8.1.3. Journal

#### 8.1.3.1. member of the editorial board

- Nathalie Mitton is editorial board members of AHSWN since 2011.
- Nathalie Mitton is editorial board member of Adhoc Networks since 2012.
- Nathalie Mitton is editorial board member of IET-WSS since 2013.
- Nathalie Mitton is editorial board member of ComSoc MMTC e-letter since 2014.

- Nathalie Mitton co-edited the book "Wireless sensor and robot networks: from topology control to communication aspects", to be published in February 2014.
- Valeria Loscri is a member of the 'Research Group on IoT Communications and Networking Infrastructure' at ComSoc Communities.

#### 8.1.3.2. reviewer

- Nathalie Mitton reviewed submissions for Elsevier Theoretical Computer Science, IET Communications, Wireless Communications and Mobile Computing, IEEE Communications letters, IEEE Wireless Communications Magazine, Elsevier Computer Communications (COM-COM), IEEE Transactions on Parallel and Distributed Systems (TPDS), Transactions on Sensors Networks, IEEE SENSORS, Elsevier Ad Hoc Networks.
- Valeria Loscri reviewed submissions for JCN, AD Hoc Networks, JNCA, IEEE Transactions on Nanotechnology, IEEE Transactions on Wireless Communications, IEEE TDPS, IEEE Sensors Journal, Elsevier COMCOM, COMNET.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master : Nathalie Mitton, Wireless sensor networks, 36h eqTD (Master TIIR and MINT), Université Lille 1 and Telecom Lille 1, France

Master : Nathalie Mitton, RFID Middlewares, 16h eqTD, Institut Telecom and Université Lille 1, France

### 8.2.2. Supervision

PhD in progress: Riccardo Petrolo, Internet of Things and Smart Cities, Université Lille 1, 2013-2016, Nathalie Mitton and Valeria Loscri

PhD in progress: Viktor Toldov, : Interférence et consommation dans les réseaux de capteurs, Université Lille 1, 2013-2016, Nathalie Mitton and Laurent Clavier

PhD in progress: Natale Guzzo, Auto - organisation et économie d'énergie dans un réseau sans fil de surveillance de fret, Université Lille 1, 2013-2016, Nathalie Mitton

PhD in progress: Roudy Dagher, Géolocalisation en environnement réel, extérieur et intérieur avec réseau de capteurs, Université Lille 1, 2013-2016, Nathalie Mitton

PhD in progress: Mouna Rekik, geographic multi path routing protocol based on swarm intelligence for wireless sensor and actuator networks in the context of Smart Grids, co-supervision Université Lille 1 and University of Sfax (Tunisia), 2013-2017, Nathalie Mitton and Zied Chtourou

PhD in progress: Jean Cristanel Razafimandimby, Distributed Cooperation and Communication among Heterogeneous Devices, Université Lille 1, 2014-2017, Tahiry Razafindralambo and Valeria Loscri

### 8.2.3. Juries

- Nathalie Mitton was reviewer of the following PhD thesis:
  - Alhem Riggani, UPMC, Paris, January 2014
  - Arnab Sinha, Inria Rennes, February 2014
  - Rafik Kheddami, Esisar, Valence, February 2014
  - Yacine Benchaib, Institut Mines Telecom, March 2014
  - Hicham Laklhef, Université de Franche Comté, Montbéliard, November 2014
  - Ahmed Mokrane, UPMC, Paris, Décembre 2014
  - Jacques Bou Abdo, Institut Mines Telecom, December 2014

- Mario Antonio Gasperin Zancanaro, UPMC, January 2015
- Tahiry Razafindralambo was reviewer of the PhD thesis of Rivo S. A. Randriatsiferana, Université de La Réunion, St Denis, December 2014
- Nathalie Mitton was member of the CR2 Lille competition selection committee.

### **8.3. Popularization**

- Nathalie Mitton gave a talk on "Introduction to RFID" to Terminales S a in the framework of "Fête de la Science".
- Nathalie Mitton gave a talk on "The new challenges of the next generation of wireless ubiquitous networks" to Rencontres Inria Industries in Nov. 2014 on Telecom.
- Nathalie Mitton gave a talk at the ProjectCity Forum in October 2014 in Lille.
- Nathalie Mitton gave a talk at the CAFFEET 2014 conference on IoT in Smart Factories in San Francisco in November 2014.
- Nathalie Mitton gave a talk at the EDF-Institut Telecom joint lab workshop on IoT in Smart Cities in Paris in December 2014.
- Nathalie Mitton was invited speaker at "La RFID - innovation responsable" event, march 2014, Paris.
- Nathalie Mitton was invited speaker at International Transportation System Forum in Lille in September 2014.
- Roudy Dagher gave a talk on "Introduction to Wireless Sensor Networks" in the framework of "Fête de la Science".
- Viktor Toldov gave a talk on "Introduction to Wireless Sensor Networks" in the framework of "Fête de la Science".
- Valeria Loscri gave a talk in the context of "30 minutes de sciences" at the Inria Lille - Nord Europe, May 2014.



## GANG Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, scientific chair

Amos Korman has co-chaired and co-organized the BDA 2014 worksop <http://www.cs.cmu.edu/~saketn/BDA2014/>. This 2 day workshop brought together leading researchers in biology and distributed computing (from institutions such as MIT, Harvard, Stanford, and Weizmann) aiming to create a common platform for collaborations.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

Pierre Fraigniaud has chaired the C track of the 41st International Colloquium on Automata, Languages, and Programming (ICALP 2014).

#### 8.1.2.2. Member of the conference program committee

Michel Habib was member of the program committee of the 39th International Symposium on Mathematical Foundations of Computer Science (MFCS 2014).

#### 8.1.2.3. Invited talks

Pierre Fraigniaud was keynote speaker at the 16th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2014), Paderborn, Germany, Sep 28 - Oct 1, 2014.

Adrian Kosowski made a tutorial at the 5th Polish Combinatorial Conference, Bedlewo, September 2014.

Adrian Kosowski was invited speaker at Algotel 2014 - 16èmes Rencontres Francophones pour les Aspects Algorithmiques des Télécommunications, Ile de Ré, June 2014.

Laurent Viennot was invited speaker at the SMBE Satellite Meeting on Reticulated Microbial Evolution, April 27-30, 2014, Kiel, Germany.

Michel Habib made a tutorial at Ecole Rescom, France, May 2014.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

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).

## 8.2. Teaching - Supervision - Juries

### 8.2.1. 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 Algorithmie réparti, 33h, M2, Univ. Paris Diderot

Master: Carole Delporte and Hugues Fauconnier, Protocoles Réseaux, 72h, M1, Université Paris Diderot

Licence: Hugues Fauconnier, Programmation objet et interfaces graphiques, 48h, L2-L3, EIDD

Licence: Carole Delporte et Hugues Fauconnier, Sécurité, 36h, L3, Univ. Paris Diderot

Licence : Boufkhad Yacine, Algorithmique et Informatique, 132h, L1, IUT de l'Université Paris Diderot

Licence : Boufkhad Yacine, Programmation Orientée Objet, 60h, L2, IUT de l'Université Paris Diderot

Master: Adrian Kosowski, Communication and Routing, 4.5h, M1, ENSEIRB-MATMECA

Master: Adrian Kosowski, Randomization in Computer Science: Games, Networks, Epidemic and Evolutionary Algorithms, 24h, M1, École Polytechnique

Master: Adrian Kosowski, Distributed Computing with Mobile Agents: Exploration, Rendezvous, and related problems, 12h, M2, IX Summer School on Discrete Mathematics in South America, Valparaiso, Chile

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

Master : Laurent Viennot, Système, réseau et Internet, 15h, M1, Univ. Paris Diderot

License : 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

### 8.2.2. Supervision

PhD: Jérémie Dusart, Parcours de graphes, applications aux graphes de cocomparabilité, Université Paris Diderot, defended June 2014, supervised by Michel Habib.

PhD: Antoine Mamcarz, Décompositions de trigraphes et parcours de graphes, Université Paris Diderot, defended June 30, 2014, supervised by Michel Habib.

PhD: Dominik Pajak, Algorithms for Deterministic Parallel Graph Exploration, Université de Bordeaux, defended June 13, 2014, supervised by Adrian Kosowski and Ralf Klasing.

PhD: The-Dang Huynh, Extensions de PageRank et Applications aux Réseaux Sociaux, Université Pierre et Marie Curie, since 2012, supervised by Fabien Mathieu, Dohy Hong and Laurent Viennot.

PhD: Leonardo Linguaglossa, Design of algorithms and protocols to support ICN functionalities in high speed routers, Université Paris Diderot, since 2013, supervised by Fabien Mathieu, Diego Perino and Laurent Viennot.

### 8.2.3. *Juries*

PhD : Hugues Fauconnier was member of the jury of Peva Blanchard, Synchronization and Fault-tolerance in Distributed Algorithms, Univ. Paris XI, September 24th

PhD : Laurent Viennot was reviewer of the thesis of Pierre-Alain Jachiet, Étude de l'évolution combinatoire des gènes par l'analyse de réseaux de similarité de séquence, Université Pierre et Marie Curie, July 2014, supervised by Eric Baptiste and Philippe Lopez

PhD : Laurent Viennot was reviewer of the thesis of Arnaud Jégou, Harnessing the power of implicit and explicit social networks through decentralization, Université de Rennes 1, September 2014, supervised by Anne-Marie Kermarrec and Davide Frey

PhD : Laurent Viennot was reviewer of the thesis of Pierre Halftermeyer, Connexité dans les réseaux et schémas d'étiquetage compact d'urgence, Université de Bordeaux, September 2014, supervised by Bruno Courcelle and Cyril Gavoille

PhD : Laurent Viennot was reviewer of the thesis of Aurélien Lancin, Étude de réseaux complexes et de leurs propriétés pour l'optimisation de modèles de routage, Université de Nice – Sophia Antipolis, December 2014, supervised by David Coudert

PhD : Fabien de Montgolfier was member of the jury of Pierre Clairet, Approche algorithmique pour l'amélioration des performances du système de détection d'intrusions PIGA, Université d'Orléans, defended on June 24th, 2014, supervised by Pascal Berthomé.

PhD : Fabien de Montgolfier was member of the jury of Antoine Mamcarz, Décompositions de trigraphes et parcours de graphes, Université Paris Diderot, defended on June 30th, 2014, supervised by Michel Habib.

## 8.3. Popularization

Laurent Viennot has written an article on the history of telecommunication networks with a special focus on the phone network and on Internet [13].

Laurent Viennot has animated a weekly workshop on computer science unplugged in the Pouchet primary school in Paris at CM1 level (15h during 2014). The topics covered included Nim game, Euler paths in graphs, and error correcting codes.

## **HIEPACS Project-Team**

## **9. Dissemination**

### **9.1. Promoting Scientific Activities**

#### **9.1.1. Scientific events organisation**

##### *9.1.1.1. Member of the organizing committee*

Olivier Coulaud has been member of the organizing committee of the first International Workshop on Dislocation Dynamics Simulations that was devoted to the latest developments realized worldwide in the field of Discrete Dislocation Dynamics simulations. This international event held in December 10th to the 12th at "Maison de la Simulation" in Saclay, France and attended by 55 participants.

#### **9.1.2. Scientific events selection**

##### *9.1.2.1. Member of the conference program committee*

Mathieu Faverge has been member of the technical program committee of the international conference HiPC'14.

Luc Giraud has been member of the scientific program committee of the international conferences HiPC'14, ICS'14, IPDPS'14, VecPar'14, PDCN'14.

Jean Roman has been member of the scientific program committee of the international conference IEEE PDP'14.

##### *9.1.2.2. Reviewer*

Luc Giraud has been involved in the first round of ANR evaluation and has performed reviewing for PRACE.

Furthermore, the **HIEPACS** members have contributed to the reviewing process of several international conferences: IEEE HiPC 2014, CCGRID 2015, IEEE IPDPS 2015, IEEE PDP 2014, ....

#### **9.1.3. Journal**

##### *9.1.3.1. Member of the editorial board*

Luc Giraud is member of the SIAM J. Matrix Analysis and Applications.

##### *9.1.3.2. Reviewer*

The **HIEPACS** members have contributed to the reviewing process of several international journals (ACM Trans. on Mathematical Software, IEEE Trans. on Parallel and Distributed Systems, Journal of Engineering Mathematics, Parallel Computing, SIAM J. Matrix Analysis and Applications, SIAM J. Scientific Comp., ...).

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Undergraduate level/Licence

1. A. Esnard: Operating system programming, 36h, University Bordeaux I; Using network, 23h, University Bordeaux I.  
He is also in charge of the computer science certificate for Internet (C2i) at the University Bordeaux I.
2. M. Faverge: Programming Environment, 26h, L3; Numerical Algorithmic, 30h, L3; C Projects, 20h, L3, ENSEIRB-MatMeca, France
3. P. Ramet: System programming 24h, Databases 32h, Objet programming 48h, Distributed programming 32h, Cryptography 32h at Bordeaux University.

## Post graduate level/Master

1. O. Coulaud: Paradigms for parallel computing, 28h, ENSEIRB-MatMeca, Talence; Code coupling, 6h, ENSEIRB-MatMeca, Talence.
2. E. Agullo: Operating systems, 24h, University Bordeaux I; Dense linear algebra kernels, 8h, ENSEIRB-MatMeca; Numerical Algorithms, 30h; ENSEIRB-MatMeca, Talence.
3. A. Esnard: Network management, 27h, University Bordeaux I; Network security, 27h, University Bordeaux I; Programming distributed applications, 35h, ENSEIRB-MatMeca, Talence.
4. M. Faverge: System Programming, 74h, M1; Load Balancing and Scheduling, 19h, M2, ENSEIRB-MatMeca, Talence.  
He is also in charge of the second year of Embedded Electronic Systems option at ENSEIRB-MatMeca, Talence.
5. P. Ramet: Scheduling, 8h; Numerical Algorithmic, 30h; ENSEIRB-MatMeca, Talence.  
He also give classes on Cryptography, 30h, Ho Chi Minh City, Vietnam.
6. L. Giraud: Introduction to intensive computing and related programming tools, 20h, INSA Toulouse; Introduction to high performance computing and applications, 20h, ISAE-ENSICA; On mathematical tools for numerical simulations, 10h, ENSEIHT Toulouse; Parallel sparse linear algebra, 11h, ENSEIRB-MatMeca, Talence.
7. A. Guermouche: Network management, 92h, University Bordeaux I; Network security, 64h, University Bordeaux I; Operating system, 24h, University Bordeaux I.
8. J. Roman: Parallel sparse linear algebra, 10h, ENSEIRB-MatMeca, Talence; Parallel algorithms, 22h, ENSEIRB-MatMeca, Talence.

**9.2.2. Supervision**

## Defended PhD thesis

1. Yohann Dudouit, *Scalable parallel elastodynamic solver with local refinement in geophysics*, defended on December 8<sup>th</sup>, advisors: L. Giraud and S. Pernet (ONERA).
2. Andra Hugo *Composabilité de codes parallèles sur plateformes hétérogènes*, defended on December 12<sup>th</sup> 2014, advisors: A. Guermouche, R. Namyst and P-A. Wacrenier.
3. Clément Vuchener, *Algorithmique de l'équilibrage de charge pour des couplages de codes complexes*, defended on February 7<sup>th</sup> 2014. advisors: A. Esnard and J. Roman.

## PhD in progress :

1. Pierre Blanchard, *Fast and accurate methods for dislocation dynamics*, starting Oct. 2013, advisors: O. Coulaud and E. Darve (Stanford Univ.).
2. Bérenger Bramas, *Optimization of time domain BEM solvers*, starting Jan 2013, advisors: O. Coulaud and G. Sylvand.
3. Astrid Casadei, *Scalabilité et robustesse numérique des solveurs hybrides pour machines massivement parallèles*, starting Oct. 2011, advisors: F. Pellegrini and P. Ramet.
4. Jean-Marie Couteyen, *Parallélisation et passage à l'échelle du code FLUSEPA*, starting Feb 2013, advisors : P. Brenner (Airbus Defence and Space) and J. Roman.
5. Arnaud Etcheverry, *Toward large scale dynamic dislocation simulation on petaflop computers*, starting Oct. 2011, advisor: O. Coulaud.
6. Xavier Lacoste, *Scheduling and memory optimizations for sparse direct solver on multi-core/multigpu cluster systems*, starting Jan. 2012, advisors: F. Pellegrini and P. Ramet.
7. Alexis Praga, *Parallel atmospheric chemistry and transport model solver for massively platforms*, starting Oct. 2011, advisors: D. Cariolle (CERFACS) and L. Giraud.

8. Stojce Nakov, *Parallel hybrid solver for heterogeneous manycores: application to geophysics*, starting Oct. 2011, advisors: E. Agullo and J. Roman.
9. Maria Predari, *Dynamic Load Balancing for Massively Parallel Coupled Codes*, starting Oct. 2013, advisors: A. Esnard and J. Roman.
10. Louis Poirel, *Two level hybrid linear solver*, starting Nov. 2014, advisors: E. Agullo, M. Faverge and L. Giraud.
11. Fabien Rozar, *Peta and exaflop algorithms for turbulence simulations of fusion plasmas*, starting Nov. 2012, advisors: G. Latu (CEA Cadarache) and J. Roman.
12. Moustapha Salli, *Design of a massively parallel version of the SN method for neutronic simulations*, starting Oct. 2012, advisors: L. Plagne (EDF), P. Ramet and J. Roman.
13. Mawussi Zounon, *Numerical resilient algorithms for exascale*, starting Oct. 2011, advisors: E. Agullo and L. Giraud.

### 9.2.3. Juries

- HDR of B. Goglin (Université de Bordeaux) entitled “Vers des mécanismes génériques de communication et une meilleure maîtrise des affinités dans les grappes de calculateurs hiérarchiques” defended April 2014. J. Roman (examinator).
- PhD of M. Dorier (Ecole Normale Supérieure de Rennes) entitled “Addressing the challenges of I/O variability in post-petascale HPC simulations” defended December 2014. J. Roman (external referee).
- PhD of D. Genet (Université de Bordeaux) entitled “Design of generic modular solutions for PDE solvers for modern architectures” defended December 2014. J. Roman (examinator).
- PhD of P. Jacq (Université de Bordeaux) entitled “Méthodes numériques de type volumes finis sur maillages non-structurés pour la résolution de la thermique anisotrope et des équations de Navier-Stokes compressibles” defended July 2014. J. Roman (examinator).
- PhD of B. Lizé (Université Paris 13) entitled “Résolution Directe Rapide pour les Éléments Finis de Frontière en Électromagnétisme et Acoustique :  $\mathcal{H}$ -Matrices. Parallélisme et Applications Industrielles” defended June 2014. L. Giraud and G. Sylvand (examinator).
- PhD of P. Jolivet (Université de Grenoble et LJLL) entitled “Méthodes de décomposition de domaine. Application au calcul haute performance” defended October 2014. L. Giraud (examinator).
- PhD of R. Kanna (Manchester University) entitled “Numerical linear algebra problems in structural analysis” defended October 2014. Jury: D. Silvester (internal referee) L. Giraud (external referee).
- PhD of L. Boillot (Université de Pau et des Pays de l’Adour), entitled “Contributions à la modélisation mathématique et à l’algorithmique parallèle pour l’optimisation d’un propagateur d’ondes élastiques en milieu anisotrope” defended December 2014, E. Agullo (examinator).

## 9.3. Popularization

In the context of HPC-PME initiative, we started a collaboration with ALGO’TECH INFORMATIQUE and we have organised one of the first PhD-consultant action implemented by Xavier Lacoste led by Pierre Ramet. ALGO’TECH is one of the most innovative SMEs (small and medium sized enterprises) in the field of cabling embedded systems, and more broadly, automatic devices. The main target of the project is to validate the possibility to use the sparse linear solvers of our team in the area of electromagnetic simulation tools developed by ALGO’TECH.

The **HIEPACS** members have organized the PATC training session on Parallel Linear algebra at “Maison de la simulation” in Saclay from March 26th to March 28th.

## HIPERCOM2 Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

**Pascale Minet** was co-chair with Leila Saidane of PEMWN 2014, organized in Sousse, Tunisia.

**Selma Boumerdassi** was chair of:

- The International Workshop on Trusted Platforms for Mobile and Cloud Computing (TPMCC 2014), April 2014 ;
- The International Workshop on Energy Management for Sustainable Internet-of-Things and Cloud Computing (EMSICC 2014), August 2014.

**Nadjib Achir** acted as track chair of the Internet of Things (IoT) track of the Selected Areas in Communications Symposium of IEEE Global Telecommunications Conference 2014.

#### 9.1.1.2. member of the organizing committee

**Paul Muhlethaler** organized the DGA Inria workshop on Telecommunication and networking: "Software Defined Network (SDN) & MANET" in October 2014.

**Christine Anocq** was member of the organizing committee of the international conference PEMWN 2014.

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

**Pascale Minet** was member of the program committee of:

- Ad Hoc Nets 2014, 6th International ICST Conference on Ad Hoc Networks, August 2014.
- DCNET 2014, International Conference on Data Communication Networking, August 2014,
- GLOBECOM 2014, IEEE Global Telecommunications Conference Selected Areas in Communications, December 2014.
- ICC 2014, IEEE International Conference on Communications, June 2014
- ICN 2014, International Conference on Networks, January 2014.
- IFIP Wireless Days 2014, November 2014.
- IROS 2014, IEEE/RSJ International Conference on Intelligent Robots and Systems, September 2014.
- Med-Hoc-Net 2014, 14th IEEE/IFIP Mediterranean Ad-Hoc Networking conference, June 2014.
- PECCS 2014, 4th international conference on Pervasive and Embedded Computing and Communication Systems, February 2014. and Adaptive Wireless Sensor Networks, in conjunction with NETYS 2013, Marrakech, Morocco, April 2013.
- RTNS 2014, 21st International Conference on Real-Time and Network Systems, September 2014.
- SNPD 2014, 13th International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, June 2014.

**Paul Muhlethaler** was also member of:

- the Steering committee of MobileHealth 2014, 4th ACM MobiHoc Workshop on Pervasive Wireless Healthcare In Conjunction With MobiHoc 2014 Conference, June 2014, Athens, Greece,
- the Technical committee of the third International conference on Performance Evaluation and Modeling in Wireless Networks, PEMWN 2014, November 2014, Sousse, Tunisia.

**Cédric Adjih** was member of the program committee of:

- AINTEC 2014, ACM Asian Internet Engineering Conference, November 2014.
- PEMWN 2014, 3rd International Conference on Performance Evaluation and Modeling in Wireless Networks, November 2014, Sousse, Tunisia.

**Selma Boumerdassi** was member of the program committee for:

- IEEE Global Telecommunications Conference, GLOBECOM 2014;
- IEEE International Conference on Communications, ICC 2014;
- International Workshop on Communicating Objects and Machine to Machine for Mission-Critical Applications, COMMCA 2014;
- IEEE Symposium on Computer Applications and Industrial Electronics, ISCAIE 2014;
- IEEE Symposium on Wireless Technology and Applications, ISWTA 2014.

**Nadjib Achir** was member of the program committee for:

- IEEE Global Telecommunications Conference, GLOBECOM 2014;
- IEEE International Conference on Communications, ICC 2014;
- IEEE Wireless Communications and Networking Conference, WCNC 2014;
- IEEE Consumer Communications & Networking Conference, CCNC 2014;
- Global Information Infrastructure and Networking Symposium, GIIS 2014.

### **9.1.3. Journal**

#### *9.1.3.1. member of the editorial board*

**Nadjib Achir** acted as guest editor of the special issue “Planning and Deployment of Wireless Sensor Networks”, of the International Journal of Distributed Sensor Networks.

#### *9.1.3.2. reviewer*

**Pascale Minet** was reviewer for the following journals:

- IEEE Transactions on Parallel and Distributed Systems
- International Journal of Sensor Networks,
- International Journal of Information and Communication Technology,
- Journal of Communications,
- Journal of Network and Computer Applications,
- Computer Communications Journal,
- Ad Hoc Networks Journal,
- Mathematical Problems in Engineering,
- Wireless Networks.

**Paul Muhlethaler** was reviewer for the following journals:

- IEEE Transactions on Wireless Communications,
- IEEE Transactions on Vehicular Technology,
- IEEE Transactions on Information Theory.

**Nadjib Achir** was reviewer for:

- Sensor Networks (MDPI),
- Wireless Communications and Mobile Computing (Wiley),
- Internet of Things Journal (IEEE),
- Ad Hoc Networks Journal (Elsevier).



## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : **Ichrak Amdouni** taught "Principe et architecture des réseaux" and "Réseaux locaux et équipements actifs" at the university of Versailles Saint-Quentin (L1).

Master : **Pascale Minet** taught:

- Networks and quality of service in Master Systèmes Electroniques et Traitement de l'Information, at INSTN (Saclay).
- Mobile ad-hoc networks: medium access, routing and quality of service in Master Ingénierie informatique of the University of Marne-la-Vallée.
- 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.

### 9.2.2. Supervision

PhD :

- **Ridha Soua**, "Wireless Sensor Networks in Industrial Environment: Energy Efficiency, Delay and Scalability", University Pierre et Marie Curie - Paris 6, February 2014, Pascale Minet, adviser, Nadjib Achir, examiner.
- Ines Ben Jemaa, "Multicast communications for cooperative vehicular systems", Mines ParisTech, December 2014, Paul Muhlethaler, co-adviser, Nadjib Achir, reviewer.

### 9.2.3. Juries

HdR : Nadjib Achir, "Wireless Networks: Deployment and Quality of Service Provisioning", University Paris 13, 2014, Paul Muhlethaler, examiner.

PhD :

- Hicham Lakhlef, "Algorithmes distribués pour l'optimisation du déploiement des microbots MEMS", University of Franche Comté, November 2014, Pascale Minet, examiner.
- Zayneb Trabelsi Ayoub, "Déploiement large échelle des réseaux de capteurs sans fil IEEE 802.15.4 ZigBee", ENSI, Tunisia, november 2014, Paul Muhlethaler, reviewer, Pascale Minet, examiner.
- Salsabil Gherairi, "Garantie des délais des trafics temps réel pour les réseaux de capteurs sans fil", ENSI, Tunisia, November 2014, Pascale Minet, examiner.
- Rima Hatoum, "Algorithmes d'ordonnancement inter-couches avec adaptation de modulation et de codage dans des réseaux hétérogènes", University of Paris 6, June 2014, Nadjib Achir, reviewer.
- Ibtissem Boulanouar, "Algorithmes de suivi de cible mobile pour les réseaux de capteurs sans fil", University of Paris Est, June 2014, Nadjib Achir, reviewer.
- Sara Mehar, "Le véhicule comme source et consommateur d'informations : collecte, dissémination et traitement de données pour une mobilité durable", University of Bourgogne, December 2014, Paul Muhlethaler, president.

## 9.3. Popularization

- **the Inria-Industry meeting focusing on Telecommunications**, in Rocquencourt, November 2014. The HIPERCOM2 team was very active and presented demonstrations of Wireless Sensor Networks. The demonstration prepared by Erwan Livolant, Cédric Adjih, Ichrak Amdouni, Pascale Minet concerned the principles of wireless sensor networks, the energy-efficient routing protocol, the node coloring algorithm running in the OCARI network to maximize network lifetime. Tuan Dang from EDF presented the new OCARI platform. Maurice Sellin from DCNS explained the deployment of an OCARI network in a DCNS ship, the application supported is fire detection and OCARI sensor nodes are provided by ADWAVE.
- Nadjib Achir, Cédric Adjih, Hana Baccouch, Ichrak Amdouni, Erwan Livolant and Ridha Soua explained the principles of communication and routing in wireless sensor networks and organized several demonstrations for undergraduates and students who visited Inria in February 2014.

## INDES Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. general chair, scientific chair

- **Iaria Castellani** is the chair of the IFIP WG 1.8 on Concurrency Theory (of which she has been a member since its start in 2005). She is a member of the Management Committee of the european COST Action IC1201 BETTY on Behavioural Types, and the chair of the BETTY working group on Security. Since November 2014 she is also a member of the COST Action IC1405 on Reversible Computation.
- **Manuel Serrano** is the coordinator of the ANR DEFIS project PWD.
- **Tamara Rezk** is the coordinator of the security work package (WP3) of the ANR AJACS project.

#### 8.1.1.2. member of the organizing committee

- **Iaria Castellani** co-organised (with the WG Secretary Mohammad Reza Mousavi) the workshop TRENDS 2014 and the annual business meeting of WG 1.8, and she participated in the IFIP TC1 (Foundations of Computation) business meeting, all held in September in Rome. She was involved in the organisation of the OPCT (Open Problems in Concurrency Theory) workshop that took place in May in Bertinoro, which was co-sponsored by WG 1.8. She was also one of the organisers of the MatthewFest, a two-day workshop that took place in Lucca in October to celebrate the 65th anniversary of Matthew Hennessy. She reported on the 2013 workshop "25 Years of Combining Compositionality and Concurrency" (WS25CCC) in the Bulletin of EATCS.
- **Tamara Rezk** organized a workshop on Programming Languages and Verification and a workshop on JavaScript Security at Inria Sophia Antipolis, on 9th and 16th December 2014.

### 8.1.2. Scientific events selection

#### 8.1.2.1. member of the conference program committee

- **Manuel Serrano** served on the program committee of the *16th Practical Aspects of Declarative Languages* (PADL'14) conference, *Trends in Functional Programming*, (TFP'14) and *Web Audio Conference* (WAC'15).
- **Nataliia Bielova** was a publication chair of International Symposium on Engineering Secure Software and Systems (ESSoS 2014) and was invited to be a publication chair of ESSoS 2015.
- **Iaria Castellani** was a member of the programme committee of the workshop BEAT 2014.
- **Tamara Rezk** served on the program committees of Computer Security Foundations (CSF'14), of International Symposium on Engineering Secure Software and Systems (ESSoS'15), and of 4th Conference on Principles of Security and Trust (POST'15).

#### 8.1.2.2. reviewer

- **Nataliia Bielova** served as an external reviewer to the Conference on Principles of Security and Trust (POST 2014) and Computer Security Foundations Symposium (CSF 2014).

### 8.1.3. Journal

#### 8.1.3.1. member of the editorial board

- **Iaria Castellani** is a member of the editorial board of *Technique et Science Informatiques*.

#### 8.1.3.2. reviewer

- **Nataliia Bielova** was an invited reviewer of the ACM Transactions on Information and System Security (TISSEC).
- **Tamara Rezk** was an invited reviewer of the Journal Computer Languages, Systems & Structures.

## 8.2. Seminars and conferences

- **Manuel Serrano** gave two seminars about Web programming in various events: "Future of Programming", Delft 2014 <http://eelcovisser.org/wiki/future-of-programming/program> and "9th Symposium on Future Trends in Service-Oriented Computing", Potsdam 2014. He participated in the SAC'2014 conference in Gyeongju, Korea [16], where is presented new techniques for implementing locks efficiently in higher order programming languages. He also participated in the WEBIST'14 conference in Barcelona, Spain [17], where he presented his work on multitier debugging of Web applications.
- **Bernard Serpette** gave a talk about *Unification des couleurs dans un  $\lambda$ -calcul polychrome* at the JFLA'14, Fréjus, France.
- **Nataliia Bielova** was invited to present her work on browser randomisation against fingerprinting at PRINCESS workshop in December 2014.
- **Iaria Castellani** participated in the NII (the Japanese National Institute of Informatics) Shonan Meeting on "Software Contracts for Communication, Monitoring, and Security", held at Shonan Village Center. In June she took part in the workshop OPCT (Open Problems in Concurrency Theory) in Bertinoro, Italy. In both cases, she gave a talk on Security for Reactive Synchronous Languages. In September, she participated in the conference TCS (Theoretical Computer Science) in Rome, where she gave a joint talk with Marco Bernardo, reporting on the IFIP WG 1.8 activities and on the OPCT workshop, in a special session dedicated to the IFIP TC1 working groups. She also attended the BEAT workshop, where her work was presented by Jorge A. Perez. She finally participated, as a co-organiser, in the workshop TRENDS 2014 and in the event MatthewFest (cf Section 9.2 below). As part of the Action BETTY, she participated in two one-day project meetings/workshops, associated with the conferences ETAPS and CONCUR respectively, and she spent a short visit to the University of Torino and another one to Trinity College, Dublin.
- **José Frago Santos** participated in the 29th IFIP International Conference of Information Security and Privacy (IFIP SEC'2014) in which he presented his joint work with Tamara Rezk (An Information Flow Monitor-Inlining Compiler for Securing a Core of JavaScript).

He participated in the 9th International Symposium on Trustworthy Global Computing (TGC'2014) in which he presented his joint work with Ana Almeida Matos and Tamara Rezk (An Information Flow Monitor for a Core of DOM - Introducing References and Live Primitives).

He gave a talk about information flow security for client-side Web applications at the LoReL group and at the LaFHIS group in the University of Buenos Aires and at the Dependable Systems Group in the University of Córdoba. José Frago Santos also gave a talk about information flow security for the DOM API in the Department of Computing of the Imperial College in London.

- **Tamara Rezk** was invited to Dagstuhl Seminar 14271, "Scripting Languages and Frameworks: Analysis and Verification". She gave two talks on "Hybrid Typing for JavaScript" and "Hop Operational Semantics".

## 8.3. Teaching - Supervision - Juries

### 8.3.1. Teaching

Licence : **Vincent Prunet**, *Algorithms and Data Structures*, 80 ETD, L2, Lycée International de Valbonne Sophia Antipolis (within the scope of the national Inria action to promote early CS courses in all scientific curricula), France.

Master : **Manuel Serrano**, *Programming the Diffuse Web*, 26h ETD, M2, University Paris 6 (UPMC), France.

Master : **Tamara Rezk**, *Security of Web Applications*, 36 ETD, M2, University of Nice Sophia Antipolis, France.

Master : **Tamara Rezk**, *Provable Cryptography*, 36 ETD, M2, University of Nice Sophia Antipolis, France.

Master: **José Fragoso Santos**, *Software Security*, 6 ETD, M2, of Instituto Superior Técnico University of Lisbon, Portugal.

Doctorat : **Manuel Serrano**, Hop.js, full-day seminar, *École des Jeunes Chercheurs en Programmation*, Rennes, France.

Doctorat: **Iliaria Castellani**, Behavioural types, one-hour tutorial, Lovran School.

### 8.3.2. Supervision

PhD : **José Fragoso Santos**, *Enforcing Secure Information Flow in Client Side Web Applications*, University of Nice Sophia Antipolis, 08/12/2014, **Ana Almeida Matos** and **Tamara Rezk**.

PhD in progress : **Cyprien Nicolas**, *Orchestrating multi-tier programming languages*, University of Nice Sophia Antipolis, 1/09/2010, **Gérard Berry** and **Manuel Serrano**.

PhD in progress: **Johan Grande**, *Conception et implantation d'un langage de programmation concurrente modulaire*, University of Nice Sophia Antipolis, 1/10/2010, **Gérard Boudol** and **Manuel Serrano**.

PhD in progress: **Yoann Couillec**, *Langages de programmation et données ouvertes*, University of Nice Sophia Antipolis, 1/10/2012, **Manuel Serrano** and **Patrick Valduriez**.

PFE in progress: **Julien Chiaremello**, *Décomposition en nombres premiers en informatique quantique*, University of Nice Sophia Antipolis, 1/11/2014, **Tamara Rezk**.

Master Internship: **Diana Proteasa-Nicola** on activity monitoring within Hop applications, Polytech Nice Sophia, **Vincent Prunet**.

Inria Internship Program: **Diana Proteasa-Nicola** on Robot simulation with Hop.js, Universitatea Politehnica Timisoara, **Vincent Prunet**.

### 8.3.3. Juries

- Manuel Serrano was a reviewer of the PhD thesis of Cagdas Bozman, ENSTA, Paris. He was also a reviewer of the PhD thesis of Julien Richard Roy, University of Rennes. Manuel Serrano organized and headed the CR2 jury of Inria Sophia-Antipolis.
- Iliaria Castellani was a reviewer of the PhD thesis of Ornela Dardha, University of Bologna.
- Tamara Rezk was a reviewer (rapporteur) of the PhD thesis of Carlos Luna, University of the República, Uruguay. He was also part of the jury of the PhD thesis of José Fragoso Santos, University of Nice Sophia Antipolis.

## 8.4. Transfer

### 8.4.1. WebRobotics

Dissemination of the HOP technology has become a priority for the team now that HOP is actually used to develop large projects. In 2012, a further step was taken with the allocation of dedicated resources missioned to develop and transfer the application portfolio to the industry. The team has focused on bringing web awareness to personal assistance robots developed by the Hephaistos team, also at Inria CRISAM, in line with one of the top strategic orientations of Inria. Using web protocols as a native framework greatly simplifies the integration of the robot as a web entity, and the use of remote web services to manage, monitor or extend the features of the robot. The behavior of a HOP robot is specified in HOP and orchestrated within diffuse HOP run time agents embedded within the robot elements, in charge of handling communication and control between platforms and with remote web services. The project, code-named *WebRobotics*, builds on the experience gained in using HOP for home automation over the recent years, adding in 2013 the support of versatile

robotic computing platforms (integration with the ROS robot framework, development of a lightweight Hop client library providing support of web protocols to legacy software components). Among the direct benefits of relying on a web framework are the ability to use any web enabled device such as a smartphone or tablet to drive the robot. Also, it is much simpler to put in place remote diagnostic and monitoring services by leveraging on existing robot sensors and the HOP framework.

The *WebRobotics* project is now part of the RAPP FP7 european project, launched in December 2013, where Hop technology is used by several academic and SME R&D teams to develop a distributed software platform and applications for assistive robotics. Two prototypes are being developed, the first one is a personal coach robot (a Nao humanoid robot embedding Hop distributed applications), and the second one is a smart rollator (a walking aid with additional hardware and software services for rehabilitation, training and activity monitoring. The rollator hardware and robotic components are provided by Inria Hephaistos). In 2013, Indes has initiated a collaboration with other research teams (Inria STARS, Nice University Cobtek Project) and local institutes and SMEs to foster the development distributed monitoring and supervision applications with the Hop technology. Indes has presented Hop applications for robots at the Lille Inria Industry conference day in November 2014.

## INFINE Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

**Aline Carneiro Viana** served as:

- Workshop co-Chair of the 11th Annual IEEE International Conference on Sensing, Communication, and Networking (SECON 2014);
- Grant Chair of the N2Women 2014 Workshop (an ACM SIGMOBILE program that is supported by the IEEE Communications Society, Microsoft Research and HP Labs)
- Publicity Chair of 12th Annual IEEE International Conference on Sensing, Communication, and Networking (IEEE SECON 2015), 20th Annual ACM International Conference on Mobile computing and Networking (ACM MobiCom 2014) and IEEE IFIP Wireless Days 2014;
- Publication co-Chair of 21st Annual ACM International Conference on Mobile computing and Networking (ACM MobiCom 2015);

**Emmanuel Baccelli** served as:

- co-Chair of the 4th ACM MOBIHOC Workshop on Pervasive Wireless Healthcare (MobileHealth 2014);

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsible of the conference program committee

- **Aline Carneiro Viana** is the TPC co-chair of the Symposium on Selected Topics in Communications together Jun Luo (from Nanyang Technological University, Singapore) to be organized jointly with IEEE/CIC International Conference on Communications in China (ICCC 2015)

#### 9.1.2.2. Member of the conference program committee

**Aline Carneiro Viana** has served in the program committees of the following conferences/workshops:

- 7th IFIP International Conference on New Technologies, Mobility and Security (IFIP NTMS 2015)
- 12th Annual IEEE Conference on Sensing, Communication and Networking (IEEE SECON 2015)
- IEEE IFIP Wireless Days 2014
- IEEE 10th International Conference on Wireless and Mobile Computing, Networking and Communications (IEEE WiMob'2014)
- 32th Simpósio Brasileiro de Redes de Computadores e Sistemas Distribuídos (SBRC 2014)

**Cédric Adjih** has been TPC member/reviewer for: IEEE Globecom 2014 (Global Communications Conference), and IEEE ICC 2015 (International Conference on Communications)

**Emmanuel Baccelli** has been TPC member for: IEEE SECON 2014 (IEEE Conference on Sensing, Communication and Networking), and SaSeIoT 2014 (International Conference on Safety and Security in Internet of Things).

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- **Aline Carneiro Viana** is Associate Editor of ACM Computer Communication Review (ACM CCR)

#### 9.1.3.2. Reviewer

**Aline Carneiro Viana** has performed reviews for the following journals/transactions:

- IEEE Transaction on Mobile Computing (TMC)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE Wireless Communications Magazine
- Elsevier: Computer Communications; Elsevier Computer Networks; Elsevier Ad Hoc Networks; Pervasive Mobile Computing (PMC); Sustainable Computing, Informatics and Systems (SUS-COM)
- IEEE Communications Letters

**Cédric Adjih** has performed reviews for the IEEE Journal on Selected Areas in Communications (JSAC), and the journal “Ad Hoc Networks”.

**Emmanuel Baccelli** has performed reviews for the following journals/transactions:

- IEEE Transactions on Sensor Networks,
- IEEE Transactions on Emerging Telecommunications Technologies.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Engineering School: Cédric Adjih, “Microcontrollers: from embedded systems to the Internet of Things”, 3 hours TD, Telecom SudParis.

#### Masters

Emmanuel Baccelli, “Telematics”, M1 Advanced Computer Networks, at Freie Universität Berlin; 15 semaines, 50 étudiants.

#### E-learning

Master: Laurent Massoulié, “epidemic algorithms”, M2 ACN (Advanced Communication Networks) entre Ecole Polytechnique et Institut Telecom; 11 semaines, 4 étudiants.  
“Graphes aléatoires”, M2 Probabilités et Statistiques, 4 semaines, UPMC, 10 étudiants.

### 9.2.2. Supervision

#### Aline Carneiro Viana:

- PhD: **Thiago Henrique Silva**, “Large scale study of city dynamics and urban social behavior using participatory sensor networks”, Federal University of Minas Gerais, May 2014.
- PhD in progress: **Eduardo Mucelli**, “Revealing new facets of human behavior”, November 2011, Aline Carneiro Viana. **Felipe Domingos**, “Identifying Social Attributes in VANETs”, January 2013, Aline Carneiro Viana. **Roni Shigueta**, “Resource allocation in highly mobile wireless networks”, January 2012, Aline Carneiro Viana. **Guangshuo Chen**, “Understanding and predicting human demanded content and mobility”, September 2014, Aline Carneiro Viana.
- Post-doc in progress: K. P. Naveen on content caching and content-centric networking.

#### Cédric Adjih:

- PhD in progress: **Fatma Soma**, on handling mobility in routing in wireless sensor networks, thesis started in 2013 and co-advised with Inès El Korbi (Institut Supérieur d’Informatique et de Gestion de Kairouan, Tunisie).



**Emmanuel Baccelli:**

- PhD in progress: **Oliver Hahm** on the optimization of energy-efficient communication protocols for the Internet of Things, **Hauke Petersen** on the resilience of emergency spontaneous wireless networks.
- Post-doc in progress: **K. P. Naveen** on content caching and content-centric networking.
- Masters thesis in the domain of IoT, during 2014: 1 completed, 3 on-going.
- Bachelor thesis in the domain of IoT, during 2014: 2 completed.

**9.2.3. Juries****Aline Carneiro Viana:**

- **Examiner:** *Oana Iova*, "Algorithms and Protocols for all-IP Wireless Sensor Networks in the Internet of Things", Université de Strasbourg, France. December 2014. *Tiphaine Phe-Neau*, "Properties and impact of vicinity in mobile opportunistic networks", UPMC – Sorbonne Universités, France. January 2014.
- **Invited:** *Thiago Henrique Silva* "Large scale study of city dynamics and urban social behavior using participatory sensor networks" at the Federal University of Minas Gerais, Brazil, May 2014.
- **PhD Qualification advisor:** *Felipe Domingos*, "Identifying Social Attributes in VANETs", at the Federal University of Minas Gerais, Brazil, August 29, 2014. *Roni Shigueta*, "Resource allocation in mobile networks", at the Pontifical University of Paraná (PUC-PR), Brazil, November 26, 2014.

**9.3. Popularization****Aline Carneiro Viana:**

- **Presentation at the "Futur en Seine" festival:** Title: "Understanding human behavior for context- and content- networking", June 12, 2014.
- **Presentation at the ESSOURIAU High School at Ulis in the context of the Math week:** Title: "Le smartphone, votre 6e sens ?", Mars 21, 2014.
- **Interview for the Interstices scientific magazine.**

**Cédric Adjih, Emmanuel Baccelli, Oliver Hahm:**

- **Demonstration of RIOT at CeBIT 2014**, the world's leading IT trade show.
- **Description of IoT-LAB, and test of IoT-LAB nodes** at the **IETF 6TiSCH plugfest** during IETF-89 in London.
- **Demonstration of RIOT on heterogeneous IoT hardware** At the IETF 6TiSCH plugfest during IETF-89 in London ([https://bitbucket.org/6tisch/meetings/wiki/140306a\\_ietf89\\_london\\_plugfest](https://bitbucket.org/6tisch/meetings/wiki/140306a_ietf89_london_plugfest)).
- **Demonstration of IoT-LAB (Contiki RPL experiments)** at the **Bits-n-Bytes event of IETF-90** in Toronto.
- **Demonstration of RIOT (CCN - 6LoWPAN interoperating)** at the **Bits-n-Bytes event of IETF-90** in Toronto.
- **Demonstration of IoT-LAB** also at the **LLN plugfest** of the same IETF-90 in Toronto.
- **Demonstration of RIOT tsch functionalities with OpenWSN integration** at the **LLN plugfest** of the same IETF-90 in Toronto.

**Oliver Hahm** co-authored an article on RIOT and IoT device programming in the iX Developer magazine's 2014 special issue on Embedded Software. O. Hahm, C. Mehlis, M. Lenders, T. Eichinger, L. Ortmann, "Betriebssysteme für eingebettete Systeme im Internet der Dinge: Freie Fahrt für Experimentierfreudige," iX Developer Magazine, Special issue on Embedded Software, February 2014.

## **KerData Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

Gabriel Antoniu

- Program Chair of the IEEE Cluster 2014 conference, Madrid, September 2014.

Luc Bougé

- Vice-Chair of the Euro-Par Steering Committee. Chair of the Euro-Par Workshop Advisory Board.
- Co-Chair of the PhD Forum of the IPDPS 2014 Conference, Phoenix, May 2014.
- Chair of the PhD Student Mentoring Program of the IEEE Cluster 2014 conference, Madrid, September 2014.

Shadi Ibrahim

- PhD Consortium Co-Chair for the 2014 CloudCom conference, Singapore, December 2014.
- Workshop Co-Chair for the 2014 ScalCom conference, Indonesia, December 2014.

Alexandru Costan

- Program Co-Chair of the BigDataCloud 2014 International workshop held in conjunction with the Euro-Par 2104 conference, Porto, August 2014.
- Submission Chair of the IEEE Cluster 2014 conference, Madrid, September 2014.

### **9.1.2. Scientific events selection**

Gabriel Antoniu

- Program Chair of the IEEE Cluster 2014 conference (Madrid, 22–26 September 2014).
- Member of the following Program Committees: ACM HPDC 2014, ACM/IEEE CC-Grid'2014, IEEE Big Data 2014, ACM/IEEE SC'14 (Technical Program Member - Posters Committee), BigDataCloud 2014 workshop (held in conjunction with the Euro-Par 2014 conference).

Shadi Ibrahim

- Program Committee Chair of the PhD Consortium for the 2014 CloudCom.
- Member of the following Program Committees: IEEE Cluster 2014, IEEE SCC 2014, IEEE CloudCom 2014, ICPADS 2014, HPCC 2014, ICA3PP 2014, NPC 2014, MEDES 2014, ISPDC 2014, PCom-2014, SCRAMBL workshop 2014, CLOUD COMPUTING 2014.
- Other reviews: HPDC 2014, Euro-par 2014, Big Data 2014, SC14 Posters and Student Research Competition.

Alexandru Costan

- Member of the following Program Committees: ICPP 2014, IEEE CloudCom 2014, IEEE CloudCom PhD Forum 2014, ISPDC 2014, ARMS-CC workshop 2014, IEEE Cluster 2014, BigDataCloud Workshop 2014
- Other reviews: ACM HPDC 2014, EuroPar 2014, ARMS-CC, IEEE Cluster 2014, IEEE/ACM CCGrid 2014, SC14.

### 9.1.3. Journal

Luc Bougé

- Member of the Editorial Board of Scientific Programming.

Shadi Ibrahim

- Guest editors for a Special Issue on *Advanced Techniques for Cloud Data Management* in the International Journal Transactions on Large-Scale Data and Knowledge Centered Systems (TLDKS), Springer.
- Other reviews: IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Computers, IEEE Transactions on Cloud Computing, ACM Transactions on Internet Technology, Future Generation Computer Systems, IEEE Systems Journal, Journal of Supercomputing, Cluster Computing, Springer Transactions on Large-Scale Data and Knowledge-Centered Systems.

Alexandru Costan

- Other reviews: IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Cloud Computing, Future Generation Computer Systems, Concurrency and Computation - Practice and Experience, Computers and Geosciences

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Gabriel Antoniu

Master (Engineering Degree, 5th year): Big Data, 24 hours (lectures), M2 level, ENSAI (*École Nationale Supérieure de la Statistique et de l'Analyse de l'Information*), Bruz, France.

Master: Grid, P2P and cloud data management, 18 hours (lectures), M2 level, ALMA Master, Distributed Architectures module, University of Nantes, France.

Master: Scalable Distributed Systems, 10 hours (lectures), M2 level, SDS Module, M2RI Master Program, ENS Rennes, France.

Master: Scalable Distributed Systems, 17 hours (lectures), M1 level, SDS Module, EIT ICT Labs Master School, France.

Luc Bougé

Bachelor: Introduction to programming concepts, 24 hours (lectures), L3 level, Informatics program, ENS Rennes, France.

Master: Introduction to object-oriented high-performance programming, 24 hours (lectures), M1 level, Mathematics program, ENS Rennes, France.

Shadi Ibrahim

Master: Hadoop, 48 hours (Project), M1 Level, ENS Rennes, France

Master: Cloud1, Map-Reduce, 16 hours (lectures, lab sessions), M2 Level, École des Mines de Nantes, Nantes, France.

Master (Engineering Degree, 5th year): Big Data, 12 hours (lab sessions), M2 level, ENSAI (*École Nationale Supérieure de la Statistique et de l'Analyse de l'Information*), Bruz, France.

Alexandru Costan

Bachelor: Object-oriented programming, 18 hours (lectures), L3, ENS Rennes

Bachelor: Java programming, 28 hours (lab sessions), L2, INSA Rennes

Bachelor: Databases, 68 hours (lectures and lab sessions), L2, INSA Rennes, France

Bachelor: Practical case studies, 24 hours (project), L3, INSA Rennes

Master: Big Data and Applications, 36h hours (lectures, lab sessions, project), M1, INSA Rennes

Matthieu Dorier

Bachelor: Ruby Programming, 15 hours (lectures, lab sessions), L3 level, ENS Rennes.

Master: Initiation to Unix Systems, 2 hours (lab sessions), M1 level, ENS Rennes.

Lokman Rahmani

Bachelor: Java Programming, 18 hours (lab sessions), L3 level, MIAGE program, University Rennes 1, France.

Master: Distributed Programming, 48 hours (lab sessions), M1 level, GL program, University Rennes 1, France.

### 9.2.2. Supervision

PhD defended: Matthieu Dorier, *Addressing the Challenges of I/O Variability in Post-Petascale HPC Simulations*, thesis started in October 2011 co-advised by Gabriel Antoniu and Luc Bougé. Defended on December 9, 2014.

PhD defended: Radu Tudoran, *High-Performance Big Data Management Across Cloud Data Centers*, thesis started in October 2011, co-advised by Gabriel Antoniu and Luc Bougé. Defended on December 10, 2014.

PhD in progress: Álvaro García Recuero, *Scalable, Power-efficient Big Data Analysis on Geographically Distributed Clouds*, thesis started in October 2013, co-advised by Shadi Ibrahim and Gabriel Antoniu.

PhD in progress: Lokman Rahmani, *Big Data Management for Next-Generation High-Performance Computing Systems*, thesis started in October 2013 co-advised by Gabriel Antoniu and Luc Bougé.

PhD in progress: Luis Eduardo Pineda Morales, *Efficient Big Data Management for Geographically Distributed Workflows*, thesis started in January 2014, co-advised by Alexandru Costan and Gabriel Antoniu.

PhD in progress: Tien-Dat Phan, *Green Big Data Processing in Large-scale Clouds*, thesis started in October 2014, co-advised by Shadi Ibrahim and Luc Bougé.

PhD in progress: Orçun Yildiz, *Energy-Efficient Big Data Management in Petascale Supercomputers and Beyond*, thesis started in September 2014, co-advised by Shadi Ibrahim and Gabriel Antoniu.

### 9.2.3. Juries

Gabriel Antoniu served as a member of Inria's Junior Researcher (CR2) Admissibility Jury for the Rennes and Grenoble Research Centers and of Inria's Junior Researcher Admission Jury (CR1 and CR2, all centers).

Luc Bougé served as a jury member for several PhD and HDR defenses, in many cases as the jury chairman.

### 9.2.4. Miscellaneous

Gabriel Antoniu served as a member of Inria's Evaluation Committee.

Shadi Ibrahim served as a member of Inria's Post-Doc Evaluation Committee since 2014.

Shadi Ibrahim served as a member of jury for L3 internship at ENS Rennes, September 2014.

Shadi Ibrahim is giving a Tutorial on *Green Big Data Processing using Hadoop: An introductory tutorial* at the Middleware 2014 conference, Bordeaux, France, December 2014 (with Anne-Cécile Orgerie).

Matthieu Dorier served as a member of jury for L3 internship at ENS Rennes, September 2014.

### 9.3. Popularization

- Gabriel Antoniu  
Microsoft Research, Redmond. Invited presentation at the Workshop on *E-Science in the Cloud*. Subject: Big Data management in the Cloud (A-Brain and Z-CloudFlow projects). Audience: engineers, students and researchers, from academia and industry (April 2014).  
ORAP Forum. Invited Speaker. *Big Data: Concepts-clés et enjeux* (April 2014).  
Radio France. Invited interview about Big Data at the *Labo des savoirs*. Available on line at <http://labodessavoirs.fr/chroniques-et-reportages/un-nouveau-paradigme/>.  
Institut Français de Bio-informatique, Grand-Ouest, Rennes. Invited presentation at the *12e Rencontres des plates-formes de Bioinformatique du Grand Ouest* about the team's experience with the Microsoft Azure cloud platform (November 2014).
- Shadi Ibrahim  
Parallel and Distributed Computing Centre (PDCC), Nanyang Technological University (NTU), Singapore. Invited seminar. Subject: *Consistency Management for Big Data Applications in the Clouds* (January 2014).
- Alexandru Costan  
EIT ICT Labs, Rennes. Invited presentation at the Workshop on *Trusted Clouds* about *KerData Team: Scalable Data Management on Clouds and Beyond* (March 2014).
- Matthieu Dorier  
Inria, Grenoble. Invited seminar about *Damaris: data management for scientific simulations on post-Petascale supercomputers* (June 2014).

## **MADYNES Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. General chair, scientific chair, session chair*

- Abdelkader Lahmadi: CSSMA Symposium – ICC 2014 (session chair), IEEE/IFIP International Workshop on Management of the Future Internet – MANFI (session chair)
- Bernardetta Addis: 2014 10th International Conference on Modeling, Optimization and SIMulation – Mosim (session chair)
- Jérôme François: IFIP/IEEE International Symposium on Integrated Network Management – IM (session chair)

#### *9.1.1.2. Organizing committee membership*

- Rémi Badonnel: IEEE Global Information Infrastructure and Networking Symposium (IEEE GIIS'14), IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'15)

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Conference program committee chairing*

- Rémi Badonnel: IEEE Global Information Infrastructure and Networking Symposium - Special Track on Cloud Infrastructures and Networking (IEEE GIIS'14), IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'15)
- Thomas Silverston: Crowdsensing 2014

#### *9.1.2.2. Conference program committee membership*

- Abdelkader Lahmadi: IEEE/IFIP International Workshop on Management of the Future Internet (MANFI'14), Crowdsensing 2014
- Françoise Simonot-Lion: 10th IEEE International Workshop on Factory Communication Systems (WFCS 2014).
- Isabelle Chrisment: International Conference on Applied Cryptography and Network Security (ACNS'14), IFIP International Conference on Autonomous Infrastructures, Management and Security (IFIP AIMS'14), IFIP International Conference on Communications and Multimedia Security (IFIP CMS'14), International Conference on Advanced Networking, Distributed Systems and Applications (INDS'14), IFIP/IEEE International Symposium on Network Operations and Management (IEEE NOMS'14); National conference on Sécurité des Architectures Réseaux et des Systèmes d'Information (SARSSI 2014- Member of the Steering Committee).
- Jérôme François: 8th IFIP International Conference on Autonomous Infrastructure, Management and Security – AIMS, IEEE/IFIP Network Operations and Management Symposium – NOMS, Cyber Security Analytics and Automation colocated with ACM CCS, European Wireless, Principles, Systems and Applications of IP Telecommunications – IPTComm, Global Information Infrastructure and Networking Symposium – GIIS

- Rémi Badonnel: IFIP/IEEE International Symposium on Network Operations and Management (IEEE NOMS'14), IEEE Global Information Infrastructure and Networking Symposium (IEEE GIIS'14), IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'15), IFIP International Conference on Autonomous Infrastructures, Management and Security (IFIP AIMS'14), IEEE International Conference on Consumer Communications and Networking (IEEE CCNC'15), Conference on Services and Networks Management (GRES'14), International Workshop on Software Defined Networking and Network Function Virtualisation (IEEE ManSDN/NFV'14), IFIP/IEEE International Workshop on Future Internet Management (IFIP/IEEE MANFI'14), Rencontres Francophones sur l'Algorithmique des Télécoms (ALGOTEL'14)
- Ye-Qiong Song: 19th IEEE international conference on Emerging Technologies & Factory Automation (ETFA'2014) - Industrial communication systems track ; 12th International Conference On Smart homes and health Telematics (ICOST 2014); 13th International Workshop on Real-Time Networks (RTN 2014); 10th IEEE International Workshop on Factory Communication Systems (WFCS 2014); 7th IFIP Wireless and Mobile Networking Conference (WMNC 2014); 12th International Conference on Embedded Computing (EmbeddedCom 2014); 2nd International Workshop on compressive Sensing in Cyber-Physical Systems, Co-located with the 11th IEEE International Conference on Mobile Ad hoc and Sensor Systems (MASS 2014).

### 9.1.2.3. Reviewing activities

- Abdelkader Lahmadi: IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'15), Special Track on the Management of the Internet of Things (IEEE NOMS'14).
- Bernardetta Addis: 2014 10th International Conference on Modeling, Optimization and SIMulation (Mosim), 2015 IEEE 12th Consumer Communications and Networking Conference (CCNC)
- Françoise Simonot-Lion: 10th IEEE International Workshop on Factory Communication Systems (WFCS 2014).
- Isabelle Chrisment: International Conference on Applied Cryptography and Network Security (ACNS'14), IFIP International Conference on Autonomous Infrastructures, Management and Security (IFIP AIMS'14), IFIP International Conference on Communications and Multimedia Security (IFIP CMS'14), International Conference on Advanced Networking, Distributed Systems and Applications (INDS'14), IFIP/IEEE International Symposium on Network Operations and Management (IEEE NOMS'14).
- Emmanuel Nataf: SENSORSNET 2015
- Rémi Badonnel: IFIP/IEEE International Symposium on Network Operations and Management (IEEE NOMS'14), IEEE Global Information Infrastructure and Networking Symposium (IEEE GIIS'14), IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'15), IFIP International Conference on Autonomous Infrastructures, Management and Security (IFIP AIMS'14), IEEE International Conference on Consumer Communications and Networking (IEEE CCNC'15), Conference on Services and Networks Management (GRES'14), International Workshop on Software Defined Networking and Network Function Virtualisation (IEEE ManSDN/NFV'14), IFIP/IEEE International Workshop on Future Internet Management (IFIP/IEEE MANFI'14), Rencontres Francophones sur l'Algorithmique des Télécoms (ALGOTEL'14)
- Thibault Cholez: Applied Cryptography and Network Security 2014, IFIP/IEEE International Symposium on Network Operations and Management (IEEE NOMS'14), IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'15), IEEE International Conference on Communications (ICC'15)
- Ye-Qiong Song: 19th IEEE international conference on Emerging Technologies & Factory Automation (ETFA'2014) - Industrial communication systems track ; 12th International Conference On Smart homes and health Telematics (ICOST 2014); 13th International Workshop on Real-Time Networks (RTN 2014); 10th IEEE International Workshop on Factory Communication Systems (WFCS 2014); 7th IFIP Wireless and Mobile Networking Conference (WMNC 2014); 12th International

Conference on Embedded Computing (EmbeddedCom 2014); 2nd International Workshop on compressive Sensing in Cyber-Physical Systems, Co-located with the 11th IEEE International Conference on Mobile Ad hoc and Sensor Systems (MASS 2014).

### **9.1.3. Journal**

#### *9.1.3.1. Editorial board membership*

- Françoise Simonot-Lion: IEEE Transactions on Industrial Informatics (associated editor).
- Ye-Qiong Song: Elsevier Computers and Electrical Engineering journal (associate editor); Journal of Multimedia Information System (associate editor).

#### *9.1.3.2. Reviewing activities*

- Abdelkader Lahmadi: Springer's Journal of Network and Systems Management (JNSM), IEEE Communications Magazine, IEEE Transactions on Network and Service Management (TNSM), International Journal of Network Management (IJNM).
- Bernardetta Addis: Computer Communications, Computers and Operations Research, Computational Optimization and Applications, Discrete and Applied Mathematics, European Journal of Operations Research, Journal of Combinatorial Optimization, Journal of Global Optimization, Mathematical Methods of Operations Research, IEEE/ACM Transactions on Networking
- Françoise Simonot-Lion: Journal Mathematical Problem in Engineering, IEEE Transactions on Industrial Informatics.
- Isabelle Chrisment: IEEE Communications Magazine, Security and Communication Networks, Computer Networks, Privacy in a Digital, Networked World -Technologies, Implications and Solutions (book) , ARIMA Journal (Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées)
- Jérôme François: IEEE Transactions on Network and Service Management, Elsevier Computer Networks, International Journal of Network Management – IJNM
- Rémi Badonnel: IEEE Transactions on Network and Service Management (IEEE TNSM), Springer's Journal of the Network and Systems Management (JNSM)
- Thibault Cholez: IEEE Transactions on Network and Service Management, IEEE Transactions on Information Forensics and Security, IEEE Transactions on Computers, Elsevier Computer Networks, Journal of Communications and Networks
- Ye-Qiong Song: Elsevier Computers and Electrical Engineering journal (associate editor); Journal of Multimedia Information System (associate editor); IEEE Transactions on Industrial Informatics; Journal of distributed sensor networks; IEEE Transactions on Cloud Computing; ACM Transactions on Architecture and Code Optimization.

#### **9.1.4. Other animation activities**

Isabelle Chrisment is a member of AFNIC scientific board since January 2013

Isabelle Chrisment is the Co-Chair together with Ahmed Serhrouchni from Telecom ParisTech of the IFIP Task Force 6.5 on Secure Networking. This Task Force provides a framework for the organization of activities within the scope of secure networking. It facilitates international cooperation activities and exchanges in this area.

Olivier Festor is Chair of the IFIP Working-Group 6.6 on Network and systems management. This working group is actively involved the animation of most major conferences in this research area and organizes frequent meetings and workshops on the domain.

Olivier Festor is the Co-chair together with Lisandro Zambenedetti Grandvile from the Federal University of Rio Grande do Sul (UFRGS) of the Internet Research Task Force (IRTF) Network Management Research Group since march 2011.

Françoise Simonot-Lion is Scientific Delegate with HCERES.



Françoise Simonot-Lion was member of the review panel of the research evaluation at Mälardalen University (May 2014).

Françoise Simonot-Lion was chair of the review panel of the research evaluation of Department DTIM at ONERA (December 2014).

Ye-Qiong Song is the member of the jury of the Gilles Kahn best PhD thesis award.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

There is a high demand on networking courses in the various universities in which LORIA is part of. This puts high pressure on MADYNES members which are all in charge of numerous courses in this domain. Especially the team professors and associate professors ensure more than the required amount of teaching obligation in their respective institutions: IUT, bachelor, master, TELECOM Nancy, ENSEM and École des Mines de Nancy engineering schools.

Laurent Andrey was the Head of Department of the Charlemagne IUT specialization on multimedia networking until the end of the academic year 2014.

Olivier Festor is the Director of the TELECOM Nancy Engineering School. Remi Badonnel is heading the Telecommunications and Networks specialization of the 2nd and 3rd years at the TELECOM Nancy engineering school, and is also in charge of the 2nd year design and development projects at the same school. They teach the networking related courses in this cursus.

Isabelle Chrisment was co-directing the school and in charge of the students recruitment process until September 2014.

Laurent Ciarletta is heading the specialization Safe Systems Architecture of the Computer Science and IT department of the Ecole des Mines de Nancy ("Grande Ecole", Engineering School, Master degree level). He is most notably in charge of Advanced Networking, Middleware, Component-based software development, Pervasive Computing, Networking and Systems courses at the Ecole des Mines de Nancy. Notably, within the ARTEM alliance (ICN - Business School, Mines Nancy, Ecole d'Art / School of Art), he is a member of the Research Committee, more specifically with the "Smart Working Spaces" research theme, and he is co-responsible for the "Businesses: the digital challenge *CORP 3.0*, *Entreprises: le défi numérique* and the *Imagineries and the Workspaces*, 2 classes within the ARTEM alliance (over 90 hours).

Thomas Silverston was in charge of the SSSR Master degree at IGA (Morroco).

Team members are teaching the following courses:

#### **Abdelkader Lahmadi**

- 280 hours
- Level: Engineering degree (L1, M1, M2)
- Algorithms and Java programming, C language programming, Real Time systems, Databases, Distributed algorithms, constrained systems programming
- ENSEM - Engineering school

#### **Bernardetta Addis**

- 158 hours
- Level: M2
- Operations Research, Discrete Optimization
- Ecoles de Mines de Nancy

#### **Isabelle Chrisment**

- 220 hours

- Engineering/Master Degree in Computer Science
- C and Shell Programming, Computer Networking, Operating Systems, Network Security.
- TELECOM Nancy Engineering School of Computer Science

**Jérôme François**

- 28 hours
- Master 2
- Network security, Hadoop
- Univ. Lorraine, Telecom Nancy

**Emmanuel Nataf**

- 192 hours
- L1 L2 M2
- Network, operating system, network monitoring
- IUT Nancy-Charlemagne, Telecom Nancy, Université de Lorraine

**Olivier Festor**

- 192 hours
- Engineering/Master Degree in Computer Science
- Network, Programming, Algorithmics, Complexity
- TELECOM Nancy Engineering School of Computer Science

**Rémi Badonnel**

- 242 hours
- Engineering/Master Degree in Computer Science
- Networks, Systems and Services, Network Management, Software Design and Programming, Cloud Computing
- TELECOM Nancy Engineering School of Computer Science

**Thibault Cholez**

- 258 hours
- Level: Engineering/Master Degree in Computer Science (L2, M1, M2)
- Main topics: Computer Networks, Databases, Object-Oriented Programming, C and Shell Programming, Techniques and Tools for Programming, Network Services, Constraint development on small Connected Objects, Mobile applications and Internet of Things.
- Main location: TELECOM Nancy Engineering School in Computer Science

**Thomas Silverston**

- 300 hours
- Level: Master Degree in Computer Science
- Networking, Network Security and VoIP
- Main location: University of Lorraine

**Ye-Qiong**

- 242 hours
- Level: Engineering degree (L1, M1, M2)
- Algorithms and Java programming, networking, Databases, sensor networks.
- ENSEM - Engineering school

**E-learning**

MOOC, Introduction to Nagios-based Monitoring (45 minutes, English), Flamingo Network of Excellence, 8900 views in less than 1 year.

### 9.2.2. Supervision

PhD: Martin Barrere, Vulnerability Management in Autonomic Networks and Systems, University of Lorraine, since Jun 2014, supervised by Olivier Festor, Rémi Badonnel

PhD in progress: Elian Aubry, Using Software Defined Network to manage Content Centric Networks, since October 2013, supervised by Isabelle Chrisment, Thomas Silverston.

PhD in progress: César Bernardini, Réseau orienté-contenu basé sur les communautés d'utilisateurs, since Nov 2011, supervised by Olivier Festor et Thomas Silverston

PhD in progress: Francois Despaux, QoS in wireless sensor and actuator networks, since November 2011, supervised by Ye-Qiong Song, Abdelkader Lahmadi

PhD in progress: Gaëtan Hurel, Mobile Cloud Security, since Jan 2014, supervised by Olivier Festor, Rémi Badonnel, Abdelkahder Lahmadi

PhD in progress: Patrick-Olivier Kamgue, Routing management in WSNs, since Jun 2012, supervised by Emmanuel Nataf and Olivier Festor in France, Thomas Djotio in Cameroun

PhD in progress: Samuel Marchal, honeypot and malware analysis, since October 2013, supervised by Olivier Festor in France, Thomas Engel in Luxembourg

PhD in progress: Anthéa Mayzaud, Monitoring and Security for the Internet of Things, since May 2013, supervised by Isabelle Chrisment, Rémi Badonnel

PhD in progress: Kevin Roussel : Dynamic management of QoS and energy in heterogenous sensor and actuator networks for e-health applications, since Dec 2012, supervised by Ye-Qiong Song

PhD in progress : Mohamed Said Seddiki, Allocation des ressource dans la virtualisation des réseaux, since Mar 2013, supervised by Ye-Qiong Song, and by Mounir Frikha in Tunisia

PhD in progress: Evangelia Tsiontsiou , Multiconstrained QoS routing for wireless sensors networks with applications to smart space for ambient assisted living, since October 2013, supervised by Ye-Qiong Song, Bernardetta Addis

PhD in progress: Shbair Wazen, Contributions for the Management of HTTPS traffic, since December 2013, supervised by Isabelle Chrisment and Thibault Cholez

### 9.2.3. Juries

Team members participated to the following Ph.D. defense committees:

- Tristan Groléat, Ph.D. in Computer Science from Université Européenne de Bretagne, Télécom Bretagne Title: High Performance traffic monitoring for network security and management, March 2014 – (Isabelle Chrisment)
- Truong Khoa Phan, Ph.D. in Computer Science from Université de Nice - Sophia Antipolis. Title: Design and Management of Networks with Low Power Consumption, September 2014 – (Bernardetta Addis)
- Houari Mahfoud, Ph.D. in computer science from Université de Lorraine. Title: Efficient Access Control to XML Data: Querying and Updating Problems, Feb. 2014 – (Ye-Qiong Song)
- Nadine Abdallah, Ph.D. in control and applied computer science from Université de Nantes. Title: Multiprocessor real-time partitioning with Quality of Service requirements and energy constraints, Feb. 2014 – (Ye-Qiong Song)
- Ridha Soua, Ph.D. in computer science from Université Pierre et Marie Curie Paris 6. Title: Wireless Sensor Networks in Industrial Environment: Energy Efficiency, Delay and Scalability, Feb. 2014 – (Ye-Qiong Song)
- William Mangoua Sofack, Ph.D. in computer science from Université de Toulouse. Title: Amélioration des délais de traversés pire cas des réseaux embarqués à l'aide du calcul réseau, June 2014 – (Ye-Qiong Song)

- Philippe Thierry, Ph.D. in computer science from Université Paris-Est. Title: Systèmes véhiculaires à domaines de sécurité et de criticité multiples : une passerelle systronique, July 2014 – (Ye-Qiong Song)
- Hamdi Ayed, Ph.D. in networking, telecommunications, systems and architectures from Université de Toulouse. Title: Analysis and optimization of multi-cluster avionics networks, November 2014 – (Ye-Qiong Song)
- Yan Han, Ph.D. in computer science from Université de Rennes 1. Title: Smart devices collaboration for energy saving in home networks, December 2014 – (Ye-Qiong Song)

Team members acted as reviewer for the following Ph.D. thesis:

- Inad Nawajah, Ph.D. in Mathematical Models and Methods in Engineering from Politecnico di Milano. Title: Bayesian Analysis of home care longitudinal counts data, 2014 – (Bernardetta Addis)
- Wei You, Ph.D. in Computer Science from Université Européenne de Bretagne, Télécom Bretagne Title: A Content-Centric Networking Node for a Realistic Efficient Implementation and Deployment, January 2014 – (Isabelle Chrisment)
- Antoine Lavignotte, Ph.D. in Computer Science from Université de Saint-Etienne Title: Prise en compte de la qualité de l'expérience utilisateur au sein des protocoles de streaming adaptatifs, Mai 2014 – (Isabelle Chrisment)
- Silvia Gil Casals, Ph.D. in Computer Science from Université de Toulouse, Title: Risk Assessment and Intrusion Detection for Airborne Networks, July 2014 – (Isabelle Chrisment)
- Rim Moalla, Ph.D. in Computer Science from Télécom ParisTech and Université Pierre et Marie Curie. Title: Secure Future Cooperative ITS Applications, (September 2014) – (Isabelle Chrisment)
- Ludie Akue, Ph.D. in Computer Science from Université de Toulouse, Title: Un cadre générique pour la vérification en ligne, générique, flexible et évolutive de configurations de systèmes communicants complexes, (February 2014) – (Olivier Festor)
- Raphael Barbosa, Ph.D. in Computer Science from University of Twente, Title: Anomaly Detection in SCADA systems, (February 2014) – (Olivier Festor)
- Rebecca Steinert, Ph.D. in Computer Science from KTH, Title: Probabilistic Fault Management in Networked Systems, (June 2014) – (Olivier Festor)
- Anthony Dessiatnikoff, Ph.D. in Computer Science from Université de Toulouse, Title: Analyse de Vulnérabilités de systèmes avioniques embarqués: classification et expérimentation, (June 2014) – (Olivier Festor)
- Ghida Ibrahim, Ph.D. in Computer Science and Networking from TELECOM ParisTech, Title: Evolution of the Control Plane for Future Content Distribution Services, (June 2014) – (Olivier Festor)
- Ahmed Amokrane, Ph.D. in Computer Science from Pierre et Marie Curie University Title: Green et Efficacité en Energie dans les Réseaux d'Accès et Infrastructures Cloud, (December 2014) – (Olivier Festor)
- Ridha Soua, Ph.D. in computer science from UNIVERSITY PARIS 6 PIERRE ET MARIE CURIE. Title: Wireless Sensor Networks in Industrial Environment: Energy Efficiency, Delay and Scalability, Feb. 2014 – (Ye-Qiong Song)
- William Mangoua Sofack, Ph.D. in computer science from Université de Toulouse. Title: Amélioration des délais de traversés pire cas des réseaux embarqués à l'aide du calcul réseau, June 2014 – (Ye-Qiong Song)
- Philippe Thierry, Ph.D. in computer science from Université Paris-Est. Title: Systèmes véhiculaires à domaines de sécurité et de criticité multiples : une passerelle systronique, July 2014 – (Ye-Qiong Song)
- Hamdi Ayed, Ph.D. in networking, telecommunications, systems and architectures from Université de Toulouse. Title: Analysis and optimization of multi-cluster avionics networks, November 2014 – (Ye-Qiong Song)
- Yan Han, Ph.D. in computer science from Université de Rennes 1. Title: Smart devices collaboration for energy saving in home networks, December 2014 – (Ye-Qiong Song)

Team members participated to the following Habilitation Degree defense committees:

- Stefano Secci, , Habilitation Degree in Computer Science from Pierre et Marie Curie - Paris 6 University. Title: Modeling and Evaluating Novel Networked Communications Systems, (September 2014) – (Olivier Festor)
- (Liliana Cucu-Grosjean), Habilitation Degree in (Computer Science) from (Université Paris 6). Title: (Contributions to real-time systems), (May 2014) — (Françoise Simonot-Lion)

## MAESTRO Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- 7th Intl. Conference on Network Games, Control and Optimization (NETGCOOP 2014, Trento, Italy) (**E. Altman** as steering committee chair);
- 8th Intl. Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS 2014, Bratislava, Slovakia) (**E. Altman** as steering committee co-chair);
- 2nd IEEE Intl. Workshop on Self-Organizing Networks (SONETS 2014, Istanbul, Turkey) (**M. Haddad** as workshop co-chair);
- 10ème Atelier en Evaluation de Performances (AEP10, Sophia Antipolis, France) (**S. Alouf** and **A. Jean-Marie**) [76].

#### 9.1.1.2. Member of the organizing committee

- 33rd IEEE Intl. Conference on Computer Communications (IEEE INFOCOM 2014, Toronto, Canada) (**G. Neglia** as publicity chair);
- 32nd Intl. Symposium on Computer Performance, Modeling, Measurements and Evaluation (IFIP WG 7.3 Performance 2014, Turin, Italy) (**P. Nain** as steering committee member);
- 12th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt 2014, Hammamet, Tunisia) (**E. Altman** as steering committee member);
- 10ème Atelier en Evaluation de Performances (AEP10, Sophia Antipolis, France) (**J. K. Sreedharan**).

### 9.1.2. Scientific events selection

#### 9.1.2.1. Chair of the conference program committee

- 2nd IEEE Intl. Workshop on Self-Organizing Networks (SONETS 2014, Istanbul, Turkey) (**M. Haddad** as workshop co-chair);
- 12th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt 2014, Hammamet, Tunisia) (**M. Haddad** as co-PC chair).

#### 9.1.2.2. Member of the conference program committee (list in alphabetical order of event name)

- 9th ACM Workshop on Challenged Networks (CHANTS 2014, Maui, Hawaii, USA) (**G. Neglia**);
- 10th Advanced Intl. Conference on Telecommunications (AICT 2014, Paris, France) (**K. Avrachenkov**);
- 34th IEEE Intl. Conference on Computer Communications (IEEE INFOCOM 2015, Hong Kong) (**G. Neglia**);
- 6th IEEE Intl. Workshop on Network Science for Communication Networks (IEEE NetSciCom 2014, Toronto, Canada) (**K. Avrachenkov**, **G. Neglia**);
- IEEE Multi-Conference on Systems and Control (MSC 2014, Nice/Antibes, France) (**M. El Chamie**);
- 5th Intl. Conference on Access Networks (ACCESS 2015, Seville, Spain) (**K. Avrachenkov**);
- 8th Intl. Conference on Game Theory and Management (GTM 2014, St. Petersburg, Russia) (**E. Altman**);

- 7th Intl. Conference on Network Games, Control and Optimization (NETGCOOP 2014, Trento, Italy) (**K. Avrachenkov, M. Haddad**);
- 5th Intl. Conference on Next Generation Networks and Services (NGNS 2014, Casablanca, Morocco) (**M. Haddad**);
- 14th Intl. Conference on Next Generation Wired/Wireless Networking (NEW2AN 2014, St. Petersburg, Russia) (**K. Avrachenkov**);
- 8th Intl. Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS 2014, Bratislava, Slovakia) (**S. Alouf, K. Avrachenkov, M. Haddad, G. Neglia**);
- 29th Intl. Symposium on Computer and Information Sciences (ISCIS 2014, Krakow, Poland) (**A. Jean-Marie**);
- 32nd Intl. Symposium on Computer Performance, Modeling, Measurements and Evaluation (IFIP WG 7.3 Performance 2014, Turin, Italy) (**S. Alouf**);
- 16th Intl. Symposium of Dynamic Games (ISDG 2014, Amsterdam, The Netherlands) (**E. Altman**);
- 7th Intl. Workshop on Multiple Access Communications (MACOM 2014, Halmstad, Sweden) (**K. Avrachenkov**);
- Networking and Electronic Commerce Research Conference (NAEC 2014, Trieste, Italy) (**E. Altman**);
- 1st Symposium on the Control of Network Systems (SCONES 2014, Boston, Massachusetts, USA) (**E. Altman**);
- 11th Workshop on Algorithms and Models for the Web Graph (WAW 2014, Beijing, China) (**K. Avrachenkov**);
- Workshop on Cooperative and Cognitive Networks (Nicosia, Cyprus) (**M. Haddad**);
- 16th Workshop on Mathematical Performance Modeling and Analysis (MAMA 2014, Austin, Texas, USA) (**A. Jean-Marie, P. Nain**).

### **9.1.3. Journal**

#### *9.1.3.1. Editor-in-chief*

- *Performance Evaluation* (PEVA) (**P. Nain** since 1 January 2008).

#### *9.1.3.2. Member of the editorial board (list in alphabetical order of journal name)*

- *Dynamic Games and Applications* (DGAA) (**E. Altman** since 2011);
- *Elsevier Computer Communications* (COMCOM) (**G. Neglia** since 2014);
- *IEEE Transaction on Control of Networks* (TCNS) (**E. Altman** since 2013);
- *IEEE/ACM Transaction on Networking* (ToN) (**E. Altman** since 2013);
- *Journal of Economic Dynamics and Control* (JEDC) (**E. Altman** since 2001);
- *Performance Evaluation* (PEVA) (**K. Avrachenkov** since 2008).

#### *9.1.3.3. Reviewer (list in alphabetical order of journal name)*

- *Computer Communications* (COMCOM) (**S. Alouf, G. Neglia**);
- *Computer Networks* (COMNET) (**E. Altman, K. Avrachenkov, A. Dandoush, I. Dimitriou, G. Neglia**);
- *Elsevier Ad Hoc Networks* (ADHOC) (**G. Neglia**);
- *EURASIP Journal on Wireless Communications and Networking* (JWCN) (**M. Haddad**);
- *IEEE Communications Magazine* (COMMAG) (**M. Haddad**);
- *IEEE Journal on Selected Areas in Communications* (JSAC) (**M. Haddad**);
- *IEEE Trans. on Automatic Control* (TAC) (**G. Neglia**);
- *IEEE Trans. on Communications* (TCOM) (**M. Haddad**);

- *IEEE Trans. on Neural Networks and Learning Systems* (TNNLS) (G. Neglia);
- *IEEE Trans. on Parallel and Distributed Systems* (TPDS) (G. Neglia);
- *IEEE Trans. on Vehicular Technology* (TVT) (M. Haddad);
- *IEEE Trans. on Wireless Communications* (TWC) (M. Haddad);
- *Performance Evaluation* (PEVA) (G. Neglia).

#### **9.1.4. Leadership within the scientific community**

- E. Altman is a fellow member of IEEE (Class of 2010). The society of dynamic games attributes in July 2014 the Isaacs Award to E. Altman for his research on game theory. (Award attributed once every two years.)
- E. Altman, A. Jean-Marie and P. Nain are (elected) members of IFIP WG7.3 on “Computer System Modeling”.
- P. Nain has been the vice-Chair of the IFIP WG7.3 working group on “Computer System Modeling” (from 30 June 2007 to 21 July 2014).

#### **9.1.5. Research administration**

E. Altman

- is co-responsible of one of the five themes of the SFR (Structure Fédérative de Recherche) AGORANTIC (in which Inria is a founding member) entitled “Digital Culture and Virtual Societies.”
- is Scientific coordinator of the European project CONGAS.

K. Avrachenkov

- together with Arnaud Legout (DIANA team) and Fabien Gandon (WIMMICS team) is co-responsible of the multi-disciplinary research theme (Action Transversale) “Semantic and Complex Networks” at Inria Sophia Antipolis - Méditerranée.

A. Jean-Marie

- is the scientific coordinator of Inria activities in Montpellier (since 2008); as part of this duty, he represents Inria in the Scientific Board of the Univ. of Montpellier 2, at the Scientific Council of the Doctoral School “Sciences and Agrosiences” of the Univ. of Avignon, at the Regional Conference of Research Organisms (CODOR), at the Regional Consulting Committee for Research and Technological Development (ARAGO Committee);
- was member of the managing sub-committee of the Project-Team Committee of the Inria Sophia Antipolis – Méditerranée research center (July 2010 – August 2014);
- is a member of the Steering Committee of the GDR RO, a national research initiative on Operations Research sponsored by the CNRS;
- is president of the Technical and Industrial Orientation Council for Information Technologies (COSTI TIC) of the Transferts LR association (since 2009);
- is Head of project-team MAESTRO since October 2014.

P. Nain

- is Chairman of Inria’s Evaluation Committee since 1 September 2012 (<http://www.inria.fr/en/institute/organisation/committees/evaluation-committee>); as part of this duty he has presided the 2014 recruitment committees for senior Inria researchers (DR2, DR1) and for junior Inria researchers (CR1).
- was Head of project-team MAESTRO (September 2003 – September 2014).

G. Neglia



- is the scientific delegate for European partnerships for Inria Sophia Antipolis – Méditerranée;
- was member of the recruitment committee for a *Maître de Conférences* position at Univ. of Avignon.

MAESTRO members are in the following committees of Inria Sophia Antipolis - Méditerranée

- CC (Comité de Centre): General Information Commission (**G. Neglia** since September 2013);
- CSD: Doctoral Committee (**S. Alouf**, since February 2006);
- NICE: Invited Researchers Committee (**K. Avrachenkov**, since 2010);

and in charge of the following tasks for the research center:

- Supervision and validation of the project-teams' yearly activity reports (**K. Avrachenkov**, since 2010);
- Accounting for the monthly Project-Team Committee meetings (**S. Alouf**, February 2012 – August 2014);
- Organizing MAESTRO internal meetings (**J. K. Sreedharan**, since November 2013).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence:

S. Alouf, “Probability”, 38.5H, 1st year Water Engineering degree (L3), Univ. of Nice Sophia Antipolis (UNS), France.

M. El Chamie, “Mathematics”, 18H, Miage (L3), UNS, France.

M. El Chamie, “Networks”, 22H, Computer Science Program (L3), UNS, France.

M. El Chamie, “Programmation Web - Aspect Serveur”, 16.5H, Computer Science Program (L1), UNS, France.

G. Neglia, “Statistics”, 14H, 1st year Water Engineering degree (L3), UNS, France.

Master:

S. Alouf, “Performance Evaluation of Networks”, 31.5H, M2 IFI Ubinet, UNS, France.

M. El Chamie, “Réseaux Couches Basses”, 13.5H, M1 Miage, UNS, France.

M. Haddad, “Information theory”, 16H, M1, Univ. of Avignon, France.

G. Neglia, “Performance Evaluation of Networks”, 31.5H, M2 IFI Ubinet, UNS, France.

G. Neglia, responsible for the “Winter School on Complex Networks”, 42H, M1 Computer Science, UNS, France.

Doctorat:

A. Jean-Marie, “Advanced Markov Modeling”, 18H, Univ. of Montpellier 2, France.

### 9.2.2. Supervision

PhD:

Nicaise Choungmo Fofack, “On Models for Performance Analysis of a Core Cache Network and Power Save of a Wireless Access Network” [10], Univ. of Nice Sophia Antipolis (UNS), 21 February 2014, Advisors: Sara Alouf and Philippe Nain.

Mahmoud El Chamie, “Optimization, Control, and Game Theoretical Problems in Consensus Protocols” [11], Univ. of Nice Sophia Antipolis (UNS), 21 November 2014, Advisors: Konstantin Avrachenkov and Giovanni Neglia.

Julien Gaillard, “Recommendation Systems: Dynamic Adaptation and Argumentation”, Univ. of Avignon et Pays du Vaucluse (UAPV), 10 December 2014, Advisors: Eitan Altman, Marc El-Beze and Emmanuel Ethis.

Olivia Morad, “Prefetching Control for On-Demand Contents Distribution: A Markov Decision Process Study”, Univ. of Montpellier 2, 17 September 2014, Advisor: Alain Jean-Marie.

Marina Sokol, “Clustering and learning techniques for traffic/user classification” [12], Univ. of Nice Sophia Antipolis (UNS), 29 April 2014, Advisors: Paulo Gonçalves (Inria project-team DANTE) and Philippe Nain.

PhD in progress:

Alberto Benegiamo, “Mathematical tools for smart grids,” 1 November 2013, advisors: Patrick Loiseau (Eurecom) and Giovanni Neglia.

Iliaria Brunetti, “Cooperative and competitive content dissemination in social networks,” 1 October 2012, advisor: Eitan Altman.

Arun Kadavankandy, “Random Matrix Theory and Complex Networks,” 5 March 2014, advisors: Konstantin Avrachenkov and Laura Cottatellucci (Eurecom).

Jithin Kazhuthuveetil Sreedharan, “Diffusion processes in complex networks,” 23 July 2013, advisor: Konstantin Avrachenkov.

Hlib Mykhailenko, “Probabilistic approaches for big data analysis,” 1 May 2014, advisors: Fabrice Huet (SCALE team) and Philippe Nain.

Yonathan Portilla, “Analysis of social networks,” 1 January 2012, advisor: Eitan Altman.

Alexandre Reiffers, “Modelling competition and cooperation in telecommunication networks,” 15 October 2012, advisor: Eitan Altman.

Abdoulaye Tall, “Self organisation in wireless networks,” 1 December 2012, advisors: Eitan Altman and Zwi Altman (Orange Labs).

### 9.2.3. *Juries*

MAESTRO members participated in the Habilitation (HDR) thesis committees of (in alphabetical order):

- Marceau Coupechoux: 26 May 2014, Telecom ParisTech, (**E. Altman** as examiner);

and in the Ph.D. committees of (in alphabetical order):

- Nicaise Choungmo Fofack: 21 February 2014, Inria, Sophia Antipolis (**S. Alouf** and **P. Nain** as advisors, **G. Neglia** as invited member);
- Mahmoud El Chamie: 21 November 2014, Inria, Sophia Antipolis (**K. Avrachenkov** and **G. Neglia** as advisors);
- Dariush Fooladivanda: 18 July 2014, Univ. of Waterloo (**E. Altman** as reviewer);
- Julien Gaillard: 10 December 2014, Univ. of Avignon (**E. Altman** as advisor);
- Arnob Ghosh: 16 December 2014, Univ. of Pennsylvania (**E. Altman** as examiner);
- Stefano Iellamo: 4 December 2014, Telecom ParisTech (**E. Altman** as examiner);
- Benjamin Larrousse: 11 December 2014, Univ. Paris Sud (**E. Altman** as examiner);
- Olivia Morad: 17 September 2014, Univ. of Montpellier 2 (**A. Jean-Marie** as advisor);
- Renaud Sallantin: 29 September 2014, IRIT Toulouse (**K. Avrachenkov** as reviewer);
- Tatiana Seregina: 18 November 2014, LAAS, Toulouse (**K. Avrachenkov** as reviewer);
- Marina Sokol: 29 April 2014, Inria, Sophia Antipolis (**P. Nain** as advisor);

### 9.3. Popularization

S. Alouf is a member of MASTIC, a commission in charge of popularization and regional and internal scientific animation (since November 2011).

### 9.4. Participation in scientific events

#### 9.4.1. Keynotes, tutorials and invited talks

MAESTRO members gave the following keynote lectures (in alphabetical order):

- *Analysis of competition and visibility in complex networks*, at WPerformance 2014 workshop, in conjunction with the XXXIV Brazilian Conference of Computer Science (CSBC), Brasilia, Brazil, 29 July 2014 (**E. Altman**);
- *Timelines Analysis and competition over popularity, influence and visibility in social networks*, at 32nd Intl. Symposium on Computer Performance, Modeling, Measurements, and Evaluation (Performance), Turin, Italy, 9 October 2014 (**E. Altman**),

the following tutorials (in alphabetical order):

- *Introduction to Complex Networks*, at Winter School on “Complex Networks”, Sophia Antipolis, 27-31 January 2014 (**G. Neglia**);
- *Network Formation Games*, at Advanced Research Center, Campione d’Italia, Italy, 8-11 September 2014 (**K. Avrachenkov**);
- *On competition in social networks*, at CEFIPRA Workshop on “New Avenues for Network Models”, Bangalore, India, 13-15 January 2014 (**E. Altman**);
- *Random Walk Methods for Complex Networks*, at Winter school on “Complex Networks”, Sophia Antipolis, 27-31 January 2014 (**K. Avrachenkov**);
- *Random Walk Methods for Complex Networks*, at Summer school ResCom on “Complex Networks”, Corsica, 13-17 May 2014 (**K. Avrachenkov**),

and the following invited talks (in alphabetical order):

- *Analysis of competition and visibility in complex networks*, Federal Univ. of Rio de Janeiro, Brazil, 1 August 2014 (**E. Altman**);
- *Competition over visibility on Online Social Networks*, Create-Net, Italy, 15 April 2014, (**A. Reiffers**);
- *Distribution and Dependence of Extremes in Network Sampling Processes*, at Vilnius Probability Conference, Lithuania, 3 July 2014 (**K. Avrachenkov**);
- *Energy-Efficient Resource Management Games in Wireless Networks*, at CEFIPRA Workshop, IISc Bangalore, India, 15 January 2014 (**M. Haddad**);
- *Game Theory Applied to Advertising Competition in Online Social Networks*, Federal Univ. of Rio de Janeiro, Brazil, 29 August 2014 (**A. Reiffers**);
- *Graph-based Semi-supervised Methods for Community Detection*, at EURANDOM Workshop, The Netherlands, 22 January 2014 (**K. Avrachenkov**);
- *How to network in online social networks*, at IFCAM Workshop, IISc Bangalore, India, 16 January 2014 (**G. Neglia**);
- *Routing Games Applied to Online Social Networks*, Technion - Israel Institute of Technology, Israel, 10 December 2014 (**A. Reiffers**);
- *Teletraffic Engineering for Smart Grids*, Federal Univ. of Rio de Janeiro, Brazil, 23 August 2014 (**G. Neglia**);
- *Teletraffic Engineering for Smart Grids*, Univ. of Florence, Italy, 15 July 2014 (**G. Neglia**);
- *Weight Selection in Consensus Protocols*, Chalmers Univ. of Technology, 23 October 2014 (**M. El Chamie**).

### 9.4.2. Conferences and workshops

MAESTRO members gave presentations at the following scientific events (in alphabetical order):

- American Control Conference (ACC), 4-6 June 2014, Portland, Oregon, USA (**M. El Chamie**);
- 53rd IEEE Conference on Decision and Control (CDC), 15-17 December 2014, Los Angeles, California, USA (**M. El Chamie, G. Neglia**);
- 33rd IEEE Intl. Conf. on Computer Communications (INFOCOM), 27 April - 2 May 2014, Toronto, Canada (**M. Haddad**);
- IEEE Infocom Workshop on Network Science for Communication Networks (NetSciCom), 2 May 2014, Toronto, Canada (**G. Neglia**);
- IEEE Infocom Workshop on Communications and Control for Smart Energy Systems (CCSES), 28 April 2014, Toronto, Canada (**G. Neglia**);
- IEEE Intl. Conference on Communications (ICC), 10-14 June 2014, Sydney, Australia (**G. Neglia**);
- 13th IFIP Intl. Conf. on Networking (Networking), 2-4 June 2014, Trondheim, Norway (**A. Reiffers**);
- IFIP Performance, 7-9 October 2014, Turin, Italy (**M. Haddad**);
- 7th Intl. Conference on Network Games, Control and Optimization (NETGCOOP), 29-31 October 2014, Trento, Italy (**I. Brunetti, A. Reiffers**);
- 12th Intl. Symp. on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), 12-16 May 2014, Hammamet, Tunisia (**E. Altman, M. Haddad**);
- 29th Intl. Symposium on Computer and Information Sciences (ISCIS), 27-28 October 2014, Krakow, Poland (**A. Jean-Marie**);
- 3rd Intl. Workshop on IEEE Complex Networks and their Applications, 23-27 November 2014, Marrakech, Morocco (**J. K. Sreedharan**);
- Intl. Workshop on Modeling, Analysis and Management of Social Networks and their Applications (SOCNET), 19 March 2014, Bamberg, Germany (**K. Avrachenkov**);
- Social Networking Workshop (in conjunction with COMSNETS 2014), 10 January 2014, Bangalore, India (**A. Reiffers**);
- 10ème Atelier en Evaluation de Performances (AEP), 11-13 June 2014, Sophia Antipolis (**M. El Chamie, J. K. Sreedharan**).

### 9.4.3. Schools and doctoral courses

MAESTRO members have attended the following events (list in alphanumeric order):

- Doctoral course on “Advanced Game Theory” (20H), 12-27 May 2014, Montpellier (**I. Brunetti**);
- Doctoral course on “Advanced Markov Modeling” (20H), 18-28 February 2014, Montpellier (**I. Brunetti, A. Reiffers**);
- EIT ICT Labs summer school on “Smart Energy” (120H), 18-29 August 2014, Stockholm (KTH Royal Institute of Technology, first week) and Karlsruhe (Karlsruhe Institute of Technology, second week) (**A. Benegiamo**);
- Grid5000 spring school 2014 (18H), 17-19 June 2014, Lyon (**H. Mykhailenko**);
- ResCom summer school on “Complex Networks” (30H), 13-17 May 2014, Corsica (**A. Kadvankandy, J. K. Sreedharan**);
- School on “Game Theory for Telecommunications” (56H), 8-11 September 2014, Advanced Research Center, Campione d’Italia, Italy (**V. Singh**);
- Winter School on “Complex Networks” (30H), 27-31 January 2014, Sophia Antipolis (**A. Benegiamo, J. K. Sreedharan**).

## **MESCAL Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. general chair, scientific chair*

- Panayotis Mertikopoulos was technical program co-chair of WiOpt '14: the 12-th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks.
- Bruno Gaujal was the technical program chair of EAP 2014, Sophia-Antipolis.
- Bruno Gaujal, Florence Perronnin and Jean-Marc Vincent organized a Marmote workshop, July 9-10, 2014.
- Nicolas Gast organized a Quanticol workshop, April 14, 2014.
- Arnaud Legrand organized the Summer School on Performance Metrics, Modeling and Simulation of Large HPC Systems, Sophia-Antopolis, June 2014.
- Jean-Marc Vincent organized the Licia Workshop in Grenoble, Oct. 2014.

#### *9.1.1.2. member of the organizing committee*

- Arnaud Legrand was a workshop organizer of the 1st workshop on reproducibility in parallel computing.
- Olivier Richard was an organizer of the 2st event “Realis 2014 : Reproductibilité expérimentale pour l’informatique en parallélisme, architecture et système” during Compas 14.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. member of the conference program committee*

- Panayotis Mertikopoulos was member of the program committee of Valuetools 2014 and NetGCoop 2014.
- Bruno Gaujal was member of the program committee of of Sigmetrics 2014, Wodes 2014 and Performance 2014.
- Nicolas Gast was member of the program comittee of E-Energy 2014 and ValueTools 2014.
- Arnaud Legrand served on the committee of Compas 2014, ICCP and HiPC.
- Jean-Marc Vincent served in the committee of ASMTA 2014, SimulTech 2014, Epew 2014.
- Olivier Richard served on the committe of Compas 2014, CARLA 2014/First HPCLATAM, Grid'5000 School, Euro-Par2014WS, HPCS-14.

### **9.1.3. Journal**

#### *9.1.3.1. reviewer*

- Team members served as reviewers for: IEEE Transactions on Information Theory, IEEE Transactions on Automatic Control, IEEE Transactions on Signal Processing, IEEE Journal on Selected Areas in Communications, Advances in Applied Probability, Games and Economic Behavior, Journal of Economic Theory, Theoretical Economics, Journal of Optimization Theory and Applications, Mathematics of Operations Research, SIAM Journal on Control and Optimization, Automatica, CCPE, IEEE Transactions on Communication, Journal of Grid Computing.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Master/PhD: Panayotis Mertikopoulos, "Game Theory for the Working Economist", 35 Eq. TD, University of Athens, Department of Economic Sciences PhD program (UADPhilEcon), Athens, Greece.

Master : Bruno Gaujal, Discrete Event Systems, 18 h, (M2R), MPRI, Paris.

Master : Bruno Gaujal, Advanced Performance evaluation, 9 h, (M2), Ensimag, Grenoble.

Master: Arnaud Legrand, Parallel Systems, 21 h, (M2R), Mosig.

Master: Arnaud Legrand and Jean-Marc Vincent, Performance Evaluation, 15 h, (M2R), Mosig.

Master: Arnaud Legrand and Jean-Marc Vincent, Probability and simulation, performance evaluation 72 h, (M1), RICM, Polytech Grenoble.

Master: Jean-Marc Vincent, Mathematics for computer science, 18 h, (M1) Mosig.

Master: Jean-Marc Vincent, workshop on the methodology in computer science research, 15 h, (M2R) Mosig.

Master : Olivier Richard, Networking, 40 Eq. TD, (M1), RICM, Polytech Grenoble

Master : Olivier Richard, Physical Computing Eq. 60 TD, L1 and M1, Joseph Fourier University and Polytech Grenoble

DU: Jean-Marc Vincent, Informatique et sciences du numérique, 20 h, (Professeurs de lycée).

#### **E-learning**

SPOC: Jean-Marc Vincent, Informatique et sciences du numérique, 6 mois, plate-forme pairformnce, rectorat de Grenoble, Professeurs de lycée, formation continue, environ 50 inscrits.

### **9.2.2. Supervision**

PhD : Christian Ruiz, *Méthodes et outils pour des expériences difficiles sur Grid 5000: un cas d'utilisation sur une simulation hybride en électromagnétisme* Defended Dec. 15, 2014.

### **9.2.3. Juries**

- Panayotis was a member of the jury eximanor for the Ph.D. thesis of Tatiana Seregina: "Applications of Game Theory to Distributed Routing and Delay Tolerant Networking", University of Toulouse, November 2014.
- Bruno Gaujal served as a reviewer in the PhD thesis defense of William Mangoua Sofack (Onera), Stefano Iellamo (Telecom Paris tech) and Simon Stuker (University of Toulouse).
- Olivier Ricahrd was a member of the jury eximanor for the Ph.D. thesis of George Markomanolis : "Performance evaluation of parallel applications and performance prediction through simulation", Inria/École Normale Supérieure de Lyon, January 2014.

## **9.3. Popularization**

- fête de la science: atelier sciences manuelles du numérique.
- MathC2+: sciences manuelles du numérique.
- Interventions dans des classes de seconde sur la simulation simcity.
- participation à l'IREM de Grenoble, groupe algorithmique.

## MIMOVE Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

##### 8.1.1.1. Member of organizing committee

- Valérie Issarny is member of the Steering Committee of the ESEC/FSE conference.

##### 8.1.1.2. Chair of technical program committee

- Rachit Agarwal is co-chair of the “Advanced and Trusted Internet of Things and Smart City” track in the 12th IEEE International Conference on Advanced and Trusted Computing (ATC 2015);
- Valérie Issarny is co-programme chair of “New Ideas Track” at ESEC/FSE’15 international conference;
- Animesh Pathak is co-chair of the systems track of the IC3’2015 international conference.

##### 8.1.1.3. Member of technical program committee

- Nikolaos Georgantas is PC member of the following international conferences: AmI’14, DATA’14&’15, ICSOFT-EA’14&’15, ICSOFT-PT’14&’15, ANT’14&’15, SOSE’14&’15, HPCC’14, WETICE’15, CBSE’15, ComPAS’15, Projects Showcase event at STAF’15;
- Nikolaos Georgantas is PC member of the following international workshops: MW4NG’14, ARM’14, OrChor’14, SESoS’14&’15, SERENE’14&’15;
- Raphael De Aquino Gomes is PC member of the following international conferences: CSE’14, and CISIS’15;
- Valérie Issarny is PC member of the following international conferences: CBSE’14, Coordination’14&15, ESSOS’14, FASE’15&16, FSE’14, ICDCS’15, ICSE-SEIP Track’14&15, IFIPTM’15, ISPN’15, Middleware’14&15, SEAMS’14;
- Animesh Pathak is PC member of the following international conferences: HPCC’14, EWSN’14, S-Cube’14, and Sensornets’14.

#### 8.1.2. Journal

##### 8.1.2.1. 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.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: Nikolaos Georgantas, “Pervasive Service Oriented Computing” as part of “Services Web et Architectures à bases de services” (SWAS), 18 hours (équivalent TD), niveau M2, University of Versailles Saint-Quentin en Yvelines, France;

Master: Animesh Pathak co-taught a M2 COSY level course on “Web sémantique, contenus et usages” at University of Versailles Saint-Quentin-en-Yvelines in Spring 2014; and

Master: Animesh Pathak gave two three-hour guest lectures at CNAM, Paris as part of a M2 level course on embedded systems in Spring 2014.

### 8.2.2. Supervision

In 2014, the following students successfully defended their PhD:

Sara Hachem, *Service-Oriented Middleware for the Large-Scale Mobile Internet of Things*, UVSQ-EDSTV, defended in February 2014, advised by A. Pathak and V. Issarny.

Additionally, the following PhD theses are currently in progress at the MiMove team:

Emil Andriescu, *Synthèse et déploiement dynamiques de protocoles de médiation pour l'interopérabilité dans les environnements collaboratifs nomades*, started October 2012, UPMC-EDITE, CIFRE Inria-Ambientic, advised by Valérie Issarny and Roberto Speicys-Cardoso (Ambientic).

Benjamin Billet, *Self-adaptive Streaming Middleware for the Internet of Things*, started October 2012, UVSQ-EDSTV, advised by Valérie Issarny

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 embarqués*; this is a PhD from UPMC-EDITE with the research being undertaken at CEA-LISE.

### 8.3. Popularization

- Benjamin Billet was invited to speak at a one-day Android tutorial event organized by the ARAMIS business network at Lyon.

### 8.4. Other Academic Services

#### 8.4.1. Institutional Commitment

- Nikolaos Georgantas is member of the PhD monitoring committee at Inria Paris-Rocquencourt;
- Nikolaos Georgantas is member of the Inria PhD scholarship selection committee at Inria Paris-Rocquencourt;
- Valérie Issarny is elected member of the *Commission d'Evaluation Inria*;
- Valérie Issarny is scientific coordinator of Inria@Silicon Valley;
- Animesh Pathak served on the Inria assistant selection committee for Lille and Rennes centers.

#### 8.4.2. Collective Responsibilities outside Inria

- Valérie Issarny and Nikolaos Georgantas are members of the IFIP Working Group 2.14/6.12/8.10 on Services-oriented Systems;
- Valérie Issarny is member of the IFSTTAR Scientific Council & “Commission d'évaluation des chercheurs”;
- Valérie Issarny is member of the GDR GPL scientific council.



## MOAIS Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

Moais has an intensive reviewing activity for a large variety of Conferences and Journals we do not detail here.

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, scientific chair

- 11th bi-annual Workshop on new challenges in scheduling theory 2014. Chair: D. Trystram.

#### 8.1.1.2. Member of the organizing committee

- EGPGV (Eurographics Symposium on Parallel Rendering and Visualization), Member of the steering committee of : B. Raffin.
- French Day of Visualization ([visu2014.imag.fr](http://visu2014.imag.fr)). Member of the steering committee of : B. Raffin.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Member of the conference program committee

- LDAH 2014 (IEEE Symposium on Large-Scale Data Analysis and Visualization), B. Raffin.
- ICCS 2014 (International Conference on Computational Science), B. Raffin.
- SEARIS 2014 (Workshop on Software Engineering and Architectures for Realtime Interactive Systems), B. Raffin.
- JVRC 2014 (International Joint Virtual Reality Conference), B. Raffin
- COMPAS, april 22-25, 2013, Neuchatel, Switzerland, D. Trystram
- IPDPS 2014 (25th IEEE International Parallel & Distributed Processing Symposium) may 20-22, Phoenix, USA, D. Trystram.
- HCW'2014 (23th IEEE Heterogeneous Computing Workshop) may 19, 2014, Phoenix, USA, D. Trystram.
- HICOMB'2014 (13th IEEE Internat Workshop on High Performance Computational Biology) may 19, Phoenix, USA, D. Trystram.
- HICOMB'2014 (13th IEEE Internat Workshop on High Performance Computational Biology) may 19, Phoenix, USA. D. Trystram.
- ISPDC (13th Internat Symposium on Parallel and Distributed Computing) june 24-27, Porquerolles Island, France, D. Trystram.
- PMAA'14 (8th internat. workshop on Parallel Matrix Algorithms and Applications) july 2-4, Lugano, Switzerland, D. Trystram.
- OPTIM'14 (Workshop on Opt. Issues in Energy Efficient Distributed Systems) july 21-25, 2014, Bologna, Italy, D. Trystram.
- EuroMPI/ASIA sept. 9-12, 2014, Kyoto, Japan, D. Trystram.
- 26th SBAC-PAD, october 22-24, 2014, Paris, France, D. Trystram.
- CARI (12th conf on research in computer science and applied Maths), oct. 23-26, 2014, Saint Louis, Senegal, D. Trystram.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

- Associate Editor of the Parallel Computing journal PARCO, D. Trystram.

- Member of the Editorial Board of JPDC, D. Trystram.
- Member of the Editorial Board of Computational Methods in Science and Technology, D. Trystram.
- Member of the Editorial Board of ARIMA (revue africaine de recherche en informatique et maths appliquées), D. Trystram
- Member of the Editorial Board of IEEE Trans. Parallel and Distributed Systems TPDS, D. Trystram.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: J-L. Roch co-director (Grenoble-INP) with P Elbaz-Vincent (Université Joseph Fourier, Math. Dept) of the Master "SCCI Security, Cryptology and Coding of Information Systems" (M2) joined between UJF and INP Grenoble Universities. This Master, started in 2001, is taught in English from sept 2007 (international Master).

Master: C. Pernet and Denis Trystram are responsible of the first year (M1) of the international Master of Science in Informatics at Grenoble (MOSIG-M1).

Master: V Danjean: course "Parallel Programming" (M2), Grenoble University,.

Master: J-L. Roch, "Security models" 24h (M2), Grenoble University

Master: D. Trystram, P-F. Dutot, J.-L. Roch, "Complexity, approximation theory and randomization" master course (M2) at Grenoble University

Master: François Broquedis. 192 hours per year. 192 hours per year. Engineering school Grenoble-INP/Ensimag, 1st year/L3 and Master (M1/2nd year and M2/3rd year).

Master: Vincent Danjean. 242 hours per year. Licence (third year) and Master (first and second year) at Joseph Fourier University. First to third year of engineering school at Polytech' Grenoble.

Master: Pierre-François Dutot. 226 hours per year. Licence (first and second year) at IUT2/UPMF (Institut Universitaire Technologique de l'Université Pierre Mendès-France) and 9 hours Master M2R-ISC Informatique-Systèmes-Communication at Joseph Fourier University.

Master: Guillaume Huard. 242 hours per year. Licence (first and third year) and Master (first year) at Joseph Fourier University.

Master: Grégory Mounié. 242 hours per year. Master (first year) and Computer Science for Non Computer Scientist Post-Master at Engineering school ENSIMAG and Dept TELECOM, Grenoble-INP.

Master: Clement Pernet. 210 hours per year. University J. Fourier. Master (first year and second year) and Licence (3rd year).

Licence: Bruno Raffin. 38 hours per year. Engineering school ENSIMAG.

Master: Jean-Louis Roch. 242 hours per year. Engineering school Grenoble-INP/Ensimag and Master (M1/2nd year and M2/3rd year)

Master: Denis Trystram. 200 hours per year in average, mainly at first level of Engineering School.

Master: Frédéric Wagner. 220 hours per year. Engineering school ENSIMAG, Grenoble-INP (M1/2nd year and M2/3rd year) (190h), Master DESS/M2-P SCCI Security (30h).

### 8.2.2. Supervision

Adrien Roussel. Mutli-CPU/Multi-GPU parallelization of numerical solvers. Co-advised by Jean-Marc Gratien (IFPEN) and Thierry Gautier.

David Beniamine (since 2013). Parallelisation Patterns and Scheduling for Real-Time Physics Simulations. Co-advised by Guillaume Huard and Bruno Raffin.

Amrit Kumar (since 2013). Analysis of work-stealing and adaptive algorithms. Labex-Persyval co-advised PhD by Pascal Lafourcade (Verimag lab), Cedric Lauradoux (Inria Privatics team) and Jean-Louis Roch.

Gilles Daviet (since 2013). Parallel Macroscopic Simulations of Fibrous Materials. Co-advised by Florence Bertails-Descoubes and Bruno Raffin.

Julio Toss (since 2013). Parallel Algorithms and Data Structures for Physically Based Simulation of Deformable Objects. Join Ph.D with UFRGS, Brazil. Co-advised by Joao Comba and Bruno Raffin.

Marwa Sridi (since 2013). Parallel Algorithm Composition for Transient Mechanic Simulations. Join Ph.D with CEA, France. Co-advised by Vincent Faucher, Thierry Gautier and Bruno Raffin.

Ziad Sultan (since 2012). Hig-performance algebraic computations. Co-advised Ph.D by Jean-Guillaume Dumas (LJK Lab) and Clément Pernet.

Stefano Mor (since 2011). Analysis of work-stealing and adpative algorithms. Join Ph.D with UFRGS, Brazil. Co-advised by Jean-Louis Roch, Nicolas Maillard and Bruno Raffin

Mathieu Dreher (since 2011). In-Situ Visualization for Molecular Dynamics. Advised by Bruno Raffin.

David Glesser. Energy Aware Resource Management for HPC. Co-advised by Yianis Georgiou (BULL) and Denis Trystram.

Raphaël Bleuse. Affinity Scheduling. Co-advised by Gregory Mounié and Denis Trystram.

Millian Poquet. Enhanced Data Movements for HPC. Co-advised by Pierre-François Dutot and Denis Trystram.

Abhinav Srivastav. Persyval. Multi-objective Scheduling. Co-advised by Oded Maler (VERIMAG) and Denis Trystram.

Fernando Machado Mendonca. Locality Aware Scheduling. Co-advised by Frederic Wagner and Denis Trystram.

Alessandro Kraemer. Scheduling in the Cloud. Join Ph.D with UFPR, Brazil. Co-advised by Olivier Richard, and Denis Trystram.

### 8.2.3. *Juries*

- Vincent Faucher, HDR, INSA Lyon, June 2014.
- Laurent Gourvés, HDR, December 2014
- Florian Jamain, PhD, June 2014
- Rohit Babbar, PhD, October 2014
- Abdelkader Kersani, PhD, October 2014
- Florence Monna, PhD, November 2014
- Dounia Zaidouni, PhD, Decembre 2014
- Georgos Zois, PhD, December 2014)
- Marc Labadens, PhD, Ecole Polytechnique, December 2014.
- Fabien Coubard, PhD, Université Paris-Est, October 2014.

## **MUSE Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### ***9.1.1. Scientific events organisation***

#### *9.1.1.1. Member of steering/executive committee*

- R. Teixeira, Vice-chair of ACM SIGCOMM (since Jun. 2013).
- R. Teixeira, member of the steering committee of the ACM Internet Measurement Conference (since Nov. 2009)

### ***9.1.2. Scientific events selection***

#### *9.1.2.1. Chair of selection committee*

- R. Teixeira, Workshop co-chair of ACM SIGCOMM 2015.

#### *9.1.2.2. Member of conference program committee*

- R. Teixeira, ACM SIGCOMM 2014
- R. Teixeira, ACM SIGCOMM Poster and Demo 2014
- R. Teixeira, ACM CoNEXT 2014

### ***9.1.3. Journal***

#### *9.1.3.1. Member of editorial board*

- R. Teixeira, Editor of IEEE/ACM Transactions on Networking (since Feb. 2011)
- R. Teixeira, Area editor of ACM Sigcomm Computer Communication Review (Feb. 2010 – July 2014)

#### *9.1.3.2. Reviewer*

- A.-K. Pietilainen, ACM Transactions on Multimedia Computing; Elsevier Pervasive and Mobile Computing

### ***9.1.4. Tutorials and invited presentations***

- R. Teixeira, "Internet measurements: topology discovery and dynamics", tutorial at the Rescom summer school, Corsica, May 2014.
- A.-K. Pietilainen and R. Teixeira, "Measurements close to users", tutorial at the 4th PhD School on Traffic Monitoring and Analysis (TMA), London, April 2014.
- R. Teixeira, "Measuring Internet Experience from Home Networks", seminar at Federal University of Rio de Janeiro (UFRJ) and at Federal Univeristy of Minas Gerais (UFMG), Brazil, October 2014. Seminar at University of Washington, USA, November 2014.

## **9.2. Teaching - Supervision - Juries**

### ***9.2.1. Teaching***

Master: Renata Teixeira, "Methodology for research in networking", 21.5h eqTD, M2, UPMC, France

### ***9.2.2. Supervision***

PhD: Oana Goga, "Matching User Accounts Across Online Social Networks: Methods and Applications", EDITE, May 21, 2014, advisor: Renata Teixeira

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

### **9.2.3. Juries**

Renata Teixeira: member of PhD committee of Zachary Scott Bischoff (Northwestern University, 2014) and Srikanth Sundaresan (Georgia Tech, 2014)

## MYRIADS Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Program committees

Roberto-Gioacchino Cascella was program committee member of the ORMaCloud 2014 workshop co-located with ACM HPDC, VTC 2015-Spring and VTC 2015-Fall (track "wireless Networks and Security") and in IEEE TrustCom 2015 (track "privacy"). He co-organized the Contrail Business Day held in Roma, Italy on January 23, 2014. He was General co-chair of 2nd edition of DIHC workshop, co-located with Euro-Par 2014, held in Porto, Portugal, on August 26th, 2014.

Eugen Feller was program committee member of PDP (2014, 2015) and IEEE Cluster 2014.

Yvon Jégou was program committee member of IEEE TrustCom 2014 conference and ORMaCloud workshop co-located with ACM HPDC 2014.

Christine Morin was program committee member of the *International Symposium on Parallel and Distributed Computing* (ISPDC) 2014, *IEEE International Parallel & Distributed Processing Symposium* (IPDPS) 2014, *IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing* (CC-GRID) in 2014 and 2015, *CLOSER 2014*, *Resilience* (workshop on Resiliency in High Performance Computing in Clusters, Clouds, and Grids) co-located with EuroPar 2014, *VTDC* (International Workshop on Virtualization Technologies in Distributed Computing) co-located with ACM HPDC in 2015, *ScienceCloud* co-located with ACM HPDC in 2014 and 2015, *OrmaCloud* co-located with ACM HPDC 2014, *CrossCloud* (workshop on cloud interoperability and federation) co-located with INFOCOM in 2014, *Distributed Cloud Computing* (DCC) workshop co-located with SIGCOMM in 2014, *VHPC 2014* and 2015 (workshop on Virtualization in High-Performance Cloud Computing) co-located with EuroPar, *Euromicro International Conference on Parallel, Distributed, and Network-Based Processing* (PDP 2015). She is also a member of the SC'15 technical poster committee.

She co-organized the Contrail Business Day held in Roma, Italy on January 23, 2014. She was a member of the scientific committee for the Inria Scientific Days held in Lille in June 2014. She was General co-chair of 2nd edition of DIHC workshop, co-located with Euro-Par 2014, held in Porto, Portugal, on August 26th, 2014. She was *Tutorial Chair* and a mentor in the PhD student mentoring track of the IEEE Cluster conference held in Madrid, Spain, in September 2014.

Anne-Cécile Orgerie was program committee member of FedICI workshop co-located with EuroPar 2014, of VTC2014-Fall, of CCGrid 2015, and of the PhD student mentoring track of Cluster 2014. She was also general co-chair for ExtremeGreen workshop co-located with CCGrid 2014, general co-chair and organizer for GreenDays@Rennes, and co-organizer of the Inria booth at SuperComputing 2014.

Nikolaos Parlavantzas was program committee member of DAIS 2014 and CSB 2014.

Guillaume Pierre was program committee member of Middleware 2014, IC2E 2014, MobileCloud 2014, ComPAS 2014, CloudDP 2014, DADS track of SAC2015, IC2E 2015, AINA 2015 and CSCS20-2015. He was also workshop chair of EuroSys 2014.

Cédric Tedeschi was a program committee member of ICWS 2014, ICCS 2014, and CloSer 2014.

### 7.1.2. Evaluation committees, consulting

Yvon Jégou is a member of the Grid 5000 executive committee. He is a member of the *Comité de Sélection et de Validation (CSV)* of the *Images & Réseaux* cluster.

C. Morin acted as an expert to review ERC starting grant proposals for the European Commission. She is a member of the ModaClouds European project Advisory Board. She is a member of the scientific council of ENS Cachan. She was a member of the jury for the 2014 Inria prizes. She was a consultant for SAFRAN.

Anne-Cécile Orgerie is expert at the HCERES for evaluating the doctoral schools.

Nikolaos Parlavantzas acted as an expert to review proposals for Alpes Grenoble Innovation Recherche (AGIR) 2014.

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Christine Morin is responsible for the Internet of Services: Programming Models & Things and Clouds (ISI) teaching unit of the Master in research in Computer Science of the University of Rennes 1.

Christine Morin:

- Master : Internet of Services: Programming Models & Things and Clouds (ISI), 12 hours ETD, M2RI, University of Rennes 1, France.
- Master : Energy management in computing infrastructures (as part of the Eco-STIC module), 4.5 hours ETD, M1, Supelec, France.

Anne-Cécile Orgerie (at ENS de Rennes):

- License 3: ARCSYS2 - architecture et systèmes 2 (60 hours ETD)

Nikolaos Parlavantzas (at INSA Rennes):

- 4th year: Operating Systems (40 hours ETD)
- 4th year: Big Data and Applications (25 hours ETD)
- 4th year: Networking and SOA (12 hours ETD)
- 4th year: Advanced Operating Systems (12 hours ETD)
- 4th year: Parallel programming (12 hours ETD)
- 4th year: Software Development Project (30 hours ETD)
- 5th year: Component-based Software Engineering (16 hours ETD)

Jean-Louis Pazat is responsible for the following graduate teaching Modules: Advanced operating Systems, Parallel Computing, Networking and SOA.

Jean-Louis Pazat (at INSA Rennes for 2012-2013):

- 4th year: Advanced Operating Systems (32 hours ETD)
- 4th year: Parallel Programming (48 hours ETD)
- 4th year: Networking and SOA (48 hours ETD)
- 4th year: Software development project (60 hours ETD)

Guillaume Pierre (at the University of Rennes 1):

- License 3: Systèmes (25 hours ETD)
- License 3: Organisation et utilisation des systèmes d'exploitation 2 (67 hours ETC)
- Master 2: Techniques de développement logiciel dans le Cloud (39 ETD)
- Master 1: Service Technologies (24 ETD)
- Master 2: Approche algorithmique des applications et systèmes répartis (32 ETD)

Cédric Tedeschi (at the University of Rennes 1 for 2013-2014):

- Master 1: Multitask Operating Systems (65 hours ETD)
- Master 1: Concurrency in Systems and Networks (70 hours ETD)
- Master 1: Parallel Programming (36h ETD)
- Master 1: Service Technologies (30h ETD)
- Master 2 (research): Internet of Services (6 hours ETD)

#### **E-learning**

Cédric Tedeschi is responsible for the Operating Systems class within the eMiage online teaching program.

### **7.2.2. Supervision**

PhD : Djawida Dib, Optimizing PaaS Provider Profit under SLA constraints, defended on July 7th 2014, Christine Morin, Nikolaos Parlavantzas.

PhD in progress : Ancuta Iordache, Multi-resource optimization for application hosting in heterogeneous clouds, started in February 2013, Guillaume Pierre.

PhD in progress: Yunbo Li, Resource allocation in a Cloud partially powered by renewable energy sources, started in October 2013, Anne-Cécile Orgerie, Jean-Marc Menaud (Ascola).

PhD in progress: Ismael Cuadrado Cordero, Energy-efficient and network-aware resource allocation in Cloud infrastructures, started in October 2013, Christine Morin, Anne-Cécile Orgerie.

PhD in progress: Édouard Outin, A multi-objective adaptation system for the management of a Distributed Cloud, started in October 2013, Olivier Barais (Triskell), Yvon Jégou, Jean-Louis Pazat.

PhD in progress: Sabbir Hasan, SLA Driven Cloud autoscaling for optimizing energy footprint, started in December 2013, Thomas Ledoux (Ascola), Jean-Louis Pazat.

PhD in progress: Anna Giannakou, A Self-adaptable Security Supervision System for Clouds, started in March 2014, Christine Morin, Jean-Louis Pazat, Louis Rilling.

PhD in progress: Bruno Stevant, Resource allocation strategies for service distribution at the Internet edge to optimize end-to-end latency, started in December 2014, Jean-Louis Pazat.

### **7.2.3. Juries**

- Christine Morin is a reviewer of the HdR committee of Brice Goglin, University of Bordeaux (April 15th, 2014).
- Christine Morin is a member (chair) of the PhD defense committee of Arnab Sinha, Université de Rennes 1 (May 28th 2014).
- Christine Morin is a reviewer in the PhD defense committee of Jonathan Lejeune, University of Paris 6 (September 19th, 2014).
- Christine Morin is a member (chair) of the PhD defense committee of Alessandro Ferreira Leite, University of Paris 11 (December 2nd, 2014).
- Christine Morin is a reviewer of the HdR committee of Jacques Jorda, University of Toulouse 3 - Paul Sabatier (December 11th, 2014).
- Guillaume Pierre is a member of the PhD defense committee of Wubin Li, University of Umea (April 25th 2014).
- Guillaume Pierre is a member of the PhD defense committee of Cassidy Clark, TU Delft (May 14th 2014).
- Guillaume Pierre is a member of the PhD defense committee of Pierpaolo Cincilla, Université Paris 6 (September 15th 2014).
- Anne-Cécile Orgerie is a member of the PhD defense committee of Guillaume Le Louët, Ecole des Mines de Nantes (May 12th 2014)



- Nikolaos Parlavantzas is a member of the PhD defense committee of Chrysostomos Zeginis, University of Crete (October 20th, 2014)
- Jean-Louis Pazat is a reviewer for the PhD thesis of the PhD thesis of Alessandro Leite (December 2, 2014)
- Jean-Louis Pazat is the president of the Habilitation defense of Olivier Barais, Université de Rennes 1 (December 8th 2014)

### 7.3. Popularization

- Roberto-Gioacchino Cascella presented a demonstration of the VEP-S system at the EIT ICT Labs result day, Helsinki, Finland, December 2014.
- Christine Morin gave a talk entitled "Contrail Project Overview" at the Contrail Business Days, Roma, Italy, January 2014.
- Christine Morin was invited to give a talk on Myriads activities on cloud computing at the EIT ICT Labs meeting on future clouds, Rennes, France, March 2014.
- Christine Morin gave a talk entitled "Contrail: Interoperability and Dependability in a Cloud Federation" at the first workshop of the Joint Laboratory for Extreme Scale Computing, Sophia-Antipolis, France, June 2014.
- Christine Morin was invited to give a talk entitled "Contrail: Toward a Trusted Cloud Market Place" at the EIT ICT Labs Symposium on Future Cloud Computing, Rennes, France, June 2014.
- Christine Morin was invited to give a talk entitled "Contrail: Toward a Trusted Cloud Market Place" at the Inria Scientific Days, Lille, France, June 2014.
- Christine Morin gave an invited talk entitled "Snooze: A Scalable Energy-Efficient IaaS Cloud Management System" at the Next-GWiN 2014 Workshop, Rennes, France, October 2014.
- Christine Morin gave a talk entitled "Checkpointing as a Service in Heterogeneous Clouds" at the second workshop of the Joint Laboratory for Extreme Scale Computing, Chicago, USA, November 2014.
- Guillaume Pierre organized the 2nd ConPaaS workshop (Rennes, May 26th 2014) and gave the opening presentation
- Guillaume Pierre organized the EIT ICT Labs Future Cloud Symposium (Rennes, June 23-24th 2014).
- Anne-Cécile Orgerie gave a talk entitled "Green IT : maîtrise de la consommation énergétiques des équipements informatiques", at Rencontres de la recherche, Fondation Rennes 1, Rennes, September 19, 2014.
- Anne-Cécile Orgerie gave a talk entitled "Toward Energy-Efficient Cloud Computing" at the Inria-Technicolor Workshop, Rennes, December 4, 2014.
- Anne-Cécile Orgerie gave a tutorial entitled "Green Big Data Processing using Hadoop: An Introductory" with Shadi Ibrahim from KerData team, at the ACM/IFIP/USENIX Middleware conference, Bordeaux, December 2014.
- Arnab Sinha presented a demonstration of the VEP-S system at the EIT ICT Labs result day, Helsinki, Finland, December 2014.
- Cédric Tedeschi gave a talk about workflow activities within the DALHIS associate team at the Berkeley Inria Stanford workshop, Paris, June 2014.

### 7.4. Miscellaneous

Roberto-Gioacchino Cascella is a member of the Inria "Commission locale formation".

Christine Morin is a member of the Project-Team Committee of INRIA RENNES – BRETAGNE ATLANTIQUE (Comité des projets), *Référent Chercheur* for INRIA RENNES – BRETAGNE ATLANTIQUE. She is a member of the Irisa/Inria "Commission Personnel" being in charge of post-docs and "délégations". She is correspondent for North America relationships in the Inria Direction of International Relationships. She was the coordinator of Contrail European project. She participated in a researchers-journalists exchange organized by the AJSPI (*Association des Journalistes Scientifiques de la Presse d'Information*). In this context, she hosted Sophy Caulier, free-lance journalist in Myriads team, January 13-17, 2014 and she was hosted March 24-28, 2014 as an intern by Guillaume Mézières, editor in chief of *Le laboratoire des Savoirs* hosted at Radio Prun in Nantes. She contributed to a radio programme (<http://labodessavoirs.fr/emissions-du-labo/un-monde-plurilingue/>).

Anne-Cécile Orgerie is in charge (chargée de mission) of the "Green IT" transversal axis of IRISA.

Nikolaos Parlavantzas is the local coordinator for the international exchange of students at the computer science department of Insa.

Guillaume Pierre is the local coordinator of the EIT ICT Labs master school in Rennes. He is the local coordinator of the Erasmus exchange program between Université de Rennes 1 and Politehnica University Bucharest.

Jean-Louis Pazat is the leader of the "Large Scale Systems" department of IRISA. He is the leader of the computer Science Lab at INSA (IRISA-INSA). He is the co-leader of the Operating Systems Activity in the CNRS ASR research Group (*Groupement de Recherche*). He is the coordinator for reviews of international bilateral cooperation projects at the Ministry of Research and Higher Education in the STIC domain.

Thierry Priol is the director of the Inria European Partnership department.

Cédric Tedeschi is a member of the administration council of the EECS department of the University of Rennes 1.

## PHOENIX Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events selection

#### 8.1.1.1. Member of the conference program committee

Charles Consel:

- ICSE 2014, the 36th International Conference on Software Engineering. June 1-7, Hyderabad, India.
- ESOP 2015, the 24th European Symposium on Programming. April 11-15, 2015 London, United Kingdom.

Hélène Sauzéon:

- Conférence ITASD : des solutions numériques pour les personnes avec Autisme (Paris, Oct. 2014)
- Journées d'étude du vieillissement cognitif (Caen 2014)

#### 8.1.1.2. Reviewer

Loïc Caroux has reviewed papers for the following conferences:

- CHI 2015 (ACM Conference on Human Factors in Computing Systems)
- HFES 2014 (International Annual Meeting of the Human Factors and Ergonomics Society)
- IHM 2014 (Conférence Francophone sur l'Interaction Homme-Machine)

#### 8.1.1.3. Invited talks

- Consel C.: "Activity verification". Presentation at Northeastern University on human assistance, October 27, 2014.
- Sauzéon, H. and Caroux, L. (2014, Juillet). Plans expérimentaux et statistiques « pratiques ». Workshop of the Inria Project Lab Personally Assisting Living (IPL PAL), Talence, France.
- Sauzéon, H. and Consel, C. (2014) Projet DomAssist. 2ème Congrès Européen de Stimulation Cognitive – Technologies de compensation et Stimulation Cognitive, 22-23 septembre 2014, Toulouse.
- Sauzéon, H. and Consel, C. (2014) Assistance à domicile et aide à la réalisation des activités quotidiennes :le projet DomAssist. Technologies Appliquées Au Handicap : de la compensation à la participation - IFR Handicap PARIS – CNRS, 26 septembre 2014, Paris.
- Dupuy L., N'Kaoua B., Consel C., Aguilova L., and Sauzéon H. (2014). Role of cognitive reserve on everyday functioning among oldest old physically frail. XIIIème Colloque International sur le Vieillissement Cognitif – JEV, 15 et 16 septembre 2014, Caen, France.
- Congrès de Psychiatrie et de Neurologie de Langue Française Fage C., Consel C., and Sauzéon H., Collège+ : Un Assistant Scolaire pour Soutenir l'Inclusion Scolaire en Classe Ordinaire des Elèves avec Troubles du Spectre Autistique (TSA), CPNLF 2014 (Bordeaux, France, 2014).

### 8.1.2. Journal

#### 8.1.2.1. Reviewer

Loïc Caroux reviewed papers for the following journals:

- Computers in Human Behavior
- Behaviour and Information Technology
- Journal of Physical Education and Sport Management

Hélène Sauzéon reviewed papers for the following journals:

- Gerontology
- BMC Geriatrics
- Applied Psycholinguistics
- Experimental Aging Research
- Journal of Speech, Language, and Hearing Research

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence: Hélène Sauzéon, "General Cognitive Psychology", 36h, L2/L3, Université de Bordeaux, France

Licence: Hélène Sauzéon, "Neuropsychologie Cognitive", 14h, DU, Université de Bordeaux, France

Master: Hélène Sauzéon, "Sciences cognitives du langage", "Technologies du handicap cognitif", "Facteurs humains et IHM", 120h, M1/M2, Université de Bordeaux, France

Master: Lucile Dupuy, "Fonctions cognitives en situation", 18h, M1, Université de Bordeaux, France

Master: Charles Fage, "Handicap, autonomie et technologies", 15h, M2, Université de Bordeaux, France

Master: Charles Fage, "Environnement de la recherche", 12h, M2, Université de Bordeaux, France

Master: Charles Fage, "Troubles cognitifs et handicap", 10h, M1, Université de Bordeaux, France

Master: Charles Fage, "Facteurs humains et IHM", 8h, M1, Université de Bordeaux, France

Master: Charles Fage, "Handicap et nouvelles technologies", 25h, M1, Université de Bordeaux, France

### 8.2.2. Supervision

PhD: Stéphanie Gatti, "Architecture en composants et qualification incrémentale", finished in February 2014, supervised by Charles Consel and Emilie Balland

PhD in progress: Paul van der Walt, "Certification d'une plateforme ouverte", started in November 2012, supervised by Charles Consel

PhD in progress: Milan Kabac, "Orchestration à grande échelle d'objets communicants", started in September 2012, supervised by Charles Consel

PhD in progress: Charles Fage, "Validation expérimentale d'un assistant numérique d'inclusion scolaire d'élèves collégiens porteurs d'autisme", started in September 2012, supervised by Hélène Sauzéon

PhD in progress: Lucile Dupuy, "DomAssist: Assistance domiciliaire pour la personne âgée et son aidant formel basée sur la technologie DiaSuiteBox", started in September 2013, supervised by Hélène Sauzéon and Charles Consel

PhD in progress: Adrien Carteron, "A development environment dedicated to assistive application", started in October 2014, supervised by Charles Consel.

PhD in progress: Cécile Magnier, "Customized technology for autonomous schooling: on longitudinal effects for students with an autism spectrum disorder", started in November 2014, supervised by Hélène Sauzéon and Charles Consel.

PhD in progress: Quentin Chisin, "Digital home assistance for young adults with Down syndrome", started in December 2014, supervised by Bernard N'Kaoua and Charles Consel.

### 8.2.3. Juries

Charles Consel participated in the following juries:

- Committee of the best thesis award of the "GDR GPL" (Prix de la thèse GDR GPL 2013, 2014).
- Member of the AERES Research Evaluation committee of the LIG lab (Laboratoire d'Informatique de Grenoble), December 2014.
- Thesis defense committee for Arnad Sinha, Université de Rennes 1, 28 mai 2014.

Hélène Sauzéon participated in the following juries:

- Thesis defense committee for M. Abrame, Université Paris Descartes, december 2014.
- Thesis defense committee for C. Toczé, Université Tours, december 2014.

### **8.3. Popularization**

Various members of the Phoenix Inria project team participated in the following events:

- Charles Consel. "Presentation of the DomAssist project". Journée du Numérique organisé par Inria à l'Assemblée Nationale, Paris, France, january 21, 2014.
- Charles Consel. "Presentation of the DomAssist project". Journée de lancement de la Silver Economie Aquitaine, Bordeaux, France, february 17 2014.
- Loïc Caroux. "Des besoins de la personne âgée pour son maintien à domicile à la solution DomAssist". Semaine Nationale des Retraités et des Personnes Agées, Carbon-Blanc, France. October 2014.
- Loïc Caroux, Alexandre Spriet. "DomAssist : Plate-forme d'assistance domiciliaire pour la personne âgée et son aidant formel". Journée de la Santé Connectée en Aquitaine, Bordeaux, France. October 2014.
- Charles Consel, Hélène Sauzéon. "Assistance numérique pour compenser les déficiences cognitives à tous les âges de la vie". 2e Assises nationales de la médiation numérique : le numérique dans votre quotidien. October 16-17, 2014, Bordeaux.
- Lucile Dupuy. "Presentation of the DomAssist project". Fêtes de la science, Bordeaux, France, september-october 2014.
- Charles Fage. Production of a video-presentation of the School+ assistive platform with the Inria Communication Service. <http://vimeo.com/93262450>.

In addition to the following popularization actions, the DomAssist project has been presented during 2014 in two french newspapers (Sud Ouest, La Croix), and in one television report on France 3 TV.

## RAP Project-Team

# 7. Dissemination

## 7.1. Leadership within scientific community

*Nicolas Broutin* is member of the steering committee of the international meeting on analysis of algorithms (AofA). He has been the referee for the PhD thesis of Elie de Panafieu (Paris 7) and a member of the committee for the PhD thesis of Ross Hemsley (U de Nice).

*Christine Fricker* is member of the jury of agrégation. She is the leader of PGMO project “Systèmes de véhicules en libre-service: Modélisation, Analyse et Optimisation” with G-Scop (CNRS lab, Grenoble) and Ifsttar. From 1 to 3 years. Starting at 1/10/2013. *Christine Fricker* was member of Jury de recrutement de CR2 Inria-Saclay.

*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”. He is member of the scientific council of EURANDOM. He is also associate Professor at the École Polytechnique in the department of applied mathematics where he is in charge of lectures on mathematical modeling of networks. *Philippe Robert* has been a member of the technical programme committee of the conferences ACM Sigmetrics(2014) Performance(2014) and ICCCN (2014).

## 7.2. Teaching

*Nicolas Broutin* has taught at the Master Parisien de Recherche en Informatique (MPRI), in the course 2.15 on Analysis of Algorithms. He has also taught at NYU Shanghai during the fall of 2014.

*Philippe Robert* gives Master2 lectures in the laboratory of the Probability of the University of Paris VI. He is also giving lectures in the “Programme d’approfondissement de Mathématiques Appliquées et d’Informatique” on Networks and Algorithms at the École Polytechnique.

## 7.3. Conference and workshop committees, invited conferences

*Nicolas Broutin* has given lectures at the annual meeting of the GDR-IM and at the Journées de combinatoire de Bordeaux, the Workshop on New Frontiers in random geometric graphs at the Lorentz Center in Leiden. He has presented his results at seminars in Ecole Polytechnique (LIX and CMAP), Université de Nice and at the East China Normal University in Shanghai. He has visited the mathematics department of the University of Bath and the NYU-ECNU institute for mathematical sciences at NYU Shanghai.

*Sarah Eugene* gave a talk at the Joint Annual Meeting of the Japanese Society for Mathematical Biology and the Society for Mathematical Biology on July 2014, Osaka, Japan.

*Christine Fricker* was invited at Tours University in a panel about “Trades of mathematics”, 20/11/2014. She gave a talk at ECQT (1st European Conference on Queuing Theory), Ghent, 20-22/8/2014. Participation (co-author) at Workshop CluCo d’EGC 2014, Rennes, 28/01/2014, IWCIM, Paris, 1-2/11/2014.

*Philippe Robert* gave a keynote conference of “European Conference on Queueing Theory”, ECQT 2014, Ghent, August 2014. He gave a talk at the Lycee “Jeanne d’Albret” in Saint Germain en Laye in May, and for BTS students in April and also to maths teachers of option ISN (Informatique et sciences du numérique), académie de Versailles in April 2014.

## REGAL Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific event organisation

#### 8.1.1.1. General chair, scientific chair

- Pierre Sens was the general co-chair for SBAC-PAD 2014, 26th International Symposium on Computer Architecture and High Performance Computing.
- Marc Shapiro was Program Co-Chair of the **OPODIS 2014** conference.

#### 8.1.1.2. Member of the organizing committee

Sébastien Monnet was the workshop chair for SBAC-PAD 2014, 26th International Symposium on Computer Architecture and High Performance Computing. Luciana Arantes was local organizer of SBAC-PAD 2014

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

- Luciana Arantes was PC chair of the XV Workshop on Test and Fault Tolerance, 2014, Brazil.
- Marc Shapiro was Program Co-Chair of the **OPODIS 2014** conference.

#### 8.1.2.2. Member of the conference program committee

- Swan Dubois was member of the programm committee of the 16èmes Rencontres Francophones pour les Aspects Algorithmiques des Télécommunications (AlgoTel'14).
- Sébastien Monnet was member of the programm committee of the 1st International Symposium on Cloud Computing (CCA 2014).
- Franck Petit was member of the program committee of the Conférence d'informatique en Parallélisme, Architecture et Système (ComPas) 2014.
- Pierre Sens was member of the program committee of 3rd IEEE/SAE International Conference on Connected Vehicles and Expo (ICCVE 2014), 3rd IEEE Symposium on Network Cloud Computing and Applications (NCCA'2014), 28th IEEE International Parallel and Distributed Processing Symposium (IPDPS'2014).
- Luciana Arantes was member of the program committee The 13th IEEE International Symposium on Network Computing and Applications (NCA 2014).
- Marc Shapiro was member of the PC of the Annual ACM/IFIP/USENIX Middleware Conference (Middleware 2014), and of the Workshop on Adaptive Resource Management and Scheduling for Cloud Computing (AMRS-CC) 2014.

#### 8.1.2.3. Reviewer

Swan Dubois peer-reviewed papers for STACS'14, ICDCS'14, SRDS'14, SSS'14, and WWW'14.

Franck Petit peer-reviewed papers for ICDCN'15, IPDPS'15 and SSS'14.

Marc Shapiro was a reviewer for the European Research Council Consolidator Grant (panel PE6) 2014.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

Franck Petit is a member of the editorial board of Journal of Discrete Mathematics and The Scientific World Journal. Pierre Sens is associated editor of International Journal of High Performance Computing and Networking (IJHPCN).

### 8.1.3.2. Reviewer

Swan Dubois peer-reviewed papers for Information Processing Letters (IPL) and Scientific World Journal (SWJ). Sébastien Monnet peer-reviewed papers for TCS, JPDC and Transaction on Computers journal. Franck Petit peer-reviewed papers for TCS, Distributed Computing, International Journal of Foundations of Computer Science. Luciana Arantes reviewed papers for JPDC and FGCS.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: Luciana Arantes, Swan Dubois, Oliver Marin, Sébastien Monnet, Franck Petit, Pierre Sens, Advanced distributed algorithms, M2, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Sébastien Monnet, Pierre Sens, Julien Sopena, Operating systems kernel, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Olivier Marin, System distributed Programming, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Olivier Marin, Franck Petit, Distributed Algorithms, 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 : Swan Dubois, Data structures in C, 80h, L2, UPMC Sorbonne Universités, France \*

Licence : Swan Dubois, Data structures in C, L2, UPMC Sorbonne Universités, France

Ingénieur 4ème année : Marc Shapiro, Introduction aux systèmes d'exploitation, 22 h, M1, Polytech UPMC Sorbonne Universités, France.

### 8.2.2. Supervision

Completed PhD: Pierpaolo Cincilla: "Gargamel: boosting DBMS performance by parallelising write transactions," UPMC, 09/15/2014. Advisors: Marc Shapiro, Sébastien Monnet.

PhD: Jonathan Lejeune, "Algorithmique distribuée d'exclusion mutuelle : vers une gestion efficace des ressources," UPMC, 09/19/2014, Julien Sopena, Luciana Arantes, Pierre Sens.

Completed PhD: Masoud Saeida Ardekani, "Ensuring Consistency in Partially Replicated Data Stores," UPMC, 09/16/2014. Advisors: Marc Shapiro, Pierre Sutra.

PhD: Yoann Péron, "Development of an adaptive recommendation system", UPMC/Makazi, Franck Petit, Patrick Gallinari, Matthias Oehler (Makazi).

PhD: Mohamed Hamza Kaaouachi, "Autonomic Distributed Environments for Mobility", UPMC/Chart-LUTIN (Labex SMART), Franck Petit, Swan Dubois, and François Jouen (Chart).

PhD in progress: Tao Thanh Vinh, UPMC, CIFRE, since Feb. 2014. Advisors: Marc Shapiro, Vianney Rancurel (Scality).

PhD in progress: Alejandro Z. Tomsic, UPMC, funded by SyncFree, since Feb. 2014. Advisor: Marc Shapiro.

PhD in progress: Mahsa Najafzadeh, UPMC, funded by Inria competitive grant (Cordi-S), since Nov. 2012. Advisor: Marc Shapiro.

PhD in progress: Lokesh Gidra, UPMC, since Feb. 2011. Advisors: Gaël Thomas, Julien Sopena, Marc Shapiro.

PhD in progress: Marek Zawirski, UPMC, funded by Inria Google Research Grant. Since Oct. 2010. Advisor: Marc Shapiro.



### **8.2.3. Juries**

Pierre Sens was the reviewer of:

- Jacques Jorda. HDR IRIT, Toulouse
- A. Sinah. PhD Irisa (Advisor : M. Banatre)
- D. Dib. PhD Irisa (Advisor : C. Morin)
- O. Shahmirzadi. PhD EPFL, Suisse (Advisor : A. Schiper)
- M. Servajean. PhD LIRMM (Advisor : E. Pacitti)
- T-T. Vu. PhD LIFL (Advisor : N. Meleb)

Franck Petit was the reviewer of:

- Greicy Marques-Costa, TIMA/ARIS, Grenoble (Advisor: R. Velazco),
- Ahmed Mouhamadou Wade, LaBRI Bordeaux (Advisor: R. Klasing)

Marc Shapiro was a member of the thesis committee of:

- Ghassan Almaless, UPMC Sorbonne Universités (advisor: Franck Weisburt).
- Jiaqing Du, École Polytechnique Fédérale de Lausanne (advisor: Willy Zwaenepoel).

## **8.3. Popularization**

The team animated a stand on distributed algorithms at the 2014 edition of "Fête de la Science"

## RMOD Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

- Marcus Denker, Damien Cassou and Stéphane Ducasse were part of the organization of ESUG 2014.
- Damien Cassou co-organized Dyla'14 *Workshop on Dynamic Languages and Applications*

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- Anne Etien
  - ECMFA 2014, *European Conference on Modelling Foundations and Applications*.
  - IWST 2014, *International Workshop on Smalltalk Technologies*.
  - ME 2014, *Models and Evolution*
  - SLE 2014, *International Conference on Software Language Engineering*.
  - Dyla'14, *Workshop on Dynamic Languages and Applications*
  - Inforsid 14 *Congrès INFORSID - INFormatique des ORganisations et Systèmes d'Information et de Décision*
- Damien Cassou
  - Dyla'14, *Workshop on Dynamic Languages and Applications*
- Stefan Marr
  - DLS 2014, *Dynamic Language Symposium*
  - 9th IC00LPS 2014 *Workshop Implementation, Compilation, Optimization of OO Languages, Programs and Systems*.
- Marcus Denker
  - IWST 2014, *International Workshop on Smalltalk Technologies*.
  - COP 2014, *ECOOP International Workshop on Context-Oriented Programming*
- Stéphane Ducasse declined the participation to ECOOP 2014 and ECOOP 2015.

#### 9.1.2.2. Reviewer

- Damien Cassou: Apsec 2014 *The Asia-Pacific Software Engineering Conference*
- Martin Dias: ICSME 2014 *International Conference on Software Maintenance and Evolution*
- Andre Hora: ICSME 2014 and SANER 2014 *International Conference on Software Analysis, Evolution, and Reengineering*

### 9.1.3. Journal

#### 9.1.3.1. Reviewer

- Anne Etien: *International Journal of Computer Aided Engineering and Technology (IJCAET)*
- Damien Cassou reviewed paper for SCP

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Master: C. Demarey, Architectures Logicielles, 30h (M1), GIS4, Polytech'Lille, France
- Master: C. Demarey, Intégration Continue, 12h (M2), IAGL, Université de Lille 1, France
- Master : Damien Cassou, Conception des applications réparties, 42h, M1, Université Lille 1, France
- Licence : Damien Cassou, UV Info, 24h, L3, Telecom Lille, France
- Licence : Damien Cassou, Conception orientée objet, 57h, L3, Université Lille 1, France
- Master : Damien Cassou, Qualité logicielle, 30h, M2, Université Lille 1, France
- Master : Damien Cassou, CAL Tests et Maintenance, 12h, M2, Université Lille 1, France
- Master : Anne Etien, Système d'information objet, 22h, M1, Polytech-Lille, France
- Master : Anne Etien, Bases de données, 44h, M1, Polytech-Lille, France
- Master : Anne Etien, Bases de données Avancées, 12h, M1, Polytech-Lille, France
- Licence : Anne Etien, Bases de données, 22h, L3, Polytech-Lille, France
- Licence : Camille Teruel, Conception orientée objet, 36h, L3, Université Lille 1, France
- Licence : Damien Pollet, Programmation orientée objet, 85h, L3, Telecom Lille, France
- Licence : Damien Pollet, Systèmes Numériques (SNUM), 11h, L3, Telecom Lille, France
- Master : Damien Pollet, Ingénierie Logicielle (ILOG), 7h, M1, Telecom Lille, France
- Master : Damien Pollet, Technologies de Systèmes d'Information Ouverts (TSIO), 38h, M1, Telecom Lille, France
- Master : Damien Pollet, Spécification et Validation du Logiciel (SVL), 24h, M1, Université Lille 1, France
- Master : Damien Pollet, Services Réseaux (SER), 28h, M2, Telecom Lille, France
- Licence : Nicolas Anquetil, Interfaces et Conception Orientée Objets, 64h, L2, IUT-A/Université de Lille-1, France
- Licence : Nicolas Anquetil, Analyse et conception des systèmes d'information, 24h, L2, IUT-A/Université de Lille-1, France
- Licence : Nicolas Anquetil, stage, 6h, L2, IUT-A/Université de Lille-1, France
- Licence : Nicolas Anquetil, Projet tutoré, 16h, L2, IUT-A/Université de Lille-1, France
- Licence : Nicolas Anquetil, Conception et programmation objet avancées, 48h, L2, IUT-A/Université de Lille-1, France
- Licence : Nicolas Anquetil, Projet Modélisation mathématique, 16h, L2, IUT-A/Université de Lille-1, France
- Licence : Nicolas Anquetil, Introduction aux interfaces homme-machine, 32h, L2, IUT-A/Université de Lille-1, France
- Licence : Jean-Christophe Bach, Conception orientée objet, 42h, L3, Université Lille 1, France
- Master : Jean-Christophe Bach, Génie logiciel, 42h, M1, Université Lille 1, France
- Licence : Stéphane Ducasse, Cours IAE (2014), 14h, Annecy, France
- Master : Stéphane Ducasse, Cours Ecole des Mines de Douai (2014), 12h, France
- Master : Stéphane Ducasse, Cours USTL L3 (2014), 4.5h, Université Lille, France
- Licence : Stéphane Ducasse, Advanced Design, 6h, University of Delft, L3

### 9.2.2. Supervision

Camillo Bruni, Towards Self-aware Virtual Machines, 16/05/2014, Stéphane Ducasse, Marcus Denker.

Andre Hora, Assessing and Improving Rules to Support Software Evolution, 04/11/2014, Nicolas Anquetil, Stéphane Ducasse.

PhD in progress: Camille Teruel, Security for dynamic languages, 01/12/2012, Stéphane Ducasse, Damien Cassou

PhD in progress: Martin Dias, Supporting Merging, 03/12/2012, Damien Cassou, Stéphane Ducasse.

PhD in progress: Guillermo Polito, Isolation and Reflection in Dynamic Object Oriented Languages, 01/04/2012, Noury Bouraqadi, Luc Fabresse, Stéphane Ducasse.

PhD in progress: Marco Naddeo, Viviana Bono (Univerosty of Turin), Damien Cassou, Stéphane Ducasse, started 01/01/2014

PhD in progress: Vincent Blondeau, CIFRE Worldline, started Oct 2014, Anne Etien, Nicolas Anquetil.

PhD in progress: Brice Govin, CIFRE Thales, started Jan 2015, Anne Etien, Nicolas Anquetil, Stéphane Ducasse.

PhD in progress: Max Mattone: Updating programs at runtime, started Oct 2014 Noury Bouraqadi, Luc Fabresse, Stéphane Ducasse .

PhD in progress: Clement Bera: Evolvable Runtimes for a Changing World, started Oct 2014, Stéphane Ducasse, Marcus Denker.

### 9.2.3. Juries

- Nicolas Anquetil: Lisong Guo, LIP6 University Pierre and Marie Currie, 12/2014 (reviewer)
- Damien Cassou: Eyvind W. Axelsen, Oslo, 05/2014 (opponent)
- Stéphane Ducasse: *Une approche pragmatique pour mesurer la qualité des applications à base de composants logiciels*, Salma Hamza, Université de Bretagne Sud, France. 18/12/14. (referee)
- Anne Etien was in the mid term examination committee of the PhD thesis: Elie Richa 09/2014 (reviewer)

## 9.3. Popularization

- Marcus Denker gave two presentations about Pharo at the open source conference FOSDEM 2014.
- Damien Cassou gave a Pharo tutorial at PLDI' 14.
- RIC Day was held 23 September 2014 @ University of Lille 1, Lille, Anne Etien and Damien Pollet gave a presentation about Pharo, Moose and software maintenance.
- A Programming Dojo was organized by Christophe Demarey on Dec 1st.
- A hands-on course about Pharo for the students at Lille in November organized by Léo Perard and Stéphane Ducasse.
- Demo for industry at the Rencontres Inria-Industrie *Technologies du Web*, 26 Nov 2014 at EuraTechnologies - Lille.
- RMOD co-organized and participated at ESUG 2014.
- Multiple public Pharo Sprints in Lille.
- Stefan Marr gave a half-day tutorial on “Building Self-Optimizing Interpreters with Truffle or RPython” at the Software Composition Group, Universität Bern, Switzerland, December 2nd, 2014
- Stefan Marr gave an invited talk on “Building High-Performance Language Implementations with Low Effort” at Software Composition Group, Universität Bern, Switzerland, December 1st, 2014

- Stefan Marr gave an invited talk on “Zero-Overhead Metaprogramming: Using Self-Optimizing Interpreters to Remove the Runtime Cost of Reflective Programming” at the Software Languages Lab, Vrije Universiteit Brussel, Belgium, November 2014
- Stefan Marr gave an invited talk “On the Way to Concurrency without Accidental Complexity” at the Institut für Systemsoftware, JKU University Linz, Austria, July 2014
- Stefan Marr gave an invited talk on “Building VMs for Language Designers” at the Software Development Team of Laurence Tratt, King’s College London, May 2014
- Stefan Marr gave a talk on “How to get a JIT Compiler for Free?” in the Smalltalk Developer Room of the FOSDEM Open Source Conference, Brussels, Belgium, February 2014

## ROMA Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific council

Yves Robert is a member of the Scientific Council of Maison de la Simulation, Saclay.

### 9.1.2. Scientific events organisation

#### 9.1.2.1. General chair, scientific chair

Yves Robert is a member of the Steering Committee of IPDPS, of HCW of HeteroPar, and of Edu-EuroPar.

#### 9.1.2.2. Member of the organizing committee

Yves Robert and Frédéric Vivien organized the *Scheduling for large-scale platforms* in Lyon, July 1-4, 2014. There were 55 participants.

Bora Uçar organized the CSC14 workshop, the *Sixth SIAM Workshop on Combinatorial Scientific Computing* in Lyon, July 21-23, 2014. There were 54 participants.

### 9.1.3. Scientific events selection

#### 9.1.3.1. Responsibility in conference program committees

Anne Benoit was vice-program chair, for the track *Algorithms*, of IPDPS 2014, and workshops co-chair of ICPP 2014.

Yves Robert was program vice-chair for the track *Algorithms* of SC'14.

Frédéric Vivien was program vice-chair, for the algorithms track, of HiPC 2014, and was co-responsible of the stream "Algorithms distribués, multi-agents et calcul parallèle" for ROADEF 2014.

#### 9.1.3.2. Member of conference program committees

Anne Benoit was a member of the program committees of the following conferences and workshops: HCW 2014, PDP 2014, Ena-HPC 2014 and CCGrid 2014.

Jean-Yves L'Excellent was a member of the program committees of CompAS 2014, Vecpar 2014, CSC 2014.

Loris Marchal was a member of the program committee of IPDPS'2014 and HeteroPar'2014.

Yves Robert was a member of the program committee of the following conferences and workshops: ISCS'14, EduPar'14, ICCS'14, and FTXS'14.

Bora Uçar was a member of the program committee for MPP2014 (a workshop of SBAC-PAD2014), HiPC14, IPDPS 2014, PMAA14, and PCO 2014 (a workshop of IPDPS).

Frédéric Vivien was a member of the program committee of the following conferences and workshops: SC'14, posters of SC'14, IPDPS 2014, CompAS'2014, PDP 2014, and EduHPC'14.

### 9.1.4. Roles in international organizations

Bora Uçar was elected as the Secretary of the SIAM activity group on Supercomputing. (1 January 2014–12 December 2015). He was also appointed as the member of the steering committee of Combinatorial Scientific Computing.

### 9.1.5. Journal

#### 9.1.5.1. Member of the editorial board

Anne Benoit is an associate editor of the *Journal of Parallel and Distributed Computing (JPDC)* and of the *Journal of Sustainable Computing: Informatics and Systems (SUSCOM)*.

Yves Robert is an associate editor of *International Journal of High Performance Computing Applications (IJHPCA)*, *International Journal of Grid and Utility Computing (IJGUC)*, and *Journal of Computational Science (JOCS)*.

Frédéric Vivien is an associate editor of *Parallel Computing*.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: Anne Benoit, Systèmes et Réseaux, 48h, L3, École normale supérieure de Lyon, France.

Licence: Yves Robert, Algorithmes, 48h, L3, École normale supérieure de Lyon, France.

Master: Frédéric Vivien, Algorithmique et Programmation Parallèles, 36 h, M1, École normale supérieure de Lyon, France.

Master: Frédéric Vivien, Algorithms for High-Performance Computing Platforms, 36 h, M2, École normale supérieure de Lyon, France.

Master: Bora Uçar, Combinatorial Scientific Computing, 36 h, M2, École normale supérieure de Lyon, France.

### 9.2.2. Supervision

PhD: Guillaume Aupy, Resilient and energy-efficient scheduling algorithms at scale, École normale supérieure de Lyon, September 16, 2014, Anne Benoit and Yves Robert.

PhD: Dounia Zaidouni, Combining checkpointing and other resilience mechanisms for exascale systems, December 10, 2014, École normale supérieure de Lyon, Frédéric Vivien and Yves Robert.

PhD: Wissam M. Sid-Lakhdar, Scaling the solution of large sparse linear systems using multi-frontal methods on hybrid shared-distributed memory architectures, December 1 2014, Jean-Yves L'Excellent.

PhD in progress: Aurélien Cavelan, Algorithms for detecting and correcting silent errors, September 1, 2014, Anne Benoit and Yves Robert.

PhD in progress: Oguz Kaya, Parallel and Distributed Sparse Tensor Computations, September 1, 2014, Yves Robert and Bora Uçar.

PhD in progress: Julien Herrmann, Numerical algorithms for large-scale platforms, September 1, 2012, Loris Marchal and Yves Robert.

### 9.2.3. Juries

Bora Uçar was a member of the PhD defense committee of Clément Vuchener as a “rapporteur”, Université de Bordeaux, École doctorale de mathématiques et d'Informatique.

Yves Robert was a member of the HdR defense committee of Frédéric Suter, ENS Lyon.

## **RUNTIME Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. General chair, scientific chair*

Emmanuel JEANNOT was a program chair of Heteropar 2014.

#### *9.1.1.2. Member of the steering committee*

Emmanuel JEANNOT is member of the steering committee of Euro-Par and Cluster.

### **9.1.2. Scientific events selection**

#### *9.1.2.1. Member of the conference program committee*

Brice GOGLIN was a program committee member of ICCCN 2014, EuroMPI/ASIA 2014, CARLA 2014, HiPC 2014, Hot Interconnects 2014 and Cluster 2014. Emmanuel JEANNOT was a program committee member of CCGRID'2014, EuroMPI/ASIA 2014, HiPC 2014, Compas 2014. Samuel THIBAUT was a program committee member of IPDPS 2014, HIPC 2014 and MuCoCos 2014. Alexandre DENIS was a program committee member of HiPC 2014, Heteropar 2014, and Realis.

#### *9.1.2.2. Reviewer*

The members of the team review numerous papers for various international conferences such as IPDPS, Super-Computing, Euro-Par, ICPP

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

Emmanuel JEANNOT is associate editor of the International Journal of Parallel, Emergent and Distributed Systems

#### *9.1.3.2. Reviewer*

Emmanuel JEANNOT was reviewer of IEEE TPDS, Parallel Computing, JPDC, IJPP. Samuel THIBAUT was reviewer for IJHPC.

### **9.1.4. Scientific project selection**

#### *9.1.4.1. Reviewer*

Olivier AUMAGE reviewed a project proposal for the CORE 2014 call of Luxembourg's FNR research funding agency.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Members of the RUNTIME project gave thousands of hours of teaching at the University of Bordeaux and the IPB engineering school, covering a wide range of topics from basic use of computers and C programming to advanced topics such as operating systems, parallel programming and high-performance runtime systems.



### 9.2.2. Supervision

HDR: Brice Goglin, Towards generic Communication Mechanisms and better Affinity Management in Clusters of Hierarchical Nodes [9], 2014/04.

PhD: Bertrand Putigny, Benchmark-driven Approaches to Performance Modeling of Multi-Core Architectures [10], 2014/03, Denis Barthou and Brice Goglin.

PhD: Andra Hugo, Composability of parallel codes over heterogeneous platforms, 2014/12, Abdou Guermouche and Pierre-André Wacrenier and Raymond Namyst.

PhD in progress: François Tessier, Placement d'applications hybrides sur machine non-uniformes multicœurs, 2011/10 Emmanuel Jeannot and Guillaume Mercier

PhD in progress: Paul-Antoine Arras, Development of a Flexible Heterogeneous System-On-Chip Platform using a mix of programmable Processing Elements and hardware accelerators. 2011/10, Emmanuel Jeannot and Samuel Thibault

PhD in progress: Corentin Rossignon, Design of an object-oriented runtime system for oil reserve simulations on heterogeneous architectures, 2012/04, Olivier Aumage and Pascal Hénon (TOTAL) and Raymond Namyst and Samuel Thibault

PhD in progress: Emmanuelle Saillard, Analyse statique/dynamique/itérative pour la validation et l'amélioration des applications parallèles multi-modèles sur supercalculateur hybride de type cluster de CPUs/GPUs, 2012/10, Patrick Carribault (CEA/DAM), Denis Barthou

PhD in progress: Grégory Vaumourin, Hiérarchie mémoire hybride et gestion dynamique de données dans les architectures parallèles embarquées, 2013/10, Thomas Dombek (CEA/DACLE), Denis Barthou

PhD in progress: Soufiane Baghdadi, Collaboration entre compilateur et support d'exécution pour les applications parallèles 2011/10, Elisabeth Brunet (Telecom SudParis), Jean-François Trahay (Telecom SudParis), Denis Barthou

PhD in progress: Marc Sergent, Passage à l'échelle de moteur d'exécution à base de graphes de tâches, 2013/09, Olivier Aumage, David Goudin (CEA/CESTA), Samuel Thibault, Raymond Namyst

PhD in progress: Suraj Kumar, Stratégies d'ordonnancement dynamique pour l'algèbre linéaire dense, 2013/12, Emmanuel Agullo, Olivier Beaumont, Samuel Thibault

PhD in progress: Pei Li, High-Performance Code Generation for Stencil Computations on Heterogeneous Multi-device Architectures, 2012/10, Raymond Namyst, Elisabeth Brunet (Telecom SudParis)

PhD in progress: Christopher Haine, Estimating efficiency and automatic restructuring of data layout, 2014/01, Olivier Aumage, Denis Barthou

PhD in progress: Jérôme Richard, Conception of a software component model with task scheduling for many-core based parallel architecture, application to the Gysela5D code, 2014/11, Christian Perez (LIP/ENSL), Julien Bigot (Maison de la Simulation), Olivier Aumage, Guillaume LATU (IRFM).

### 9.2.3. Juries

Denis BARTHOUS was member of PhD defense jury of the following candidates:

- Cédric Valensi (UVSQ, President)

Brice GOGLIN was member of the PhD defense jury of the following candidates:

- Sylvain Didelot (UVSQ, Reviewer)
- Robert Rey Exposito (Universidade Da Coruna, Examiner)

Emmanuel JEANNOT was member of the PhD defense jury of the following candidates:

- Georges Markomanolis (ENS-Lyon, Reviewer)
- Aleksandar Ilic (Univ. Of Porto, Reviewer)
- Sergio Aldea Lopez (Univ. Of Valladolid, Reviewer)
- Sebastien Valat (UVSQ, Examiner)
- Cristian Ruiz (Univ. Of Grenoble, President)

Samuel THIBAULT was member of PhD defense jury of the following candidates:

- Florence Monna (LIP6, Examiner)

### **9.3. Popularization**

Brice GOGLIN is in charge of the diffusion of the scientific culture for the Inria Research Center of Bordeaux. He is also a member of the national Inria committee on Scientific Mediation. He gave numerous talks about high performance computing and research careers to general public audience and school student, as well as several radio and paper interviews about Inria's activities. He is also involved in the popularization of computer programming and robotics programming and gave several wide audience seminar on these topics.

Brice GOGLIN gave talks about Software releases and Source version control with GIT in internal Inria seminars.

Samuel THIBAULT gave a talk about the structure of Internet and questions of security at "Unithé ou Café"

Olivier AUMAGE gave a talk at Seminar Modeling, at the Maison de la Simulation on the StarPU Runtime System.

Runtime organized a 2-days PRACE Advanced Training Center session where several member of the team gave talks about programming heterogeneous parallel architectures with tools such as StarPU and hwloc.

## SCALE Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- Eric Madelaine, scientific co-chair of the 11th International Conference on Formal Aspects of Component Software (FACS'14), Bertinoro, Italy, Sep. 2014. <http://facs2014.cs.unibo.it/>.

#### 9.1.1.2. member of the organizing committee

- Fabien Hermenier was a co-chair of the poster session for Compas.

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

- Olivier Dalle, member of the SIMUTools Steering Committee;
- Eric Madelaine, member of the FACS Steering Committee;

#### 9.1.2.2. member of the conference program committee

- Françoise Baude: program committee member of CCGrid'14, ISPA'14, HPCS 2014, Compas2014
- Olivier Dalle: program committee member of DEVS/TMS'14, ACM SIGSIM PADS'14
- Ludovic Henrio: program committee member of ICE'14
- Eric Madelaine: program committee member of ED^C'14

#### 9.1.2.3. reviewer

- Françoise Baude: reviewer for EuroPar 2014
- Fabien Hermenier: reviewer for the international conference PDP - Special session on energy-aware computing, and the national conference Compas. He was also a sub-reviewer for ICDCS.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- Françoise Baude: Concurrency and Computation: Practice and Experience, special issue 2013 *Special Issue on High Performance Computing and Simulation*.

#### 9.1.3.2. reviewer

- Françoise Baude was a reviewer for journals Parallel and Distributed Computing, Journal of Computational Finance, and International Journal of Computer Mathematics;
- Olivier Dalle was a reviewer for journals ACM TOMACS, SCS SIMULATION, Elsevier SIMPRA;
- Fabien Hermenier was a reviewer for journals Concurrency and Computation: Practice and Experiment, IEEE Transaction on Cloud Computing, IEEE Transaction on Parallel and Distributed Systems, Journal of Grid Computing;
- Ludovic Henrio was reviewer for the journal SCP (Science of Computer Programming), Mathematical Structures in Computer Science, and STVR;
- Eric Madelaine was reviewer for the journal SCP (Science of Computer Programming), special issue 2013 on *Formal Aspects of Component Software*.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Françoise Baude, Algorithmique et Programmation en Java, 70 H eqTD, niveau L2, Polytech'Nice Sophia, UNS, France

Licence : Françoise Baude, Introduction au Web (new course setup), 30 H eqTD, niveau L2, Polytech'Nice Sophia, UNS, France

Licence : Olivier Dalle, Systèmes Informatiques, 36 H eqTD, niveau L1, UFR Sciences, UNS, France

Licence : Olivier Dalle, Projet Scientifique Informatique, 33 H eqTD, niveau L2, UFR Sciences, UNS, France

Licence : Olivier Dalle, Systèmes d'Exploitation, 54 H eqTD, niveau L2, UFR Sciences, UNS, France

Licence : Olivier Dalle, Initiation Framework Programmation Serveur, 63 H eqTD, niveau L3, UFR Sciences, UNS, France

Licence : Fabien Hermenier, Algorithmique et Programmation en Java, 70 H eqTD, niveau L2, Polytech'Nice Sophia, UNS, France

Licence : Fabien Hermenier, Introduction à Internet, 103 H eqTD, niveau L2, Polytech'Nice Sophia, UNS, France

Licence : Fabien Hermenier, Outils pour le Génie Logiciel 14 H eqTD, niveau L3/SI3, Polytech'Nice Sophia, UNS, France

Licence : Justine Rochas, TP de Programmation Orientée Objet 18 H eqTD, niveau L3, UFR Sciences, UNS, France

Master : Françoise Baude, Applications Réparties, 45 H eqTD, niveau M1/SI4, Polytech'Nice Sophia, UNS, France

Master : Françoise Baude and Ludovic Henrio, Distributed systems: an Algorithmic approach, 17 H + 17 h eqTD, niveau M2, Polytech'Nice Sophia/UFR Sciences, UNS, France

Master : Olivier Dalle, Systèmes Distribués, 9 H eqTD, niveau M1, UFR Sciences, UNS, France

Master : Fabrice Huet, Programmation Parallèle et Distribuée, 63h eqTD, niveau M1, UFR Sciences, UNS, France

Master : Fabrice Huet, Programmation Avancée, 78h eqTD, niveau M1, UFR Sciences, UNS, France

Master : Justine Rochas, TP de Systèmes Distribués 24 H eqTD, niveau M1, UFR Sciences, UNS, France

Master : Justine Rochas, TP de Technologies XML 24 H eqTD, niveau M1, UFR Sciences, UNS, France

Summer School : Eric Madelaine, "Designing, programming, and verifying distributed systems", 9 H eqTD, East China Normal University Shanghai, China.

Françoise Baude was Innovation and Entrepreneurship coordinator for the ICT Labs Summer school on Urban Life and Mobility, organized from June 29th to July 11th 2014 at Eurecom (supervision, evaluation and ranking of student teams from an educational perspective).

### 9.2.2. Supervision

PhD : Laurent Pellegrino, "Pushing dynamic and ubiquitous event-based interaction in the Internet of services: a middleware for event clouds", UNS, 3/4/2014, Françoise Baude, Fabrice Huet.

PhD: Yanwen Chen, "Formal model and Scheduling for cyberphysical systems", cotutelle between UNS and ECNU Shanghai, 30/11/2014, advisors Eric Madelaine and Yixiang Chen

PhD: Nuno Gaspar, “Integrated, Autonomic, and Reliable Deployment and Management for SaaS composite applications”, UNS, 16/12/2014, advisor: Eric Madelaine

PhD in progress: Michaël Benguigui, “Modèles de programmation pour l’analyse de données sur machines multi-cœurs, grilles et clouds”, since Dec 2011, advisor Françoise Baude.

PhD in progress: Maeva Antoine, “Plateforme élastique pour le stockage et la notification d’Evènements”, since Oct. 2012, advisors Eric Madelaine and Fabrice Huet

PhD in progress: Sophie Song, “Publish-Subscribe Models for Large Scale Data Analysis Frameworks”, since Feb. 2013, advisor Fabrice Huet and Frédéric Margoulés (ECP)

PhD in progress: Damian Vicino, “Simulation-based Open Science in the Cloud”, since Jan. 2013, advisors Françoise Baude, Gabriel Wainer (Carleton University, Canada), and Olivier Dalle.

PhD in progress : Vincent Kerbache, “Resource Management in a Cloud Supplied with Renewable Energies”, since Sep. 2013, advisors Eric Madelaine and Fabien Hermenier

PhD in progress : Oleksandra Kulankhina, “Model-driven environment for the development of safe component-based distributed applications”, since Oct. 2013, advisor Eric Madelaine

PhD in progress: Justine Rochas, “Programming model and middleware support for distributed and concurrent applications”, since Oct. 2013, advisor Ludovic Henrio

PhD in progress: Hlib Mykhailenko, “Probabilistic Approaches for Big Data Analytics”, since March. 2014, advisors Fabrice Huet, Philippe Nain (Inria)

PhD in progress: Vincenzo Mastandrea, “Deadlock analysis for concurrent and distributed programming”, since Oct. 2014, advisors Ludovic Henrio and Cosimo Laneve.

### 9.2.3. Juries

- Françoise Baude was jury president for the PhD of Gauthier Berthou (Université de Grenoble), jury member for the PhD of Pierre-Louis Aublin (Université de Grenoble), reviewer and jury member for the PhD of Fawaz Paraiso (Université de Lille 1), of Mohamed Mohamed (INT Telecom Paris-Sud, Université d’Evry), of Soguy Mak-Karé Gueye (Université de Grenoble).
- Ludovic Henrio was jury member for the PhD of Karl Palmskog (KTH); he was reviewer and jury member for the PhD of Thomas Pinsard (Université d’Orléans).
- Fabien Hermenier co-reviewed (with F. Baude) the PhD thesis of Christine Mayap Kanga (University of Toulouse) and an expert for a CIFRE thesis grant.
- Fabrice Huet reviewed the PhD thesis of Roelof Kemp (Vrije Universiteit, Amsterdam).
- Eric Madelaine was reviewer for the PhD of M. Donc Ruzhen, University of Pisa

## 9.3. Popularization

- Françoise Baude is in charge since September 2011 of the set up and animation of an educational program *Cordées de la Réussite*. She leads as Polytech’Nice Sophia member, and in connection with MASTIC activities at Sophia-Antipolis, two *Cordées pour la Science à Sophia* groups (one with Lycée Vinci Antibes, the other with Lycée Tocqueville Grasse). Since 2013, she is in charge of the AVOSTII-STI2D program implementation for Polytech’Nice Sophia, requiring advertising high-school pupils for engineering studies, in particular in ICT. As ICT Labs Master School University of Nice Sophia-Antipolis coordinator, she is in charge of publicizing, orchestrating, and reporting about all the ICT Labs master programmes involvement of UNS (Internet and Technology Architecture, and Data Science programmes); and as part of the *Paris Node comité de pilotage*, to follow French activities within ICT Labs, and report about UNS activities within this KIC. Overall this mission required about two full-time months of work in 2014.
- Fabrice Huet is in charge, since 2011, of the *Informatiques et Sciences du Numérique* courses for the academia of Nice. These courses are offered to high school teachers who volunteer to offer a Computer Science option to their students. He has also given seminars in high school during the *Fête de la Science*.

## **SOCRATE Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

The inauguration of the experimentation room of FIT/CortexLab took place in October 2014, see Figure 5<sup>0</sup>, with the noticeable venue of Prof. H. Vincent Poor, Dean of School of Engineering and Applied Science of Princeton University.

#### *9.1.1.1. general chair, scientific chair*

- Samir Perlaza was a co-chair the Eight IEEE Sensor Array and Multichannel Signal Processing (SAM 2014). Special Session on Estimation in Cyber-Physical Energy Systems. June 22-25, 2014, La Coruna, Spain.

#### *9.1.1.2. member of the conference program committee*

- Florent de Dinechin was a member of the following program committees:
  - IEEE International Conference on Application-specific Systems, Architectures and Processors (ASAP)
  - IEEE International Conference on Field Programmable Logic and Applications (FPL)
  - IEEE International Conference on Field Programmable Technologies (FPT)
  - IEEE International Conference on Reconfigurable Computing and FPGAs (ReConFig)
  - International Symposium on Highly Efficient Reconfigurable Accelerator Technologies (HEART)
  - Conférence d’informatique en Parallélisme, Architecture et Système (CompAS)
- Jean-Marie Gorce was a member of the following program committees:
  - IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2014
  - IEEE International Conference on Ultra-Wideband (ICUWB) 2014
- Tanguy Risset was a member of the following program committees:
  - IEEE Computer Society Annual Symposium on VLSI (ISVLSI) 2014.
  - Design Automation and Test in Europe (DATE) 2014.
- Samir Perlaza was a member of the following program committees:
  - IEEE Global Conference on Signal and Information Processing (GLOBALSIP) 2014.
  - Conference on Decision and Game Theory for Security (GameSec) 2014.
  - International Workshop on Wireless Networks: Communication, Cooperation and Competition (WNC3) 2014.
  - IEEE INFOCOM Workshop on Communications and Control for Smart Energy Systems (CCSES) 2014.
  - IEEE ICC Workshop on Small Cell and 5G Networks (SmallNets) 2014.
  - International WDN Workshop on Cooperative and Heterogeneous Cellular Networks (WDN-CN) 2014.
- Guillaume Villemaud was a member of the following program committees:

<sup>0</sup><http://www.inria.fr/centre/grenoble/actualites/inauguration-reussie-de-la-plateforme-cortexlab-equipex-fit>

- IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2014
- International Telecommunications Symposium (ITS) 2014

#### 9.1.1.3. member of the editorial board

- Florent de Dinechin is an associate editor of IEEE Transactions on Computers
- Jean-Marie Gorce is an associate editor of Telecommunications Systems (Springer) and Journal of Wireless communications and Networking (Springer).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Tanguy Risset and Jean-Marie Gorce are professors in the Telecommunications department of Insa Lyon.

Florent de Dinechin is professor in the Computer Science department of Insa Lyon.

Claire Goursaud is associate professor in the Telecommunications department of Insa Lyon.

Leonardo Sampaio Cardoso is associate professor at Insa Lyon (Premier Cycle).

Guillaume Salagnac and Kevin Marquet are associate professors in the Computer Science department of Insa Lyon.

Guillaume Villemaud and Florin Hutu are associate professor in the Electrical Engineering department of Insa Lyon.

Nikolai Lebedev is associate professor in the engineering school in Chemistry, Physics and Electronics, Lyon.

Tanguy Risset has been the vice-head of the Telecommunications department of Insa Lyon until september 2012.

Tanguy Risset is the responsible for the Networking program of the Master Mastria from University of Lyon.

Jean-Marie Gorce is the responsible for the Telecommunications program of the future Master EEAP from University of Lyon.

Guillaume Villemaud is responsible for international relations in the Electrical engineering département of Insa Lyon

### 9.2.2. Supervision

Phd: **Nicolas Brunie**: *Contributions to computer arithmetic and applications to embedded systems*, École Normale Supérieure de Lyon, Kalray CIFRE grant, 16 May 2014.

Phd: **Mickael Dardaillon**: *Compilation d'applications flot de données paramétriques pour MPSoC dédiés à la radio logicielle*, nom de l'Université, Rhones-Alpes Grant, 19 Nov. 2014.

PhD in progress **Coralie Saisset**: *Compilation de programme data-flow pour architecture multi-cœur*, nom de l'Université, MENRT, since 09/2014.

PhD in progress **Victor Quintero**: *Fundamental Limits of Decentralized Cognitive Radio Networks*, Ecole Doctoral EEA de Lyon, funded by Colciencias since 02/2014.

PhD in progress : **Arturo Jimenez Guizar**: *Cooperative communications in Body Area Networks*, ANR Cormoran grant, since 09/2012.

PhD in progress : **Matei Istoan**: *High-performance coarse operators for FPGA-based computing*, ANR Metalibm grant, since 01/2014.

PhD in progress : **Matthieu Lauzier**: *“Design and evaluation of information gathering systems for dense mobile wireless sensor networks”*, CIFRE/Euromedia, since 09/2011.

PhD in progress : **Baher Mawlawi**: CEA grant, since 09/2012.

PhD in progress : **Matthieu Vallerian**: “*Radio Logicielle pour réseau de capteurs*”, CIFRE/Orange, since 09/2012.

PhD in progress : **Zhaowu Zhan**: “*Full-Duplex Multimode MIMO wireless communications*”, CSC/China grant with , since 9/2012.

PhD in progress **Aissa Khoumeri**: “*Study and Development of Wake-Up Radio Receivers*”, FUI ECONHOME since 11/2011.

Jean-Marie Gorce is a member of the Comité National des Universities (CNU) in section 61 signal processing.

### 9.2.3. *Juries*

Florent de Dinechin

PhD: **Manish Kumar Jaiswal**, *Configurable Architectures for Mixed High Precision Floating Point Arithmetic*, City University, Hong Kong (as a reviewer).

PhD: **Nicolas Brunie**, *Contributions to computer arithmetic and applications to embedded systems*, École Normale Supérieure de Lyon.

PhD: **Mohamed Amine Najahi**, *Synthesis of certified programs in fixed-point arithmetic, and its application to linear algebra basic blocks*, Université de Perpignan Via Domitia (as a reviewer).

PhD: **Benoît Lopez**, *Implémentation optimale de filtre linéaire en arithmétique virgule fixe*, Université Pierre et Marie Curie, Paris.

Jean-Marie Gorce

HDR: **Jean-Yves Baudais**, *Systèmes à porteuses multiples précodés*, IETR, INSA Rennes.

HDR: **Marceau Coupechoux**, *Ingénierie des réseaux radio*, Telecom Paris Tech, Paris.

PhD: **Ramona Rosini**, *From radio channel modeling to a system level perspective in body-centric communications*, Univ. of Bologna, Italy.

PhD:, INSA Toulouse

PhD:, IETR, INSA Rennes

PhD:, Gipsa-lab Université Joseph Fourier, Grenoble

PhD: Zhaowu Zhan, INSA Lyon.

Tanguy Risset

PhD: **Mickael Dardaillon**, *Compilation d’applications flot de données paramétriques pour MPSoC dédiés à la radio logicielle*, Insa-Lyon.

PhD: **Ganda Stéphane Ouedraogo**, *Automatic Synthesis of Hardware Accelerators from High-Level Specifications of Physical Layers for Flexible*



## SPIRALS Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, Scientific chair

**Martin Monperrus** has been General Chair of the 1st European Open Symposium on Empirical Software Engineering (**EOSESE'2014**), organized in Lille on June 30 2014.

**Lionel Seinturier** has been General Chair of the 17th ACM SIGSOFT International Conference on Component-Based Software Engineering and Software Architecture (**CompArch**) that has been held in Lille from 30 June to 3 July 2014.

#### 9.1.1.2. Member of the organizing committee

**Laurence Duchien**, **Martin Monperrus** and **Romain Rouvoy** have been members of the organisation committee of the ACM SIGSOFT 17th International Conference on Component-Based Software Engineering and Software Architecture (**CompArch**) that has been held in Lille from 30 June to 3 July 2014.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsible of the conference program committee

**Romain Rouvoy** has been Poster Chair of the 15th ACM/IFIP/USENIX International Middleware Conference (**Middleware**).

**Romain Rouvoy** is member of the Steering Committee of the IFIP International Conference on Distributed Applications and Interoperable Systems (**DAIS**).

**Lionel Seinturier** has been Program Committee co-chair of the 3rd International Workshop on Advanced Information Systems for Enterprises (**IWAISE**).

#### 9.1.2.2. Member of the conference program committee

##### **Laurence Duchien**

International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS)

Track on Software Engineering In Practice (SEIP) at International Conference on Software Engineering (ICSE)

International Workshop on Software Engineering Research and Industrial Practices (SER&IPs)

International Track on Adaptive and Reconfigurable Service-oriented and component-based Applications and Architectures (AROSA) at the IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)

International Conference on Software Maintenance and Evolution

European Conference on Software Architecture (ECSA)

International Software Product Line Conference (SPLC)

##### **Philippe Merle**

Middleware Workshop on Cloud Brokers

International Workshop on Cloud Security and Cryptography (CloudCrypto)

IEEE INFOCOM Workshop on Cross-Cloud Systems (CrossCloud)

International Workshop on Adaptive and Reflective Middleware (ARM)

Conférence en Ingénierie du Logiciel (CIEL)

**Filip Krikava**

Transformation Tool Contest (TTC) of the Software Technologies: Applications and Foundations (STAF)

**Martin Monperrus**

Track on New Ideas and Emerging Results Track (NIER) at the International Conference on Software Engineering (ICSE)

International Symposium on Search Based Software Engineering (SSBSE)

Asia-Pacific Software Engineering Conference (APSEC)

**Romain Rouvoy**

ACM/IFIP/USENIX Middleware Conference (Middleware)

International Conference on Ambient Systems, Networks and Technologies (ANT)

Track on Dependable and Adaptive Distributed Systems (DADS) of the ACM Symposium on Applied Computing (SAC)

Track on Software Engineering Aspects of Green Computing (SEGC) of the ACM Symposium on Applied Computing (SAC)

International Workshop on Middleware for CyberPhysical Systems (MW4CPS)

International Workshop on Middleware for Next Generation Internet Computing Workshop (MW4NG)

International Workshop on Adaptive and Reflective Middleware (ARM)

International Workshop on Adaptive Services for the Future Internet (WAS4FI)

International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)

International Workshop on Big Data Management for the Internet-of-Things (BIOT) at COMPSAC

International Workshop on Green in Software Engineering, Green by Software Engineering (GIBSE) at the International Conference on Modularity (Modularity)

French Conference on Systems, Architecture and Parallelism (ComPAS)

**Lionel Seinturier**

Working IEEE/IFIP Conference on Software Architecture (WICSA)

Track on Model-based development, Components and Services (MOCS) at the Euromicro Conference series on Software Engineering and Advanced Applications (SEAA)

IEEE International Symposium on Software Crowdsourcing (ISCC)

Track on Software Engineering Aspects of Green Computing (SEGC) of the ACM Symposium on Applied Computing (SAC)

International Workshop on Middleware for CyberPhysical Systems (MW4CPS)

IEEE International Conference on Service Oriented Computing & Applications (SOCA)

Workshop on Distributed Architecture modeling for Novel component based Embedded systems (DANCE) at the ACM/IFIP/USENIX Middleware Conference (Middleware)

International Workshop on Model-Driven Engineering for Component-Based Software System (ModComp)

IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS)

Australasian Software Engineering Conference (ASWEC)

International Conference on Ambient Systems, Networks and Technologies (ANT)

International Workshop on Green in Software Engineering, Green by Software Engineering (GIBSE) at the International Conference on Modularity (Modularity)

Track on Formal Verification of Service Based Systems (FVSBS) at the IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)

International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS)

### 9.1.2.3. Reviewer

#### Philippe Merle

European Conference on Software Architecture (ECSA)  
Track on Software Engineering In Practice (SEIP) at the International Conference on Software Engineering (ICSE)

#### Jifeng Xuan

IEEE International Conference on Software Engineering (ICSE)  
Asia-Pacific Software Engineering Conference (APSEC)  
International Conference on Quality Software (QSIC)  
IEEE International Conference on Software Maintenance and Evolution (ICSME)

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

**Laurence Duchien** is member of the editorial board of Lavoisier Technique et Science Informatiques (TSI).

**Lionel Seinturier** is editor for software engineering of the ISTE-Wiley Computer Science and Information Technology book collection. He has been co-editor of the special issue on "Greening Distributed Systems" of the Springer Journal of Internet Services and Applications (JISA).

#### 9.1.3.2. Reviewer

**Laurence Duchien:** Elsevier Future Generation Computer Systems, ACM Transactions on Autonomous and Adaptive Systems, IEEE Software.

**Philippe Merle:** Elsevier Journal of Systems and Software (JSS), Springer Journal of Internet Services and Applications (JISA), The Scientific World Journal, Special issue "Ingénierie du logiciel" of Lavoisier Technique et Science Informatiques (TSI).

**Martin Monperrus:** Elsevier Journal of Systems and Software (JSS), IEEE Software, IEEE Transactions on Software Engineering (TSE), Springer Empirical Software Engineering, Wiley Journal of Software: Evolution and Process.

**Romain Rouvoy:** IEEE Transactions on Network and Service Management (TSNM), IEEE Software, IEEE Internet of Things Journal, IEEE Communications Magazine, Lavoisier Technique et Science Informatiques (TSI), Journal of Universal Computer Science (JUCCS), Journal of Network and Computer Applications (JNCA), Elsevier Computer Communications (COMCOM).

**Lionel Seinturier:** IEEE Software, Elsevier Science and Computation, The Computer Journal, MDPI Sensors, Springer Software Quality Journal, Elsevier Sustainable Computing, Annals of Telecom, Wiley Software Practice and Experience, Lavoisier TSI.

**Jifeng Xuan:** Elsevier Science of Computer Programming (SCP).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

**Laurence Duchien** teaches at the University of Lille 1, IEEA faculty. She heads the **research program** in Master of Computer Science at University Lille 1. She heads the Carrières et Emplois service and is referent for the professional insertion in the PhD program in Computer Science at PRES University Lille Nord de France. She is also Director of Doctoral Studies for Computer Science in Doctoral School Engineering Science (SPI) - COMUE Lille Nord de France.

Software Project Management, 50h, Level M2, Master MIAGE,  
Design of distributed applications, 42h, Level M1, Master of Computer Science,  
Software Product Lines, 8h, Level M2, Master of Computer Science,  
Research and Innovation Initiation, 22h, Level M2 IAGL, Master of Computer Science,  
Tutoring Internship, 16h, Level M2, Master of Computer Science.

**Martin Monperrus** teaches at the University of Lille 1, IEEA faculty.

Introduction to programming, 48h, Level L1, Licence of Computer Science,  
 Object-oriented design, 39h, Level L3, Licence of Computer Science,  
 Automated software engineering, 40h, Level M2 IAGL, Master of Computer Science.

**Romain Rouvoy** teaches at the University of Lille 1, IEEA faculty. He heads the **IAGL** specialty of the Master of Computer Science at the University Lille 1. He supervises the **Agil-IT** Junior Enterprise.

Conception d'Applications Réparties, 42h, Level M1, Master of Computer Science,  
 Infrastructures et Frameworks Internet, 32h, Level M2 IAGL, Master of Computer Science,  
 Innovation & Initiation à la Recherche, 14h, Level M2 IAGL, Master of Computer Science special-  
 ity,  
 Outils pour la Programmation des Logiciels, 12h, Level M2 IAGL, Master of Computer Science,  
 Suivi de projets, 20h, Level M2, Master of Computer Science,  
 Suivi d'alternants, 20h, Level M2, Master of Computer Science.

**Walter Rudametkin** teaches at the University of Lille 1, Polytech engineering school.

GIS4 Programmation par Objets  
 GIS4 Architectures Logicielles  
 GIS2A3 (apprentissage) Projet programmation par Objet  
 IMA2A4 (apprentissage) Conception Modélisation Objet  
 GBIAAL4 Bases de données

**Lionel Seinturier** teaches at the University of Lille 1, IEEA faculty.

Conception d'Applications Réparties, 18h, Level M1, Master of Computer Science,  
 Infrastructures et Frameworks Internet, 6h, Level M2 E-Services and TIIR, Master of Computer Science.

#### **E-learning**

: Lionel Seinturier, Infrastructure et frameworks Internet, 10 semaines, plate-forme Corolia formation, Telecom Lille & Université Lille 1, niveau Bac+5, formation continue, 12 inscrits par session

### **9.2.2. Supervision**

Defended HdR: Romain Rouvoy, Contributions to the Autonomy of Ubiquitous Software Systems, University Lille 1, 5 December 2014

Defended PhD: Alexandre Feugas, Une approche agile, fiable et minimale pour le maintien de la qualité de service lors de l'évolution d'applications à base de processus métiers, 8 October 2014, Laurence Duchien & Sébastien Mosser (University Nice Sophia-Antipolis).

Defended PhD: Nicolas Haderer, APISENSE®: a distributed platform for deploying, executing and managing data collection campaigns using smart devices, 5 November 2014, Lionel Seinturier & Romain Rouvoy.

Defended PhD: Matias Martinez, Extraction and Analysis of Knowledge for Automatic Software Repair, 10 October 2014, Laurence Duchien & Martin Monperrus.

Defended PhD: Adel Noureddine, Towards a Better Understanding of the Energy Consumption of Software Systems, 19 March 2014, Lionel Seinturier & Romain Rouvoy.

Defended PhD: Fawaz Paraiso, soCloud : une plateforme multi-nuages distribuée pour la conception, le déploiement et l'exécution d'applications distribuées à large échelle, 18 June 2014, Lionel Seinturier & Philippe Merle.

Defended PhD: Clément Quinton, Cloud Environment Selection and Configuration: A Software Product Lines-Based Approach, 22 October 2014, Laurence Duchien.

In progress PhD: Maxime Colmant, Amélioration de l'efficacité énergétique des logiciels dans les systèmes multi-coeurs, October 2013, Lionel Seinturier & Romain Rouvoy.

In progress PhD: Benoit Cornu, Automated Runtime Software Repair, October 2012, Lionel Seinturier & Martin Monperrus.

In progress PhD: Maria Gomez Lacruz, Self-Optimization of Software Systems Driven by Wisdom of the Crowds, October 2013, Lionel Seinturier & Romain Rouvoy.

In progress PhD: Geoffrey Hecht, Auto-optimisation des architectures orientées services : Application aux applications mobiles et Cloud, October 2013, Laurence Duchien & Romain Rouvoy.

In progress PhD: Vincenzo Musco, Etude de la topologie et de l'évolution des graphes logiciels, October 2013, Philippe Preux (Inria SequeL) & Martin Monperrus.

In progress PhD: Marc Sango, Composants logiciels, boucle de contrôle et adaptation pour applications safety critical dans le domaine ferroviaire, October 2012, Laurence Duchien & Christophe Gransart.

In progress PhD: Gustavo Sousa, Towards dynamic software product lines to optimize management and reconfiguration of cloud applications, October 2012, Laurence Duchien & Walter Rudametkin.

In progress PhD: Amal Tahri, Evolution logicielle multi-vues : des réseaux domestiques au Cloud, March 2013, Laurence Duchien.

In progress PhD: Bo Zhang, Elasticité spontanée des services et infrastructures dans le Cloud, October 2013, Lionel Seinturier & Romain Rouvoy.

### **9.2.3. Juries**

#### **Laurence Duchien**

Boris Baldassari (University Lille 3), chair  
Calvante Hora André (University Lille 1), chair  
Koutheir Attouchi (University Paris 6), reviewer  
Cédric Teyton (University of Bordeaux), reviewer  
Jean-Christophe Bach (University of Lorraine), reviewer  
Jonathan Michaux (Telecom ParisTech), reviewer  
Hamza Samih (University Rennes 1), reviewer  
Alexandre Feugas (University Lille 1), director  
Matias Martinez (University Lille 1), director  
Clément Quinton (University Lille 1), director

#### **Philippe Merle**

Fawaz Paraiso (University Lille 1), co-supervisor

#### **Martin Monperrus**

Boris Baldassari (University Lille 3), examiner  
Alexandre Bartel (University of Luxembourg), co-supervisor  
Matias Martinez (University Lille 1), co-supervisor

#### **Romain Rouvoy**

Keling Da (University of Pau et des Pays de l'Ardour), examiner  
Adel Noureddine (University Lille 1), co-supervisor  
Nicolas Haderer (University Lille 1), co-supervisor  
Yunbo Li (University of Nantes), member of the comité de suivi de thèse

**Lionel Seinturier**

HDR Xavier Bonnaire (University Paris 6), chair  
HDR Yvan Peter (University Lille 1), chair  
HDR Walid Gaaloul (University Paris 6), reviewer  
HDR Nicolas Anquetil (University Lille 1), examiner  
HDR Romain Rouvoy (University Lille 1), examiner  
Nadia Elouali (University Lille 1), chair  
Mohamed Amroune (University of Toulouse), reviewer  
Etienne Gandrille (University of Grenoble), reviewer  
Soguy Gueye (University of Grenoble), reviewer  
Loïc Letondeur (University of Grenoble), reviewer  
Julien Richard-Foy (University Rennes 1), reviewer  
Nicolas Haderer (University Lille 1), director  
Adel Noureddine (University Lille 1), director  
Fawaz Paraiso (University Lille 1), director  
Nour Assy (Telecom SudParis), member of the comité de suivi de thèse  
Anca Iordache (University Rennes 1), member of the comité de suivi de thèse

### 9.3. Popularization

**Lionel Seinturier** has participated in October to the event Chercheur itinérant organized by the Inria Lille Nord Europe research center in the context of La Fête de la science. Two classes (3ème and 1ère) have been visited. The theme of the visit was crowdsensing and data gathering from mobile devices.

**Walter Rudametkin** has given some demonstrations at two major open source events: the Open World Forum in October in Paris, and Fossa in November in Rennes.

**Loïc Huertas** and **Maxime Colmant** have presented in November the PowerAPI software library (see Section 5.3 ) at the **GreenCodeLab** that is a challenge for the design of sustainable software

**Loïc Huertas** has given a demonstration of the PowerAPI software library (see Section 5.3 ) at the RIC day in September. The event targets students from computer science master programs and engineering schools.

The team has participated to three Inria organized events in relation with the industry: in January in Rennes for the Imatch event with the software industry (Clément Quinton, Loïc Huertas, Philippe Merle, Romain Rouvoy, Christophe Ribeiro, Daniel Romero Acero, Lionel Seinturier), in November in Rocquencourt for the RII Telecom du futur (Christophe Ribeiro), in November in Lille for the RII Web technologies (Philippe Merle, Christophe Ribeiro, Romain Rouvoy).

## TACOMA Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events selection

#### 8.1.1.1. member of the conference program committee

- PC member for Ehpwas 2014: 2nd IEEE Int. Workshop on E-Health , 2014, F. Weis
- Member of the scientific committee of MC 2014 (Materiality in its contemporary form) Grenoble, February 2014, M. Dominici

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

L2/L3: network computing (lectures, tutorials, labs), 250 hours, F. Weis, University Rennes 1

Master : Ambient Computing and Mobile Communications, F. Weis, 6 hours, M2, university of Rennes 1

Master : Wireless LANs, F. Weis, 8 hours, M2, Telecom Bretagne

Master: Mobile and Pervasive Computing , P. Couderc, M2, University of Rennes 1

### 8.2.2. Supervision

PhD: Arnab Sinha, Pervasive control systems for smart waste management solutions, 14/12/10, M. Banâtre and P. Couderc, defended in April 2014

PhD in progress: Francisco Javier Acosta Padilla, Auto-adaptation for IoT, 31/01/13, Frédéric Weis and Johann Bourcier

### 8.2.3. Juries

Paul Couderc was in the following PhD examination committees:

Arnab Sinha, Pervasive control systems for smart waste management solutions, University Rennes 1 (co-director)

Tony Ducrocq, Auto-organisation des réseaux sans-fil multi-sauts dans les villes intelligentes, University Lille 1 (examiner)

Frédéric Weis was in the following PhD examination committees:

Ozan Gunalp, Déploiement continu des applications pervasives en milieux dynamiques, University Grenoble (PhD referee)

### 8.2.4. Internship

Master 1 Internship, 3 months: "Enhancing a Web Administration GUI for Smart Home using the Wisdom Framework", CHAABI Abdelhak

Master 1 Internship, 3 months: "Integration of Netatmo, Philipps Hue and Fibaro sensors into a Smart-Home platform", Bahram Salim

Master 1 Internship, 4 months: "Implementation of motion control for an RFID experimentation testbed", Victor Petit

## TYREX Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

C. Roisin is a member of the steering committee of the [ACM Symposium on Document Engineering](#).

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

P. Genevès is the PC Chair of the [ACM Symposium on Document Engineering 2015](#).

#### 8.1.2.2. Member of the conference program committee

P. Genevès is member of the external review committee for the 42nd ACM Symposium on Principles of Programming Languages (POPL'15).

P. Genevès and N. Layaïda are program committee members for the 14th ACM Symposium on Document Engineering (DocEng'14).

#### 8.1.2.3. Reviewer

P. Genevès has been referee for International Colloquium on Automata, Languages and Programming (ICALP)

P. Genevès has been referee for International Conference on Relational and Algebraic Methods in Computer Science (RAMiCS).

### 8.1.3. Journal

#### 8.1.3.1. Reviewer

N. Layaïda has been a referee for the Communications of the ACM.

P. Genevès has been a referee for Engineering Science and Technology (Elsevier).

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence: C. Roisin, Computer Networks, 100h/year, L2, University of Grenoble, France

Licence: C. Roisin, Pedagogical manager of the Professional Licence "MESSI" and Academic-side tutoring of several apprentices of this licence, University of Grenoble, France

Licence: N. Gesbert, Logic, 45h/year, L3, University of Grenoble, France

Licence: N. Gesbert, Algorithmics, 60h/year, L3, University of Grenoble, France

Licence: N. Gesbert, Academic-side tutoring of an apprentice, 10h/year, University of Grenoble, France

Master: N. Gesbert, Logic, 45h/year, M1, University of Grenoble, France

Master: N. Gesbert, Web development, 22h30/year, M1, University of Grenoble, France

Master: N. Gesbert, Software analysis, conception and validation, 45h/year, M1, University of Grenoble, France

Master: P. Genevès, Foundations for XML: logics and automata, 18h/year, M2 (Mosig), University of Grenoble, France



### 8.2.2. Supervision

HdR: P. Genevès, Static Analysis for Data-Centric Web Programming, Université de Grenoble Alpes, 21 November 2014.

PhD in progress: D. Graux, Large scale evaluation of semantic web queries, since November 2013, N. Layaïda and P. Genevès

PhD in progress: N. Guido, Semantic Query-Update Independence Analysis under Constraints, since October 2012, C. Roisin and P. Genevès

PhD in progress: A. Abbas, Web query rewriting for heterogeneous data sources, since October 2014, N. Layaïda and P. Genevès

PhD in progress: T. Michel, Mobile Augmented Reality Applications for Smart Cities, since October 2014, P. Genevès, N. Layaïda and H. Fourati

PhD in progress: L. Jachiet, Reasoning with NoSQL Data Flows in Massively Parallel Systems, since October 2014, N. Layaïda and P. Genevès

### 8.2.3. Juries

N. Layaïda has been reviewer for the PhD thesis of Houari Mahfoud, Efficient Access Control to XML Data: Querying and Updating Problems, Université de Lorraine, supervisors: Abdessamad Imine and Michael Rusinowitch. 18 February 2014.

N. Layaïda has been committee member of the HdR of P. Genevès, Static Analysis for Data-Centric Web Programming, Université de Grenoble Alpes, 21 November 2014.

C. Roisin has been reviewer for midterm PhD thesis of Mira Sarkis, Supervised by Jean-Claude Dufourd and Cyril Concolato, Télécom Paristech, Paris, 2014.

## 8.3. Popularization

M. Razafimahazo developed a mobile application for the pupils of the école de la paix, Grenoble. The application uses Augmented Reality for cultural heritage tour of Grenoble City with content produced by pupils.

M. Razafimahazo Animated a brainstorming during CitizenTIC around OpenStreetMap crowd-sourcing: “Les cartes changent la donne autour des parcours accessibles dans l’agglomération Grenobloise”.

N. Layaïda animated several workshops on Open Linked Data for Grenoble City and Grenoble Agglomeration (La métro).

We received two pupils from secondary school, Jeremy Andreoletti and Hugo Kersaudy, for a one week initiation to research. We hosted several pupils from the primary school for a one day for a presentation and demos.

### 8.3.1. Institutional commitment:

C. Roisin Board member of the University Pierre Mendes-France, University of Grenoble, in charge of IT systems and TICE.

C. Roisin is President of the disciplinary commission of the University Pierre Mendes-France, University of Grenoble.

N. Layaïda is member of the Scientific Board of Advanced Data-mining of the Parsyval Labex.

N. Layaïda is member of the experts pool (selection committee) of the minalogic competitive cluster.

## URBANET Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Administrative responsibilities

- Fabrice Valois was elected (02/2014) and nominated (09/2014) as director of the CITI research laboratory of INSA Lyon.
- Hervé Rivano is responsible with the Economic and Strategic Intelligence affairs of the CITI research laboratory, in charge with setting up ZRRs withing the lab.
- Hervé Rivano and Razvan Stanica are members in the CITI laboratory council.

### 9.1.2. Scientific events organization

#### 9.1.2.1. Session chair

- Marco Fiore was a panelist at the *Complex Network Science: the next big thing* Panel at IEEE NetSciCom, May 2014.
- Marco Fiore was Session chair for two sessions at IEEE SECON 2014.
- Hervé Rivano was an invited panelist at the Labex IMU Workshop.
- Razvan Stanica was Session chair for the "Sensing, Vising and Perception VII" session at IEEE ITSC 2014.

### 9.1.3. Scientific events selection

#### 9.1.3.1. Member of the conference program committee

- The Urbanet team members are/were members of the technical program committee for a number of international conferences, including IEEE SECON 2014, IEEE WoWMoM 2014/2015, IEEE Globecom 2014, IEEE ICC 2014/2015, IEEE VTC-Spring 2014, IEEE WCNC 2014, IEEE VNC 2014, WD 2014, ICCVE 2014, IEEE AINA 2014, IWCMC 2014.

### 9.1.4. Journal

#### 9.1.4.1. Member of the editorial board

- Marco Fiore is member of the Technical Committee of Elsevier Computer Communications.

#### 9.1.4.2. Reviewer

- The Urbanet team members are/were reviewers for a number of international journals, including IEEE Transactions on Mobile Computing, IEEE Communications Magazine, IEEE Transactions on Vehicular Technology, IEEE Wireless Communication Letters, Ad Hoc Networks Journal, Vehicular Communications Journal, Transportation Research Part C.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Isabelle Augé-Blum, Operating Systems, 70h, L3, Telecom. Dpt. INSA Lyon, France.

Licence : Walid Bechkit, IP Networks, 10h, L3, Telecom. Dpt. INSA Lyon, France.

Licence : Hervé Rivano, IP Networks, 20h, L3, Telecom. Dpt. INSA Lyon, France.

Licence : Razvan Stanica, Network Programming, 90h, L3, Telecom. Dpt. INSA Lyon, France.

Licence : Razvan Stanica, Advanced Wireless Networks, 20h, L3, IST / Telecom. Dpt. INSA Lyon, France (lectures given in english).

Licence : Fabrice Valois, IP Networks, 100h, L3, Telecom. Dpt. INSA Lyon, France.

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

Master : Isabelle Augé-Blum, Innovation project, 30h, M1, Telecom. Dpt. INSA Lyon, France.

Master : Isabelle Augé-Blum, Bibliographical study, 30h, M1, Telecom. Dpt. INSA Lyon, France.

Master : Isabelle Augé-Blum, Real-Time Networks, 25h, M2, Telecom. Dpt. INSA Lyon, France.

Master : Isabelle Augé-Blum, Networks of the Future, 10h, M2, University of Lyon.

Master : Walid Bechkit, Network architectures, protocols and services, 12h, M1, Telecom. Dpt. INSA Lyon, France.

Master : Walid Bechkit, Performance evaluation of telecom networks, 60h, M1, Telecom. Dpt. INSA Lyon, France.

Master : Walid Bechkit, Wireless Multihop networks, 10h, M2, University of Lyon.

Master : Razvan Stanica, Wireless local area networks, 8h, M2, University of Lyon.

Master : Razvan Stanica, Mobile Networks, 10h, M1, Telecom. Dpt. INSA Lyon, France.

Master : Fabrice Valois, Cellular Networks, 40h, M1, Telecom. Dpt. INSA Lyon, France.

Master : Fabrice Valois, Wireless Sensor Networks, 6h, M2, University of Grenoble.

Isabelle Augé-Blum is in charge of the foreign affairs of the Telecommunications department at INSA Lyon, coordinating all incoming and outgoing student exchange programs.

Razvan Stanica is responsible for the administrative part related to all Master projects prepared by INSA Lyon Telecommunications department students.

Fabrice Valois is responsible of the networking teaching team in the Telecommunications department at INSA Lyon, coordinating all the courses in the networking domain.

Since 2006, Fabrice Valois is the head of an international teaching program focused on Internet of Things, established between INSA Lyon and Shanghai Jiao Tong University.

Fabrice Valois is an elected member of the Telecommunications Department Council at INSA Lyon.

### 9.2.2. Supervision

HdR : Hervé Rivano, Modélisation et optimisation du partage de ressources dans les réseaux radio multi-sauts, INSA Lyon, 06/2014.

HdR : Marco Fiore, Vehicular networking: from fundamental properties to network solutions, INSA Lyon, 07/2014.

PhD : Quentin Lampin, Réseaux urbains de capteurs sans fil: Applications, caractérisation et protocoles, INSA Lyon, 01/2014. Advisors: Isabelle Augé-Blum, Fabrice Valois.

PhD in progress : Soukaina Cherkaoui, Energy-saving strategies for backhaul networks, since 11/2013. Advisors: Hervé Rivano, Fabrice Valois.

PhD in progress : Jin Cui, Aggregation: From data dynamics to network dynamics, since 11/2012. Advisor: Fabrice Valois.

PhD in progress : Rodrigue Domga Komguem, Autonomous WSN architectures for road traffic applications, since 11/2012. Advisors: Fabrice Valois, Razvan Stanica, Maurice Tchente (Univ. Yaoundé, Cameroun).

PhD in progress : Guillaume Gaillard, SLA pour réseaux de capteurs multi-services, since 12/2012. Advisor: Fabrice Valois.

PhD in progress : Trista Lin, Urban mobility measurement and citizen-oriented services cartography, since 10/2012. Advisors: Frédéric Le Mouel (CITI DynaMid), Hervé Rivano.

PhD in progress : Diala Naboulsi, Human mobility - an urban networking perspective, INSA Lyon, since 10/2012. Advisors: Razvan Stanica, Marco Fiore, Hervé Rivano.

MS thesis: P. Brunisholz, INSA Lyon, The Gain of Network Coding in Wireless Sensor Networking. Advisors: Fabrice Valois, Marine Minier (Inria Privatics).

MS thesis: A. Caballero, INSA Lyon, Collection and Analysis of Mobile Phone Data. Advisors: Razvan Stanica, Hervé Rivano.

MS thesis: R. Chaabouni, INSA Lyon, Capacity of a Bike Mobile Sensor Network. Advisor: Hervé Rivano.

MS thesis: S. Feng, INSA Lyon, GPS Data Collection using Android Smartphones. Advisors: Razvan Stanica, Hervé Rivano.

MS thesis: F. Hou, INSA Lyon, Resource Allocation in Cloud Radio Access Networks. Advisor: Razvan Stanica.

MS thesis: H. Kahoul, INSA Lyon, Autonomous RPL An IPV6 Routing Protocol For Wireless Sensor Networks. Advisor: Fabrice Valois.

MS thesis: C. Lamé, INSA Lyon, Analytical Models of IEEE 802.11 Networks. Advisor: Razvan Stanica.

MS thesis: F. Matigot, INSA Lyon, Deployment of Wireless Sensor Networks for Urban Pollution Monitoring. Advisors: Walid Bechkit, Hervé Rivano.

MS thesis: S. Mokhtari, INSA Lyon, Performance Evaluation of Line Wireless Sensor Networks. Advisors: Walid Bechkit, Hervé Rivano.

MS thesis: A. Tessilimi, INSA Lyon, Human Mobility Analysis from Call Detail Records. Advisors: Razvan Stanica, Marco Fiore.

MS thesis: M. Yu, INSA Lyon: Characterization of WSN For Traffic Flow Control. Advisor: Fabrice Valois.

### 9.2.3. Juries

- Marco Fiore was external reviewer of the following Ph.D. defense:
  - S. Faye, Contrôle et gestion du trafic routier urbain par un réseau de capteurs sans fil, Telecom ParisTech, 10/2014.
- Marco Fiore was external examiner of the following Ph.D. defense:
  - N. Haddadou, Réseaux ad hoc véhiculaires : vers une dissémination de données efficace, coopérative et fiable, Université Paris-Est, 06/2014.
- Marco Fiore was external examiner of the following mid-term Ph.D. defense:
  - L. Gallo, Next Generation Mobile Vehicular Networking for Public Transportation Systems, EURECOM, 10/2014.
- Hervé Rivano was external reviewer of the following Ph.D. defense:
  - A. Kodjo, Design and Optimization of Wireless Backhaul Networks, I3S, Université de Nice Sophia Antipolis, 12/2014.
- Razvan Stanica was a member of one CoS (selection committee) for an associate professor position at INSA Lyon.
- Fabrice Valois was external reviewer of the following Ph.D. defenses:
  - K. El Gholami, La Gestion de la Qualité de Service Temps-Réel dans les Réseaux de Capteurs Sans Fil, LIMOS, Université Blaise Pascal, Clermont-Ferrand (France) and STIC, Université Chouaib Doukkali, El Jadida (Maroc), 12/2014.
  - D. D. Khanh, Performance Analysis of Wireless Technologies for New Generation Avionics Embedded Systems, ISAE, Université de Toulouse, 12/2014.

- Fabrice Valois was member in the following HdR defense committee:
  - F. Theoleyre, Medium Access and Efficient Use of Multihop Wireless Networks (HDR), ICube, Université de Strasbourg, 06/2014.
- Fabrice Valois was a member of two CoS (selection committee) for associate professor positions at Telecom ParisTech and INSA Lyon.

### 9.3. Popularization

- Hervé Rivano gave a popularization talk for ISN teachers on smart cities and wireless networking issues in June 2014.
- Razvan Stanica gave an invited talk, titled *Data Collection and Analysis using Mobile Phone Sensors*, in the wireless sensor network training organized for industrial partners at the Ecole Polytechnique de Yaoundé in June 2014.
- Fabrice Valois gave an invited talk, titled *Introduction to Wireless Sensor Networks*, in the wireless sensor network training organized for industrial partners at the Ecole Polytechnique de Yaoundé in June 2014.

## WHISPER Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Member of the organizing committee

Julia Lawall was a member of the SIGPLAN Executive Committee, which supervises the organization of the various conferences sponsored by SIGPLAN, as well as other SIGPLAN activities.

Gilles Muller is a member of the steering committee of the EuroSys conference.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

Gilles Muller was a PC member for the conferences VEE, TRIOS, for the workshop APSYS and for the jury of the best EuroSys PhD (Roger Needham award).

Julia Lawall was a PC member for the conferences Modularity and ICDCS.

Pierre-Évariste Dagand was a PC member for WGP 2014, the workshop on generic programming.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

Julia Lawall: Higher-Order and Symbolic Computation, Science of Computer Programming.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

### 9.2.2. Supervision

PhD : Koutheir Attouchi, Managing Resource Sharing Conflicts in an Open Embedded Software Environment, Université Pierre et Marie Curie, 11 juillet 2014, Gilles Muller et Gaël Thomas, CIFRE Orange

PhD : Jean-Pierre Lozi, Towards more scalable mutual exclusion for multicore architectures, Université Pierre et Marie Curie, 16 juillet 2014, Gilles Muller et Gaël Thomas

PhD : Lisong Guo, Boost the Reliability of the Linux Kernel: Debugging Kernel Ooopses, Université Pierre et Marie Curie, 18 décembre 2014, Julia Lawall et Gilles Muller

PhD in progress : Florian David, A profiler for locks in Java servers, octobre 2011, Gilles Muller et Gaël Thomas

PhD in progress : Peter Senna Tschudin, Développement Rapide de Pilotes de Périphériques, mai 2014, Julia Lawall et Gilles Muller

PhD in progress : Valentin Rothberg, Exploration de la génétique des pilotes périphériques, octobre 2014, Julia Lawall et Gilles Muller

PhD in progress : Antoine Blin, Execution of real-time applications on a small multicore embedded system, avril 2012, Gilles Muller et Julien Sopena (Regal), CIFRE Renault

### 9.2.3. Juries

- Gilles Muller:

- HDR: David Bromberg (University of Bordeaux, reviewer), Michaël Hauspie (reviewer).
- PhD: Jigar Solanki (University of Bordeaux, rapporteur), Pierre-Louis Aublin (University of Grenoble, reviewer), Baptiste Lepers (University of Grenoble), Etienne Millon (University of Pierre et Marie Curie, President)
- Julia Lawall:
  - HDR: David Bromberg (University of Bordeaux, reviewer), Nicolas Anquetil (University of Lille).
  - PhD: Alexandre Lissy (University of Tours, reviewer), Lucia (Singapore Management University)

### **9.3. Popularization**

Julia Lawall presented a tutorial on Coccinelle at ENS (Masters students), the IT University of Copenhagen (PhD students), at the Suse Labs conference (developers), at LinuxCon Europe (developers), and at Middleware (PhD students and researchers).

## ALICE Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events selection

##### 8.1.1.1. Organizing committee membership

- Bruno Lévy was program co-chair for Eurographics 2014
- Sylvain Lefebvre was STAR co-chair for Eurographics 2014

##### 8.1.1.2. Conference program committee membership

- Sylvain Lefebvre was PC member of Pacific Graphics 2014
- Nicolas Ray was PC member of Eurographics 2014
- Rhaleb Zayer was PC member of Eurographics 2014

#### 8.1.2. Journal

##### 8.1.2.1. Editorial board membership

- Sylvain Lefebvre is associate editor for ACM Transactions on Graphics
- Bruno Lévy is associate editor for IEEE Transactions on Visualization and Computer Graphics
- Xavier Antoine is associate editor for ISRN Applied Mathematics
- Bruno Lévy is associate editor for Graphical Models (Elsevier)

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

License: Samuel Hornus, “Functional programming with OCaml” at épITECH Nancy (private school training programmers, <http://nancy.epitech.eu/> ). Lecture: 9h. Lab work: 18h. 3 student projects.

License: Samuel Hornus, “Mathématique discrètes”, à Télécom Nancy

License: Dmitry Sokolov, Géométrie et représentation dans l’espace, 35h, L2 Informatique de l’UL, France

License: Dobrina Boltcheva, Licence ISN, IUT Saint-Dié-des-Vosges

License: Dobrina Boltcheva, 2A DUT INFO, IUT Saint-Dié-des-Vosges

License: Dobrina Boltcheva, 1A DUT INFO, IUT Saint-Dié-des-Vosges

Master: Sylvain Lefebvre, Ecole de Géologie, introduction to parallelism (3h TP) and introduction to computer graphics (3h cours, 6h TP)

Master: Sylvain Lefebvre, OpenCL, UL, master M2, with Dmitry Sokolov.

Master: Sylvain Lefebvre, Course on Video Game programming at “Ecole des Mines de Nancy”. Taught with Guillaume Bonfante.

Master: Dmitry Sokolov, Algorithmique avancée, 28h, M2 Math de l’UL, France

Master: Dmitry Sokolov, Logiques et Modèles de calcul, 30h, M1 Informatique de l’UL, France

Master: Dmitry Sokolov, Infographie 76h, M1 Informatique de l’UL, France

Master: Dmitry Sokolov, Modèles de perception et raisonnement, 56h, M1 Informatique de l’UL, France



Master: Dmitry Sokolov, Parallélisme de données, 15h, M1 Informatique de l'UL, France

Master: Bruno Lévy, "Numerical Geometry" (15 h) in the National School of Geology and in Nancy School of Mines.

### **8.2.2. Supervision**

HdR : Sylvain lefebvre, Synthèse de textures par l'exemple, Université de Lorraine, 30 juin 2014

PhD : Jeanne Pellerin, Prise en compte de la complexité géométrique des modèles structuraux dans des méthodes de maillage fondées sur le diagramme de Voronoï, ENSG, 20 mars 2014, Bruno Lévy and Guillaume Caumon (Université de Lorraine)

### **8.2.3. Juries**

Bruno Lévy was chair of the Inria junior position (CR2) hiring committee for the centre Inria Nancy Grand-Est.

## **8.3. Popularization**

- Bruno Lévy animates "initiation to computer programming", 1h each Friday evening (10 kids, 7 to 12 years old).
- Members of the team participate each year to "science fair" events, scientific demos, conferences for the general audience.
- Sylvain Lefebvre is a member of the scientific mediation committee of the centre Inria Nancy Grand-Est.

## ALPAGE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events selection

#### 9.1.1.1. Member of the conference program committee

- Benoît Sagot has served as member of the program committee for the following events: TALN 2014, SPMRL-SANCL 2014 (Workshop at COLING 2014)
- Marie Candito has served as member of the program committee for the following events: SPMRL-SANCL 2014 (Workshop at COLING 2014)
- Pierre Magistry has served as a member of the program committee for the following event: “Questionnements sur la didactique des sinogrammes”, workshop organised by the CERLOM, Inalco
- Éric Villemonte de La Clergerie has served as PC member for the following events: COLING 2014 (area Resources), AAI SA-14 (AAAI-14 Student Abstract and Poster Program), TALN’14 SemDis Workshop, STAIRS-2014 (the 7th Starting AI Researcher Symposium)

#### 9.1.1.2. Reviewer

- Benoit Crabbé has served as a reviewer for the following events : TALN 2014, RECITAL, COLING, Formal Grammar.
- Benoît Sagot has served as reviewer for the following events: ACL 2014, LREC 2014, WoLE 2014 (LREC workshop), PolTAL 2014, Coldoc 2014, RECITAL 2014, NLP4CMC, SHESL-HTL 2015
- Chloé Braud has served as a reviewer for the following event: ConSOLE XXIII
- Corentin Ribeyre has served as a reviewer for the following event: ConSOLE XXIII
- Kata Gábor served as a reviewer for the following event(s)/journal(s): LREC 2014, Cicing 2014, ConSOLE XXIII
- Laurence Danlos has served as a reviewer for the following conferences: LREC 2014, TALN 2014, CMLF 2014
- Marianne Djemaa has served as a reviewer for the following event: ConSOLE XXIII
- Marie Candito has served as reviewer for the following events: ACL 2014, EMNLP 2014, COLING 2014, SEMDIS 2014 (workshop at TALN 2014)
- Éric Villemonte de La Clergerie has served as a reviewer for the following events: LREC 2014, LATIN 2014

### 9.1.2. Journal

#### 9.1.2.1. Member of the editorial board

- Laurence Danlos served as a member of the editorial board of *Traitement Automatique des Langues (TAL)*
- Éric Villemonte de La Clergerie has served as Chief Editor of *Traitement Automatique des Langues (TAL)*

#### 9.1.2.2. Reviewer

- Benoit Crabbé has served as a reviewer for the following journals: Journal of Language Modelling, Language Resources Evaluation, Linguisticae Investigationes
- Benoît Sagot has served as a reviewer for the following journal: Natural Language Engineering

- Lucie Barque has served as a reviewer for the following journal: Neologica
- Éric Villemonte de La Clergerie has served as reviewer for the following journal: Journal of Language Modelling

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: Benoit Crabbé, Introduction à la programmation, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Benoit Crabbé, Introduction à la linguistique informatique, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Benoit Crabbé, Introduction aux probabilités pour la linguistique, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Chloé Braud, Programmation 2, 28 heures en équivalent TD, niveau L3, Université Paris 7, France

Licence: Corentin Ribeyre, TD d'Algorithmique, 24 heures en équivalent TD, niveau L3, Université Paris 7 Diderot, France

Licence: Laurence Danlos, Introduction au TAL, 32 heures en équivalent TD, niveau L3, Université Paris-Diderot, France

Licence: Lucie Barque, Sémantique lexicale, 45 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Lucie Barque, Morphologie lexicale, 22,5 heures en équivalent TD, Université Paris 13, France

Licence: Lucie Barque, Fondamentaux de la grammaire, 67,5 heures en équivalent TD, niveau L1, Université Paris 13, France

Licence: Lucie Barque, Introduction aux sciences du langage, 22,5 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Marianne Djemaa, Programmation 1 (TD), 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Licence: Marie Candito, Linguistique de corpus, 28 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Master: Benoit Crabbé, Méthodes probabilistes pour le TAL, 48 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: Benoît Sagot, Analyse syntaxique du langage naturel, 28 heures en équivalent TD, niveau M1, Université Paris 7, France

Master: Chloé Braud, Sémantique Computationnelle, 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: Éric Villemonte de La Clergerie, "Structures Informatiques et Logiques pour la Modélisation Linguistique", 18 heures en équivalent TD, niveau M2, MPRI, France

Master: Laurence Danlos, Discours: Analyse et génération de textes, 32 heures en équivalent TD, niveau M2, Université Paris-Diderot, France

Master: Lucie Barque, Ressources lexicales pour le TAL, 27 heures en équivalent TD, niveau M2, Université Paris 13, France

Master: Marie Candito, Analyse sémantique automatique du langage naturel, 28 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: Maximin Coavoux, Approches probabilistes du TAL (TD), 24 heures en équivalent TD, niveau M1, Université Paris Diderot, France

### 9.2.2. Supervision

PhD in progress: Marion Baranes, “Normalisation de textes bruités”, started in January 2012, supervised by Laurence Danlos (supervisor) and Benoît Sagot (co-supervisor)

PhD in progress: Valérie Hanoka, “Extraction et Structuration de Terminologie Multilingue”, started in January 2011, supervised by Laurence Danlos (supervisor) and Benoît Sagot (co-supervisor)

PhD in progress: Emmanuel Lassale, “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)

PhD in progress: Chloé Braud, “Analyse discursive : les relations implicites”, Université Paris-Diderot, started in October 2011, supervised by Laurence Danlos (supervisor) and Pascal Denis (co-supervisor)

PhD in progress: 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)

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: Jacques Steinlin, “Les relations implicites et les AltLex dans le FDTB”, Université Paris-Diderot, started in Novembre 2014, supervised by Laurence Danlos

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: 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)

PhD in progress: Maximin Coavoux, “Représentations continues pour l’analyse syntaxique et sémantique automatique”, started in September 2015, supervised by Benoit Crabbé.

### 9.2.3. Juries

- Marie Candito served as a member in the PhD defense committee of Ophélie Lacroix. Title: De l’étiquetage syntaxique pour les grammaires catégorielles de dépendances à l’analyse par transition dans le domaine de l’analyse en dépendances non-projective. University: Université de Nantes Angers Le Mans. PhD supervisors: Colin de la Higuera and Denis Béchet. Defense date: December 8th, 2014.
- Marie Candito served as a member in the PhD defense committee of Sandrine Ollinger. Title: Le raisonnement analogique en lexicographie, son informatisation et son application au Réseau Lexical du Français. University: Université de Lorraine. PhD supervisor: Alain Polguère. Defense date: December 15th, 2014.

- Laurence Danlos served as a member in the PhD defense committee of Sai Qian. Title: Accessibility of Referents in Discourse Semantics University : Université de Lorraine PhD supervisors : Philippe de Groote and Maxime Amblard. Defense date : July 11th, 2014.
- Éric Villemonte de La Clergerie as served as a member in the PhD defense of Simon Petijean. Title: "Génération modulaire de Grammaires Formelles". PhD supervisors: Denys Duchier and Yannick Parmentier. University: Université d'Orléans. Defense date: December 11th 2014
- Benoît Sagot served as a member in the PhD defense committee of Édouard Grave. Title: A Markovian approach to distributional semantics. University: Université Paris VI - Pierre et Marie Curie. PhD supervisors: Francis Bach and Guillaume Obozinski. Defense date: January 20th, 2014.

#### 9.2.4. Other activities

- Benoît Sagot is elected board member of the French NLP society (ATALA) and was its Secretary until June 2013.
- Benoît Sagot is a member of the scientific board of the consortium Corpus Écrits, which belongs to the TGIR Huma-Num
- Benoît Sagot represents Alpage at the board of the Institut de Linguistique Française, a CNRS federation (Alpage is a member of the Institut de Linguistique Française since June 2013)
- Benoît Sagot is a member of the Permanent Committee of the TALN conference organized by ATALA.
- Laurence Danlos is the deputy chair of the Doctoral School for Linguistic Sciences (École Doctorale de Sciences du Langage).
- Laurence Danlos is the chair of the Scientific Committee of the UFR of Linguistics of University Paris Diderot.
- Marie-Hélène Candito is the deputy chair of the UFR of Linguistics of University Paris Diderot.
- Djamé Seddah is the head teacher (*directeur pédagogique*) of the transversal Computer Science class (C2I) at the University Paris-Sorbonne.
- Benoit Crabbé and Laurence Danlos are members of the Administrative board of the UFR of Linguistics of University Paris Diderot.
- Benoit Crabbé co-organized the research seminar : lectures in experimental linguistics (Univ P7)
- Benoit Crabbé is responsible for the L3 computational linguistics (Univ Paris Diderot)
- Laurence Danlos is responsible for the M2 computational linguistics (Univ Paris Diderot)
- Éric Villemonte de La Clergerie has served as SIGParse secretary
- Benoît Sagot is a member of the Governing Board and of the Scientific Board of the **LabEx EFL**, as head of the research strand on language resources; he is also in charge of several reserach operations; Benoit Crabbé is deputy-head of the research strand on experimental grammar; Marie-Hélène Candito and Laurence Danlos are in charge of one research operation each. Laurence Danlos is a member of the Scientific Board, representing Alpage.
- Marie-Hélène Candito organized the Alpage research seminar.

### 9.3. Popularization

- Éric Villemonte de La Clergerie has presented some simple NLP tasks at the ISN day (for Math teachers, computer science option, April 8th, [http://euler.ac-versailles.fr/webMathematica/reflexionpro/2013\\_2014/Seminaire/eric\\_de\\_la\\_clergerie.pdf](http://euler.ac-versailles.fr/webMathematica/reflexionpro/2013_2014/Seminaire/eric_de_la_clergerie.pdf))
- Éric Villemonte de La Clergerie has presented a survey on the use on NLP tools for MOOCs at the Moolab day on "Moocs : de la correction automatique à la personnalisation des cursus" (Paris, January 14th)

## AVIZ Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

AVIZ members are active worldwide in the domains of Visualization, Visual Analytics, HCI, and computer graphics.

### 9.1.1. Keynotes and Invited Talks

- Jean-Daniel Fekete: “Visualisation de réseaux par matrices d’adjacence”, Horizon Maths 2014, Dec. 16, 2014.
- Jean-Daniel Fekete: “Matrix-Based Visualization of Graphs”, keynote speaker for the Graph Drawing 2014 Symposium, Würzburg, Germany, Sep. 25th, 2014.
- Jean-Daniel Fekete: “Visualizing Dynamic Interactions”, Summer School in Cognitive Sciences 2014, Web Science and the Mind, Université du Québec à Montréal, Jul 10th, 2014.
- Jean-Daniel Fekete: “La visualisation d’information pour comprendre et interagir avec les données” seminar at IRT SystemX, Saclay, Jul. 1st, 2014.
- Jean-Daniel Fekete: “Dataviz & BigData : Mythes & réalités”, Panel at Microsoft Techdays, Paris, Feb. 11th, 2014.
- Tobias Isenberg: “*Touching the Third Dimension—Exploration of Scientific Data on Surfaces*”. Microsoft eScience Workshop, Guarujá, Brazil, Oct. 22, 2014.
- Tobias Isenberg: “Direct-Touch Interaction for Scientific Visualization”. Center for Data Science Kick-Off Meeting, Orsay, France, June 30, 2014.
- Tobias Isenberg: “Direct-touch Interaction for Scientific Visualization”. Forum on Tactile and Gestural Interaction, Tourcoing, France, May 13, 2014.
- Tobias Isenberg: “Interaction with 3D Scientific Data on Touch-Sensitive Surfaces”. University of Granada, Spain, May 7, 2014.
- Tobias Isenberg: “Interaction with 3D Scientific Data on Touch-Sensitive Surfaces”. University of Rostock, Germany, Apr. 16, 2014.
- Petra Isenberg: “How Important is Display Technology for Visualization and Visual Analytics?” Capstone at the 2014 European Workshop on Visual Analytics (EuroVA), Swansea, UK.
- Pierre Dragicevic: “Wrong Stats are Miscommunicated Stats”. Yves Guiard’s Emeritus Ceremony, Telecom ParisTech, 9 July 2014.
- Pierre Dragicevic: “**Bad Stats are Miscommunicated Stats**”. Keynote at VIS’14 BELIV workshop, 10 Nov 2014.
- Samuel Huron: “La sédimentation visuelle”. Invited speaker at Sud Web 2014, Toulouse
- Wesley Willett: “**Tools and Strategies for Social Data Analysis**”. SIGCHI Paris, 27 January 2014.
- Benjamin Bach: “Visualizing functional brain connectivity”. Invited talk at **The 10th IEEE International Conference on e-Science**, Guarujá, Brazil, Oct. 2014.

### 9.1.2. Scientific Associations

- Jean-Daniel Fekete is a member of the Steering Committee of EuroVis (Eurographics WG on Data Visualization).
- Jean-Daniel Fekete is a member of the Steering Committee of the IEEE Information Visualization Conference.

- Jean-Daniel Fekete is a member of the IEEE VIS Executive Committee.
- Tobias Isenberg is a member of the Steering Committee of the Expressive conference.
- Tobias Isenberg is a member of the Executive Committee of the Visualization and Computer Graphics Technical Committee of the IEEE Computer Society (VGTC), serving as publications chair.

### **9.1.3. Conference Organization**

- Jean-Daniel Fekete was the President of the IEEE Conference on Visualization VIS'2014 in Paris.
- Petra Isenberg and Tobias Isenberg co-organized the IEEE VisWeek Workshop on Beyond Time and Errors—Novel Evaluation Methods for Visualization (BELIV 2014) at IEEE VIS 2014.
- Tobias Isenberg was Workshops co-chair at IEEE VIS 2014.
- Tobias Isenberg was Publicity co-chair at IEEE SUI 2014.
- Petra Isenberg was poster co-chair at ITS 2014.
- Petra Isenberg was exhibits co-chair at ITS 2014.
- Charles Perin, Pierre Dragicevic and Jean-Daniel Fekete organized the Bertin Exhibition at IEEE VIS'2014.
- Charles Perin was Student Volunteers co-chair at IEEE VIS'2014.
- Jeremy Boy designed the sponsors brochure for collecting funds for the IEEE VIS'14 Conference.
- Jeremy Boy designed the interface for displays showing the conference program at the IEEE VIS'14 Conference venue.
- Jeremy Boy redesigned all the Fast-Forward material for the IEEE VIS'14 Conference.
- Jeremy Boy and Heidi Lam designed the Vis in other venues posters for the IEEE VIS'14 Conference.
- Jeremy Boy, Sung Hee Kim, Sukwon Lee, Ji Soo Yi, and Niklas Elmquist organized the workshop on visualization literacy at the IEEE VIS'14 Conference.
- Benjamin Bach co-chaired the celebration of the 25th anniversary of the IEEE VIS conference.

### **9.1.4. Conference Program Committees**

- Jean-Daniel Fekete was a member of the program committee of IEEE VAST.
- Tobias Isenberg was a member of the program committee for ACM ITS Posters.
- Tobias Isenberg was a member of the program committee for ACM SUI.
- Tobias Isenberg was a member of the program committee for IEEE VISAP.
- Tobias Isenberg was a member of the program committee for IEEE InfoVis.
- Tobias Isenberg was a member of the program committee for IEEE SciVis.
- Tobias Isenberg was a member of the program committee for ACM/Eurographics Expressive.
- Tobias Isenberg was a member of the program committee for EuroVis full papers.
- Tobias Isenberg was a member of the program committee for EuroVis short papers.
- Tobias Isenberg was a member of the program committee for IEEE 3DUI.
- Petra Isenberg was a member of the program committee for AVI 2014.
- Petra Isenberg was a member of the program committee for CHI 2014.
- Petra Isenberg was a member of the program committee for InfoVis 2014.
- Petra Isenberg was a member of the program committee for ITS 2014.
- Petra Isenberg was a member of the program committee for SUI 2014.
- Petra Isenberg was a member of the program committee for PerDis 2014.
- Pierre Dragicevic was a member of the program committee for VIS 2014.

- Pierre Dragicevic was a member of the best poster committee for VIS 2014.
- Pierre Dragicevic was a member of the workshop committee for CHI 2015.
- Wesley Willett was a member of the works-in-progress program committee for CHI 2014.
- Wesley Willett was a member of the program committee for the iConference 2015.
- Wesley Willett was a member of the program committee for GI 2015.

### 9.1.5. Journal Editorial Board

- Jean-Daniel Fekete is associate editor of IEEE Transactions on Visualization and Computer Graphics.
- Tobias Isenberg is associate editor of Elsevier Computers & Graphics.

### 9.1.6. Conference Reviewing

- 3DUI IEEE Symposium on 3D User Interfaces: Tobias Isenberg
- 3DVis IEEE VIS International Workshop on 3DVis: Tobias Isenberg
- alt.chi Alt.chi Forum: Pierre Dragicevic
- AVI International Working Conference on Advanced Visual Interfaces: Pierre Dragicevic, Petra Isenberg
- BioVis IEEE Symposium on Biological Data Visualization: Tobias Isenberg
- CAe International Symposium on Computational Aesthetics in Graphics, Visualization, and Imaging: Tobias Isenberg
- CHI ACM Conference on Human Factors in Computing System: Pierre Dragicevic, Tobias Isenberg, Samuel Huron, Charles Perin, Wesley Willett, Jeremy Boy, Benjamin Bach
- CSCW ACM Conference on Computer Supported Cooperative Work: Wesley Willett
- DIS ACM conference on Designing Interactive Systems: Pierre Dragicevic, Petra Isenberg
- EuroVA EuroVis Workshop on Visual Analytics: Pierre Dragicevic, Petra Isenberg
- EuroVis Eurographics/IEEE Conference on Visualization: Tobias Isenberg, Petra Isenberg, Samuel Huron, Charles Perin, Wesley Willett, Benjamin Bach
- GD International Symposium on Graph Drawing: Samuel Huron
- IHM Conférence Francophone sur l'Interaction Homme-Machine: Charles Perin
- iConference iSchools conference on critical information issues in contemporary society: Wesley Willett
- InfoVis IEEE Information Visualization Conference: Tobias Isenberg, Petra Isenberg, Charles Perin
- ITS ACM Conference on Interactive Tabletops and Surfaces: Pierre Dragicevic, Tobias Isenberg, Petra Isenberg, Wesley Willeett
- IUI ACM International Conference on Intelligent User Interfaces: Tobias Isenberg
- MobileHCI International Conference on Human-Computer Interaction with Mobile Devices and Services: Petra Isenberg
- NPAR ACM Symposium on Non-Photorealistic Animation and Rendering: Tobias Isenberg
- PacificVis IEEE Pacific Visualization Symposium: Wesley Willett, Benjamin Bach
- PG Pacific Conference on Computer Graphics and Applications: Tobias Isenberg
- PerDis International Symposium on Pervasive Displays: Petra Isenberg
- SciVis IEEE Scientific Visualization Conference: Tobias Isenberg
- SIGGRAPH ACM Conference on Computer Graphics and Interactive Techniques: Tobias Isenberg
- SUI ACM Symposium on Spatial User Interaction: Tobias Isenberg, Petra Isenberg
- UIST ACM Symposium on User Interface Software and Technology: Pierre Dragicevic, Tobias Isenberg, Charles Perin, Wesley Willett



VAST IEEE Conference on Visual Analytics Science and Technology: Petra Isenberg, Charles Perin

### 9.1.7. Journal Reviewing

C&G Elsevier Computers and Graphics: Tobias Isenberg

CG&A IEEE Computer Graphics and Applications: Tobias Isenberg, Samuel Huron, Wesley Willett

CGF Computer Graphics Forum: Tobias Isenberg

COSU Computer Supported Cooperative Work: Petra Isenberg

IJHCS International Journal of Human-Computer Studies: Tobias Isenberg

TOG ACM Transactions on Graphics: Pierre Dragicevic

TVCG IEEE Transactions on Visualization and Computer Graphics: Pierre Dragicevic, Tobias Isenberg, Petra Isenberg, Wesley Willett, Benjamin Bach

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- “Interactive Information Visualization” (M2 module), taught by Jean-Daniel Fekete, Pierre Dragicevic, Benjamin Bach, Nadia Boukhelifa, Lonni Besançon at Univ. Paris-Sud
- “Visual Analytics” (M2 module) taught by Wesley Willett, Petra Isenberg, Pierre Dragicevic, Jean-Daniel Fekete, Nadia Boukhelifa at Ecole Centrale, Paris
- “Innovative Interactive Systems for Medical Visualization” taught by Tobias Isenberg at the ‘SUMMER’ FP7 Marie Curie Research Training Network summer-school, TU Delft, the Netherlands
- “Non-Photorealistic Rendering” taught by Tobias Isenberg at the University of Granada, Spain
- “Non-Photorealistic Rendering” taught by Tobias Isenberg at Polytech Paris-Sud, France

### 9.2.2. Supervision

- PhD: Yvonne Jansen, Physical and Tangible Information Visualization, Université Paris-Sud, 10 March 2014, Pierre Dragicevic and Jean-Daniel Fekete.
- PhD: Benjamin Bach, Connections, Changes, and Cubes: Unfolding Dynamic Networks for Visual Exploration, Université Paris-Sud, 9 May 2014, Emmanuel Pietriga and Jean-Daniel Fekete.
- PhD: Nicolas Heulot, Étude des projections de données comme support interactif de l’analyse visuelle de la structure de données de grande dimension, Université Paris-Sud, 4 Jul 2014, Jean-Daniel Fekete.
- PhD: Charles Perin, Direct Manipulation for Information Visualization, Université Paris-Sud, 17 Nov 2014, Jean-Daniel Fekete
- PhD: Samuel Huron, Constructive Visualization: A token-based paradigm allowing to assemble dynamic visual representation for non-experts, Université Paris-Sud, 29 Sep 2014, Jean-Daniel Fekete.
- PhD in progress: Jeremy Boy, Visualization for the People, Telecom ParisTech, Jean-Daniel Fekete and Françoise Detienne.
- PhD in progress: Pascal Goffin, From Individual to Collaborative Work, Université Paris-Sud, 2013, Petra Isenberg and Jean-Daniel Fekete
- PhD in progress: Mathieu Le Goc, Dynamic and Interactive Physical Visualization, Université Paris-Sud, 2013, Pierre Dragicevic and Jean-Daniel Fekete
- PhD in progress: Evanthia Dimara, Information Visualization for Decision Making, Université Paris-Sud, 2014, Pierre Dragicevic, Anastasia Bezerianos and Jean-Daniel Fekete
- PhD in progress: Lonni Besançon, Interactive visualization using touch input and tangibles, Université Paris-Sud, 2014, Tobias Isenberg and Mehdi Ammi.

### 9.2.3. Juries

- Pierre Dragicevic: CR hiring committee at Inria Lille
- Pierre Dragicevic: Member of the “Commission Scientifique” (CS) at Inria Saclay
- Pierre Dragicevic: Member of the “Commission Consultative de Spécialistes de l’Université (CCSU)” at Université Paris-Sud
- Tobias Isenberg: PhD committee of Dr. Martin Luboschik, Illustrative Informationsvisualisierung [Illustrative Information Visualization], University of Rostock, Germany, Apr. 16, 2014.

## 9.3. Popularization

- Pierre Dragicevic and Yvonne Jansen are curating an online [List of Physical Visualizations and Related Artefacts](#) with now 180+ entries.
- Benjamin Bach is curating an online [List of Temporal Visualizations based on Space-Time cube visualizations](#).
- Benjamin Bach is maintaining a [Webpage](#) describing the efforts of the Microsoft Research-Inria Joint Research Center on visualizing functional brain connectivity.
- Jeremy Boy and Jean-Daniel Fekete developed a [Series of Visualizations for the People](#).
- Jeremy Boy: [CO2: La carte de la pollution mondiale](#), Mediapart data-journalism article.
- Jeremy Boy: [Les diplômés, est-ce que ça paye?](#), Mediapart data-journalism article.
- Jeremy Boy: [Le poids du nucléaire dans le monde](#), Mediapart data-journalism article.
- Jeremy Boy, Samuel Huron, and Jean-Daniel Fekete organized a workshop on Data Visualization at Futur En Seine 2104, Paris, France.

## AYIN Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

- Josiane Zerubia was a part of the organizing committee for the IEEE ICIP conference in Paris in September 2014 (more than 1700 participants) <http://icip2014.wp.mines-telecom.fr/>. She was also co-chair of the tutorials and chair of a session.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Member of the conference program committee

- Yuliya Tarabalka was a part of the program committee for the OSA Imaging Systems and Applications conference 2014.
- Josiane Zerubia was a part of the program committee for the EMMCVPR conference in Hong-Kong <http://blog.ust.hk/emmcvpr/people/>.

#### 8.1.2.2. Reviewer

- Nazre Batool was a reviewer for the conference IEEE ICIP 2014.
- Aurélie Boisbunon was a reviewer for the European Signal Processing Conference (EUSIPCO).
- Ian Jermyn was a reviewer for the conferences EMMCVPR, IEEE ICIP 2014, IDEAL and of proposals for the UK Engineering and Physical Sciences Research Council and the Israel Science Foundation.
- Yuliya Tarabalka was a reviewer for the conferences IEEE ICIP 2014, IEEE IGARSS 2014 and OSA Imaging Systems and Applications 2014.
- Josiane Zerubia was a reviewer for the conferences EMMCVPR, IEEE ICASSP'14, IEEE ISBI'14, IEEE ICIP'2014 and ICPR'14.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

- Yuliya Tarabalka was a co-editor of the special issue "Analysis of Remote Sensing Image Data" for the journal Remote Sensing.
- Josiane Zerubia is an Associate Editor of the collection "Foundation and Trends in Signal Processing" [<http://www.nowpublishers.com/>].
- Josiane Zerubia is a member of the Editorial Board of the "Revue Française de Photogrammétrie et de Télédétection of SFPT".
- Josiane Zerubia is an Associate Editor of the electronic journal Earthzine [<http://www.earthzine.org/>].

#### 8.1.3.2. Reviewer

- Nazre Batool was a reviewer for IEEE TIP, IET Image Processing journal and International Journal of Image and Graphics.
- Aurélie Boisbunon was a reviewer for the journals Signal Processing and Pattern Recognition.
- Paula Craciun was a reviewer for the IEEE JSTARS journal.
- Seong-Gyun Jeong was a reviewer for the journals IEEE CSVT and ELS JVCIR.

- Ihsen Hedhli was a reviewer for the journals IEEE GRSL, IEEE JSTARS and MDPI remote sensing.
- Ian Jermyn was a reviewer for the Journal of Mathematical Imaging and Vision
- Yuliya Tarabalka was a reviewer for the journals IEEE TIP, IEEE TGRS, IEEE JSTARS and ISPRS Journal of Photogrammetry and Remote Sensing.

#### 8.1.4. Seminars

- Nazre Batool attended a meeting with Galderma R&D in August 2014 at Galderma, Sophia Antipolis and presented research progress on evaluation of temporal changes in facial wrinkles.
- Nazre Batool attended a meeting with Fraunhofer Institutes (Germany) and Philips Research (Netherlands) under LIRA consortium in February 2014 at Inria Sophia Antipolis.
- Aurélie Boisbunon gave the seminar “Détection de bateaux sur images satellitaires de ports”, at BioSP team, INRA Avignon, France, in June.
- Aurélie Boisbunon gave the seminar “Non convex sparse optimization problems in very high dimension and application to object detection”, at the Nonconvex optimization meeting organized by GdR ISIS, Télécom ParisTech, France, in May.
- Paula Craciun gave a seminar about multiple target tracking using marked point processes at Inria Rennes, in December 2014 and enjoyed a large audience from Inria Rennes and IRMAR Institute.
- Ihsen Hedhli, together with Aurélie Boisbunon and Josiane Zerubia presented Ayin research work at a poster session during the Pleiades days organized the French Space Agency in Toulouse in April 2014.
- Seong-Gyun Jeong attended a meeting with Galderma R&D in August 2014 at Galderma, Sophia Antipolis and presented his work on facial wrinkle detection.
- Seong-Gyun Jeong presented his work for regular poster session and Inria booth in IEEE ICIP 2014, Paris, in October.
- Yuliya Tarabalka visited and gave seminars at the University of Surrey and the University of Nice Sophia-Antipolis, on the topic of spatio-temporal video segmentation with shape growth or shrinkage constraint, in January and February 2014, respectively.
- Yuliya Tarabalka, Ian Jermyn and Josiane Zerubia attended a meeting at Institute Mines-Telecom in Paris in March 2014 with Magellium (UK), University of Genoa (Italy), EPFL (Switzerland), University of Szeged (Hungary), University of Tromsø (Norway), University of Iceland and University Ben Gurion (Israel). The meeting was held in regards with a project proposal for the H2020 initiative.
- Josiane Zerubia organized the meeting with 2 Fraunhofer Institutes (Germany), Philips Research (Netherlands), Red Cross Hospital (Netherlands), Galderma R&D (France), CHU Nice/Inserm (France) and Inria-SAM (France). The meeting was held in regards with a project proposal for the H2020 initiative at Inria Sophia Antipolis in February 2014.
- Josiane Zerubia was invited to give in June a series of different seminars related to remote sensing, marked point processes and hierarchical Markov random fields in Israel at Ben Gurion University in Beer Sheva, Hebrew University of Jerusalem, University of Haifa as well as in two industrial R&D centers in Herzlyia (General Motors and Superdimension/Covidian).
- Josiane Zerubia gave in August in Canada a seminar on remote sensing at University of Montreal and two talks on skin image processing at Mc Master University (Biophotonics lab and Juravinski Cancer Center).
- Josiane Zerubia was invited in December to go to Hungary to give a talk on skin image processing at University of Szeged and another one on hierarchical Markov random field for remote sensing at MTA SZTAKI in Budapest.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- Masters: Yuliya Tarabalka, Digital imaging, 15h eq. TD (2h of lectures + 12h of TD), M2 SVS ISAB, Université de Nice Sophia-Antipolis, France.
- Masters: Josiane Zerubia, Deconvolution and denoising in confocal microscopy, 18h eq. TD (12h of lectures), M2 BCC, Université de Nice Sophia-Antipolis, France. Josiane Zerubia is also director of this course (total: 24h of lectures).
- Masters: Josiane Zerubia, Advanced techniques in signal and image processing, 30h eq. TD (20h of lectures), ISAE/SUPAERO, France. Josiane Zerubia is also director of this course (total: 30h of lectures and 10h of TD). This course was given to third-year students at ISAE/SUPAERO and was also validated by the Master 2 of Applied Mathematics at the University Paul Sabatier in Toulouse.
- Masters: Josiane Zerubia, Introduction to image processing, 4.5h eq. TD (3h of lectures), M2 SVS ISAB, Université de Nice Sophia-Antipolis, France. Josiane Zerubia is also director of the course “Digital imaging” at UNS, Master 2 SVS ISAB, UE3 (total: 25h of lectures and 25h of TD).

### 8.2.2. Supervision

PhD in progress: Paula Craciun, Automatic object tracking on a sequence of images taken from a geostationary satellite, University of Nice-Sophia Antipolis, started in December 2012, Josiane Zerubia.

PhD in progress: Ihsen Hedhli, Change detection methods for multisensor and multiresolution remote sensing images for applications to environmental disaster management, University of Genova and University of Nice-Sophia Antipolis, started in January 2013, Gabriele Moser and Josiane Zerubia.

PhD in progress: Seong-Gyun Jeong, New image processing methods for skin condition evaluation, University of Nice-Sophia Antipolis, started in December 2012, Josiane Zerubia and Yuliya Tarabalka.

### 8.2.3. Juries

- Yuliya Tarabalka participated in the monitoring committee for the thesis of Amine Bohi, Southern University of Toulon-Var in September 2014.
- Josiane Zerubia was a reviewer for the Master 2 SVS ISAB at UNS.
- Josiane Zerubia participated with another senior researcher of Inria in the monitoring committee for all the PhD theses funded by Airbus Defense and Space at Inria.
- Josiane Zerubia was a reviewer of a joint PhD thesis between ONERA/DOTA in Toulouse and GIPSA lab at ENSE3 in Grenoble (PhD thesis committee).
- Josiane Zerubia was a member of the selection committee to hire junior researchers (CR2) at Inria-SAM in May 2014.

## 8.3. Popularization

- Aurélie Boisbunon is the representative of PhD students and postdocs at the Mediation and Animation commission (MASTIC) of Inria Sophia Antipolis.
- Aurélie Boisbunon gave talks about machine learning and image processing to high school students and junior high school students for the MathsC2+ training course and for the Fête de la Science 2014.
- Aurélie Boisbunon is participating in a project with junior high school students from Collège Nucéra, in Nice, aiming at giving an introduction to programming and robotics.

- Josiane Zerubia gave a talk on aerial and satellite image processing to high school students in Physics at Valbonne International Center during the “Fête de la Science 2014.”
- Josiane Zerubia presented Inria and Inria-SAM to interested PhD and post-doc students at Inria booth during ICIP’14 in Paris as well as Mc Master University in Canada, University of Szeged and MTA SZTAKI in Hungary.
- Josiane Zerubia is organizing a monthly scientific seminar at Inria-SAM with national and international speakers (see <https://team.inria.fr/ayin/ayinseminars/>).

## DAHU Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific events organisation

##### 9.1.1.1. general chair, scientific chair

Luc Segoufin was the general chair of the conference Highlights of Logic, Games and Automata, held in Paris in September 2014.

Serge Abiteboul co-chaired with Patrick Flandrin the Conference: La Datamasse : directions et enjeux pour les données massives, Sciences Academy, Paris 2014

##### 9.1.1.2. member of the organizing committee

Sylvain Schmitz and Luc Segoufin were part of the organizing committee for the conference Highlights of Logic, Games and Automata, held in Paris in september 2014.

#### 9.1.2. Scientific events selection

##### 9.1.2.1. member of the conference program committee

Luc Segoufin: Intl. Conf. on Foundations of Software Science and Computation Structures (FoSSaCS'14).

Victor Vianu: Joint meeting of Conf. on Computer Science Logic (CSL'14) and ACM/IEEE Symp. on Logic in Computer Science (LICS'14). Intl. Conf. on Data, Processes, and Software Systems, Hangzhou, China. Intl. Symp. on Foundations of Information and Knowledge Systems (FoIKS'14). SIGMOD PhD Symposium 2014.

Serge Abiteboul: Intl. Conf. on Digital Intelligence. Buda Intl. Workshop on Big Uncertain Data. Intl. Conf. on Extending database Technology. Intl. Conf. on Principles of database systems (PODS'14), Award committee. Intl. Conf. on Data engineering (ICDE'2015). Intl. Conf. on Database Theory (ICDT'2015), Award committee. Intl. Conf. on the Management of data (2015), Demonstrations.

Cristina Sirangelo: Intl. Conf. on Database Theory (ICDT'15). Symp. on Principles of Database Systems (PODS'15).

#### 9.1.3. Journal

##### 9.1.3.1. member of the editorial board

Victor Vianu: Editor-in-Chief of the Journal of the ACM Associate Editor of ACM Transactions on Computational Logic (TOCL)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### E-learning

Mooc: Serge Abiteboul (with Benjamin Nguyen), Bases de données relationnelles, 6 weeks, Association Sillages, june 2014, accredited by Ocean

Serge Abiteboul (with Benjamin Nguyen and Yannick Lebras) Introduction aux Bases de Données Relationnelles, course for the CPGE, pdf, <http://abiteboul.com/Lili/bdrelationnelles.pdf>

Master : Cristina Sirangelo, Complexité avancée, 36 hours ETD, M1, MPRI, France

Master : Cristina Sirangelo, Algorithmique, 25 hours ETD, Préparation à l'agrégation, École Normale Supérieure de Cachan, France

Licence : Cristina Sirangelo, Bases de données, 24 hours ETD, L3, École Normale Supérieure de Cachan, France

Licence : Cristina Sirangelo, Projet de bases de données, 22 hours ETD, L3, École Normale Supérieure de Cachan, France

Doctorat : Cristina Sirangelo, Bases de données et sites Web dynamiques, 18 hours ETD, École Normale Supérieure de Cachan, France

Doctorat : Cristina Sirangelo, Création de sites Web, 18 hours ETD, École Normale Supérieure de Cachan, France

Doctorat : Cristina Sirangelo, Recherche sur le Web, 18 hours ETD, École Normale Supérieure de Cachan, France

Licence : Serge Abiteboul, Base de données , ENS Cachan and ENS Paris

Master : Serge Abiteboul (with Pierre Senellart), Web data management, MPRI Paris

Licence : Serge Abiteboul, Bases de données pour les professeurs de CPGE, ENS Cachan, 3 heures.

Master : Sylvain Schmitz, Langages formels, 30 hours ETD, M2 Préparation à l'agrégation, École Normale Supérieure de Cachan, France

Master : Sylvain Schmitz, Logical and Computational Structures for Linguistic Modeling, 18 hours ETD, M2 MPRI, France

### 9.2.2. Supervision

HdR : Cristina Sirangelo, Representing and querying incomplete information: a data interoperability perspective, Ecole Normale Supérieure de Cachan, December 5th 2014 [11]

PhD in Progress: Nadime Francis, graph databases, 01/09/2011, Cristina Sirangelo and Luc Segoufin

PhD in progress: Nathan Grosshans, branching program, 15/09/2014, Luc segoufin and Pierre McKenzie (Montreal)

PhD in progress: David Montoya, Personal information management systems, 01/02/2014, Serge Abiteboul

### 9.2.3. Juries

Luc Segoufin was a member of the HDR jury of Cristina sirangelo.

Cristina Sirangelo was member of a hiring committee for an assistant professor position at Polytech Paris-Sud.

Sylvain Schmitz was a member in two hiring committees for "agrégé préparateur" assistant professor positions at ENS Cachan.

## 9.3. Popularization

Serge Abiteboul participated in 2014 to the following reports of the Conseil national du numérique: Digital education (Jules Ferry 3.0, Bâtir une école créative et juste dans un monde numérique) and Platform neutrality (Neutralité des plateformes)

Serge Abiteboul started in 2014 a Blog invited by Le monde newspaper: <http://binaire.blog.lemonde.fr>

Serge Abiteboul coordinated the production of a report on Education to Big data [23].

Serge Abiteboul was audited on the Digital Risk by Office Parlementaire d'Évaluation des Choix Scientifiques et Technologiques.

Serge Abiteboul was interviewed on radio notably by: La Matinale d'Europe 1, BFM Business, Radio Campus, Autour de la question, RFI. He had articles notably in: Le monde, Fenêtres sur Cours, Sciences et Avenir, Le Parisien Magazine. He gave talks to Cap digital, Assises Médias Entreprises, Conférence Idées, Université d'été de l'Institut des Actuaire, 10 ans de la Fondation Steri, Orange Labs, Google.



## **DREAM Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events organisation**

#### *9.1.1.1. general chair, scientific chair*

- Local chair of EGC 2014 in Rennes (R. Quiniou).
- Local chairs of PFIA 2015 in Rennes (T. Guyet, R. Quiniou).
- Organization chairs and program committee members of FST-CERGEIO workshop at EGC 2014 (T. Guyet, R. Quiniou).
- Organization chairs and program committee members of GAST workshop at EGC 2015 (T. Guyet, R. Quiniou).

#### *9.1.1.2. member of the organizing committee*

- Organization committee member of EGC 2014 in Rennes (T. Guyet, T. Bouadi, S. Benabderrahmane).

### **9.1.2. Scientific events selection**

#### *9.1.2.1. responsible of the conference program committee*

- Steering Committee of RFIA'2014 (T. Guyet).

#### *9.1.2.2. member of the conference program committee*

- Program committee member of DX'14 (Principles of Diagnosis)(M.-O. Cordier).
- Program committee member of JIAF'14 (Journées Intelligence Artificielle Fondamentale)(M.-O. Cordier).
- Program committee members of RFIA'2014 (M.-O. Cordier, T. Guyet, A. Termier).
- Program committee members of EGC 2014 and 2015 (R. Quiniou, A. Termier).
- Program committee member of BDA'2014 (A. Termier).
- Program committee member of Data Mining on Networks Workshop of ICDM 2014 (A. Termier)
- Program committee member of International Conference on Data Science and Advanced Analytics (DSAA) 2014 (A. Termier)

#### *9.1.2.3. reviewer*

- Reviewer for EDBT'2014 (A. Termier).

### **9.1.3. Journal**

#### *9.1.3.1. member of the editorial board*

- *AAI: Applied Artificial Intelligence* (M.-O. Cordier).
- *Interstices webzine* (M.-O. Cordier).
- *Revue d'Intelligence Artificielle* (T. Guyet).

#### *9.1.3.2. reviewer*

- *AAI: Applied Artificial Intelligence* (M.-O. Cordier).
- *Interstices webzine* (M.-O. Cordier).
- *Journal of Biomedical Informatics* (T. Guyet).
- *ACM Computing Surveys* (T. Guyet).

- *Data Mining and Knowledge Discovery* (A. Termier).
- *Transactions on Knowledge and Data Engineering* (A. Termier).
- *National Academy Science Letters* (A. Termier).

### 9.1.4. Scientific animation

#### 9.1.4.1. Scientific and administrative boards

- ECCAI fellow + Honorary member of AFIA (Association Française d'Intelligence Artificielle): M. - O. Cordier
- Member of "Agrocampus-Ouest" scientific board: M.-O. Cordier.
- Member of "Conseil d'administration de l'ISTIC": M.-O. Cordier.
- Head of IRISA department "Data and Knowledge Management" and member of the IRISA scientific management committee: M.-O. Cordier
- Member of the "Prix de thèse AFIA 2014" award committee (selects the best French PhD thesis in the Artificial Intelligence domain): M.-O. Cordier.
- Chair of the INRA CSS-MBIA (Commission scientifique spécialisée "Mathématiques, Biologie et Intelligence Artificielle"): M.-O. Cordier.
- Member of the CoNRS (Comité national recherche scientifique (since october 2012, until september 2014) : M.-O. Cordier
- Chair of an AERES-HCERES evaluation committee and member of two AERES-HCERES evaluation committees : M.-O. Cordier
- Member of two recruitment committees for INRA (CR1 and DR2) : M.-O. Cordier
- Chair of a recruitment committee for a professor position, member of three recruitment committees for assistant-professor positions : M.-O. Cordier
- Member of the AFIA board (since october 2011): T. Guyet.
- Member of the COREGE (Research Committee-COMITÉ de la REcherche du Grand Etablissement) of Agrocampus-Ouest: T. Guyet.
- Evaluator for the Mines-Telecom Foundation, "Futures et Ruptures" program: T. Guyet.
- Evaluator for the National Research Agency (ANR): T. Guyet.
- Member of the Payote-Network board: T. Guyet.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Many members of the EPI DREAM are also faculty members and are actively involved in computer science teaching programs in ISTIC, INSA and Agrocampus-Ouest. Besides these usual teachings DREAM is involved in the following programs:

Master: *Module DSS: Apprentissage sur des données séquentielles symboliques*, 10 h, M2, ISTIC University of Rennes (R. Quiniou).

Master: *C++ Programming*, M1, ENSAI, Rennes (T. Guyet),

Master: *Géoinformation*, M2, Agrocampus Ouest Rennes (L. Bonneau, T. Guyet, C. Largouët)

### 9.2.2. Supervision

PhDs: Yulong Zhao, "Modélisation d'agroécosystèmes dans un formalisme de type systèmes à événements discrets et simulation de scénarios utilisant des outils de model-checking. Application à l'étude des impacts des changements climatiques et des pratiques agricoles sur les flux de nutriments vers les eaux de surface.", january 13th 2014, supervisor Marie-Odile Cordier and Chantal Gascuel

PhD in progress: Philippe Rannou, "Modèle rationnel pour humanoïdes virtuels", october 1st 2010, co-supervisors Marie-Odile Cordier and Fabrice Lamarche

PhD in progress: Serge Vladimir Emteu Tchagou, "Stream mining techniques for online monitoring of MPSoC applications", february 1st 2012, co-supervisors Alexandre Termier, René Quiniou, Miguel Santana and Jean-François Méhaut

PhD in progress: Léon Constantin Fopa, "Mise en contexte de traces pour une analyse en niveaux d'abstraction", january 1st 2012, co-supervisors Fabrice Jouanot, Alexandre Termier and Jean-François Méhaut

PhD in progress: Behrooz Omidvar Tehrani, "Interactive Pattern Space Exploration", october 1st 2012, co-supervisors Sihem Amer-Yahia and Alexandre Termier

PhD in progress: Hamid Mirisaei, "Matrix decomposition for social network analysis and itemset mining", october 1st 2012, co-supervisors Eric Gaussier and Alexandre Termier

PhD in progress: Oleg Iegorov, "Data Mining Environment for Degugging Real Time Issues on MPSoCs", january 1st 2013, co-supervisors Alexandre Termier, Vincent Leroy, Miguel Santana and Jean-François Méhaut

PhD in progress: Rémy Dautriche, "Techniques d'interaction multi-échelles pour la visualisation interactive de traces d'exécution", november 1st 2013, co-supervisors Renaud Blanch, Miguel Santana and Alexandre Termier

### 9.2.3. Juries

- Committee member of Yulong Zhao's PhD defence (Université de Rennes 1): M.-O. Cordier , C. Largouët.
- Committee member of Sébastien Silva's PhD defence (Université de Lorraine): M.-O. Cordier
- Committee chair of Hervé Jegou's HDR defence (Université de Rennes 1): M.-O. Cordier
- Committee member of Alef Denguir's PhD defence (Université de Montpellier 2): M.-O. Cordier
- Committee member and reviewer of Jeremy Sanhes' Phd defence (Université de Nouvelle Calédonie): A. Termier
- Committee member of Christiane Kamdem-Kengne Phd defence (Université de Grenoble Alpes): A. Termier

## 9.3. Popularization

- M.-O. Cordier is editorial board member of Interstices webzine.

## **E-MOTION Project-Team**

# **8. Dissemination**

## **8.1. Scientific Animation**

- C. Laugier is Guest Editor (with A. Zelinsky, A. Broggi and U. Ozgüner) for the chapter “Intelligent Vehicles” of the 2nd edition of the Springer “Handbook of Robotics” to be published in March 2015.
- C. Laugier is Guest Editor (with Ph. Martinet and U. Nunes) for a Special Issue on “Perception and Navigation for Autonomous vehicles” of the IEEE Robotics and Automation Magazine. March 2014. Editorial: <https://hal.inria.fr/hal-00932719>.
- A. Spalanzani co-organised a workshop on Assistance and Service robotics in a human environment during IROS 14, Chicago, US, September 2014.
- C. Laugier co-organized (with Ph. Martinet, U. Nunes, and C. Stiller) the 6th Workshop on “Planning, Perception and Navigation for Intelligent Vehicles” at the IEEE/RSJ IROS 2014 conference, Chicago, US, September 2014.
- C. Laugier was an Associate Editor for the IEEE ICRA 2014 conference.
- C. Laugier is co-chair (with Ph. Martinet and C. Stiller) of the IEEE RAS Technical Committee on “Autonomous Ground Vehicles and Intelligent Transportation Systems”.
- C. Laugier is a member of the Advisory / Steering Committee of IEEE/RSJ IROS conference.
- C. Laugier is a member of the Editorial Board of the JSME Robomech Journal.

### **8.1.1. Keynote talks**

- C. Laugier. Keynote talk “Bayesian Perception and Decision: from theory to real world applications”. IEEE/RSJ IROS 2014, Chicago, Sept. 2014.
- C. Laugier. Invited Talk “Nex cars generation”. Invited by Tokyo University and Japanese companies. Tokyo, October 2014.
- C. Laugier. Plenary Talk “Key Technologies for addressing the challenge of Autonomous Vehicles”. Int. Conf. on “Innovations for next generation automobile”. Sendai, Japan, October 2014.
- C. Laugier. Invited Talk “Technologies for next cars generation”. IEEE ICARCV 2014, plenary session on the future of robotics, Singapore, December 2014.
- M. Perrollaz and C. Laugier. Invited Talk (given by M. Perrollaz) “Relever les défis des véhicules autonomes”. EMM 2014, 12<sup>ème</sup> rencontre Européenne de Mécatronique. Annecy, June 2014.

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

- International Master 2 MOSIG-INP, Course on “Autonomous Robots” (24 h), C. Laugier (responsible), A. Martinelli, M. Perrollaz, A. Nègre. Grenoble University, France.
- **E-learning**
  - Mooc “Mobile Robots and Autonomous Vehicles” - 6 weeks, C. Laugier, D. Vasquez, A. Martinelli - under finalization, publication spring 2015.

### **8.2.2. Supervision**

PhD defended in 2014: Chiara Troiani, vision and inertial sensor fusion for 3D navigation, 2011, A. Martinelli.

PhD defended in 2014: Arturo Escobedo, Shared Control navigation, 2011, A. Spalanzani.

PhD in progress: Tiana Rakotovao Andriamahefa, Embedded Bayesian Perception on a Multi-core Architecture, 2013, C. Laugier and D. Ruspini (CEA LETI).

PhD in progress: Boris Grechanichenko, Autonomous Driving, 2013, C. Laugier and D. Vasquez, (cooperation Toyota).

Starting PhD: Mathieu Barbier, Decision making for Intelligent Vehicles, 2014, E. Mazer and D. Vasquez (cooperation Renault)

PhD in progress: Vishnu K. Narayanan, semi-autonomous navigation of a electric wheelchair using visual servoing and user intention analysis, 2013, M. Babel (Lagadic Team) and A. Spalanzani.

### **8.2.3. Juries**

C. Laugier was a reviewer and a member of the defense committee of the PhD thesis of Thibault Kruse, University of Munich, January 14th 2015 (Report July 2014).

C. Laugier was a member of the defense committee of the PhD thesis of Chiara Troiani and of Arturo Escobedo.

## EXMO Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. general chair, scientific chair

- Jérôme Euzenat was organiser of the Ontology matching workshop of the 13th ISWC, Riva del Garda (IT), 2014 (with Pavel Shvaiko, Ming Mao, Ernesto Jiménez-Ruiz, Juanzi Li and Axel Cyrille Ngonga-Ngomo),
- Jérôme Euzenat was co-chair with Maria Keet of the “ontologies” area of the programme committee of the “European Semantic Web Conference (ESWC)”, 2014

#### 8.1.1.2. member of the organizing committee

- Jérôme Euzenat is founding member of the “Semantic Web Science Association” (steering committee for the ISWC conference series).
- Jérôme David has been member of the organisation committee of the “Web of data summer school”, Saint-Étienne (FR).

### 8.1.2. Scientific events selection

#### 8.1.2.1. member of the conference program committee

- Manuel Atencia and Jérôme Euzenat were programme committee members of the 21st “European conference on artificial intelligence (ECAI)” 2014.
- Jérôme Euzenat was programme committee member of the “International conference on Knowledge Representation and Reasoning (KR)” 2014.
- Manuel Atencia and Jérôme Euzenat were programme committee members of the 13th “International semantic web conference (ISWC)” 2014.
- Jérôme Euzenat was programme committee member of the “International Conference on Formal Ontologies for Information Systems (FOIS)” 2014.
- Jérôme Euzenat was programme committee member of the “International Conference on Conceptual Structures (ICES)” 2014.
- Jérôme Euzenat was programme committee member of the conference «Reconnaissance des Formes et Intelligence Artificielle (RFIA)» 2014.
- Manuel Atencia, Jérôme David and Jérôme Euzenat were programme committee members of the “knowledge engineering (ingénierie des connaissances)” conference 2014.
- Jérôme Euzenat was programme committee member of the conference “French fundamental artificial intelligence days” (JIAF) 2014.
- Jérôme David and Tatiana Lesnikova have been programme committee members of the 9th “Ontology matching workshop (OM)”, 2014.
- Jérôme David has been programme committee member of the IC workshop “Des sources ouvertes au web des données (SoWeDo)”, 2014.

#### 8.1.2.2. reviewer

- Manuel Atencia has been reviewer for the 17th “International Conference on Database Theory” (ICDT) 2014.

- Jérôme David has been reviewer for the 21st “European conference on artificial intelligence (ECAI)” 2014.
- Jérôme David has been reviewer for the 11th “European Semantic Web Conference (ESWC)”, 2014.
- Jérôme David has been reviewer for the 21st International Conference on Conceptual Structures (ICES), 2014.

### 8.1.3. Journal

#### 8.1.3.1. member of the editorial board

- Jérôme Euzenat is editorial board member of *Journal of Web Semantics*, *Journal on Data Semantics* and *Semantic web journal*.

#### 8.1.3.2. reviewer

- Jérôme Euzenat has been reviewer for the Journal of Artificial Intelligence Research.
- Jérôme Euzenat has been reviewer for the Semantic web journal.
- Jérôme Euzenat has been reviewer for the Journal of the Association for Information Science and Technology.

### 8.1.4. Seminars

- Seminar on “Data integration with ontologies through alignments”, Semanco VoCamp, Barcelona (ES), 13/02/2014 (Jérôme Euzenat).
- Invited talk on “Foundations for revising networks of ontologies”, WoDOOM workshop, Hersounis-sos (GR), 26/05/2014 (Jérôme Euzenat).
- Invited talk on “Raisonnement avec des réseaux d’ontologies”, Journées d’intelligence artificielle fondamentale, Angers (FR), 12/06/2014 (Jérôme Euzenat).
- Invited talk on “Représenter, communiquer, échouer”, Journée ARIA de promotion de l’intelligence artificielle, Paris (FR), 2/10/2014 (Jérôme Euzenat).

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- Licence: Jérôme David, Inff3 Algorithmique et programmation par objets, 70, L2 MASS, UPMF, France
- Licence: Manuel Atencia, Introduction aux technologies du Web, L3 MASS, UPMF, France
- Master: Jérôme David, Documents XML, 30, M1, UPMF, France
- Master: Manuel Atencia, Langages et technologies du Web 1, M1 IC2A, UPMF, France
- Master: Manuel Atencia, Langages et technologies du Web 2, M1 IC2A, UPMF, France
- Master: Jérôme David, Développement Web Mobile, 30, M2, UPMF, France
- Master: Manuel Atencia, Web Sémantique, M2 IC2A, UPMF, France
- Master: Jérôme Euzenat, Semantic web: from XML to OWL, 22heqTD, M2R, Université Joseph Fourier & INPG, France
- Post-graduate level: Jérôme Euzenat and Pavel Shvaiko, Ontology matching, 3h, Tutorial ISWC, Riva del Garda, Italy

### 8.2.2. Supervision

- PhD: Zhengjie Fan, Concise Pattern Learning for RDF Data Sets Interlinking, Université de Grenoble, 4/4/2014, supervisors: Jérôme Euzenat and François Scharffe
- PhD in progress: Tatiana Lesnikova, Multilingual data interlinking, 1/10/2012, supervisors: Jérôme Euzenat and Jérôme David

- PhD in progress: Armen Inants, Ontology alignment algebra, 1/12/2012, supervisor: Jérôme Euzenat
- PhD in progress: Adam Sanchez Ayte, Ontology alignment and data interlinking evolution on the web of data, 1/12/2013, supervisor: Jérôme Euzenat and Jérôme David

### **8.2.3. Juries**

- Jérôme Euzenat has reviewed the PhD dissertation of Sébastien Harispe, Knowledge-based semantic measures: from theory to application, Université de Montpellier 2, 25/04/2014, supervisors: Jacky Montmain and Sylvie Ranwez
- Jérôme Euzenat was member of the HDR committee of Fabian Suchanek, Contribution à l'avancement des grandes bases de connaissances, Université Pierre et Marie Curie, 10/09/2014
- Jérôme Euzenat chaired the PhD committee of Mustafa Al-Bakri, Uncertainty-sensitive reasoning over the web of data, Université de Grenoble, 15/12/2014, supervisors: Marie-Christine Rousset and Manuel Atencia

### **8.3. Popularization**

- Jérôme Euzenat gave a talk to the Canopé network conference cycle on “Communication et adaptation: la fabrique de la communication flexible (communication and adaptation: the making of flexible communication), CROP, Grenoble (FR), 2/04/2014.
- Jérôme Euzenat gave a talk to the 7es journées de l'interopérabilité des applications d'entreprise (JIAE) on “Aligner les ontologies pour communiquer (matching ontologies to communicate)”, Saint-Étienne (FR), 16/05/2014.
- Jérôme David participates to the working group “Créer et maintenir une interconnexion sémantique des grands référentiels culturels: le "Graphe Culture"” of the ministry of Culture. <http://cblog.culture.fr/projet/2013/11/07/groupe-de-travail-metadonnees-culturelles/>



## FLOWERS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Invited Talks

- Manuel Lopes made a plenary talk at the conference Technologies de l'Information et de la Communication pour l'Enseignement (TICE), 18-20 Novembre, Beziers, France
- Manuel Lopes made an invited talk at the Robotics: Science and Systems : Workshop on Learning Plans with Context From Human Signals, USA.
- Manuel Lopes made an invited talk ICRA Workshop on Active Visual Learning and Hierarchical Visual Representations for General-Purpose Robot Vision, Hong-Kong
- Manuel Lopes made an invited talk ICRA Workshop on Autonomous Grasping and Manipulation: An Open Challenge, Hong-Kong
- Alexander Gepperth gave an invited lecture at the FP7-sponsored Summer School "Neuronal dynamics approaches to cognitive robotics", Bochum, Germany
- Matthieu Lapeyre gave a talk at Journées Scientifiques Inria 2014 (06/26/2014) about the Poppy project and especially on the open source aspects of the project.
- Matthieu Lapeyre participated to Open experience at WAVE 2014 conference (09/11/2014) about new models of distribution and presented the particularity of Poppy as an open science project.
- Matthieu Lapeyre made a talk at Digital Intelligence 2014 conference held in Nantes (France) about the use of Poppy for educational and artistic applications.
- Olivier Mangin made an invited talk at Language and Body symposium, International Association for the Study of Child Language Conference (IASCL), 14-18 July 2014, Amsterdam, Netherlands.
- Steve N'Guyen gave a talk at the ISIR lab (Institut des Systèmes Intelligents de et Robotique, Paris) about the Poppy project (06/10/2014).
- Clément Moulin-Frier gave two invited talks. The first one was at the Humanoids 2014 conference in Madrid, Spain, during the workshop entitled *Active Learning in Robotics: Exploration Strategies in Complex Environments*: <http://www.ausy.tu-darmstadt.de/Workshops/Humanoids2014ActiveLearning>. The second one was at the *PyconFr*, a French software developer conference: <http://www.pycon.fr/2014/schedule/presentation/37/>
- Pierre-Yves Oudeyer gave the following talks:
  - (Keynote) (march 2014) Developmental Robotics: : Lifelong Learning and the Morphogenesis of Developmental Structures, AAAI Spring Symposium on Implementing Selves with Safe Motivational Systems and Self-Improvement, Stanford Univ., US. [https://www.youtube.com/watch?v=bkv83GKYpkI&list=PL8W4iBcZa2EIG\\_Q38ihjPdINjgkVXt0Uu](https://www.youtube.com/watch?v=bkv83GKYpkI&list=PL8W4iBcZa2EIG_Q38ihjPdINjgkVXt0Uu)
  - (Keynote) (june 2014) Curiosity-driven learning and development: How robots can help us understand humans, WACAI 2014, [http://wacai14.litislab.fr/?page\\_id=140](http://wacai14.litislab.fr/?page_id=140)
  - (jan. 2014) Emergence du langage et robotique développementale, Séminaire de l'association X-SHS, <https://www.youtube.com/watch?v=LQ5evY4aCKI>
  - (feb. 2014) Developmental Robotics: Lifelong Learning and the Morphogenesis of Developmental Structures, Dagstuhl Seminar 14081 on "Robots learning from experiences", <http://www.dagstuhl.de/program/calendar/partlist/?semnr=14081&SUOG>

- (march 2014) La robotique comme outil pour comprendre les origines du langage, Rencontres Mollat, Bordeaux.
- (march 2014) Comment les robots nous aident à comprendre l'homme, Forum des Sciences Cognitives, Paris. <https://www.youtube.com/watch?v=enQYBR3zFpo>
- (avril 2014) Fabricating Open-Source Baby Robots, Tedx Cannes, <https://www.youtube.com/watch?v=AP8i435ztwE>
- (avril 2014) Poppy: Open Source Robotics Platform for Science, Art and Education, La Cantine, Rennes.
- (may 2014) Open Source Developmental Robotics, Bodywara workshop Inria/FING, Bordeaux.
- (june 2014) KidLearn: Machine learning for personalizing educational contents, Digital Intelligence conference, Nantes.
- (july 2014) The roles of active learning in sensorimotor and language development, International Conference of the International Society of Infant Studies (ISIS 2014), Symposium on Integrative models of language acquisition, slides: <https://www.dropbox.com/s/qcpad2lvbe3fs93/ISIS2014.pptx?dl=0>
- (sept. 2014) Curiosity-driven learning and development in robots, IX Advanced Multimodal Information Retrieval int'l summer school.
- (oct. 2014) Open source developmental robotics, Séminaire du Centre de Recherche Interdisciplinaire, Univ. Paris VII.
- (nov. 2014) The impact of curiosity-driven learning on self-organization of developmental process: robotic models, First International Symposium on Information Seeking, Curiosity and Attention, Bordeaux, France, vidéo: <https://www.youtube.com/watch?v=9ATEhHB99wQ&list=PL9T8000j7sJDZL1NrTL-zyFmeJlvXYXzm>
- (nov. 2014) Modeling cognitive development with robots, Seminar of the Center for Brain and Cognitive Development, Birbeck college.

## 9.1.2. Scientific events organisation

### 9.1.2.1. General chairs

#### 9.1.2.1.1. First interdisciplinary symposium on Information-seeking, curiosity and attention

General chairs Pierre-Yves Oudeyer, Jacqueline Gottlieb, Manuel Lopes  
6-7 Nov. 2014, Inria Bordeaux Sud-Ouest, France

Summary:

The past few years have seen a surge of interest in the mechanisms of active learning, curiosity and information seeking, and this body work has highlighted a number of highly significant questions regarding higher cognition and its development (for a recent review, see Tics13). One question is how subjects explore to build explanatory models of their environment, and how these models further constrain the sampling of additional information. A related question is how the brain generates the intrinsic motivation to seek information when physical rewards are absent or unknown, and how this impacts cognitive development in the long term. Our goal is to stimulate discussion on these and related topics and foster further research in this nascent and complex field. <https://openlab-flowers.inria.fr/t/first-interdisciplinary-symposium-on-information-seeking-curiosity-and-attention/21>

#### 9.1.2.2. responsible of the conference program committee

Clément Moulin-Frier will be program chair at the ICDL/Epirob conference to be held in August 2015 in Brown University, Providence, Rhode Island, USA: <http://www.icdl-epirob.org/>

### 9.1.2.3. member of the conference program committee

David Filliat was Associate Editor for IROS. Freek Stulp was on the Program Committee of RSS, and an Associate Editor for IROS and ICRA. Alexander Gepperth was on the programme committee of ESANN and IJCNN.

### 9.1.2.4. reviewer

David Filliat was reviewer for ICARCV, ICRA, IROS, RFIA. Freek Stulp was a reviewer for ICRA and IROS. Manuel Lopes was reviewer for Iros, Icr, HRI, Aamas. Jonathan Grizou was reviewer for ICDL and HRI. Alexander Gepperth was reviewer for IROS, IJCNN, ESANN and ITSC.

## 9.1.3. Journal

### 9.1.3.1. member of the editorial board

Pierre-Yves Oudeyer was editor of the IEEE CIS Newsletter on AMD and associate editor of IEEE Transactions on Autonomous Mental Development, Frontiers in Humanoid Robotics, Frontiers in Neurorobotics, International Journal of Social Robotics, as well as member of the editorial board of Advances in Interaction Studies, John Benjamins Publishing Company.

Clément Moulin-Frier and Pierre-Yves Oudeyer are co-editors of a special issue in *Journal of Phonetics*, a major journal in speech science. This special issue, entitled *On the cognitive nature of speech sound systems* is focused on a target paper for which Clément Moulin-Frier is the first author. A dozen of international contributions are currently under review, the publication is expected during the spring of 2015. <https://hal.archives-ouvertes.fr/hal-01073668>

### 9.1.3.2. reviewer

David Filliat was reviewer for International Journal of Robotics Research, Robotics and Autonomous Systems, Neurocomputing Pierre Rouanet was reviewer for the journal IEEE Transactions on Human-Machine Systems. Freek Stulp was a reviewer for Autonomous Robots. Manuel Lopes was reviewer for IEEE Transactions on Robotics, IEEE Transactions on Autonomous Mental Development Jonathan Grizou was reviewer for IEEE Transactions on Autonomous Mental Development. Alexander Gepperth was reviewer IEEE Transactions on Intelligent Transportation Systems, Neurocomputing, Neural Networks, Neural Processing Letters and Cognitive Computation. PY Oudeyer reviewed projects for the European Commission and Inria, and was a reviewer for IEEE ICDL-Epirob, ICRA, IEEE TAMd.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

License: Introduction to Matlab, 21 heures. L3, ENSTA - ParisTech (David Filliat).

Master: Apprentissage, 5 heures. M2, Enseirb-Matmecca (Manuel Lopes).

Master: La robotique de compagnie: concepts et techniques, 9 heures. M2, ENSTA - ParisTech (Manuel Lopes).

Master: Robotique Mobile, 21 heures. M2, ENSTA - ParisTech (David Filliat).

Master: Perception pour la robotique, 12 heures. M2 Systemes Avances et Robotique, University Pierre et Marie Curie (David Filliat)

Licence 2: Graphe, Langage, Cryptologie, 21 heures. Pôle universitaire français de Ho Chi Minh Ville

Pedagogical resources : Développement ans diffusion of IniRobot pedagogical kit (see highlights), Didier Roy, Thomas Guitard et Pierre-Yves Oudeyer.

### 9.2.2. Supervision

PhD in progress: Louis-Charles Caron, RGB-D object recognition on a mobile robot, started january 2012 (superv. Alexander Gepperth).

PhD in progress: Thomas Hecht, Bio-inspired sensor fusion, started November 2013 (superv. Alexander Gepperth).

PhD in progress: Egor Sattarov, Multimodal vehicle perception architecture, started November 2013 (co-superv. Alexander Gepperth).

PhD in progress: Thomas Kopinski, Machine Learning for human-machine interaction, started November 2012 (superv. Alexander Gepperth).

PhD in progress: Guillaume Duceux, Navigation and exploration based on RGB-D cameras, started october 2011 (superv. David Filliat).

PhD in progress: Alexandre Armand, Contextual electronic copilot for driving assistance, started feb. 2011 (superv. David Filliat)

PhD in progress: Yuxin Chen, Interactive learning of objects and names on a humanoid robot, started oct. 2013 (superv. David Filliat).

PhD in progress: Celine Craye, Curiosity and visual attention for the guidance of an exploration robot, started apr. 2014 (superv. David Filliat).

PhD in progress: Thibaut Munzer, Learning from Instruction (superv. Manuel Lopes).

PhD in progress: Baptiste Busch, Interactive Learning (superv. Manuel Lopes).

PhD in progress: Alexandra Delmas, Auto-Apprentissage Auto-Adaptable pour la compliance au traitement (superv. Manuel Lopes).

PhD in progress: Fabien Benureau, Exploration strategies in developmental robotics (superv. PY Oudeyer)

PhD finished: Jonathan Grizou, Fluid simultaneous learning of task and feedback models, started oct. 2011 (superv. Manuel Lopes and Pierre-Yves Oudeyer).

PhD finished: Matthieu Lapeyre, Poppy: Open source 3D printed and fully-modular robotic platform for Science, Art and Education, started sept. 2010 (superv. Pierre-Yves Oudeyer).

### 9.2.3. PhD Juries

Ryad Akrou (Pierre-Yves Oudeyer, Examineur) : Robust Preference Learning-based Reinforcement Learning, Univ. Paris Sud.

Raphael Laurent (Pierre-Yves Oudeyer, Examineur) : COSMO : un modèle bayésien des interactions sensori-motrices dans la perception de la parole, Univ. Grenoble.

Kirill Makikhin (Pierre-Yves Oudeyer, Rapporteur) : Towards a Biologically Plausible Computational Model of Developmental Learning with Robotic Applications, Univ. Queensland, Australia.

Hung Ngo (Pierre-Yves Oudeyer, Rapporteur) : Artificial Curiosity: Algorithms for Autonomous Acquisition of Robotic Skills, Univ. Svizzera Italiana.

Olivier Mangin (19/03/14, David Filliat, Examineur) : The Emergence of Multimodal Concepts: From Perceptual Motion Primitives to Grounded Acoustic Words. Univ Bordeaux, Pierre-Yves Oudeyer (dir.).

Fabien Hervouet (30/06/2014, David Filliat, Rapporteur) : Exploration et structuration intrinsèquement motivées d'espaces d'apprentissage sensorimoteur : contributions théoriques, plateforme et expérimentations

Adrien Jauffret (11/07/2014, David Filliat, Rapporteur) : De l'auto-évaluation aux émotions - approche neuromimétique et bayésienne de l'apprentissage de comportements complexes impliquant des informations multimodales

Kangni Kueviakoe (30/09/2014, David Filliat, Rapporteur) : Localisation multi-capteurs garantie : Résolution d'un problème de satisfaction de contraintes

Emilie Wirbel (7/10/14, David Filliat, Rapporteur) : Localisation et navigation topologiques de robots humanoïdes

Irene Ayllon Clemente (25/7/14, Alexander Gepperth, Rapporteur) : An on-line learning system for speech acquisition.

### 9.3. Popularization

**IniRobot:** Development, evaluation and dissemination of the IniRobot program for initiating young kids (primary schools) to computer science and robotics. This has been used and deployed in several major towns in France, including Lille, Talence and Lormont. Several days of formation for teachers have been organized to foster dissemination. The kit is Creative Commons, and available on the dedicated web site created: <https://dm1r.inria.fr/c/kits-pedagogiques/inirobot>

PY Oudeyer gave a TedX talk in Cannes, explaining open-source developmental robotics, <https://www.youtube.com/watch?v=AP8i435ztwE>

PY Oudeyer gave several interviews in the general press (e.g. Le Monde, Les Echos, Sciences et Avenir) to explain societal issues of robotics, <http://www.pyoudeyer.com/press/>

PY Oudeyer wrote three popular science articles to explain societal issues of robotics:

- "What can we learn about development from baby robot" <http://www.pyoudeyer.com/WhatDoWeLearnFromBabyRobotsOudeyer2015.pdf>
- Oudeyer, P-Y. (2014) Robotique: les grands défis à venir, Futuribles, Mars 2014 <http://www.pyoudeyer.com/PYOudeyerRobotFuturibles14.pdf>.
- Oudeyer, P-Y. (2014) Des abeilles aux sources de la parole, in Breve de Maths, Mathématiques pour la planète terre, Nouveau monde editions, <http://www.breves-de-maths.fr/des-abeilles-aux-sources-de-la-parole/>.

06/02/2014 : "Developmental Robotics - Learning objects by interaction", David Filliat, Invited conference, Institut Bull, Réunion du groupe de réflexion CEM "Cerveaux et machines"

6-8/02/2014 : Aquitec, Yoan Mollard presented the Poppy platform to students and visitors

18-20/03/2014 : Innorobo 2014, Yoan Mollard and Steve N'guyen presentend the projects Poppy and 3rd hand

11/04/2014 : "Semantic Mapping", David Filliat, Invited Conference, Laboratoire Imagine, Ecole Nationale Supérieure des Ponts et Chaussées

20-22/06/2014: Poppy has been presented in the Paris Makerfair and obtained a "maker of merit" award.

2-8/07/2014: Demonstrations of Poppy took place at the FAB10 conference in Barcelona, the biggest conference about the maker revolution. Poppy was among the ten finalists for the Fablab award.

4-5/09/2014: Clement Moulin-Frier, Steve N'Guyen and Pierre Rouanet participated to a Hackathon in "cité des sciences" about programming the Poppy humanoid platform.

11/10/2014: Robotics animations for the "Fete de la science" at ENSTA ParisTech,

17/10/2014 : "Robots and Social Interaction Decisions - Developmental robotics", David Filliat, Invited presentation for the ITechLaw 2014 conference.

25-28/10/2014: Clement Moulin-Frier and Pierre Rouanet presented the Poppy platform and the associated libraries - pypot and explauto - to the PyConFR2014 conference and organised of a Hackathon.

19-21/11/2014: Clement Moulin-Frier, Nicolas Rabault, and Pierre Rouanet presented the Poppy platform to the fossa 2014 conference.

10/12/2014: Robotics demonstration for "Science Break" organised by Diagonale Paris Saclay : <http://sciencebreak.ladiagonale-paris-saclay.fr>

Clément Moulin-Frier contributed to a scientific diffusion paper in the French journal *Biofutur* about the use of robotics in the study of language evolution and acquisition: <http://www.biofutur.com/anciens-numeros>. <https://hal.archives-ouvertes.fr/hal-01100048>

Fabien Benureau supervised two students in 3rd year of the Cognitive Science major at the University of Bordeaux on their TER project. The project used Poppy, exploring how the attitude towards robots influences how humans recognise the emotion they try to express. Poppy having no facial expression — or face — yet, the students expressed the five expressions they selected (anger, surprise, joy, sadness, disgust) with body movements alone. They videotaped the sequences of movements (videos are available here [http://python.sm.u-bordeaux2.fr/ter/2014/sc/desprez-zerdoumi/?page\\_id=289](http://python.sm.u-bordeaux2.fr/ter/2014/sc/desprez-zerdoumi/?page_id=289)) and created an experiment asking volunteers to guess which emotion was displayed. The form also included the Negative Attitude towards Robots Scale (NARS), to investigate the possible correlation between fear of robot and the ability to identify their emotional attitude. The results showed no correlation between the two, although it was admitted that the experiment would have to be improved and ran again before any conclusion could be made.

## GRAPHIK Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- Madalina Croitoru was general chair of ICCS 2014 (21st International Conference on Conceptual Structures) <http://iccs2014.info.uaic.ro/index.php>.

#### 9.1.1.2. Member of the organizing committee

- Fabien Garreau was member of the organizing committee of JIAF 2014 (Journées d'Intelligence Artificielle Fondamentale) <http://jiaf2014.univ-angers.fr/index.php?accueil>.
- Jérôme Fortin was member of the local organizing committee of IPMU 2014 (15th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based System) <http://www.ipmu2014.univ-montp2.fr/>.
- Patrice Buche was member of the initiative committee for a special session in IPMU'2014 (Decision Support and uncertainty management in Agri-Environment) <http://www.ipmu2014.univ-montp2.fr/SpecialSessions.php>.
- Patrice Buche was member of the initiative committee for a special session in MTSR'2014 (Metadata and Semantics for Agriculture, Food & Environment) <http://www.mtsr-conf.org/>.
- Patrice Buche was member of the initiative committee for a special session in IC'2014 (IN-OVIVE 2014) [https://colloque6.inra.fr/in\\_ovive\\_2014](https://colloque6.inra.fr/in_ovive_2014).

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsible of the conference program committee

- Marie-Laure Mugnier (along with Roman Kontchakov, London) was Program Chair of the 8th International Conference on Web Reasoning and Rule Systems (RR'2014), Athens, 2014 <http://rr2014.di.uoa.gr/>.

#### 9.1.2.2. Member of the conference program committee

- Marie-Laure Mugnier was senior PC member of AAAI 2015 (AAAI Conference on Artificial Intelligence).
- Federico Ulliana was PC member of AAAI 2015 (AAAI Conference on Artificial Intelligence).
- Marie-Laure Mugnier and Souhila Kaci were PC members of ECAI 2014 (European Conference on Artificial Intelligence).
- Jean-François Baget was PC member of RR 2014 (International Conference on Web Reasoning and Rule Systems).
- Jean-François Baget and Michel Leclère were PC members of ESWC 2014 (European Semantic Web Conference).
- Jérôme Fortin was PC member of ICCS 2014 (International Conference on Conceptual Structures).
- Marie-Laure Mugnier was PC member of NMR 2014 (Non Monotonic Reasoning Workshop).
- Souhila Kaci was PC member of MPREF'14 (Workshop on Advances in Preference Handling).
- Madalina Croitoru was PC member of the special session on "Decision Support and uncertainty management in Agri-Environment" of IPMU 2014 (15th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based System).

- Madalina Croitoru was PC member of COMMA 2014 (5th International Conference on Computational Models of Argument).
- Madalina Croitoru was PC member of AGI-14 (7th Conference on Artificial General Intelligence).
- Madalina Croitoru was PC member of AIMSIA 2014 (16th International Conference on Artificial Intelligence: Methodology, Systems, Applications).
- Madalina Croitoru was PC member of IBERAMANIA 2014 (Ibero-American Conference on Artificial Intelligence).
- Rallou Thomopoulos was PC member of IPMU 2014 (Information Processing and Management of Uncertainty in Knowledge-Based Systems).
- Patrice Buche was PC member of CARI 2014 (Colloque africain sur la recherche en informatique et mathématiques appliquées)
- Marie-Laure Mugnier was PC member of JIAF 2014 (Journées d'Intelligence Artificielle Fondamentale).
- Rallou Thomopoulos was PC member of GeCSO (Gestion des Connaissances dans la Société et les Organisations).
- Patrice Buche was PC member of IC 2014 (Journées francophones d'Ingénierie des Connaissances).
- Patrice Buche was PC member of RFIA 2014 (Congrès national sur la Reconnaissance de Formes et l'Intelligence Artificielle).

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- Madalina Croitoru is member of the editorial board of the International Journal of Conceptual Structures and Smart Applications (IJCSA).
- Marie-Laure Mugnier is member of the editorial committee of the journal Revue d'Intelligence Artificielle (RIA).

#### 9.1.3.2. Reviewer

- Transactions on Database Systems (TODS)
- Journal of Artificial Intelligence (JAIR)

### 9.1.4. Scientific Animation

- Patrice Buche animates the national network INRA IN-OVIVE <http://www6.inra.fr/reseau-in-ovive>.
- Patrice Buche animates the regional seminar MIA <http://umr-iate.cirad.fr/seminaires/aide-a-la-decision>.
- Souhila Kaci animates the LIRMM seminar on Artificial Intelligence <https://www.lirmm.fr/recherche/departements/info/poles-de-recherche/ia>.

### 9.1.5. Invited Talks

- Marie-Laure Mugnier gave an invited talk at the 10th Reasoning Web Summer school (RW'2014), Athens, Sept. 2014. <http://rw2014.di.uoa.gr/>. Title : "Ontology-Based Query Answering with Existential Rules" [http://rw2014.di.uoa.gr/sites/default/files/slides/Ontology-Based\\_Query\\_Answering\\_with\\_Existential\\_Rules.pdf](http://rw2014.di.uoa.gr/sites/default/files/slides/Ontology-Based_Query_Answering_with_Existential_Rules.pdf).
- Madalina Croitoru gave an invited talk at the MIA-INRA seminar, Lyon, March 2014. [https://colloque6.inra.fr/math\\_info/Programme-Actes](https://colloque6.inra.fr/math_info/Programme-Actes). Title: "Ingénierie de la connaissance et argumentation". [https://colloque.inra.fr/math\\_info/content/download/318/3534/version/1/file/Madalina\\_Croitoru.pdf](https://colloque.inra.fr/math_info/content/download/318/3534/version/1/file/Madalina_Croitoru.pdf)
- Madalina Croitoru gave an invited talk at the INCOM-INRA seminar, Paris, April 2014. Title: "Argumentation based Explanation in Agronomy".



- Marie-Laure Mugnier gave an invited talk at 25èmes journées francophones d'ingénierie des connaissances (IC'2014), Clermont Ferrand, May 2014. <http://www.irit.fr/IC2014>. Title: “*Un nouveau cadre pour l'interrogation de données basée sur une ontologie : les règles existentielles*”<http://www.irit.fr/CMS-DRUPAL7/IC2014/>.
- Marie-Laure Mugnier gave an invited talk at the INRA Open Data seminar, Montpellier, Dec. 2014. <http://www6.inra.fr/reseau-in-ovive/Actions-du-reseau/Seminaires/Seminaire-Open-Data-du-17-19-December-2014>. Title: “*L'approche OBDA*”.
- Federico Ulliana gave an invited talk at the INRA Open Data seminar, Montpellier, Dec. 2014. Title: “*My Corporis Fabrica*”. <http://www6.inra.fr/reseau-in-ovive/Media/Fichier/seminaires/Seminaire-Open-Data-du-17-19-December-2014/My-Corporis-Fabrica>
- Michel Chein gave an invited talk at the ISIMA-LIMOS Seminar, Clermont-Ferrand, Dec. 2014. Title: “*Un problème d'identification d'entités nommées dans les bases bibliographiques.*”

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

The next table details the number of lecture hours as well as the number of module responsibilities for each team member.

Name	Position	2013/14	Cursus (*)	Module Resp. (per year)
J.-F. Baget	Research Scientist	40	M (UM2)	1
M. Croitoru	Assistant Prof.	198	L2	2
M. Chein	Emeritus Prof.	0		
J. Fortin	Assistant Prof	230	Polytech	2
S. Kaci	Professor	198	L and M(UM2)	3
M. Leclère	Assistant Prof.	196	L and M (UM2)	2
M. -L. Mugnier	Professor	192	L and M (UM2)	3
L. Guizol	PhD	64	L (UM2)	no
M. König	PhD	64	L (UM2)	no
A. Arioua	PhD	12	L (UM2)	no

(\*) L =Licence, M = Master (M1 = first year, M2 = second year), UM2 = Univ. Montpellier 2 (Sciences), IUT = Institute of Technology of UM2 (Licence Cursus), Polytech = Engineering School of UM2, UM3 = Univ. Montpellier 3 (Art and Humanities)

The courses taught by team members are mainly in Logics (in Licence), Artificial Intelligence, Knowledge Representation, Knowledge Engineering, and Decision Support (in Master). We are also responsible of modules in Web Technologies (Professional L at IUT) and Databases (L).

We have some specific responsibilities in the Computer Science Licence and Master:

- Michel Leclère is co-responsible of the master speciality DECOL (about 30 students) started in September 2011.
- Marie-Laure Mugnier is co-responsible of the Computer Science Master started in September 2011 (about 250 students), which gathers six specialties. She is also leading the Master project for the next four years (LMD4).
- Souhila Kaci is leading the Licence project for the next four years (LMD4).
- Madalina Croitoru is responsible of the special year teaching formation at IUT Montpellier II (25 students).

### 9.2.2. Supervision

*Madalina Croitoru* defended her HDR in November *Reasoning about Knowledge as Graphs: Practical Artificial Intelligence Applications* [15]. The jury was:

- Leila Amgoud, Directeur de Recherche, IRIT, Toulouse, France (reviewer)
- Ollivier Haemmerle, Professeur, IRIT, Toulouse, France (reviewer)
- Jan Top, Professeur, Vrije, Universiteit, Netherlands (reviewer)
- Jérôme Lang, Directeur de Recherche, Paris Dauphine, France (examiner)
- Marie-Laure Mugnier, Professeur, Univ. Montpellier 2, France (examiner)

*Bruno Paiva Lima da Silva* defended his PhD in January *Data Access over Large Semi-Structured Databases* [18]. The jury was:

- Ollivier Haemmerlé, Professeur, IRIT (reviewer)
- Fabien Gandon Dr. & HDR, Inria Sophia-Antipolis (reviewer)
- Odile Papini, Professeur, Université Aix-Marseille II (examiner)
- Marie-Laure Mugnier, Professeur, Université Montpellier II (advisor)
- Jean-François Baget, Chargé de Recherche, Inria (co-advisor)
- Madalina Croitoru, Maître de Conférences, Université Montpellier II (co-advisor)

*Mélanie König* defended her PhD in October *Interrogation de grandes bases de connaissances : algorithmes de réécriture de requêtes conjonctives en présence de règles existentielles* [17]. The jury was:

- Bernardo Cuenca Grau Tenure, Associate Professor, Univ. Oxford (reviewer)
- Igor Stephan, Maître de conférence HDR, Univ. Angers (reviewer)
- Marianne Huchard, Professeur, Univ. Montpellier II (examiner)
- Lhouari Nourine, Professeur, Univ. Blaise Pascal (examiner)
- Meghyn Bienvenu, Chargé de recherche CNRS, Univ. Paris Sud (examiner)
- Remi Coletta, Maître de conférence, Univ. Montpellier II (examiner)
- Marie-Laure Mugnier, Professeur, Univ. Montpellier II (advisor)
- Michel Leclère, Maître de conférence, Univ. Montpellier II (co-advisor)

*Tjitze Rienstra* defended his PhD in October *Argumentation in Flux – Modelling change in the theory of argumentation*. The jury was:

- Lluís Godo, professor, Institut d'Investigació en Intel·ligència Artificial, Bellaterra, Spain (chairman)
- Pietro Baroni, professor, Università degli Studi di Brescia, Italy (vice-chairman)
- Beishui Liao, professor, Zhejiang University, China (member)
- Richard Booth, researcher, Université du Luxembourg (member)
- Leon van der Torre, professor, Université du Luxembourg (co-supervisor)
- Souhila Kaci, professor, Université de Montpellier, France (co-supervisor)

*Léa Guizol* defended her PhD in November *Partitioning semantics for entity resolution and link repairs in bibliographic knowledge bases* [16]. The jury was:

- Nathalie Aussenac, Directeur de recherches, CNRS, IRIT, Toulouse (reviewer)
- Englebert Mephu Nguifo, Professeur, Université Clermont-Ferrand (reviewer)
- Mathieu Roche, Directeur de recherches, Université Montpellier II (examiner)
- Marie-Laure Mugnier, Professeur Université Montpellier II (advisor)
- Madalina Croitoru, Maître de conférences, Univ. Montpellier II (co-advisor)

The PhDs in progress are:

*Fabien Garreau* (ANR ASPIQ grant), Algorithms for stable model semantics and existential rules (ANR ASPIQ, with Univ. of Angers), Sept. 2012, supervised by Igor Stephan, Jean-François Baget and Laurent Garcia

*Swan Rocher* (ANR Qualinca grant), Reasoning with inconsistent knowledge bases in presence of existential rules (ANR Qualinca), Sept. 2013, supervised by Marie-Laure Mugnier and Jean-François Baget

*Namrata Patel* (Univ. Montpellier II grant), Preference Handling in Decision Problems (ministry grant), Sept. 2013, supervised by Souhila Kaci

*Abdallah Arioua* (ANR Dur-Dur& INRA Grant), Argumentation Theory and its Application to Knowledge-based Systems, started Nov. 2013, supervised by Patrice Buche, Madalina Croitoru and Jérôme Fortin.

### **9.2.3. Juries**

Jury member - Mustafa AL BAKRI - Uncertainty-Sensitive Reasoning over the Web of Data - December 15, 2014 - Université de Grenoble, LIG (Marie-Laure Mugnier)

Jury member - Rim TOUHAMI - Construction et évolution d'une ressource termino-ontologique dédiée à la représentation de relations n-aires, application à l'évaluation du risque microbiologique dans des aliments emballés - Université Montpellier 2, UMR IATE, MIA & AgroParisTech, September 5, 2014 (Marie-Laure Mugnier)

Reviewer - Maxime LEFRANCOIS - "Représentation des connaissances sémantiques lexicales de la Théorie Sens-Texte : Conceptualisation ; représentation ; et opérationnalisation des définitions lexicographiques" - Université de Nice, Inria & I3S, June 24, 2014 (Marie-Laure Mugnier)

Recruitment committee member: Assistant Professor position at Université d'Orsay (Marie-Laure Mugnier)  
Assistant Professor position at Université Montpellier 2 (Madalina Croitoru, Marie-Laure Mugnier)

## **HEPHAISTOS Team**

# **8. Dissemination**

## **8.1. Promoting Scientific Activities**

### **8.1.1. Scientific events organisation**

#### *8.1.1.1. General chair, scientific chair*

- J-P. Merlet is a member of the scientific committee of the European Conference on Mechanism Science (EUCOMES), chairman of the scientific Committee of the Computational Kinematics workshop, a member of the steering Committee of IROS. and board member of the Journal of Behavioral Robotics. He is also also Inria representative to PPP Eurobotics aisbl. He is a member of the IFToMM (International Federation for the Promotion of Mechanism and Machine Science) Technical Committees on History and on Computational Kinematics and is one of the 10 members of IFToMM Executive Council, the board of this federation. He is a member of the scientific committee of the CNRS GDR robotique

#### **8.1.2. Scientific events selection**

##### *8.1.2.1. Member of the conference program committee*

- J-P. Merlet has been reviewing Editor for IROS 2014
- Y. Papegay is a permanent member of the International Steering Committee of the International Mathematica Symposium conferences series, and member of the Program Committee of the 2015 edition

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Master : O. Pourtallier lectured 6 hours on game theory to Master OSE (M2), at École des Mines de Paris, Sophia Antipolis, France

### **8.2.2. Supervision**

PhD in Progress : K. Bakal, Biomechanics of the upper limb, 2013, supervisors: D. Daney, J-P. Merlet, P. Gorce

PhD in Progress :M. Beninati, Legal aspect of assistance robotics, 2015, supervisor: J-P. Merlet

PhD in Progress : A. Berti, Forward kinematics of cable driven parallel robots, 2012, supervisors: M. Carricato, J-P. Merlet

PhD in Progress : L. Blanchet, Interference and modularity management in cable-driven parallel robots, 2011, supervisor: J-P. Merlet

PhD in Progress, H. Lamine, Cable-driven parallel robot for rehabilitation, 2013, supervisors: J-P. Merlet, L. Romdhane

PhD in Progress : A. Massein, Design of Smart Environment for Human Behaviour Recognition, 2013, supervisors: D.Daney, Y.Papegay

PhD in Progress : R. Ramadour, Visual servoing for cable-driven parallel robot, 2011, supervisors: F. Chaumette, J-P. Merlet

### **8.2.3. Juries**

- J-P. Merlet has been the member of the jury of 5 PhD defense and of one HdR

### **8.3. Popularization**

- M. Gautier has participated to the Fête de la science CIV, to the Carrefour des métiers Nice and has proposed a programming initiation to a 6ème class in view of the participation to the Junior Robotics Pobot Cup.
- Y.Papegay is actively participating to the Math.en.Jeans initiative for Mathematics teaching for undergraduate students.
- we extensively use the MARIONET-SCHOOL robots for pedagogy and teaching at all level.
- J-P. Merlet has given several national newspapers and TV interviews

## HYBRID Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- Anatole Lécuyer was General co-Chair of IEEE Symposium on 3D User Interfaces 2014.
- Bruno Arnaldi was Chair and Organizer of Journées de l'AFRV 2014, Reims, France
- Maud Marchal was Chair and Organizer of a Workshop on Bimanual Haptics at Eurohaptics 2014.

#### 9.1.1.2. Member of the organizing committee

- Anatole Lécuyer was Award Chair of Eurohaptics 2014.
- Ferran Arguelaguet was Demo Chair of ICAT-EGVE 2014.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsible of the conference program committee

- Anatole Lécuyer was Program co-Chair of IEEE Symposium on 3D User Interfaces 2014.

#### 9.1.2.2. Member of the conference program committee

- Anatole Lécuyer was Member of the conference program committee of Eurohaptics 2014, and IEEE Haptics Symposium 2014.
- Bruno Arnaldi was Member of the conference program committee of IEEE Virtual Reality 2014
- Maud Marchal was Member of the conference program committee of IEEE Virtual Reality 2014, IEEE Symposium on 3D User Interfaces 2014, Eurohaptics 2014, International Symposium on Biomedical Simulation 2014 and MICCAI Symposium on Deep Brain Stimulation 2014.
- Ferran Arguelaguet was Member of the conference program committee of IEEE Virtual Reality 2014, IEEE Symposium on 3D User Interfaces 2014, ACM Virtual Reality Software and Technology 2014 and ACM Symposium on Spatial User Interfaces 2014.

#### 9.1.2.3. Reviewer

- Anatole Lécuyer was reviewer for Eurohaptics 2014, and IEEE Haptics Symposium 2014.
- Valérie Gouranton was Reviewer for Conference on Computer Animation and Social Agents 2014.
- Maud Marchal was Reviewer for IEEE Virtual Reality 2014, IEEE Symposium on 3D User Interfaces 2014, Eurohaptics 2014, International Symposium on Biomedical Simulation 2014, MICCAI International Conference 2014, GRAPP 2014, and International Conference on Robots and Intelligent Systems 2014.
- Ferran Arguelaguet was Reviewer for EuroHaptics 2014.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- Anatole Lécuyer is Associate Editor of Frontiers in Virtual Environments.
- Maud Marchal is Associate Editor of Computer Graphics Forum, Review Editor of Frontiers in Virtual Environments and Member of the Editorial Board of Revue Francophone d'Informatique Graphique.
- Ferran Arguelaguet is Review Editor of Frontiers in Virtual Environments.

#### 9.1.3.2. Reviewer

- Anatole Lécuyer was Reviewer for ACM Transactions on Applied Perception, and International Journal on Human Computer Studies.
- Valérie Gouranton was Reviewer for Revue d'Intelligence Artificielle.
- Maud Marchal was Reviewer for IEEE Transactions on Visualization and Computer Graphics and IEEE Transactions on Haptics.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Anatole Lécuyer:

Master MNRV: "Haptic Interaction", 9h, M2, ENSAM, Laval, FR

Ecole Doctorale Matisse : "Haptic Interaction" and "Brain-Computer Interfaces", 5h, M2-PhD, University of Rennes 1, FR

Master SIBM: "Haptic and Brain-Computer Interfaces", 4,5h, M2, University of Rennes 1, FR

Bruno Arnaldi:

Master INSA Rennes: "VAR: Virtual and Augmented Reality", 12h, M2, INSA Rennes, FR

Master INSA Rennes: "Virtual Reality", 6h, M2, INSA Rennes, FR

Master INSA Rennes: Projects on "Virtual Reality", 20h, M1, INSA Rennes, FR

Valérie Gouranton:

Licence: "Introduction to Virtual Reality", 12h, L2 and responsible of this lecture, INSA Rennes, FR

Licence: Project on "Virtual Reality", 12h, L3 and responsible of this lecture, INSA Rennes, FR

Master INSA Rennes: "Virtual Reality", 16h, M2, INSA Rennes, FR

Master INSA Rennes: Projects on "Virtual Reality", 30h, M1, INSA Rennes, FR

Maud Marchal:

Master INSA Rennes: "Modeling and Engineering for Biology and Health Applications", 48h, M2 and responsible of this lecture, INSA Rennes, FR

Master SIBM: "Biomedical simulation", 3h, M2, University of Rennes 1, FR

Ferran Argelaguet:

Master STS Informatique MITIC: "Techniques d'Interaction Avancées", 26h, M2, ISTIC, University of Rennes 1, FR

### 9.2.2. Supervision

HdR : Maud Marchal: "3D Multimodal Interaction with Physically-Based Virtual Environments", Université Rennes 1, November 20th 2014

PhD : Fabien Danieau, "Contribution to the study of haptic feedback for improving the audiovisual experience", Université Rennes 1, February 13th 2014, Supervised by M. Christie, P. Guillotel, J. Fleureau, N. Mollet, and A. Lécuyer

PhD : Anthony Talvas, "Bimanual haptic interaction", INSA Rennes, December 1st 2014, Supervised by A. Lécuyer and M. Marchal

PhD : Thi Thuong Huyen Nguyen, "New 3D techniques for collaborative interaction and navigation that preserve users' immersion", Université Rennes 1, November 20th 2014, Supervised by T. Duval

PhD : Jérôme Ardouin, "Contribution to the study of visualization of real and virtual environments with an extended field-of-view", December 17th 2014, Supervised by M. Marchal, E. Marchand and A. Lécuyer

PhD in progress: Jean-Baptiste Barreau, "Virtual Reality and Archaeology", Started in February 2014, Supervised by V. Gouranton and B. Arnaldi

PhD in progress: Benoit Le Gouis, "Multi-scale physical simulation", Started in October 2014, Supervised by B. Arnaldi, M. Marchal and A. Lécuyer

PhD in progress: Lorraine Perronet, "Neurofeedback applications based on EEG, fMRI and VR", Started in January 2014, Supervised by C. Barillot and A. Lécuyer

PhD in progress: Jérémy Lacoche, "Plasticity for user interfaces in mixed reality", Started in September 2013 at b<>com Research Institute, Supervised by T. Duval, B. Arnaldi, É. Maisel and J. Royan

PhD in progress: Morgan Le Chénéchal, "Activity and perception for distant collaboration in virtual environments", Started in September 2013 at b<>com Research Institute, Supervised by B. Arnaldi, T. Duval, V. Gouranton and J. Royan

PhD in progress: Lucas Royer, "Visualization tools for needle insertion in interventional radiology", Started in September 2013 at b<>com Research Institute, Supervised by A. Krupa, M. Marchal and G. Dardenne

PhD in progress: Andéol Evain, "BCI-based Interaction", Started in September 2013, Supervised by N. Roussel, G. Casiez, F. Argelaguet and A. Lécuyer

PhD in progress: Guillaume Claude, "Synthesis and Simulation of Process Models ", Started in September 2013, Supervised by V. Gouranton and B. Arnaldi

PhD in progress: François Lehericey, "Collision Detection HPC", Started in October 2013, Supervised by V. Gouranton and B. Arnaldi

PhD in progress: Merwan Achibet, "Dexterous manipulation in virtual environments", Started in November 2012, Supervised by A. Lécuyer and M. Marchal.

PhD in progress: Jonathan Mercier-Ganady, "Hybrid Brain-Computer Interfaces", Started in October 2012, Supervised by M. Marchal and A. Lécuyer

### 9.2.3. *Juries*

#### 9.2.3.1. *Selection committees*

- Anatole Lécuyer was Member of Selection committee of Full-time Professor Position at IUT Orsay.
- Bruno Arnaldi was Member of Selection committee of Full-time Professor Position at University of Rennes 1 and Member of Selection committee of Assistant Professor at Université Lille 1.
- Valérie Gouranton was Member of Selection committee of Assistant Professor at INSA Rennes, Research Fellow (CR2) Inria Rennes Bretagne Atlantique
- Maud Marchal was Member of Selection committee of Assistant Professor at Université Lille 1.

#### 9.2.3.2. *PhD and HDR juries*

- Anatole Lécuyer was Member of PhD jury of Huyen Nguyen (INSA de Rennes).
- Bruno Arnaldi was Member of PhD jury of Jérôme Ardouin (INSA de Rennes), Antony Talvas (INSA de Rennes) and Huyen Nguyen (INSA de Rennes), Member of HDR Jury of Richard Kulpa (University of Rennes 2).
- Maud Marchal was Member of PhD juries of Guillaume Kazmitcheff (Université Lille 1) and Emmanuelle Chapoulie (Université Nice - Sophia Antipolis).

## 9.3. Popularization

- Massive media coverage of the "Mind-Mirror" system : following a press conference and press release organized in May 2014. This ended up with numerous appearances in the media (TV, Press, Radio).



- Other regular and numerous appearances of the team results and activity at: French TV (e.g., France5, France 3, France 2) or newspapers and journals (e.g., articles in "Archeologia" (Feb 2014) and "Science et Avenir" (Aug 2014) on "Virtual Reality and Archaeology").
- "Journées Science et Musique" 2014 (Rennes, Oct 2014) : organization of this event, and presentation of several demos of the team in Immersia room, Rennes.
- "Journée Nationales d'Archéologie" 2014 (Rennes, June 2014) : organization of this event, and presentation of several demos, Rennes.
- Participation at "Forum Libération" (Rennes, April 2014) : presentation of Anatole Lécuyer.
- Participation at "LE WEB 2014" Conference (Paris, Dec 2014) : demos of the FLYVIZ system.

## IMAGINE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- Rémi Ronfard was chair for the 3rd AAAI workshop on Cinematography and Film Editing (WICED'2014), which took place on July 30, 2014 in Quebec City, Canada. He was also co-chair for the 4th Eurographics workshop on Cinematography and Film Editing (WICED'2015), which will take place on May 4, 2015, in Zurich, Switzerland.
- Stefanie Hahmann was co-organizer of the 9th international colloque *Dagstuhl Seminar on Geometric Modeling* et the Leibniz-Zentrum für Informatik en Allemgane. 45 invited researchers participated to scientific talks, discussions and perspective working groups.

#### 9.1.1.2. member of the organizing committee

- Marie-Paule Cani was a steering committee member of SMI (Shape Modelling International) and Expressive (SBIM, NPAR, CAe) Chair of the Steering committee of Eurographics.
- Rémi Ronfard was member of the following events
  - International Conference on Interactive Digital Storytelling (ICDS 2014).
  - Computational Modeling of Narrative (CMN 2014).
  - Interactive Narrative Technologies (INT 2014).
  - SIGGRAPH workshop on Motion in Games (MIG 2014).
  - International Conference on 3D imaging (IC3D 2014).
  - International Conference on Intelligent Human Computer Interaction (IHCI 2014).

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- Marie-Paule Cani was member of the conference program committee for Graphics Interface 2014 and Expressive 2014 (joint ACM-EG symposium on SBIM, NPAR, CAe).
- Stefanie Hahmann was member of the international program committee for Eurographics 2014, SMI'14 Shape Modeling International, Computer Graphics International (CGI'14), and SPM 2014 Symposium on Solid and Physical Modeling.
- Damien Rohmer was member of the Technical Briefs & Poster for ACM SIGGRAPH Asia 2014.

#### 9.1.2.2. reviewer

- Marie-Paule Cani was reviewer for SIGGRAPH 2014.
- Stefanie Hahmann was reviewer for Eurographics 2014, SMI'14, CGI'14 and SPM'14.
- Jean-Claude Léon was reviewer for CAD 2014 Intl conference.
- Damien Rohmer was reviewer for SIGGRAPH Asia 2014 and Eurographics 2014.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- Marie-Paule Cani was member of the editorial board of ACM Transactions on Graphics (TOG).
- Stefanie Hahmann was reviewer for Computer Aided Design (Elsevier) and Graphical Models (Elsevier).

- Jean-Claude Léon was member of the editorial board of Computer Aided Design.

#### 9.1.3.2. reviewer

- Jean-Claude Léon was reviewer for Computer Aided Design.
- Olivier Palombi was reviewer for Surgical and Radiologic Anatomy.
- Rémi Ronfard was reviewer for The Visual Computer, and Computer Vision and Image Understanding.
- Damien Rohmer was reviewer for the popularization journal Quadrature.

#### 9.1.4. Others

Marie-Paule Cani was

- Vice chair of the European scientific organization Eurographics
- Elected member of EG-France executive committee (french chapter of Eurographics)
- Member of the ACM publication board until June 2014.
- Member of the scientific council of ESIEE Paris.

Stefanie Hahmann was

- Member of the SMA Executive Committee (Shape Modeling Association).
- President of GTMG (Groupe de Travail en Modélisation Géométrique) part of GDR IM and GDR IGRV.
- Member of the Conseil du Laboratoire at LJK.
- Responsible of Maths-Info department of the Grenoble doctoral school MSTII.

Rémi Ronfard

- gave invited talks on "Directing virtual worlds" at Utrecht University; at Laboratoire d'Informatique Fondamentale in Marseille; at LIRIS in Lyon; at IRCAM in Paris.
- is a co-organizer of the GDR ISIS action on "Face, gesture, action and behavior", which held its national meeting on December 11, at Telecom Paris Tech.
- is a member of the new GDR Esars : *Esthétique, Art et Science*.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Responsibilities of academic programs

- Marie-Paule Cani is responsible for two courses at Ensimag/Grenoble-INP: 3D Graphics (a course that attracts about 80 master 1 students per year) and IRL (Introduction à la recherche en laboratoire), a course enabling engineering students to work on a personal project in a research lab during one semester, to get an idea of what academic research is.
- Stefanie Hahmann is co-responsible of the MMIS (Images and Applied Maths) (<http://ensimag.grenoble-inp.fr/cursus-ingenieur/modelisation-mathematique-images-simulation-124674.kjsp>) department at University ENSIMAG/Grenoble INP. Stefanie Hahmann is responsible of 3 courses at Ensimag/Grenoble INP: Numerical Methods (240 students, 3rd year Bachelor level), Geometric Modeling (60 students, Master 1st year) and Surface Modeling (30 students, Master 2nd year).
- Olivier Palombi is responsible of the French **Campus numérique** of anatomy. Olivier Palombi is responsible and national leader of the project SIDES (<http://side-sante.org/>). All the French medical schools (43) have planned to use the same e-learning framework (SIDES) to manage evaluations (examen) and to create a large shared database of questions.
- François Faure was responsible of the GVR-(Graphics, Vision and Robotic) program in the MOSIG Master.
- Damien Rohmer is coordinator of the Math-Signal-Image program in the school CPE Lyon.
- Rémi Ronfard taught courses in Advanced 3D animation, M2R MOSIG, University of Grenoble (12 hours); and Game Engine Programming, M2R IMAGINA, University of Montpellier (20 hours).

Note that MOSIG is joint master program between University Joseph Fourier (UJF) and Institut Polytechnique de Grenoble (INPG) taught in English since it hosts a number of internal students. It belongs to the doctoral school MSTII.

### **9.2.2. Educational activities**

Most of the members of our team are Professor or Assistant Professor in University where the common teaching load is about 200h per year. Rémi Ronfard who is only researcher usually perform some teaching in delegation.

### **9.3. Popularization**

Damien Rohmer published an article on volume preserving deformation in Quadrature Journal [41]. This journal is accessible for University students and teachers.

## IN-SITU Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

- UIST 2014, *ACM Symposium on User Interface Software and Technology*, Hawaii, 2014: Stéphane Huot (Video Previews Co-Chair)

### 8.1.2. Scientific events selection

#### 8.1.2.1. Chair of conference program committee

- IHM 2014, *Conférence Francophone d'Interaction Homme-Machine*: Olivier Chapuis (Papers Co-Chair)

#### 8.1.2.2. Member of the conference program committee

- CHI 2014, *ACM Conference on Human Factors in Computing*: Wendy Mackay
- UIST 2014, *ACM Symposium on User Interface Software and Technology*: Wendy Mackay
- DIS 2014, *ACM conference on Designing Interactive Systems*: Wendy Mackay
- NIME 2014, *New interfaces for Musical Expression*: Stéphane Huot, Theophanis Tsandilas
- MOCO 2014 - *International Workshop on Movement and Computing*: Michel Beaudouin-Lafon
- DI 2014 - *First International Conference Digital Intelligence*: Michel Beaudouin-Lafon
- GD 2014 - *22nd International Symposium on Graph Drawing*: Anastasia Bezerianos
- GRAPP 2014 - *10th International Conference on Computer Graphics Theory and Applications*: Cédric Fleury
- IHM 2014, *Conférence Francophone d'Interaction Homme-Machine*: Theophanis Tsandilas

#### 8.1.2.3. Reviewer

- ACM CHI 2014: Caroline Appert, Michel Beaudouin-Lafon, Anastasia Bezerianos, Olivier Chapuis, Stéphane Huot, Can Liu, Theophanis Tsandilas
- ACM UIST 2014: Caroline Appert, Michel Beaudouin-Lafon, Anastasia Bezerianos, Olivier Chapuis, Can Liu, Theophanis Tsandilas
- ACM EICS 2014 - *ACM Symposium on Engineering Interactive Computing Systems*: Stéphane Huot
- ACM ITS 2014 - *ACM Conference on Interactive Tabletop and Surfaces*: Anastasia Bezerianos, Olivier Chapuis, Theophanis Tsandilas
- ACM MobileHCI 2014 - *ACM Conference on Human-Computer Interaction with Mobile Devices and Services*: Caroline Appert, Olivier Chapuis
- IEEE 3DUI 2014 - *IEEE Symposium on 3D User Interfaces*: Cédric Fleury
- IEEE InfoVis 2014 - *IEEE Information Visualization Conference*: Anastasia Bezerianos
- IEEE EuroVis 2014 - *Eurographics/IEEE Symposium on Visualization*: Anastasia Bezerianos
- IEEE VAST 2014 - *Visual Analytics Software and Technology*: Anastasia Bezerianos
- 3DVIS @ IEEE VIS 2014 - *IEEE VIS Workshop on 3DVis*: Cédric Fleury
- 3DCVE @ IEEE VR 2014 - *IEEE VR Workshop on Collaborative Virtual Environments*: Cédric Fleury

- GI 2014 - Graphics Interface Conference: Theophanis Tsandilas

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

- Editor for the Human-Computer Interaction area of the new ACM Books Series (published with Morgan & Claypool Publishers): Michel Beaudouin-Lafon (2013-)
- CACM, *Communications of the ACM*, ACM: Wendy Mackay (2008-)
- TOCHI, *Transactions on Computer Human Interaction*, ACM: Michel Beaudouin-Lafon (2009-)
- JIPS, *Journal d'Interaction Personne-Système*, AFIHM: Michel Beaudouin-Lafon (2009-)
- IJHCS, *International Journal of Human-Computer Study*, Elsevier: Michel Beaudouin-Lafon (Member of the Advisory Board, 2009-)
- JCSCW, *Journal of Computer Supported Cooperative Work*, Springer: Michel Beaudouin-Lafon (Member of the Advisory Board, 2010-)

#### 8.1.3.2. Reviewer

- Transactions on Computer-Human Interaction (TOCHI), ACM: Caroline Appert, Michel Beaudouin-Lafon, Olivier Chapuis, Stéphane Huot, Wendy Mackay
- Transactions on Visualization and Computer Graphics (TVCG): Anastasia Bezerianos, Cédric Fleury
- International Journal of Human-Computer Studies (IJHCS), Elsevier: Olivier Chapuis, Stéphane Huot
- Journal on Multimodal User Interfaces (JMUI), Springer: Caroline Appert, Stéphane Huot
- International Journal of Geo-Information (IJGI), ISPRS: Caroline Appert
- Journal d'Interaction Personne-Système (JIPS): Michel Beaudouin-Lafon

### 8.1.4. Research Organizations

- Agence Nationale de la Recherche (ANR), CES "Contenus, connaissances, interactions": Caroline Appert (Evaluation Committee member)
- Agence Nationale de la Recherche (ANR), "Blanc", "Blanc International" and "Jeunes Chercheuses Jeunes Chercheurs" programs: Caroline Appert (reviewer), Theophanis Tsandilas (reviewer)
- AERES Evaluation Committee of Laboratoire d'Informatique de Grenoble (LIG): Michel Beaudouin-Lafon (president)
- Alliance des Sciences et Technologies du Numérique (ALLISTENE), Working group "Knowledge, Content and Interaction": Wendy Mackay and Michel Beaudouin-Lafon (members)
- Alliance des Sciences et Technologies du Numérique (ALLISTENE), Working group "Interactions des mondes physiques, de l'humain et du monde numérique" for the National Research Strategy agenda: Michel Beaudouin-Lafon (co-chair)
- Steering Committee of "Institute for Digital Society" (Université Paris-Saclay): Michel Beaudouin-Lafon (member)
- Scientific Committee of IRCAM: Michel Beaudouin-Lafon (member)
- Scientific Committee of AmiQual4Home "Équipement d'Excellence" (Grenoble): Michel Beaudouin-Lafon (member)
- Research Commission of Institut Telecom: Michel Beaudouin-Lafon (member)
- Research Commission of DigiCosme LABEX (Université Paris-Saclay): Michel Beaudouin-Lafon (member)
- Working Group of the future Computer Science Department of Université Paris-Saclay: Michel Beaudouin-Lafon (member)

### 8.1.5. Learned Societies

- Association Francophone d'Interaction Homme-Machine (AFIHM): Olivier Chapuis (member of the board, vice-president), Stéphane Huot (member of the board and of the scientific council – CPPMS)
- Paris SIGCHI Local Chapter: Caroline Appert (treasurer), Anastasia Bezerianos (president)
- ACM SIGCHI Conference Management Committee: Wendy Mackay (member)
- ACM Europe Council: Michel Beaudouin-Lafon (member)
- EUACM, ACM Europe's public policy office: Michel Beaudouin-Lafon (member)
- ACM Publications Board subcommittees: Michel Beaudouin-Lafon (future of the ACM DL), Wendy Mackay (new publications)

### 8.1.6. Hiring committees

- Univ. Paris-Sud hiring committee, Commission Consultative des Spécialistes de l'Université 27ème section (computer science), members: Michel Beaudouin-Lafon, Stéphane Huot, Wendy Mackay, Caroline Appert
- Univ. Paris-Sud hiring committee, Comités de Sélection 27ème section (computer science), members: Michel Beaudouin-Lafon, Stéphane Huot, Wendy Mackay
- Inria Senior PES committee, member: Wendy Mackay

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Interaction Masters (Research Master in Computer Science, Interaction Specialty): Anastasia Bezerianos & Michel Beaudouin-Lafon, Chairs, Cédric Fleury, Internships organization, M2, Univ. Paris-Sud

HCID Masters (EIT ICT Labs European Master in Human-Computer Interaction and Design): Michel Beaudouin-Lafon & Anastasia Bezerianos, Chairs, M1 & M2), Univ. Paris-Sud

DUT Informatique: Stéphane Huot, Director of studies for the 1st year, IUT Orsay – Univ. Paris-Sud

Masters in Computer Science & HCID Masters: Anastasia Bezerianos, Cédric Fleury & Theophanis Tsandilas, *Programming of Interactive Systems*, 63 hrs, M1, Univ. Paris-Sud

Research Masters in Computer Science: Wendy Mackay & Anastasia Bezerianos, *Formation à la Recherche* 45 hrs, M2 (all research specialties), Univ. Paris-Sud

Interaction Masters & HCID Masters: Michel Beaudouin-Lafon, *Fundamentals of Human-Computer Interaction*, 38 hrs, M1/M2, Univ. Paris-Sud

Interaction Masters & HCID Masters: Wendy Mackay, *Design and Evaluation of Interactive Systems*, 63 hrs, M1/M2, Univ. Paris-Sud

Master 2 Professional: Anastasia Bezerianos, *Design and Evaluation of Interactive Systems*, 38 hrs, M2Pro, Univ. Paris-Sud

Interaction Masters: Anastasia Bezerianos, *Mixed Reality and Tangible Interaction*, 18 hrs, M2, Univ. Paris-Sud

Interaction Masters: Michel Beaudouin-Lafon & Cédric Fleury, *Groupware and Collaborative Interaction*, 38 hrs, M2, Univ. Paris-Sud

HCID Masters: Caroline Appert, *Evaluation of interactive systems*, 63 hrs, M1, Univ. Paris-Sud

HCID Masters: Anastasia Bezerianos, Wendy Mackay, Michel Beaudouin-Lafon, *Human-Computer Interaction project*, 50 hrs, M1, Univ. Paris-Sud

Polytech Fifth year: Cédric Fleury, *Réalité Virtuelle et Interaction*, 40 hrs, M2, Univ. Paris-Sud

Polytech Third year: Anastasia Bezerianos, Olivier Chapuis, *Interaction Homme-Machine*, 18 hrs, M1, Univ. Paris-Sud

Polytech Third year: Cédric Fleury, *Projet Java-Graphique-IHM*, 24 hrs, M1, Univ. Paris-Sud

Polytech First year: Cédric Fleury, *Introduction à l'Informatique*, 38 hrs, L1, Univ. Paris-Sud

Licence Second year: Anastasia Bezerianos, *Developpement Logiciel*, 15 hrs, L2, Univ. Paris-Sud

DUT Informatique: Stéphane Huot, *Introduction à l'Interaction Homme-Machine*, 100 hrs, L1, IUT Orsay – Univ. Paris-Sud

DUT Informatique: Stéphane Huot, *Programmation Orientée Objet*, 21 hrs, L2, IUT Orsay – Univ. Paris-Sud

## 8.2.2. Supervision

### PhD Students

PhD : Jérémie Garcia, *Supporting creative activities with interactive paper*, defended on 10 June 2014, Wendy Mackay & Theophanis Tsandilas

PhD in progress : David Bonnet, *Gesture-based interactions and instrumental interaction*, October 2011, Michel Beaudouin-Lafon & Caroline Appert

PhD in progress : Ghita Jalal, *Co-Adaptive Systems*, September 2013, Wendy Mackay

PhD in progress : Alexandre Kouyoumdjian, *Multimodal Selection of Numerous Moving Targets in Large Visualization Platforms: Application to Interactive Molecular Simulation.*, October 2013, Stéphane Huot, Patrick Bourdot & Nicolas Ferey (LIMSI-CNRS)

PhD in progress : Can Liu, *Collaborative Multiscale Navigation and Interaction*, October 2012, Michel Beaudouin-Lafon, Olivier Chapuis & Eric Lecolinet (Telecom ParisTech)

PhD in progress : Justin Mathew, *New visualization and interaction techniques for 3D spatial audio*, June 2013, Stéphane Huot & Brian Katz (LIMSI - CNRS)

PhD in progress : Daniel Strazzulla, *Multimedia Communication*, October 2012, Wendy Mackay

PhD in progress : Oleksandr Zinenko, *Interactive Code Restructuring*, September 2013, Stéphane Huot & Cédric Bastoul (Université de Strasbourg)

PhD in progress : Ignacio Avellino, *Remote Collaboration in Large Interactive Spaces*, September 2014, Michel Beaudouin-Lafon & Cédric Fleury

PhD in progress : Nolwenn Maudet, *Substrates and Co-Adaptive Instruments*, September 2014, Wendy Mackay & Michel Beaudouin-Lafon

PhD in progress : Jessalyn Alvina, *Mobile Co-Adaptive Instruments*, September 2014, Wendy Mackay

PhD in progress : Marc-Emmanuel Perrin, *Novel Interaction Models for Multi-surface Visualization*, September 2014, Michel Beaudouin-Lafon & James Eagan (Télécom ParisTech)

### Masters students

Nolwenn Maudet, UTC Compiègne, “Substrates and Co-Adaptive Instruments ”: Wendy Mackay (2014)

Ignacio Avellino, RWTH Aachen, “Audio-Video support for Remote Collaboration”: Cédric Fleury (2014)

Guilherme Soares, Univ. Paris-Sud, “Instrumental Interaction for Neuroanatomy Imaging”: Michel Beaudouin-Lafon (2014)

Niyati Chowdhury, Univ. Trento, “Interactive Brain Visualization”: Michel Beaudouin-Lafon and Wendy Mackay (2014)

Olutosin Oduwole, Univ. Paris-Sud, “Distributed Video Editing on a Wall-Size Display”: Wendy Mackay & Can Liu (2014)



Thanassis Taousakos, Univ. Paris-Sud, “Detecting and Simplifying Users’ Routines on Mobile Devices”: Anastasia Bezerianos & Caroline Appert (2014)

Paola Pastor, Univ. Paris-Sud, “Making non-interactive surfaces interactive”: Wendy Mackay & Daniel Strazzulla (2014)

Chen Wang, Univ. Paris-Sud, “BFF Band: Rethinking Personal Communication”: Wendy Mackay & Daniel Strazzulla (2014)

Lucien Bobo, ENS Cachan, “Comm Apps for Remote Communication”: Wendy Mackay & Daniel Strazzulla (2014)

Louis Faucon, Ecole Polytechnique, “Interactive Communication Bands”: Wendy Mackay & Daniel Strazzulla (2014)

Jianqiao Li, Ecole Polytechnique, “Dynachord - Combining chord and gesture recognition”: Wendy Mackay (2014)

Miguel Rodriguez and Gabriella Villalobos, Univ. Paris-Sud, “Video Clipper - Structured Capture of Video Data”: Wendy Mackay (2014)

Bruno Fruchard, Univ. Paris-Sud, "Development of flexible mobile interfaces on Android". Olivier Chapuis & Anastasia Bezerianos (2014)

### 8.2.3. *Juries*

- University of Munich Doctoral Consortium: Wendy Mackay, jury member
- Olivier Beaudoux (ESEO Angers) – Habilitation à Diriger des Recherches: Michel Beaudouin-Lafon, jury member
- Frédéric Bevilacqua (IRCAM) – Habilitation à Diriger des Recherches: Michel Beaudouin-Lafon, reviewer
- Riad Akrouf (LRI) – PhD committee: Michel Beaudouin-Lafon, examiner
- Jérémie Gilliot (Université de Lille, Lille) – PhD committee: Stéphane Huot, reviewer
- Samuel Huron (Université Paris-Sud) – PhD committee: Wendy Mackay, jury member
- Yvonne Jansen (Inria Saclay) – PhD committee: Michel Beaudouin-Lafon, president
- Cédric Miville (Télécom Paris) – PhD committee: Wendy Mackay, jury member
- Charles Perrin (Inria) – PhD committee: Michel Beaudouin-Lafon, president
- Maria Cristina Riff Rojas (Université Paris-Sud) – PhD committee: Wendy Mackay, examiner
- Thomas Vincent (Université de Grenoble, Grenoble) – PhD committee: Stéphane Huot, reviewer
- Jean-Luc Vinot (Université Toulouse III - Paul Sabatier) – PhD committee: Wendy Mackay, reviewer
- Tenure case in the USA: Michel Beaudouin-Lafon, reviewer

## 8.3. Popularization

- “*L’homme doit contrôler l’ordinateur, pas l’inverse*”, Interview on Arte Television Future Mag, February 2014: Wendy Mackay <http://www.futuremag.fr/interview-integrale/lunettes-connectees-interview-avec-wendy-mackay>
- “*Quid sit musicus*”, World premiere at IRCAM on June 18, 2014 of the piece composed and directed by Philippe Leroux: Jérémie Garcia designed and developed technology and tools used in the composition and performance of the piece.
- “*PaperTonnetz*” and “*Dessines moi un paysage*”, Public Exhibition at Futur-en-Seine festival, June 2014: Jérémie Garcia. The demonstration was covered by the online news site 01net.com.
- “*L’être humain au coeur de la recherche en IHM*”, SIF Blog, Le Monde, July 2014: Interview of Wendy Mackay by Serge Abiteboul and Claire Mathieu.
- “*Interfaces de demain, la fin du tactile ?*”, conference at Université du Temps Libre Essonne, December 2014: Michel Beaudouin-Lafon.
- Scientific committee of the S-Cube association (Scientipole-Savoirs-Société) on the Saclay campus for an exhibit on the brain: Michel Beaudouin-Lafon (2013-2014).

## LAGADIC Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

- Paolo Robuffo Giordano co-organized the Workshop “On the centrality of decentralization in multi-robot systems: holy grail or false idol?” at ICRA 2014, Hong Kong, China

#### 9.1.1.2. member of the organizing committee

- Paolo Robuffo Giordano co-organized the 7-th International Workshop on Human-Friendly Robotics, Pontedera, Italy

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- François Chaumette: ICRA'14, ICRA'15
- Eric Marchand: ICRA'14, RFIA'14 (area chair), ICIP'14
- Patrick Rives: RFIA'14
- Paolo Robuffo Giordano: RSS'14, ICRA'14, DARS'14, RSS'15
- Marie Babel: ICIP'14, ICRA'15

#### 9.1.2.2. reviewer

- François Chaumette: ICRA'14, RSS'14, IROS'14, , WAFR'14, ICRA'15
- Eric Marchand: ICRA'14, ICIP'14, IROS'14, ICRA'15
- Patrick Rives: ICRA'15, IROS'14, MVIGRO'14, RFIA'14, ECCV'14, ASROB'14
- Paolo Robuffo Giordano: ICRA'14, IROS'14, MSC'14, IFAC WC'14, ICRA'15
- Alexandre Krupa: ICRA'14, IROS'14, IPCAI'14, ICRA'15, ISBI'15

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- Eric Marchand and Paolo Robuffo Giordano are Associate Editors of the IEEE Trans. on Robotics.
- Eric Marchand is a Guest Editor (with Peter Corke and Jana Kosecka) of a Special Issue of the Int. Journal of Robotics Research on Robot Vision.
- François Chaumette is in the Editorial Board of the Int. Journal of Robotics Research.

#### 9.1.3.2. reviewer

- François Chaumette: IEEE Trans. on Robotics (7), Int. Journal of Robotics Research (1), IEEE Trans. on Automatic Control (1), Robotics and Autonomous Systems (1)
- Eric Marchand: IEEE Trans. on Robotics (8), Int. Journal of Robotics Research (4), Autonomous Robots (1)
- Patrick Rives: Int. Journal of Robotics Research (1), Journal of Control (1)
- Paolo Robuffo Giordano: IJRR (2), T-CST (2), JHRI (1), TAC (1), TRO (1)
- Alexandre Krupa: Robotics and Autonomous Systems (1)

### 9.1.4. Selection committees

- François Chaumette was in the selection committee for an Assistant Professor position at the “Université Picardie-Jules Verne” in Amiens. He also served in the jury for the selection of research scientists (SRP/ARP) at Inria.
- Marie Babel was in the selection committee for research scientists (CR2) at Inria Rennes-Bretagne Atlantique. She also served in the selection committee for an Assistant Professor position in robotics at the “Université de Lorraine”.
- Paolo Robuffo Giordano and François Chaumette were in the selection committee for an Assistant Professor position in robotics at the “Université de Rennes 1”.
- Eric Marchand was in the selection committee for a Professor position in image processing at Insa in Rennes.
- Patrick Rives as a member of the Inria evaluation committee was in the selection committee for research scientists (CR2) at Inria Nancy-Grand Est and Inria Bordeaux-Sud-Ouest, and also in the selection committees for senior research scientists (DR2, DR1, and DR0).

#### **9.1.5. Participation in seminars, invitation**

- François Chaumette and Paolo Robuffo Giordano were invited to give a talk during the final workshop of the FP7 Regpot project at Dubrovnik, Croatia, in September 2014.
- Alexandre Krupa was invited to give a talk in the tutorial session on Mechatronics for medical robotics at the IEEE/ASME Conf. on Advanced Intelligent Mechatronics, Besançon, France, July 2014 [59].

#### **9.1.6. Animation at the international level**

- François Chaumette served in the 2014 IEEE RAS Fellow Nomination Committee and in the 2014 IEEE RAS Chapter of the year Award Committee. He was also a member of the jury in charge of the 2014 IEEE ICRA Best Vision paper award.
- Paolo Robuffo Giordano served as External Reviewer for the EU FP7 Project “SHERPA”

#### **9.1.7. Animation at the national level**

- François Chaumette and Patrick Rives are members of the scientific council of the “GdR Robotique” and JNRR. They have both served in the jury to select the best French Ph.D. thesis in robotics.
- Patrick Rives is a member of the Inria evaluation committee.
- Eric Marchand is in the board of the “Association Française pour la Reconnaissance et l’Interprétation des Formes (AFRIF)”. He is secretary of this association.
- Alexandre Krupa is a member of the Inria Cost-GTAI in charge of the evaluation of the ADTs (“Actions de développements technologiques”)

#### **9.1.8. Animation at the regional and local levels**

- Eric Marchand is in the board of the “Images et réseaux” competitiveness cluster.
- Alexandre Krupa is a member of the GestChir project at the IRT B-Com in Rennes.
- Eric Marchand is a member of the scientific council of the “École supérieure d’ingénieurs de Rennes” (ESIR).
- François Chaumette is the president of the committee in charge of all the temporary recruitments (“Commission Personnel”) at Inria Rennes-Bretagne Atlantique and Irisa. He is also a member of the Head team of Inria Rennes-Bretagne Atlantique.
- Eric Marchand is a member of the committee in charge of all the temporary recruitments (“Commission Personnel”) at Inria Rennes-Bretagne Atlantique and Irisa. He is particularly in charge of Irisa Ph.D. students.
- Marie Babel is a member of the “Comité de centre” of Inria Rennes-Bretagne Atlantique.

- Fabien Spindler is a member of the “Commission développement durable” of Inria Rennes-Bretagne Atlantique.
- Alexandre Krupa is a member of the CUMIR (“Commission des Utilisateurs des Moyens Informatiques pour la Recherche”) of Inria Rennes-Bretagne Atlantique.
- Paolo Robuffo Giordano was invited to give a talk to the M.Sc. students at the ENS Rennes in October 2014.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Marie Babel:

- Master INSA3: “Statistical Signal Processing”, 24 hours, M2, INSA Rennes
- Master INSA1: “Assembly language compilation oriented”, 30 hours, L3, INSA Rennes
- Master INSA2: “Computer science project”, 30 hours, M1, INSA Rennes
- Master INSA2: “Image analysis”, 18 hours, M1, INSA Rennes
- Master INSA1: “Remedial math courses”, 24 hours, L3, INSA Rennes
- Master INSA1: “Risk Management for Information Systems”, 8 hours, L3, INSA Rennes

François Chaumette:

- Master ESIR3: “Visual servoing”, 8 hours, M2, Ecole supérieure d’ingénieurs de Rennes

Vincent Drevelle:

- Master CTS: “Instrumentation, localization, GPS“, 6 hours, M2, Université de Rennes 1
- Master Info: “Mobile robotics“, 22 hours, M2, Université de Rennes 1

Alexandre Krupa:

- Master SIBM (Signals and Images in Biology and Medicine): “Medical robotics guided from images”, 4.5 hours, M2, Université de Rennes 1, Brest and Angers
- Master FIP TIC-Santé: “Ultrasound visual servoing”, 6 hours, M2, Télécom Physique Strasbourg

Eric Marchand:

- Master Esir2: “Colorimetry”, 24 hours, M1, Esir Rennes
- Master Esir2: “Computer vision: geometry”, 24 hours, M1, Esir Rennes
- Master Esir3: “Special effects”, 24 hours, M2, Esir Rennes
- Master Esir3: “Computer vision: tracking and recognition”, 24 hours, M2, Esir Rennes
- Master MRI: “Computer vision”, 24 hours, M2, Université de Rennes 1
- Master MIA: “Augmented reality”, 4 hours, M2, Université de Rennes 1

Paolo Robuffo Giordano:

- Master in Robotics: “Analysis and Control of Multi-Robot Systems”, 16 hours, M2, Department of Computer and System Sciences, University of Rome “La Sapienza”

### 9.2.2. Supervision

Ph.D.: Bertrand Delabarre, “Contributions to dense visual tracking and visual servoing using robust similarity criteria”, defended on December 2014, supervised by Eric Marchand [8]

Ph.D.: Jérôme Ardouin, “Contribution to the study of visualization of real and virtual environment with an extended field of view”, defended on December 2014, supervised by Anatole Lecuyer (Hybrid group in Rennes), Maud Marchal (Hybrid group) and Eric Marchand

Ph.D.: Carlo Masone, “Planning and Control for Robotic Tasks with a Human-in-the-Loop”, defended on July 2014, supervised by Paolo Robuffo Giordano with Prof. Dr.-Ing. Frank Allgöwer (University of Stuttgart) and Prof. Dr. Heinrich H. Bühlhoff (Max Planck Institute for Biological Cybernetics)

Ph.D.: Volker Grabe, “Towards Robust Visual-Controlled Flight of Single and Multiple UAVs in GPS-Denied Indoor Environments”, defended on March 2014, supervised by Paolo Robuffo Giordano with Prof. Dr. Andreas Schilling (University of Tübingen) and Prof. Dr. Heinrich H. Bühlhoff (Max Planck Institute for Biological Cybernetics)

Ph.D.: Rafik Sekkal, “Visual techniques for 2D object detection and tracking”, defended on February 2014, supervised by Marie Babel [9]

Ph.D. in progress: Manikandan Bakthavatchalam, “Utilisation des moments photométriques en asservissement visuel”, started in October 2011, supervised by François Chaumette

Ph.D. in progress: Tawsif Gokhool, “Représentations valides à long terme pour la navigation et l’apprentissage des modèles 3D”, started in February 2012, supervised by Patrick Rives

Ph.D. in progress: Romain Drouilly, “Représentation hybride métrique, topologique et sémantique d’environnement 3D pour la localisation temps réel”, started in May 2012, supervised by Patrick Rives

Ph.D. in progress: Le Cui, “Nano-manipulation par asservissement visuel”, started in October 2012, supervised by Eric Marchand

Ph.D. in progress: Riccardo Spica, “Autonomous vision-based two-hand manipulation strategies for humanoid robots”, started in December 2012, supervised by Paolo Robuffo Giordano and François Chaumette

Ph.D. in progress: Lucas Royer, “Visual tool for percutaneous procedures in interventional radiology”, started in September 2013, supervised by Alexandre Krupa, Maud Marchal (Hybrid group at Inria Rennes-Bretagne Atlantique and Irisa) and Guillaume Dardenne (IRT B-Com)

Ph.D. in progress: Pierre Chatelain, “Multi-modal visual servoing for intra-operative imaging”, started in September 2013, supervised by Alexandre Krupa and Nassir Navab (Technische Universität München)

Ph.D. in progress: Vishnu Karakkat Narayanan, “Semi-autonomous navigation of a wheelchair by visual servoing and user intention analysis”, started in September 2013, supervised by Marie Babel and Anne Spalanzani (e-Motion group at Inria Rhône-Alpes)

Ph.D. in progress: Suman Raj Bista, “Visual navigation of a humanoid robot”, started in October 2013, supervised by Paolo Robuffo Giordano and François Chaumette

Ph.D. in progress: Nicolas Cazy, “Model predictive visual servoing of a humanoid robot”, started in October 2013, supervised by Paolo Robuffo Giordano, François Chaumette and Pierre-Brice Wieber (Bipop group at Inria Rhône-Alpes)

Ph.D. in progress: Renato José Martins, “Robust navigation and control of an autonomous vehicle”, started in November 2013, supervised by Patrick Rives and Samuel Siqueira Bueno (CTI)

Ph.D. in progress: Aly Magassouba, “Audio-based control”, started in December 2013, supervised by François Chaumette and Nancy Bertin (Panama group at Inria Rennes-Bretagne Atlantique and Irisa)

Ph.D. in progress: Jason Chevie, “Control of a flexible needle by visual servoing using B-mode ultrasound images”, started in September 2014, supervised by Alexandre Krupa and Marie Babel

Ph.D. in progress: Quentin Bateux, “Visual servoing from global descriptors”, started in October 2014, supervised by Eric Marchand

Ph.D. in progress: Fabrizio Schiano, “Collective control with onboard sensors for multiple quadrotor UAVs”, started in October 2014, supervised by Paolo Robuffo Giordano

Ph.D. in progress: Pedro Patlan-Rosales, “Robotic insertion of a biopsy needle by visual servoing using elastography images”, started in October 2014, supervised by Alexandre Krupa

Ph.D. in progress: Noël Mériaux, “Landing by visual servoing”, started in October 2014, supervised by François Chaumette, Eric Marchand and Patrick Rives

Ph.D. in progress: Lesley-Ann Dufлот, “Soft tissue deformation tracking using optical coherence tomography (OCT) and ultrasound imaging”, started in November 2014, supervised by Alexandre Krupa and Brahim Tamadazte (Minarob group at FEMTO-ST, Besançon)

Master internship: Clément Leboulenger from Insa Rennes, “Haptic guidance for vision-based semi-autonomous wheelchair navigation”, supervised by Marie Babel and Maud Marchal (Hybrig group at Inria Rennes-Bretagne Atlantique)

Master internship: Quentin Bateux from Insa Rouen, “Visual servoing from histograms”, supervised by Eric Marchand

Master internship: Jason Chevie from Normale Sup Cachan, “3D deformable target tracking in ultrasound images”, supervised by Alexandre Krupa and Marie Babel

Bachelor internship: David Roszczypala from Univ. Rennes 1, “Target tracking by visual servoing”, supervised by François Chaumette

Bachelor internship: Olivier Bordron from Normale Sup Rennes, “Active SfM with a human-in-the-loop”, supervised by P. Robuffo Giordano

Bachelor internship: Quentin Delamare from Normale Sup Rennes, “Learning-based flight control for quadrotor UAVs”, supervised by Paolo Robuffo Giordano

### 9.2.3. *Juries*

- Marie Babel: Jesus-Arturo Escobedo-Cabello (Ph.D., reviewer, Inria, Grenoble)
- François Chaumette: Dorra Larnaout (Ph.D., reviewer, CEA, Saclay), Ivan Markovic (Ph.D., Zagreb), Mohammed Rédha Benachenhou (Ph.D., reviewer, IRCCyN, Nantes), Dao Xuan Quy (Ph.D., Inria, Rennes), Guillaume Sabiron (Ph.D., president, Onera, Toulouse), Omar Tahri (HdR, Institut Pascal, Clermont-Ferrand), Xavier Savatier (HdR, reviewer, Irseem, Rouen)
- Eric Marchand: Ali Mekkonen (Ph.D., reviewer, Laas, Toulouse), Maxime Boucher (Ph.D., Evry), Olivier Le Meur (HdR, Irisa, Rennes), Rémi Cozot (HDR, president, Irisa, Rennes), Valérie Renaudin (HdR, president, Irstea), Clément Deymier (Ph.D., president, Institut Pascal, Clermont-Ferrand), Mihir Jain (Ph.D., president, Irisa, Rennes)
- Patrick Rives: R. Marie (Ph.D., Mis Amiens), E. Wirbel (Ph.D., president, Ecole des Mines de Paris), J.C. Devaux (Ph.D., reviewer, Ibisc Evry), G. Bernardes Vitor (Ph.D., reviewer, Unicamp Brazil), Xavier Savatier (HdR, president, Irseem, Rouen)

### 9.2.4. *Patent*

- Paolo Robuffo Giordano obtained the US Patent N. 8,634,969 “Teleoperation Method And Human Robot Interface For Remote Control of a Machine by a Human Operator” with Prof. Dr. Heinrich H. Bühlhoff (Max Planck Institute for Biological Cybernetics)

## 9.3. Popularization

- Due to the visibility of our experimental platforms, the team is often asked to present its research activities to students, researchers or industry. Our panel of demonstrations allows us to highlight recent results concerning the positioning of an ultrasound probe by visual servoing, the construction of a tower by combining 3D model-based visual tracking and visual servoing techniques to pick up cubes that are assembled, vision-based detection and tracking for space navigation in a rendezvous context, the semi-autonomous navigation of a wheelchair, and augmented reality applications.
- Marie Babel and François Pasteau gave a press conference in December 2014, organized at Pôle Saint Hélier (Rennes)
- Marie Babel gave a talk on "A driving assistance solution" in October 2014, during the "Semaine des Télécoms - Robotique et objets connectés" organised at Insa Rennes
- Fabien Spindler is a member of the editorial board of "Ouest Inria", the internal journal at Inria Rennes-Bretagne Atlantique.

## LEAR Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- C. Schmid is general chair for IEEE Conference on Computer Vision and Pattern Recognition, 2015.

#### 9.1.1.2. Member of the organizing committee

- C. Schmid and K. Alahari organized the ALLEGRO Workshop on weakly supervised learning and video recognition, Grenoble, 2014.
- Z. Harchaoui organized the “Tutorial on Frank-Wolfe and Greedy Optimization for Learning with Big Data” at ICML 2014, June 2014.
- Z. Harchaoui has organized a summer-school “Khronos Days”, focused on “High-Dimensional Learning and Optimization”, as part of the “Khronos” project (LabEx Persyval-Lab) and the “Gargantua” project (CNRS-Mastodons). <http://lear.inrialpes.fr/people/harchaoui/projects/khronos/>.
- Z. Harchaoui organized one international workshop. “Optimization and Statistical Learning workshop”, Les Houches, France, January 2015. <http://lear.inrialpes.fr/workshop/osl2015/>.
- Z. Harchaoui co-organized one national GDR-ISIS workshop on “Learning representations and signal processing”.
- Z. Harchaoui co-organized NIPS’14 "Optimization for Machine Learning" Workshop in Montreal (Canada).
- J. Mairal organized the session “Optimization and statistics” at “Journées MAS”, Toulouse, France.
- F. Pierucci co-organized the Grenoble Optimization Day workshop.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

- J. Verbeek: area chair for BMVC ’14, ECCV ’14, CVPR ’15.
- Z. Harchaoui: area chair for ICML ’15.
- J. Mairal: area chair for ICML ’15.

#### 9.1.2.2. Reviewer

The permanent members of the team reviewed numerous papers for numerous international conferences in computer vision and machine learning: CVPR, ECCV, NIPS, ICML, AISTATS.



### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

- C. Schmid: Editor in Chief of the International Journal of Computer Vision, since 2013.
- C. Schmid: Associate editor for Foundations and Trends in Computer Graphics and Vision, since 2005.
- J. Verbeek: Associate editor for Image and Vision Computing Journal, since 2011.
- J. Verbeek: Associate editor for the International Journal on Computer Vision, since 2014.
- J. Mairal: Guest editor for the Special Issue on Sparse Coding of the International Journal of Computer Vision.
- J. Mairal: Associate editor for IEEE Signal Processing Letters, since August 2014.
- K. Alahari: Co-guest editor: Special Issue on "Higher Order Graphical Models in Computer Vision: Modelling, Inference & Learning", IEEE Transactions on Pattern Analysis and Machine Intelligence, 2015 (in press)

#### 9.1.3.2. Reviewer

The permanent members of the team reviewed numerous papers for numerous international journals in computer vision (IJCV, PAMI,CVIU), machine learning (JMLR, Machine Learning). Some of them are also reviewing for journals in optimization (SIAM Journal on Optimization), image processing (SIAM Imaging Science), information theory (IEEE Transactions on Information Theory), statistics (Bernoulli, Annals of Statistics, Journal of American Statistical Association).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Doctorat: Z. Harchaoui, Lecture *Large-scale machine learning*, in “Tutorial on Large-Scale Visual Recognition” at CVPR 2014.

Doctorat: K. Alahari, Half-day Tutorial on MAP Estimation and Structured Prediction at ICPR, Stockholm, August 2014.

Doctorat: J. Mairal, course “Sparse estimation for image and vision processing”, 9H eqTD, DENIS summer school at Tampere university, Finland;

Doctorat: J. Mairal, course “Sparse estimation for image and vision processing”, 4.5H eqTD, given at PSL research university, Paris, France.

Master : M. Douze and K. Alahari. Multimedia databases, 3rd year ENSIMAG, Grenoble, France.

Master : J. Verbeek and J. Mairal, “Kernel Methods for Statistical Learning, 27H eqTD, M2, ENSIMAG, Grenoble.

Master: J. Mairal. “Statistical Learning and Applications”. 13.5H eqTD, M2, Ecole Normale Supérieure de Lyon, France.

Master : C. Schmid, “Object recognition and computer vision”, 10H, M2, ENS Cachan, France.

Master : J. Verbeek and C. Schmid. “Machine Learning & Category Representation”, 27H eqTD, M2, Univ. Grenoble.

Master: P. Weinzaepfel, “Réseaux IP”, 18h TD, M1, University Joseph Fourier, Grenoble, France.

Master: P. Weinzaepfel, “Introduction aux Réseaux”, 15H TD, M1, University Joseph Fourier, Grenoble, France.

Licence : F. Pierucci, “Apprentissage du raisonnement, algèbre linéaire et analyse élémentaire.”. 38H, L1, Grenoble univ., France.

Licence : H. Lin, “Apprentissage du raisonnement, algèbre linéaire et analyse élémentaire.”. 38H, L1, Grenoble univ., France.

Licence: P. Weinzaepfel, “Introduction à UNIX et à la programmation en langage C”, 33.5H TD, L1, DLST Grenoble, France.

### 9.2.2. Supervision

PhD: G. Cinbis, “Fisher kernel based models for image classification and object localization”, Grenoble Univ, July 2014, advisors: C. Schmid and J. Verbeek.

PhD: Z. Akata, “Contributions to Large-Scale Learning for Image Classification”, Grenoble Univ, Januray 2014, advisors: C. Schmid and F. Perronnin.

### 9.2.3. Juries

- C. Schmid, PhD committe for Mihir Jain, Inria Rennes, April 2014.
- C. Schmid, PhD committe for Mingyuan JIU, INSA Lyon, April 2014.
- C. Schmid, examiner for HdR Josef Sivic, ENS, Feburary 2014.
- J. Mairal, PhD committee for Nicolas Duforet-Frebourg, Grenoble University, October 2014.
- K. Alahari: President of the PhD committee for Jon Almazan, Computer Vision Center, Barcelona, Spain, October 2014.
- K. Alahari: PhD committee for Heydar Maboudi, KTH Royal Institute of Technology, Stockholm, Sweden, May 2014.

## 9.3. Other responsibilities

- C. Schmid was member of the evaluation panel for ERC starting grants, 2014.
- C. Schmid is member of the PAMI-TC awards committee, and the PAMI-TC executive committee.
- J. Verbeek: reviewer for grant proposals for the Indo French Centre for the Promotion of Advanced Research (CEFIPRA).
- Z. Harchaoui is in the scientific board of area “Machine Learning” of GDR ISIS (Groupe de Recherche “Information, Signal, Image et ViSion”).
- J. Mairal: reviewer for grant proposals from ANR and ERC.

## 9.4. Invited presentations

### 9.4.1. Keynote talks

- C. Schmid: Keynote speaker at Annual Workshop of the Austrian Association for Pattern Recognition, IST Austria, May 2014.
- C. Schmid: Keynote speaker at Netherlands Conference on Computer Vision, April 2014.

### 9.4.2. Invited talks

- Z. Harchaoui: Seminar, Microsoft Research, New York, April 2014.
- Z. Harchaoui: Seminar, Newton Institute, Cambridge, January 2014.
- Z. Harchaoui: Seminar, CBLL, NYU, April 2014.
- C. Schmid: Invited speaker at First French-German Mathematical Image Analysis Conference, Paris, January 2014.
- C. Schmid: Seminar at Univ. Edinburgh, July 2014.
- C. Schmid: Seminar at MPI, Tübingen, April 2014.
- J. Verbeek: Invited speaker at the Croatian Computer Vision Workshop, Zagreb, 2014.
- J. Mairal: invited speaker in mini-symposium at SIAM conference on Optimization, San Diego, 2014.
- J. Mairal: invited speaker at Journées BIG Data, Toulouse, 2014.

- J. Mairal: invited speaker at Journées MAS, Toulouse, 2014.
- K. Alahari: Seminar, Computer Vision Center (CVC), Barcelona, Spain, October 2014.
- K. Alahari: Seminar, University of California, Berkeley, USA, July 2014.
- K. Alahari: Invited speaker, Tutorial on Learning and Inference in Discrete Graphical Models, CVPR, Columbus, USA, June 2014.
- K. Alahari: Seminar, KTH Royal Institute of Technology, Stockholm, Sweden, May 2014.
- A. Cherian: Seminar at Yahoo Labs, Bangalore, India, April 2014.
- A. Cherian: Seminar at Siemens Corporate Research, Princeton, NJ, USA, June 2014.
- P. Weinzapfel: Seminar at UC Berkeley, December, 2014.

## **9.5. Popularization**

- Zaid Harchaoui and Martin Jaggi published in the Mathematical Optimization Society newsletter “Optima” an interview of Marguerite Frank, co-inventor of the Frank-Wolfe algorithm for constrained optimization, with a companion historical survey.
- Julien Mairal, Francis Bach, and Jean Ponce have published a monograph [24] “Sparse Modeling for Image and Vision Processing”, to appear in Foundations and Trends in Computer Graphics and Vision.
- Together with other students in LJK, Mattis Paulin did an interview of Emmanuel Candes for his award of the Prix Jean Kuntzmann in June 2014. The interview will soon be published in Journal du CNRS.

## LINKMEDIA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, Scientific chair

Vincent Claveau was co-chair of the demonstration track at the Conf. Extraction et Gestion de Connaissances.

Guillaume Gravier is president of the steering committee of the ISCA/IEEE Workshop on Speech, Language and Audio in Multimedia series.

Patrick Gros is member of the steering board of the Content-Based Multimedia Indexing workshop series.

Pascale Sébillot is a member of the permanent steering committee of Conf. francophone en Traitement Automatique des Langues Naturelles.

Pascale Sébillot was a member of the steering committee of Conf. on Recherche d'Information et Applications.

#### 9.1.1.2. Member of the organizing committee

Laurent Amsaleg and Li Weng organized a two-morning seminar on large-scale indexing at Irisa / Inria Rennes.

Andrei Bursuc and Hervé Jégou organized a micro-workshop in computer vision at Irisa / Inria Rennes.

Vincent Claveau was member of the organizing committee of the Conf. Extraction et Gestion de Connaissances.

Vincent Claveau, as ARIA financial head, participated in the financial organization of the Conférence en Recherche d'Information et Applications.

Vincent Claveau, as ARIA financial head, participated in the financial organization of the École d'été en Recherche d'Information et Applications.

Vincent Claveau was co-organizer and co-chair of a round table held during the Conf. francophone en Traitement automatique des langues naturelles.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsibility in conference program committee

Vincent Claveau was area chair at the Conf. francophone en Traitement Automatique des Langues Naturelles.

Guillaume Gravier was president of the program committee for Journées d'Études sur la Parole.

Guillaume Gravier was president of the program committee for ISCA/IEEE Workshop on Speech, Language and Multimedia.

Hervé Jégou was area chair for European Conf. on Computer Vision.

#### 9.1.2.2. Membership of conference program committee

Laurent Amsaleg was a PC member of: Intl. Workshop on Content-Based Multimedia Indexing; IEEE Intl. Conf. on Multimedia and Expo; Intl. Conf. on MultiMedia Modeling; Intl. Conf. on Signal Image Technology and Internet Systems.

Vincent Claveau was a PC member of: Conférence en Recherche d'Information et Applications; IEEE/WIC/ACM Intl. Conf. on Web Intelligence.

Teddy Furon was a PC member of: IEEE Workshop on Information Forensics and Security.

Guillaume Gravier was a PC member of: ACM Intl. Conf. on Multimedia; Intl. Workshop on Content-Based Multimedia Indexing; Intl. Congress on Image and Signal Processing; Intl. Conf. on Computational Linguistics, Demo track; IEEE Intl. Conf. on Multimedia and Expo; ACM Intl. Conf. on Multimedia Information Retrieval; Annual Conf. of the Intl. Speech Communication Association; IEEE Intl. Workshop on Multimedia Signal Processing; Intl. Conf. on Language Resources and Evaluation.

Patrick Gros was a PC member of: Intl. Conf. on Creative Content Technologies; Conférence de Recherche d'information et Applications; European Signal Processing Conf.; International Symposium on Multimedia; Conf. on Machine Learning and Data Mining; Reconnaissance des Formes et Intelligence Artificielle.

Hervé Jégou was a PC member of: Computer Vision and Pattern Recognition; British Machine Vision Conf.; ACM Intl. Conf. on Multimedia Information Retrieval.

Ewa Kijak was a PC member of: Intl. Workshop on Content-Based Multimedia Indexing.

Christian Raymond was a PC member of: Annual Conf. of the Intl. Speech Communication Association; Intl. Conf. on Machine Learning and Applications.

Pascale Sébillot was a PC member of: Workshop on Distributional Semantics; Colloque Intl. Francophone sur l'Écrit et le Document; Congrès National de Reconnaissance des Formes et Intelligence Artificielle; Intl. Conf. on Language Resources and Evaluation.

#### *9.1.2.3. Reviewer*

Laurent Amsaleg reviewed projects for the Agence National de la Recherche.

Guillaume Gravier reviewed projects for the Agence National de la Recherche.

Christian Raymond reviewed for Conférence Traitement Automatique du Langage Naturel, Journées d'Étude sur la Parole,

### **9.1.3. Journal**

#### *9.1.3.1. Member of the editorial board*

Vincent Claveau is member of the editorial committee of: Journal Traitement Automatique des Langues; Special issue of the Journal I3.

Teddy Furon is associate editor of IEEE Transactions on Information Forensics and Security

Hervé Jégou is associate editor of Computer Vision and Image Understanding

Christian Raymond is member of the editorial board of Revue Discours.

Pascale Sébillot is: editor of the Journal Traitement Automatique des Langues; member of the editorial committee of the Journal Traitement Automatique des Langues.

#### *9.1.3.2. Reviewer*

Laurent Amsaleg reviewed for Multimedia Tools and Applications, Mathematical Problems in Engineering.

Vincent Claveau was member of the reading committee for Multimedia Tools and Applications, for several issues of the Journal Traitement Automatique des Langues, for a special issue in Journal Documents Numériques

Teddy Furon reviewed for IEEE Trans. on Audio Speech and Language processing, IEEE Trans. on Information Forensics and Security, Elsevier Designs, Codes, and Cryptography journal, EURASIP Journal on Information Security.

Guillaume Gravier reviewed for IEEE Trans. on Audio Speech and Language, IEEE Transactions on Circuits and Systems for Video Technology, Intl. Journal of Multimedia Information Retrieval, Journal of Computer Science and Technology, Multimedia Tools and Applications, Traitement Automatique des Langues.

Hervé Jégou reviewed for IEEE Trans. Pattern Analysis and Machine Intelligence, IEEE Trans. Robotics, Computer Vision and Image Understanding.

Ewa Kijak reviewed for IEEE Transactions on Image Processing, Intl. Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, Journal of Applied Remote Sensing.

Pascale Sébillot was member of the reading committee for several issues of the Journal *Traitement Automatique des Langues*.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

- Master: Laurent Amsaleg, High-dimensional indexing, 13h, M2R, University Rennes 1, France
- Master: Vincent Claveau, Data-Based Knowledge Acquisition: Symbolic Methods, 20h, M1, INSA de Rennes, France
- Master: Vincent Claveau, Text Mining, 36h, M2, Univ. Rennes 1, France
- Master: Vincent Claveau, Machine Learning for symbolic and sequential data, 7h, M2, Univ. Rennes 1, France
- Master: Vincent Claveau, Information Retrieval, 15h, M2, ENSSAT, France
- Master: Vincent Claveau, Information Retrieval, 13h, M2, Univ. Rennes 1, France
- Licence: Teddy Furon, Probabilities, 40h, L1, Agrocampus Rennes, France
- Licence: Guillaume Gravier, Databases, 30h, L2, INSA Rennes, France
- Licence: Guillaume Gravier, C Programming, 10h, L3, INSA Rennes, France
- Master: Guillaume Gravier, Data analysis and probabilistic modeling, 30h, M2, University Rennes 1, France
- Master: Patrick Gros, Workshop on Mathematics, 12h, M2, Univ. Rennes 1, France
- Master: Ewa Kijak, Image analysis and classification, 30h, M1, ESIR, France
- Master: Ewa Kijak, Image processing, 64h, M1, ESIR, France
- Master: Ewa Kijak, Supervised learning, 15h, M2R, University Rennes 1, France
- Master: Ewa Kijak, Statistical data mining, 17h, M2, University Rennes 1, France
- Master: Ewa Kijak, Indexing and multimedia databases, 15h, M2, ENSSAT, France
- Master: Ewa Kijak, Computer vision, 8h, M2, ESIR, France
- Master: Ewa Kijak, Automatic video summarization, Project with Technicolor, 15h, M2, ESIR, France
- Master: Pascale Sébillot, Advanced Databases and Modern Information Systems, 70h, M2, INSA de Rennes, France
- Master: Pascale Sébillot, Data-Based Knowledge Acquisition: Symbolic Methods, 18h, M1, INSA de Rennes, France
- Master: Pascale Sébillot, Logic Programming, 12h, M1, INSA de Rennes, France

### **9.2.2. Supervision**

- HdR: Laurent Amsaleg, A Database Perspective on Large Scale High-Dimensional Indexing, Université de Rennes 1, defended on November 2014
- HdR: Hervé Jégou, On visual recognition and similarity search, Université de Rennes 1, defended on October, 2014
- PhD: Mihir Jain, Enhanced image and video representation for visual recognition, Université de Rennes 1, defended on April, 2014, Hervé Jégou, Patrick Bouthemy and Patrick Gros
- PhD in progress: Abir Ncibi, Structuring TV steams, started November 2011, Vincent Claveau and Patrick Gros
- PhD in progress: Mohammed-Haykel Boukadida, Video summarization based on constraint programming, started January 2012, Patrick Gros

PhD in progress: Petra Bosilj, Content based image indexing and retrieval using hierarchical image representations, started October 2012, Ewa Kijak and Sebastien Lefèvre (with OBELIX, IRISA team)

PhD in progress: Bingqing Qu, Structure discovery in collections of recurrent TV programs, started Oct. 2012, Guillaume Gravier

PhD in progress: Anca Roxana Simon, Hierarchical semantic structuring of video collections, started October 2012, Guillaume Gravier and Pascale Sébillot

PhD in progress: Raghavendran Balu, Privacy-preserving data aggregation and service personalization using highly-scalable data indexing techniques, started Oct. 2013, Teddy Furon and Laurent Amsaleg

PhD in progress: Raheel Kareem Qader, Phonology modeling for emotional speech synthesis, started January 2014, Gwénolé Lecorvé and Pascale Sébillot (with EXPRESSION, IRISA Team)

PhD in progress: Rémi Bois, Navigable directed multimedia hypergraphs: construction and exploitation, started October 2014, Guillaume Gravier and Pascale Sébillot

PhD in progress: Ahmet Iscen, Continuous memories for representing sets of vectors and image collections, started September 2014, Hervé Jégou and Teddy Furon

PhD in progress: Grégoire Jadi, Opinion mining in multimedia data, started October 2014, Vincent Claveau, Béatrice Daille (LINA, Nantes) and Laura Monceaux (LINA, Nantes)

PhD in progress: Vedran Vukotič, Deep neural architectures for automatic representation learning from multimedia multimodal data, started October 2014, Guillaume Gravier and Christian Raymond

### **9.2.3. Juries**

Vincent Claveau

PhD, K. Abdulahhad, LIG - Univ. Joseph Fourier, Grenoble

PhD, M. Dupuch, INSERM, Paris

PhD, R. Harastani, LINA - Univ. de Nantes

Teddy Furon

HDR, Patrick Bas, Université de Lille

PhD, reviewer, Antonino Simone, University of Eindhoven

PhD, Farzad Farhadzadeh, Université de Genève

Guillaume Gravier

PhD, Alberto Pimentel, Universidade Federal de Minas Gerais

PhD, Nadia Derbas, reviewer, Université de Grenoble

Patrick Gros

HDR, reviewer, Sid-Ahmed Berrani, Univ. Rennes 1

PhD, Mohammed Derbel, Univ of Tours

Pascale Sébillot

HDR, reviewer and president, Xavier Tannier, Paris-Sud university

PhD, president, Guiyao Ke, South-Brittany university

PhD, president, Mohamed Hatmi, Nantes university

### **9.3. Community animation**

Vincent Claveau is treasurer of the Association pour la Recherche d'Information et Applications.

Vincent Claveau is deputy head of the GDR MADICS.

Guillaume Gravier is president of the Association Francophone de la Communication Parlée.

Guillaume Gravier is co-founder and general chair of the ISCA SIG Speech, Language and Audio in Multimedia.

Guillaume Gravier is member of the Community Council of the Mediaeval Multimedia Evaluation series.

Pascale Sébillot is a member of the Conseil National des Universités.

## **9.4. Popularization**

Laurent Amsaleg. Lettre d'information Émergence, issue 32, 11/07/2014, "Un outil pour fouiller plus vite les disques durs saisis".

Laurent Amsaleg. Sciences Ouest, issue 324, October 2014, "Ils repèrent les contenus illicites".

Vincent Claveau co-organized and co-animated a round table held during the TALN conference about the evolution of NLP, from the points of view of education, research and industry.

Hervé Jégou was invited panelist at Intl. Conf. on Multimedia Retrieval, April 2014.

Hervé Jégou gave an invited tutorial on large-scale image search at Intl. Conf. on Multimedia Retrieval, April 2014.

Hervé Jégou gave a tutorial on efficient matching at Conf. on Computer Vision and Pattern Recognition, June 2014.

Hervé Jégou was invited speaker at Conf. on Computer Vision and Pattern Recognition, June 2014.

Pascale Sébillot: Invited speaker (3h) NLP tackling large volumes of potentially damaged textual data: what is different?, IST Inria seminar on "Big data: new information partitions", October 2014.



## LINKS Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, scientific chair

Sophie Tison is in the scientific committee of RTA (Rewriting Techniques and Applications) and STACS (Symposium on Theoretical Aspects of Computer Science). She is also in the editorial committee of RAIRO-ITA (Theoretical Informatics and Applications).

### 8.1.2. Scientific events selection

#### 8.1.2.1. Member of the conference program committee

Joachim Niehren was member of the program committees of LATA (International Conference on Language and Automata Theory and Applications) 2015, WPTE (Rewriting Techniques for Program Transformations and Evaluation) 2015, STACS (Symposium on Theoretical Aspects of Computer Science) 2014 and WPTE (Rewriting Techniques for Program Transformations and Evaluation) 2015.

Iovka Boneva was member of program committee ABDIS (East-European Conference on Advances in Databases and Information Systems) 2014

Angela Bonifata was member of the program committees of VLDB (Very large Database Conference) 2014 and 2015, EDBT (International Conference on Extending Database Technology) 2014, SIGMOD (International conference in Data Management) 2014, ICDT (International Conference on Database Theory) 2014 and 2015 and ICDE (International Conference of Data Engineering) 2015.

Slawomir Stawork is member of the program committees of WebDB (International Workshop on the Web and Databases) 2014.

### 8.1.3. Journal

#### 8.1.3.1. Reviewer

The members of the team reviewed papers in numerous journal papers such as Journal of ACM, TODS, TKDE, PVLDB, Information System, Information and Computation.

### 8.1.4. Scientific Responsibilities

S. TISON is head of the computer science lab in Lille (LIFL). She is elected member of the "Comité National de la Recherche Scientifique (CoNRS)" (Section 6). She was president of the scientific and technical council of the cluster "Pôle de Compétitivité Industries du commerce" until June 2014. and she is member of the administrative board of the cluster Pictanovo. She have been elected member of the Administrative committee of University of Lille 1 since September 2014 She was member of the evaluation committee AERES IRIT.

Boneva is a member of the Data Shapes Working Group which mission is to produce a language for defining structural constraints on RDF graphs. <http://www.w3.org/2014/data-shapes/charter>

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

License: Angela Bonifati, Introduction to Databases, 54h, L3, Université Lille 1, France  
 Master (Mocad): Pierre Bourhis Information extraction, 18h, M2, Université Lille 1, France  
 Master (Mocad): A. Bonifati Information extraction, 18h, M2, Université Lille 1, France  
 Master : S. Tison Advanced algorithms and complexity, M1, 57h, Université Lille 1, France  
 Master : S. Tison, Fouille de données, M1, 30h, Université Lille 1, France  
 Master: A. LEMAY, XML Technologies, 16h, M2, Université Lille 3, France  
 DUT : Iovka Boneva, 100h, Université Lille 1, France

Angela Bonifati is the co-responsible of the Master MOCAD of the University of Lille1.

Aurélien Lemay is pedagogical responsible for Computer Science and numeric correspondent for UFR LEA Lille 3.

### 8.2.2. Supervision

PhD : A. M. NDIONE, Probabilistic algorithms for tree automata and transducers. Since Sept. 2010. 16th April 2014. Supervised by Niehren and Lemay  
 PhD: G. LAURENCE, Normalisation et Apprentissage de Transformations d' Arbres en Mots. Since Sept 2010 4th June 2014 Supervised by Niehren and Lemay and Staworko.  
 PhD in progress : R.CIUCANU, Cross-model queries and schema mappings: evaluation and learning. Since Sept. 2012. Supervised by Bonifati.  
 PhD in progress : T. SEBASTIAN, Streaming algorithms for XSLT. Since May 2011. Supervised by Niehren.  
 PhD in progress: A. BOIRET, Top-down tree transformations with look-ahead : foundations and learning. Since Sept. 2011. Supervised by Niehren and Lemay.

### 8.2.3. Juries

**HDR:** Joachim Niehren was reviewer of the HDR of Pierre Senellart (Institut Télécom Paris-Tech) and comity member of Agata Savary (University of Blois).

Sophie Tison was reviewer for the HDR of E. Contejean (University South Paris) and M. Morvan (University East Paris). She was a member of the comitty of B. Ben Amor.

#### PhD:

Joachim Niheren was president of the jury of Evguenia Kopylova and Antoine Thomas.

Angela Bonifati was member of the jury of Ioana Ileana.

Sophie Tison was reviewer of the PhD of J. Amavi and member of the jury of A. Ndione, R. Auguste, A. Aissaoui and O. Rihawi.

Slawomir Staworko was member of the Jury of Jean Decoster.

#### Selection Comity :

Iovka Boneva was member of the selection comity for Junior Researcher (CR2) Inria Saclay

Sophie Tison was member of Selection comity for Professor at Lille1, and Associate Professor at Lens and Marseille. She was also in the Evaluation Comity of for the pre-proposition of ANR and member of the jury IUF senior 2014.

Pierre Bourhis was member of a comity selection for Associate Professor at Rennes.

## 8.3. Popularization

The team has participated at "Journée RIC " of University Lille 1. In particular, Angela Bonifati, Radu Ciucianu and Tom Sebastian presented two demonstrations related to and X-Fun.

## MAGNET Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

PASCAL DENIS served as member of the program committee of ACL 2014, COLING 2014, EACL 2014, and EMNLP 2014.

RÉMI GILLERON served as member of the program committee of CAP'2014.

MARC TOMMASI served as member of the program committee of CAP'2014.

FABIEN TORRE served as member of the program committee of ICPRAM 2015, EGC 2015, CluCo 2015, ECAI 2014, ICPRAM 2014.

#### 9.1.1. Reviewer

MIKAELA KELLER served as member of the program committee of NIPS 2014 and CAP'2014, of the scientific committee reviewing Digiteo post-doctoral grant proposal.

MIKAELA KELLER was also reviewer for EGC 2015.

FABIO VITALE was reviewer for NIPS 2014.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

Master MOCAD: PASCAL DENIS, Extraction d'information, 18h, M2, Université Lille 1, France

Master MOCAD: DAVID CHATEL, Extraction d'information, 3h30, M2, Université Lille 1, France

Master MIASHS: RÉMI GILLERON, Bases de données avancées, 24h, M1, Université de Lille, France

Master MIASHS: RÉMI GILLERON, Programmation R (1), 24h, M1, Université de Lille, France

Master MIASHS: RÉMI GILLERON, Programmation R (2), 24h, M1, Université de Lille, France

Master MIASHS: RÉMI GILLERON, Algorithmes de fouille de données, 36h, M1, Université de Lille, France

Licence MIASHS: RÉMI GILLERON, Programmation Python, 36h, L1, Université de Lille, France

Licence : MIKAELA KELLER, Introduction to computer science and programming, 46h, L1 and L2, Université Lille 3, France

Licence : MIKAELA KELLER, Introduction to Statistical Learning, 54h, L3, Université Lille 3, France

Licence : MIKAELA KELLER, C2i, 55h, L2-L3, Université Lille 3, France

Licence MIASHS: MARC TOMMASI, Réseaux, 64h, L1 and L2, Université de Lille, France

Licence MIASHS: MARC TOMMASI, Programmation client, 24h, L2, Université de Lille, France

Licence : MARC TOMMASI, C2i, 25h, L2, Université de Lille, France

Licence : MARC TOMMASI, Culture numérique, 30h, L2, Université de Lille, France

Master : FABIEN TORRE, langages statiques du web, 37h, M1, Université Lille 3, France

Master : FABIEN TORRE, algorithmique et programmation php pour le web, 75h, M1, Université Lille 3, France

Master : FABIEN TORRE, algorithmique et programmation pour l'extraction d'information, 55h, M2, Université Lille 3, France

Master : FABIEN TORRE, javascript langage dynamique du web, 38h, M2, Université Lille 3, France

Licence : FABIO VITALE, C2i, 25h, L1, Université Lille 3, France

Licence MIASHS (SHS) : FABIO VITALE, Intelligence Artificielle, 31h30, L2, Université Lille 3, France

Master MIASHS (SHS) : FABIO VITALE, Classification non supervisée, 30h, M1, Université Lille 3, France

Licence SHDS (SHS) : FABIO VITALE, TICE, 18h, L1, Université Lille 3, France

Licence SQ (SHS) : FABIO VITALE, Algorithmique de graphes, 19h, L3, Université Lille 3, France

FABIEN TORRE teaches a course at EPAT 2014 (École de Printemps sur l'Apprentissage artificiel) on Machine Learning Collaborative Methodes.

RÉMI GILLERON is in charge of Master Mathématiques et Informatique Appliquées aux Sciences Humaines et Sociales (MIASHS) at Université de Lille.

MARC TOMMASI is a member of the "conseil de l'UFR MIME".

FABIEN TORRE is "secrétaire du CHSCT (Comité hygiène, sécurité et conditions de travail) de Lille 3" since Dec. 2012.

### 9.2.2. Supervision

PhD: THOMAS RICATTE, Hypernode graphs : a new data structure for higher order learning, Université Lille 3, since May 2011, defense scheduled for Jan. 2015, RÉMI GILLERON

PhD in progress: DAVID CHATEL, Supervised Spectral Clustering and Information Diffusion in Graphs of Texts, Université Lille 1, since Sept. 2012, PASCAL DENIS and MARC TOMMASI

PhD in progress: PAULINE WAUQUIER, Recommendation in Information Networks, Université Lille 1, since Dec. 2013 supervised by MARC TOMMASI and MIKAELA KELLER

PhD: Jean Decoster, Programmation logique inductive pour la classification et la transformation de documents semi-structurés, Université Lille 1, since Sept. 2009, defense on July 2014, FABIEN TORRE, RÉMI GILLERON and SLAWOMIR STAWORKO

PhD in progress: EMMANUEL LASSALLE, Improved Coreference Resolution with Feature Space Learning, Université Paris-Diderot, since Sept. 2010, PASCAL DENIS and LAURENCE DANLOS (Université Paris-Diderot)

PhD in progress: CHLOÉ BRAUD, Discourse Relation Identification from Labeled and Unlabeled Data, Université Paris-Diderot, since Sept. 2011, PASCAL DENIS and LAURENCE DANLOS (Université Paris-Diderot)

Master in progress: MATHIEU DEHOUCK, Propagating structured labels for Dependency Parsing, Université Lille 1, supervised by PASCAL DENIS

PhD in progress: GÉRAUD LE FALHER, Machine Learning in Signed Graphs, Inria Lille – Nord Europe, since Oct. 2014, MARC TOMMASI, FABIO VITALE and CLAUDIO GENTILE (University of Insubria, Italy).

MARC TOMMASI wrote a report for the Phd thesis of Daniel Bernades ("LIP6", France).

### 9.2.3. Juries

MIKAELA KELLER was a member of the following selection/hiring committees: PhD committee of J.P. Peyrache, Université de St Etienne (France), MdC hiring committees at Université Paris-Sud, and MdC hiring committees at Université Paris 6 (France).

MARC TOMMASI was member of the following selection/hiring committees: UPMC (Paris 6): Professor, St Etienne (France): Assistant professor and Lille (France): Inria young researchers (CR2).

MARC TOMMASI was also reviewer for Crédit Impot Recherche.

FABIEN TORRE participated in the selection committees "COS" for the 27 MCF 0133 and 27 MCF 0470 position (spring 2014, Lens, France).

### **9.3. Popularization**

MARC TOMMASI was invited to give seminars at (i) Inria Rennes and (ii) LiX Colloquium on data science.

MIKAELA KELLER was involved in "Fête de la science" as a "chercheur itinérant".

## **MAGRIT Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events selection**

#### *9.1.1.1. Organizing committee membership*

M.-O. Berger was chair of the French conference on pattern recognition RFIA 2014.

#### *9.1.1.2. Conference program committee membership*

- M.-O. Berger was member of the program committee of the following conferences: International Conference on Medical Image Computing and Computer Assisted Intervention: MICCAI 2014, ICPR 2014, ISMAR 2014.
- Erwan Kerrien was a member of the program committee of MICCAI 2014 and of the International Symposium on Biomedical Simulation (ISBMS'14).
- G. Simon was a member of the program committee of ISMAR 2014 and Eurographics 2014.
- P.-F. Villard was a member of the program committee of MICCAI 2014 and of the International Symposium on Biomedical Simulation (ISBMS'14).

### **9.1.2. Journal**

#### *9.1.2.1. reviewer*

The members of the team reviewed articles for Computers & Graphics (Elsevier), The Visual Computer (Springer), Medical Images Analysis (Elsevier), IEEE Transactions on Visualization and Computer Graphics, Journal on Imaging Sciences (SIAM), Journal of Electronic Imaging (IS&T / SPIE), Axioms (MDPI), Experimental Mechanics (SEM), Transactions on Pattern Analysis and Machine Intelligence (IEEE), Optics and Lasers in Engineering (Elsevier).

### **9.1.3. Invited Conferences**

Pierre-Frédéric Villard was invited to give a talk entitled “Respiration Simulation : Application in Treatment Planning, Training Simulators and On-Line Treatment” during the CIM Workshop on Mathematics and Medicine, November 6-7, 2014, Uppsala, Sweden <http://www.math.uu.se/cim/seminarier-och-aktiviteter/cim-workshop-2014/>.

### **9.1.4. Other review**

E Kerrien was reviewer for one COFECUB project.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

The four associate professors of the MAGRIT team actively teach at Université de Lorraine with an annual number of around 200 teaching hours in computer sciences, some of them being accomplished in the field of image processing. Inria researchers have punctual teaching activities in computer vision and shape recognition mainly in the computer science Master of Nancy and in several Engineering Schools near Nancy (ENSMN Nancy, SUPELEC Metz, ENSG). Our goal is to attract Master students with good skills in applied mathematics towards the field of computer vision. The list of courses given by staff members which are tightly related to image processing and computer vision is detailed below:

- Licence: Graphic and haptic rendering, 30h, IUT Saint-Dié des Vosges.

- Licence: Image processing, 30h, IUT Saint-Dié des Vosges.
- Licence: 3D programming, 30h, IUT Saint-Dié des Vosges.
- Licence : Geometry, 30h, École Nationale Supérieure d'Architecture de Nancy.
- Master: Signal analysis, 50 h, Université de Lorraine.
- Master: Augmented reality, 24 h, Télécom-Nancy, Université de Lorraine.
- Master : Introduction to computer vision, 12h, Université de Lorraine.
- Master : Shape recognition, 15 h, Université de Lorraine.
- Master : Computer vision: foundations and applications, 15 h, Université de Lorraine.
- Master : Introduction to image processing, 21 h, École des Mines de Nancy
- Master : Image processing for Geosciences, ENSG, 12h.
- Master : Introduction to signal processing and applications, 21 h, Ecole des Mines de Nancy
- Master : Augmented reality, 3 h, SUPELEC Metz.
- Inter University Degree: Medical robotics, 1 h, CHU Nancy Univ. Hospital.

### 9.2.2. Supervision

PhD: Ahmed Yureidini, Modélisation implicite des vaisseaux sanguins pour la simulation interactive d'actes de radiologie interventionnelle, defended on mai 2014, Erwan Kerrien, Stéphane Cotin (SHACRA, Lille).

PhD in progress: Nazim Haouchine, Modèles physiques pour la réalité augmentée des organes déformables, janvier 2012, Marie-Odile Berger, Stéphane Cotin (SHACRA, Lille).

PhD in progress: Pierre Rolin, Calcul de pose par simulation de points de vue pour la réalité augmentée, octobre 2013, Marie-Odile Berger, Frédéric Sur.

PhD in progress: Charlotte Delmas, Reconstruction 3D des outils chirurgicaux en radiologie interventionnelle, avril 2013, Marie-Odile Berger, Erwan Kerrien.

PhD in progress: Antoine Fond, Introduction de sémantique dans la modélisation urbaine dans un contexte de calcul du point de vue, octobre 2014, Marie-Odile Berger, Gilles Simon.

### 9.2.3. Juries

Marie-Odile Berger was external reviewer of the PhD of D. Larnaout and L. Younes.

## 9.3. Popularization

Members of the team participate on a regular basis, to scientific awareness and mediation actions. Erwan Kerrien heads the local Scientific Mediation Committee. He also serves as the academic referent of an IREM<sup>0</sup> working group aiming at introducing computer science in secondary and high school curricula. Among other activities, he was also an associate researcher to a MATH.en.JEANS workshop.

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<sup>0</sup>Institut de Recherche sur l'Enseignement des Mathématiques - *Research Institute for Teaching Mathematics*

## MAIA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. Selection Committees, AERES

- François Charpillet was member of two selection committees in University of Lyon and Lorraine University
- François Charpillet was member of the AERES evaluation committee for IRIT, Toulouse and LISSI, Université Paris Est.

#### 9.1.1.2. Organizing committee membership

- François Charpillet is member of the scientific council of the Robotic GDR.
- Vincent Thomas was part of the organizing committee of the "Expressive game seminar", held in Metz, the 24th and 25th of November (<http://exgames.event.univ-lorraine.fr/>). This international seminar involved two laboratories of the university of Lorraine, the CREM (Centre de recherche sur les médiations) and the LORIA. It gathered international specialists of game design and was part of the PEPS Majestic research program.
- Vincent Thomas was part of the organizing committee of the conference "From traditional game to digital game" (<http://tgdg2014-fr.event.univ-lorraine.fr/>), held in Nancy, the 26th, 27th and 28th of November.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Conference program committee membership

- Amine Boumaza was a member of the program committee of the following international conferences: GECCO'14 (The Genetic and Evolutionary Computation Conference), CEC'14 (Congress on Evolutionary Computation), Alife'14 Int. Conf. on the Synthesis and Simulation of Living Systems. He was a member of the jury of the AFIA thesis award.
- Olivier Buffet was a reviewer for the conferences ECAI'14 (European Conference on Artificial Intelligence), ICAPS'14 (International Conference on Automated Planning and Scheduling), UAI'14 (International Conference on Uncertainty in Artificial Intelligence), JFPDA'14 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes), RFIA'14 (conférence sur la reconnaissance des formes et l'intelligence artificielle).
- François Charpillet was member of the program committees for : Macorex workshop at ECAI'14, MSDM 2014 at AAMAS'14, SENSORNETS 2015, ICAART 2015.
- Vincent Chevrier was a reviewer for IAT'14 (IEEE/WIC/ACM International Conference on Intelligent Agent Technology), ACRI'14 ABSim&CA (International Conference on Cellular Automata for Research and Industry, Agent-Based Simulation & Cellular Automata Workshop) JFSMA'14 (Journées francophones sur les Systèmes multi-Agents).
- Francis Colas was member of the program committee of SAB2014 (Simulation of Adaptive Behaviors).
- Alain Dutech was a reviewer for the conferences JFPDA'14 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes), and ECAI'14 (European Conference on Artificial Intelligence).



- Nazim Fatès was a member of the program committee of the international conferences: ACRI'14 (11th International Conference on Cellular Automata for Research and Industry), and the following workshops: ACA'14 (Third International Workshop on Asynchronous Cellular Automata and Asynchronous Discrete Models) and ABSim&CA'14 (First International Workshop on Agent-Based Simulation & Cellular Automata), ANTS'14 (Ninth Int. Conf. on Swarm Intelligence).
- Bruno Scherrer was part of the program committee for the international conferences NIPS'14 (Neural Information Processing Systems), ECAI'14 (European Conference on Artificial Intelligence) and MED'14 (Mediterranean Conference on Control and Automation), for the international NIPS'14 Workshop "From Bad Models to Good Policies", and for the French conferences CAP'14 (Conférence d'apprentissage automatique) and JFPDA'14 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes).
- Vincent Thomas was a reviewer for JFPDA'14 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes).
- Serena Ivaldi was associate editor for the conference Humanoids 2014 (International Conference on Humanoid Robots).

#### 9.1.2.2. Reviewing activities

- François Charpillat was reviewer for the IROS 2014 (IEEE/RSJ International Conference on Intelligent Robots and Systems) and ICRA 2015 (IEEE International Conference on Robotics and Automation), ASROB at IROS 2014, Macorex workshop at ECAI'14, MSDM 2014 at AAMAS'14, SENSORNETS 2015, ICAART 2015.
- Francis Colas was reviewer for the IROS 2014 (IEEE/RSJ International Conference on Intelligent Robots and Systems) and ICRA 2015 (IEEE International Conference on Robotics and Automation).
- Nazim Fatès was a reviewer for the ALIFE'14 and MOSIM'14 conferences.
- Serena Ivaldi was reviewer for the HRI'15 conference (International Conference on Human-Robot Interaction).

### 9.1.3. Journal

#### 9.1.3.1. Editorial board membership

- Amine Boumaza is a review editor of the International Journal *Frontiers in Robotics and AI: Evolutionary Robotics*.
- Olivier Buffet is a member of the editorial boards of the "revue d'intelligence artificielle" (RIA), and the "Journal of Artificial Intelligence Research" (JAIR).
- Serena Ivaldi is a review editor of the International Journal *Frontiers in Robotics and AI: Humanoid Robotics*. She is co-organiser of the Special Issue on "Whole-body control of contacts for Humanoid Robots" in the Autonomous Robots journal.

#### 9.1.3.2. Reviewing activities

- Amine Boumaza was a reviewer for the Evolutionary Intelligence journal.
- Olivier Buffet was a reviewer for the journals: AIJ (Artificial Intelligence Journal), JAIR (Journal of Artificial Intelligence Research), and Neurocomputing.
- François Charpillat was a reviewer for Journal of Intelligent and Robotic Systems
- Vincent Chevrier was a reviewer for IEEE Transactions on Services Computing (TSC),
- Francis Colas was a reviewer for the Autonomous Robots journal.
- Alain Dutech was a reviewer for RIA (Revue d'Intelligence Artificielle), EJOR (European Journal of Operational Research), and JAIR (Journal of Artificial Intelligence Research).
- Nazim Fatès was a reviewer for *Natural Computing, Theoretical Computer Science* and *Proc. of the National Academy of Sciences, Sec. A, India*.

- Serena Ivaldi was a reviewer for the journals: Robotics and Autonomous Systems, Autonomous Robots, IEEE Transactions on Cybernetics.
- Bruno Scherrer made reviews for the following journals: Journal of Machine Learning Research, Annals of Operations Research, Applied Mathematics & Optimization and IEEE Transactions on Neural Networks and Learning Systems.
- Vincent Thomas was a reviewer for IEEE Transactions on Cybernetics.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master: Alain Dutech, Numerical Learning in AI, 15h eq TD, Master 1 Cognitive Sciences, Université de Lorraine, France.

Master: Nazim Fatès, Collective and intelligent agents, 15h eq TD, Master 1 Cognitive Sciences, Université de Lorraine, France.

Master: Nazim Fatès, Complex adaptative systems, 20h eq TD, Master 2 Computer Science, Université de Lorraine, France.

Master: Vincent Thomas, Game Design, 20h eq TD, Master 1 Cognitive Sciences, Université de Lorraine, France.

Master: Vincent Thomas, Serious Game, 10h eq TD, Master 2 Cognitive Sciences, Université de Lorraine, France.

Master: Vincent Thomas, Numerical Learning, 12h eq TD, Master 2 Computer Science IPAC (Image, Perception, Action, Cognition), Université de Lorraine, France.

### 9.2.2. Supervision

PhD: Amandine Dubois, “*Mesure de la fragilité et détection de chutes pour le maintien à domicile des personnes âgées*”, Université de Lorraine, Sept. 2014, F. Charpillet (advisor).

PhD: Jano Yazbeck, “*Secure and precise immaterial hanging for automated vehicles*”, Université de Lorraine, Oct. 2014, F. Charpillet (advisor), A. Scheuer.

PhD in progress: Mihai Andries, “*Calcul spatialisé pour l’assistance à la personne: étude d’un réseau de dalles intelligentes*”, Université de Lorraine, Oct. 2012, F. Charpillet (advisor), O. Simonin.

PhD in progress: Benjamin Camus, “*Un laboratoire virtuel pour la multi-modélisation*”, Université de Lorraine, Oct 2012, Christine Bourjot, Vincent Chevrier (advisor).

PhD in progress: Abdallah Dib, “*Assistance à la personne en perte d’autonomie: étude de l’apport d’un robot compagnon*”, Université de Lorraine, March. 2013, F. Charpillet (advisor).

PhD in progress: Iñaki Fernández-Pérez, “*Apprentissage incremental évolutionnaire*”, Université de Lorraine, Oct. 2013, F. Charpillet (advisor), A. Boumaza.

PhD in progress: Nassim Kaldé, “*Exploration et reconstruction d’un environnement inconnu par une flottille de robots*”, Université de Lorraine, Oct. 2012, F. Charpillet (advisor), O. Simonin.

PhD in progress: Manel Tagorti, “*Sur les abstractions et les projections des processus décisionnels de Markov de grande taille*”, Université de Lorraine, Nov. 2011, J. Hoffmann (advisor), B. Scherrer, O. Buffet.

PhD in progress: Arsène Fansi Tchango, “*Suivi multi-caméra en environnement partiellement observé*”, Université de Lorraine, Oct. 2011, A. Dutech (advisor), V. Thomas, O. Buffet.

PhD in progress: Mohamed Tlig, “*Coordination locale et optimisation distribuée du trafic dans les réseaux de transport de véhicules autonomes*”, Université de Lorraine, Dec. 2010, O. Simonin (advisor), O. Buffet.

PhD in progress: Julien Vaubourg, “*Multi-modélisation, multi-simulation dans le cadre des Smart-grids*”, Université de Lorraine, Oct 2013, Laurent Ciarletta, Vincent Chevrier (advisor).

PhD in progress: Matthieu Zimmer, “*Developmental Reinforcement Learning*”, Université de Lorraine, Oct 2014, Alain Dutech (advisor) and Yann Boniface.

PhD in progress: Van Quan Nguyen, “*Mapping of a sound environment by a mobile robot*”, Université de Lorraine, Dec. 2014, Emmanuel Vincent (advisor), Francis Colas, and François Charpillat.

### 9.2.3. Juries

- François Charpillat was reviewer a member of the PhD committee (as referee) of
  - Alexandru Rusu, Toulouse, dec. 12th 2014,
  - Ricardo CHAVEZ GARCIA, Grenoble, sep. 25th 2014,
  - Abdelhak Chatty, Cergy Pontoise, June 30th 2014.
- Vincent Chevrier was a member of the PhD committee (as referee) of
  - Jérémy Boes, March 28th, 2014, Université de Toulouse;
  - Baudouin Dafflon, Sept. 30th, 2014, Université de Technologie de Belfort-Monbéliard.
- Alain Dutech was a member of the PhD committee of
  - Simon Gay, December 15th, 2014, Université Lyon I.
- Nazim Fatès was a member of the PhD committee of
  - Simon Stuker, December 17th, 2014, Université de Toulouse.
- Bruno Scherrer was a member of the PhD committee of
  - Gabriel Dulac-Arnold, February 7th, 2014, Université Paris 6;
  - Bilal Piot, November 14th, 2014, Supélec (Université de Lorraine).

## 9.3. Popularization

- Nazim Fatès was the president of the Jury of the *Festival du film de chercheur*, see: an article in the [Eureka magazine](#)
- Vincent Thomas participated in “Journée ISN-EPI” (Apr. 17 2014) whose audience is computer science teachers of secondary school by organizing a workshop on “artificial intelligence and games”. Vincent Thomas is participating in the LORIA IDEES group dedicated to teaching activities.
- Vincent Thomas previously organized an exposition about game design and cognitive sciences. The materiel of the exposition was presented this year in several BU (Biliotheques universitaires) including IUT Charlemagne BU, Campus Medecine BU and Campus Brabois BU. This exposition is planned to be presented in other libraries in 2015 (Epinal, St Die).
- Vincent Thomas is participating in “Expouroute” meetings organized by Inria. The aim of these mettings is to create the content of a mobile scientific exposition about computer science in general. This exposition is planned to be held in 2017.
- Vincent Thomas participated in “[la nuit des chercheurs](#)” (Sep. 26 2014, Metz) and “[ARTEM fête la science](#)” during “Fête de la Science” (Oct. 18 2014, Nancy) by organizing discussions on video games, artificial intelligence and the links between those two domains.

## MANAO Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events selection

##### 8.1.1.1. member of the conference program committee

Expressive 2014 (NPAR-SBIM-CAe), Eurographics 2014, SIGGRAPH Asia Tech Brief & Posters 2014 CVPR 2014, ECCV 2014, Light Fields for Computer Vision 2014, Computational Cameras and Displays 2014, SPIE Photonics Asia 2014, International Conference on Computational Photography 2014, Pacific Graphics 2014

##### 8.1.1.2. reviewer

ACM SIGGRAPH 2014, ACM SIGGRAPH Asia 2014, Eurographics 2015, Eurographics Symposium on Rendering 2014, Pacific Graphics 2014, ACM User Interface Software and Technology Symposium 2014

#### 8.1.2. Journal

##### 8.1.2.1. reviewer

ACM Transaction on Graphics (TOG), Computer Graphics Forum (CGF), Transactions on Visualization and Computer Graphics (TVCG), Computer & Graphics, Journal of Vision (JoV), SIAM Journal on Scientific Computing, Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Applied Optics, Optics Letters, REFIG, Journal of Computer Science and Technology (JCST), Journal of Zhejiang University Science C (ZUSC)

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

The members of our team are involved in teaching computer science at University of Bordeaux, ENSEIRB Engineering School, and Institut d'Optique Graduate School (IOGS). General computer science is concerned, as well as the following graphics related topics:

Master : Pierre Bénard and Romain Pacanowski, Photorealistic and Expressive Image Synthesis, 60 HETD, M2, Univ. Bdx, France.

Master : Xavier Granier, Numerical Techniques, 45 HETD, M1, IOGS, France

Master : Xavier Granier, Image Synthesis, 14 HETD, M2, IOGS, France

Master : Gaël Guennebaud, Geometric Modeling, 22 HETD, M2, IOGS, France

Master : Xavier Granier, Romain Pacanowski, Boris Raymond Brett Ridet, Algorithmic and Object Programming, 60 HETD, M1, IOGS, France

Master : Xavier Granier, Radiometry, 10 HETD, M1, IOGS, France

Master : Gaël Guennebaud and Pierre Bénard, High-performance 3D Graphics, 60 HETD, M1, Univ. Bdx and IOGS, France.

Master : Pascal Guitton and Pierre Bénard, Virtual Reality, 60 HETD, M2, Univ. Bdx, France.

Master : Ivo Ihrke, Computational Optical Imaging, 30 HETD, M1, IOGS, France

Master : Ivo Ihrke, Introduction to Image Processing, 30 HETD, M1, IOGS, France

Master : Ivo Ihrke, Advanced Display Technology, 12 HETD, M1, IOGS, France

Master : Christophe Schlick, Pierre Bénard, Image Synthesis, 60 HETD, M2, ENSEIRB, France

Licence : Patrick Reuter, Digital Imaging, 36 HETD, L3, Univ. Bdx, France.

Some members are also in charge of some fields of study:

Master : Xavier Granier, Optics and Computer Science, M1/M2, IOGS, France.

License : Patrick Reuter, Science and Modeling, L2, Univ. Bdx, France.

### **8.2.2. Supervision**

PhD : Cyprien Buron, Interactive Generation and Rendering of Massive Models: a Parallel Procedural Approach, Univ. Bordeaux, 4th of February 2014, J.-E. Marvie & G. Guennebaud & X. Granier

PhD : Heqi Lu, Importance Sampling of Realistic Light Sources, Univ. Bordeaux, 27th of February 2014, X. Granier & R. Pacanowski

PhD : Ilya Reshetouski, Kaleidoscopic Imaging, Saarland University, 6th of November 2014, I. Ihrke

PhD : Alkhazur Manakov, Calibration and Characterization of Advanced Image-Based Measurement Systems, Saarland University, I. Ihrke

PhD : Boris Raymond, Rendering and manipulation of anisotropic materials, Univ. Bordeaux, P. Barla & G. Guennebaud & X. Granier

PhD : John Restrepo, Plenoptic Imaging and Computational Image Quality Metrics, Univ. Bordeaux, I. Ihrke

PhD : Brett Ridell, Interactive spatial augmented reality, Univ. Bordeaux, P. Reuter & X. Granier

PhD : Carlos Zubiaga Pena, Image-space editing of appearance, Univ. Bordeaux, P. Barla & X. Granier

PhD : Florian Canezin, Implicit Modeling, Univ. Toulouse III, G. Guennebaud & Loïc Barthe

PhD : Mathieu Diawara, Computer-Assisted 2D Animation, Univ. Bordeaux, P. Barla, P. Bénard & X. Granier

PhD : Arthur Dufay, Adaptive high-quality of virtual environments with complex photometry, Univ. Bordeaux, J.-E. Marvie R. Pacanowski & X. Granier

PhD : Thibaud Lambert, Real-time rendering of highly detailed 3D models, Univ. Bordeaux, G. Guennebaud & P. Bénard

PhD : Loïs Mignard-Debize, Plenoptic function and its application to spatial augmented reality, Univ. Bordeaux, P. Reuter & I. Ihrke

### **8.2.3. Juries**

PhD : Guillaume Bouchard [37], 23th of May, Lyon, France.

## MAVERICK Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Scientific events organisation

#### 7.1.1.1. member of the organizing committee

- Georges-Pierre Bonneau: co-chair of the Industrial track of *Eurographics* 2014,
- Nicolas Holzschuch: co-chair of the Tutorial track of *Eurographics* 2014

### 7.1.2. Scientific events selection

#### 7.1.2.1. member of the conference program committee

- Georges-Pierre Bonneau:
  - Workshop on *Visualization in Environmental Sciences* (EnvirVis) 2014.
- Nicolas Holzschuch:
  - *ACM SIGGRAPH Symposium on Interactive 3D Graphics and Games* 2014 and 2015,
  - *Eurographics* 2015 ,
- Cyril Soler:
  - *Eurographics Symposium on Rendering* 2014,
  - *Eurographics* 2014,
  - *Pacific Graphics* 2014.
- Joëlle Thollot:
  - *Expressive* conference (merging of NPAR, Computational Aesthetics and SBIM) 2014.

#### 7.1.2.2. reviewer

All the faculties and some of the PhD students are collectively reviewing for all the major journals and conferences and the domain, and beyond this perimeter.

### 7.1.3. Journal

#### 7.1.3.1. reviewer

All the faculties and some of the PhD students are collectively reviewing for all the major journals and conferences and the domain, and beyond this perimeter.

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Joëlle Thollot and Georges-Pierre Bonneau are both full Professor of Computer Science. Romain Vergne is an associate professor in Computer Science. They teach general computer science topics at basic and intermediate levels, and advanced courses in computer graphics and visualization at the master levels. Nicolas Holzschuch teaches advanced courses in computer graphics at the Master level. In addition, Romain Vergne taught an advanced course on "perception & graphics" at the spring school of ôkhra (Roussillon).

### 7.2.2. Supervision

- PhD: Eric Heitz, *Représentations alternatives pour le traitement haute qualité efficace des scènes complexes*, Université de Grenoble, October 2014, Fabrice Neyret
- PhD in progress: Guillaume Loubet, *Représentations efficaces de l'apparence sous-pixel*, Université de Grenoble, October 2010, Fabrice Neyret
- PhD in progress : Léo Allemand-Giorgis, *Visualisation de champs scalaires guidée par la topologie*, October 2012, Georges-Pierre Bonneau, Stefanie Hahmann.
- PhD in progress : Aarohi Johal, *Algorithmes de génération automatique d'arbres de construction à partir de modèles géométriques CAO B-Rep*, September 2013, Jean-Claude Léon, Georges-Pierre Bonneau, thèse CIFRE EdR R&D.
- PhD in progress : Benoît Zupancic, *Acquisition of reflectance properties using compressive sensing*, October 2012, Nicolas Holzschuch, Cyril Soler.
- PhD in progress : Hugo Loi, *Automatisation de la génération de textures vectorielles et application à la cartographie*, October 2012, Joëlle Thollot, Thomas Hurtut.
- PhD in progress : Benoit Arbelot, *Etudes statistiques de forme, de matériaux et d'environnement pour la manipulation de l'apparence*, October 2013, Joëlle Thollot, Romain Vergne.

### 7.2.3. Juries

- Joëlle Thollot has been member of the jury for the PhD of Arnaud Emilien (Grenoble, 10/12/14)

## 7.3. Popularization

Every year, “MobiNet” (see section 4.5 ) classes are conducted with high school pupils of the large Grenoble area to practice initiation and intuition on Computer Science, Maths and Physics. Depending on the year, we have 2 to 4 groups in the scope of INP-Grenoble “Engineering weeks”, and 0 to 2 groups in the scope of Math-C2+ operations.

## MIMETIC Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

Scientific Chair: Franck Multon, "Maintien de l'équilibre debout en situation dynamique chez l'être humain", special day of the French Society of Biomechanics, co-organized with Pierre-Brice Wieber and Thomas Robert, Paris, May 16th 2014

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsible of the conference program committee

Richard Kulpa, Symposium "Réalité virtuelle et équilibre", SOFPEL (Société Francophone Posture Equilibre Locomotion), Rennes, 5 décembre 2014

#### 9.1.2.2. Member of the conference program committee

Franck Multon, ACM VRST 2014, Edinburgh, UK, November 2014

Franck Multon, ACM Motion in Games MIG 2014, Los Angeles, US, November 2014

Franck Multon, Computer Animation and Social Agents CASA 2014, Houston, May 2014

#### 9.1.2.3. Reviewer

Franck Multon, IEEE VR 2015, ACM SIGGRAPH Asia 2014

Armel Crétual, EuroGraphics'15

Richard Kulpa, IEEE 3DUI

Georges Dumont, ASME-DECT 2014, IDMMME-Virtual concept 2014

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

Franck Multon, Presence, MIT Press

Armel Crétual, Journal of Electromyography and Kinesiology, Elsevier

#### 9.1.3.2. Reviewer

Franck Multon, Frontiers in Neuroscience, PlosOne,

Armel Crétual, Transactions on Visualization and Computer Graphics, Journal of Electromyography and Kinesiology, Gait & Posture, Medical & Biological Engineering & Computing

Charles Pontonnier, IEEE Transactions on Visualization and Computer Graphics, International Journal of Virtual Reality

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### 9.2.1.1. Master level

Master : Franck Multon, "Images et Mouvement - IMO", leader of the module, 20H, Master 2 research in computer sciences, University Rennes1, France

Master : Franck Multon, "Santé et Performance au Travail : étude de cas", leader of the module, 30H, Master 1 M2S, University Rennes2, France



Master : Franck Multon, "Analyse Biomécanique de la Performance Motrice", leader of the module, 30H, Master 1 M2S, University Rennes2, France

Master : Franck Multon, "Modélisation et Simulation du Mouvement", leader of the module, 30H, Master 2 M2S, University Rennes2, France

Master: Marc Christie, "Multimedia Mobile", leader of the module, Computer Science, University of Rennes 1, France

Master : Armel Crétual, "Méthodologie", leader of the module, 20H, Master 1 M2S, University Rennes2, France

Master : Armel Crétual, "Biostatistiques", leader of the module, 15H, Master 2 M2S, University Rennes2, France

Master: Charles Pontonnier, "Numerical methods", leader of the module, Mechanics, École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Numerical simulation of mechanical systems", leader of the module, Mechanics, École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Analytical Mechanics" , Mechanics, École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Design and control of mobile robots", leader of the module, Electronics, École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Design, simulation and control of mechanical systems", leader of the module, Lecturers training in mechatronics, École Normale Supérieure de Rennes, France

Master : Richard Kulpa, "Contrôle moteur", leader of the module, Master 1 M2S, Université Rennes 2, France

Master : Richard Kulpa, "Boucle analyse-modélisation-simulation du mouvement", leader of the module, Master 2 M2S, Université Rennes 2, France

Master : Richard Kulpa, "Méthodes numériques d'analyse du geste", leader of the module, Master 2 M2S, Université Rennes 2, France

Master : Richard Kulpa, "Cinématique inverse", leader of the module, Master 2 M2S, Université Rennes 2, France

Master: Fabrice Lamarche, "Compilation pour l'image numérique", 29h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Synthèse d'images", 12h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Synthèse d'images avancée", 28h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Modélisation Animation Rendu", 36h, Master 2, ISTIC, University of Rennes 1, France

Master: Fabrice Lamarche, "Jeux vidéo", 26h, Master 2, ESIR, University of Rennes 1, France

Master : Georges Dumont, Mechanical simulation in Virtual reality, 36H, Master Mechatronics, Rennes 1 University and École Normale Supérieure de Rennes, France

Master : Georges Dumont, Responsible of the second year of the master Mechatronics, Rennes 1 University and École Normale Supérieure de Rennes, France

Master : Georges Dumont, Mechanics of deformable systems, 40H, Master FES, École Normale Supérieure de Rennes, France

Master : Georges Dumont, oral preparation to agregation competitive exam, 20H, Master FES, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Vibrations in Mechanics, 10H, Master FES, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Multibody Dynamics, 9H, Master FES, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Finite Element method, 12H, Master FES, École Normale Supérieure de Rennes, France //

#### 9.2.1.2. Licence level

Licence : Franck Multon, "Ergonomie du poste de travail", Licence STAPS L2 & L3, University Rennes2, France

Licence : Marc Christie, "Système d'information Tactiques", Computer Science, University of Rennes 1, France

Licence : Marc Christie, "Programmation Impérative 1", leader of the module, University of Rennes 1, France

Licence : Armel Crétual, "Analyse cinématique du mouvement", 100H, Licence 1, University Rennes 2, France

Licence: Charles Pontonnier, "Numerical control", leader of the module, Electronics, École Inter-Armes de Saint-Cyr Coëtquidan, France

Licence : Richard Kulpa, "Biomécanique (dynamique en translation et rotation)", Licence 2, Université Rennes 2, France

Licence : Richard Kulpa, "Méthodes numériques d'analyse du geste", Licence 3, Université Rennes 2, France

Licence : Richard Kulpa, "Statistiques et informatique", Licence 3, Université Rennes 2, France

Licence: Fabrice Lamarche, "Initiation à l'algorithmique et à la programmation", 56h, License 3, ESIR, University of Rennes 1, France

License: Fabrice Lamarche, "Programmation en C++", 46h, License 3, ESIR, University of Rennes 1, France

Licence: Fabrice Lamarche, "IMA", 24h, License 3, ENS Rennes, ISTIC, University of Rennes 1, France

#### 9.2.2. Supervision

PhD : Antoine Marin, Le mouvement segmentaire au service du déplacement dans la marche : analyse couplée des deux niveaux, University Rennes 2, 15th of December 2014, Armel Crétual

PhD : Mickael Ropars, Contribution clinique et biomécanique au diagnostic d'hyperlaxité de l'épaule, University Rennes 2, 7th of April 2014, Isabelle Bonan & Armel Crétual

PhD : Marion Morel, Suivi et étude des interactions pour l'analyse des tactiques durant un match de basket-ball, UPMC - University Rennes 2, septembre 2014, Catherine Achard & Séverine Dubuisson & Richard Kulpa

PhD : Pierre Touzard, Suivi longitudinal du service de jeunes joueurs de tennis élite : identification biomécanique des facteurs de performance et de risque de blessures, University Rennes 2, septembre 2014, Benoit Bideau & Richard Kulpa & Caroline Martin

PhD : Steve Tonneau, Synthèse et planification de mouvement pour des personnages virtuels en environnements contraints, INSA Rennes, 2011-2015, Franck Multon & Julien Pettré

PhD : Pierre Plantard, Estimation des efforts musculaires à partir de données in situ pour l'évaluation ergonomique d'un poste de travail, 2013-2016, Franck Multon & Anne-Sophie LePierres

PhD: Philippe Rannou, Modèle rationnel pour les humains virtuels autonomes, University of Rennes 1, Fabrice Lamarche & Marie Odile Cordier

PhD: Carl-Johan Jorgensen, Peuplement automatisé d'environnements urbains pour l'étude et la validation d'aménagements, University of Rennes 1, Fabrice Lamarche & Kadi Bouatouch

PhD: Ana Lucia Cruz Ruiz, Design of a modular and multiscale musculoskeletal model as a support to motion analysis-synthesis, Ecole normale supérieure, Georges Dumont

PhD: Kevin Jordao, Peuplement massif de maquettes numériques immenses, University Rennes1, Julien Pettré

PhD: Julien Bruneau, Foules immersives, University Rennes1, Julien Pettré

### **9.2.3. Juries**

PhD : Antoine Marin, Le mouvement segmentaire au service du déplacement dans la marche : analyse couplée des deux niveaux, Université Rennes2, December 15th, Franck Multon, examinateur

PhD : Benjamin Goislard de Monsabert, Individualisation des paramètres musculaires pour la modélisation musculo-squelettique de la main : application à la compréhension de l'arthrose, Université Aix-Marseille, Franck Multon, président

PhD : Simon Courtemanche, Analyse et Simulation des Mouvements Optimaux en Escalade, Université de Grenoble, Franck Multon, rapporteur

PhD : Chenggang Wang, Disassembly sequences generation and evaluation. Integration in virtual reality environment, Université de Grenoble, Georges Dumont, rapporteur

PhD : Thi Thuong Huyen Nguyen, Proposition of new metaphors and techniques for 3D interaction and navigation preserving immersion and facilitating collaboration between distant users, Insa de Rennes, Georges Dumont, examinateur

HDR : Didier Pradon, Modélisation et caractérisation des activités locomotrices des sujets cérébrolésés, UVSQ, Franck Multon, président

HDR : Christine Aevodo, Assistance fonctionnelle : exploiter les fonctions résiduelles du système sensori-moteur déficient, Franck Multon, Université de Montpellier 2, rapporteur

## MINT Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Conference Organization

- **IHM** (Villeneuve d'Ascq, Oct 28-31): Géry Casiez & Thomas Pietrzak (General Chairs), Fanny Chevalier (Workshops Co-Chair), Alix Goguey (Student Volunteer Chair), Nicolas Roussel (Communication Chair)
- IEEE VIS, Paris, France: Fanny Chevalier (Arts Program Co-Chair)
- ACM UIST, Honolulu, USA: Géry Casiez (Poster Co-chair), Fanny Chevalier (Video Previews Co-Chair)
- ACM CHI, Toronto, Canada: Fanny Chevalier (Video Previews Co-Chair), Nicolas Roussel (Video Showcase Co-Chair)
- **FITG** (Tourcoing, May 13-14): Nicolas Roussel (scientific chair), Thomas Pietrzak
- Eurohaptics: Frédéric Giraud, Betty Semail

### 9.1.2. Program Committees

- ACM UIST: Fanny Chevalier
- ACM CHI: Fanny Chevalier, Thomas Pietrzak (works in progress)
- Eurohaptics: Thomas Pietrzak, Frédéric Giraud, Betty Semail
- 3DUI: Géry Casiez
- GRAPP: Laurent Grisoni
- International Workshop on Movement and Computing: Laurent Grisoni, Nicolas Roussel

### 9.1.3. Editorial boards

- IEEE Transactions on Haptics : Frédéric Giraud (Associate Editor)
- IEEE Transactions on Power Electronics: Betty Semail (Associate Editor)

### 9.1.4. Journal and Conference Reviewing

- IEEE Transactions on Visualization and Computer Graphics (TVCG): Fanny Chevalier
- IEEE Transactions on Haptics (ToH): Frédéric Giraud, Betty Semail
- ACM Transactions on Interactive Intelligent Systems: Fanny Chevalier
- Behaviour & Information Technology: Thomas Pietrzak
- HCI Journal: Géry Casiez
- ACM UIST: Nicolas Roussel, Laurent Grisoni
- ACM CHI: Géry Casiez, Fanny Chevalier, Nicolas Roussel, Laurent Grisoni
- ACM SIGGRAPH: Géry Casiez, Fanny Chevalier
- IEEE INFOVIS: Fanny Chevalier
- 3DUI: Laurent Grisoni
- ErgoIHM : Laurent Grisoni
- EuroHaptics: Laurent Grisoni
- Graphics Interface: Fanny Chevalier

### 9.1.5. Invited Expertises

- Agence d'évaluation de la recherche et de l'enseignement supérieur (AERES): Nicolas Roussel
- Agence Nationale de la Recherche (ANR): Fanny Chevalier, Thomas Pietrzak, Frédéric Giraud
- MITACS Accelerate Program: Géry Casiez, Fanny Chevalier, Frédéric Giraud
- FNRS (Fédération nationale de recherche scientifique, Belgique): Laurent Grisoni
- Conseil régional Aquitaine: Laurent Grisoni

### 9.1.6. Scientific Associations

- AFIHM, the French speaking HCI association: G. Casiez (president), S. Huot (member of the Executive Committee and of the Scientific Council), Thomas Pietrzak (member of the Executive Committee)

### 9.1.7. Hiring Committees

- Inria's acceptance jury for junior researcher positions: N. Roussel
- Inria Lille's eligibility jury for junior researcher positions: N. Roussel (president)
- Inria Saclay's eligibility jury for junior researcher positions: N. Roussel
- Université Paris-Sud, Comité de Sélection MCF 27ème section (Computer Science): Géry Casiez, Fanny Chevalier
- Université Nancy, Comité de sélection PR 63ième section (Electrical Engineering): Betty Semail
- Université de Compiègne, Comité de selection PR 63ième: Betty Semail (president)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

IUT : Géry Casiez, Algorithmique, 80, niveau 1A, Bases de données, 24, niveau 1A, modélisation mathématique, 14, niveau 2A, Conception orientée objet, 24, niveau 2A, IHM, 77, niveau 2A, projets, 18, niveau 2A, Université Lille 1, France

Licence : Thomas Pietrzak, AEL : Automates et Langages, 36, niveau L3, Université Lille 1, France

Licence : Thomas Pietrzak, ASD : Algorithmes et Structures de Données, 36, niveau L3, Université Lille 1, France

Master : Géry Casiez, Thomas Pietrzak & Nicolas Roussel, IHM : Interaction Homme-Machine, (8h, 56h, 32h), niveau M1, Université Lille 1, France

Master: Géry Casiez & Fabrice Aubert; Multi-Touch Interaction, 24h, M1, Univ. Lille 1, Université Lille 1, France

Master : Frédéric Giraud: Power Electronics (40h) niveau M1, Université Lille1, France

Master : Géry Casiez, Fanny Chevalier, Laurent Grisoni & Thomas Pietrzak, NIHM : nouvelles Interactions Homme-Machine, (14h, 12h, 6h, 16h), niveau M2, Université Lille 1, France

Master: Laurent Grisoni, représentation et compression de données (24h), introduction à la programmation (38h), cryptographie (8h), Ecole Polytech'lille (dept IMA)

Master : Laurent Grisoni & Thomas Pietrzak, IHM et Interface à Gestes, (24, 12h), niveau M2 (IMA5), Polytech Lille, France

Master : Géry Casiez & Thomas Pietrzak, 3DETech : 3D Digital Entertainment Technologies, (?, 10.5h), niveau M2, Télécom Lille, France

Introduction to HCI, haptics and computer graphics, 24h, Ecole Centrale de Lille (G2): N. Roussel

### 9.2.2. Supervision

- PhD in progress : Amira Chalbi, “Understanding and designing animations for graphical user interfaces”, Univ. Lille 1, started October 2014, co-advised by N. Roussel and F. Chevalier
- PhD in progress: Alix Goguey, “Interacting between physical and digital tools”, Univ. Lille 1, started October 2013, co-advised by G. Casiez and T. Pietrzak
- PhD in progress: Andéol Evain, “Smart user interfaces based on BCI”, Univ. Rennes 1, started September 2013, co-advised by A. Lecuyer (in Rennes), G. Casiez and N. Roussel
- PhD in progress: Jonathan Aceituno, “Designing the ubiquitous desktop”, Univ. Lille 1, started October 2011, advised by N. Roussel
- PhD in progress: Sofiane Ghenna, “multimodal control of piezoelectric actuators”, Univ. Lille 1, started October 2013, co-advised by F. Giraud and C. Giraud-Audine
- PhD in progress: Eric Vezzoli, “friction control techniques for tactile rendering”, started September 2013, advised by B. Semail
- PhD in progress: Thomas Sednaoui started September 2013, co-advised by B. Semail and C. Chappaz
- Yosra Rekik, “Multi-finger gestural interaction”, Univ. Lille 1, co-advised by L. Grisoni and N. Roussel, defended December 10th 2014
- Jérémie Gilliot, “Interactions multi-points indirectes sur grands écrans”, Univ. Lille 1, co-advised by N. Roussel and G. Casiez, defended February 26th
- Farzan Kalantari, “shape feedback interaction devices”, Univ. Lille 1, started oct. 2014, co-advised by L. Grisoni and F. Giraud.
- Frederic Largilière, “Soft robots”, Univ. Lille 1, started oct 2013, co-advised by L. Grisoni and C. Duriez (SHACRA/DEFROST team)
- Vincent Gouezou, “architects and tools”, ANMA Architect cabinet (CIFRE funding)/Lille 3, co-advised by L. Grisoni and F. Vermandel (ecole d’architecture de Lille)

### 9.2.3. Juries

- Arnaud Hamon, PhD (Univ. de Toulouse, December): Nicolas Roussel (reviewer)
- Anthony Talvas, PhD (Univ. Rennes 1, December): Géry Casiez (reviewer)
- David Bertolo, PhD (Univ. Lorraine, November): Géry Casiez (reviewer)
- Jean-Luc Vinot, PhD (Univ. Toulouse 3, November): Géry Casiez (reviewer)
- Liuqing Wang (Insa de Lyon, November): Frédéric Giraud (reviewer)
- Olivier Beaudoux, HDR (Univ. d’Angers, August): Nicolas Roussel (reviewer)
- Christophe Winter (EPF Lausanne - Suisse) : Betty Semail (reviewer)
- Jérémie Garcia, PhD (Univ. Paris-Sud, June): Nicolas Roussel (examiner)
- Guillaume Trannoy (ESPCI, April): Betty Semail (reviewer)
- Charles Hudin 2014 (ESPCI, march): Betty Semail (reviewer)
- Fabien Danieau, PhD (Univ. Rennes 1, January): Géry Casiez (reviewer)
- Simon Courtemanche, PhD (Univ. Grenoble, dec): Laurent Grisoni (reviewer)

### 9.3. Popularization

- Fête de la science (October), “chercheurs itinérants”: Jonathan Aceituno, Fanny Chevalier, Alix Goguey, Damien Marchal, Hanaë Rateau, Nicolas Roussel, Laurent Grisoni
- “30 minutes de science” (September): Fanny Chevalier
- Guest of the *Place de la toile* France Cultures radio program (March): Nicolas Roussel
- technical advising of “zoomachines” week-end (imaginarium, Tourcoing, nov. 2014): Laurent Grisoni

## **MORPHEO Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific events selection**

#### *9.1.1.1. Member of the conference program committee*

- Edmond Boyer was area chair for BMVC, ICPR and RFIA.

#### *9.1.1.2. Reviewer*

- Edmond Boyer has reviewed for: CVPR, ECCV, 3DV, ACCV, CVMP, ORASIS
- Jean-Sébastien Franco has reviewed for: CVPR 2014, ECCV 2014, 3DV 2014.
- Franck Hétroy-Wheeler has reviewed for SIGGRAPH Asia (course).
- Lionel Reveret has reviewed for: ACM SIGGRAPH, Eurographics, BMVC, Pacific Graphics (committee member), Motion in Games (committee member).

### **9.1.2. Journal**

#### *9.1.2.1. Member of the editorial board*

- Edmond Boyer is associate editor of IJCV.

#### *9.1.2.2. Reviewer*

- Edmond Boyer has reviewed for: Eurographics, IEEE PAMI.
- Jean-Sébastien Franco has reviewed for: PAMI, Refig.
- Franck Hétroy-Wheeler has reviewed for: IJCV, Graphical Models, ReFIG.
- Lionel Reveret has reviewed for: ACM Transactions on Graphics, Computer Graphics Forum.

### **9.1.3. Invited talks**

- Edmond Boyer gave invited talks at: MPI Tubingen, AC3D'14 conference, Gratz University, Reims Image conference.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Licence: J.S. Franco, Algorithmics, 60h, Ensimag 1st year, Grenoble INP

License: J.S. Franco, C Project, 30h, Ensimag 1st year, Grenoble INP

Master: J.S. Franco, End of study project (PFE) Project Tutoring, 18h, Ensimag 2nd year, Grenoble INP

Master: J.S. Franco, Projet de Spécialité - Project Tutoring, 14h, Ensimag 2nd year, Grenoble INP

Master: J.S. Franco, 3D Graphics, 50h, Ensimag 2nd year, Grenoble INP

Master: J.S. Franco, Modelisation et programmation C++, 9h, Ensimag 2nd year, Grenoble INP

Master: J.S. Franco, Introduction to Computer Vision, 27h, Ensimag 1st year, Grenoble INP

Master: J.S. Franco, co-responsability of the Graphics, Vision, Robotics specialty of the Mosig Masters program, Second year Masters, Grenoble INP, Université Joseph Fourier

Master: Edmond Boyer, 3D Modeling, 9h, M2R GVR, Université Joseph Fourier Grenoble, France.

Master: Edmond Boyer, projet de programmation, 30h, M1 informatique - M1 MoSig, Université Joseph Fourier Grenoble, France.

Master: Edmond Boyer, Introduction to Image Analysis, 15h, M1 MoSig, Université Joseph Fourier Grenoble, France.

### **9.2.2. Supervision**

PhD in progress : Benjamin Allain, Geometry and Appearance Analysis of Deformable 3D shapes, Université de Grenoble, started 01/10/2012, supervised by J.S. Franco and E. Boyer.

PhD in progress: Adnane Boukhayma, 4D model synthesis, Université de Grenoble, started 01/10/2013, supervised by Edmond Boyer.

PhD in progress: Georges Nader, Evaluation de la qualité perceptuelle de maillages dynamiques et ses applications, Université Claude Bernard - Lyon 1, started 01/10/2013, supervised by Florent Dupont, Kai Wang and Franck Hétroy-Wheeler.

PhD in progress: Li Wang, Transport optimal pour l'analyse de formes en mouvement, Université de Grenoble, started 01/10/2013, supervised by Edmond Boyer and Franck Hétroy-Wheeler.

PhD in progress : Vagia Tsiminaki, Appearance Modelling and Time Refinement in 3D Videos, Université de Grenoble, started 01/10/2012, supervised by J.S. Franco and E. Boyer.

### **9.2.3. Juries**

- Edmond Boyer was reviewer of two PhD thesis (Rim Slama, Lille University, Christian Reinbacher Graz University) and president of one PhD committee (Eva Mavridou, Grenoble University).

## **9.3. Popularization**

- Franck Hétroy-Wheeler gave a talk to high school math teachers entitled: "Digital geometry: from real to virtual worlds". This talk has then been adapted and given to a 11th grade class.



## MULTISPEECH Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

General chair, 4th Joint Workshop on Hands-Free Speech Communication and Microphone Arrays (HSCMA), Nancy, May 2014 (E. Vincent)

General co-chair, 3rd CHiME Speech Separation and Recognition Challenge, Scottsdale, USA, December 2015 (E. Vincent)

Elected president, ISCA Special Interest Group on Robust Speech Processing (E. Vincent)

Chair, Challenges Subcommittee, IEEE Technical Committee on Audio and Acoustic Signal Processing (E. Vincent)

#### 9.1.1.2. Organizing committee membership

Member, Steering Committee of the Latent Variable Analysis and Signal Separation (LVA/ICA) conference series (E. Vincent)

### 9.1.2. Scientific events selection

#### 9.1.2.1. Responsible of conference program committee

Program chair, 12th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA), Liberec, Czech Republic, August 2015 (E. Vincent)

#### 9.1.2.2. Conference program committee membership

Area chair for Audio and Speech Source Separation, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (E. Vincent)

RFIA'2014 - 19ème congrès national sur la Reconnaissance de Formes et l'Intelligence Artificielle (D. Jouvét)

#### 9.1.2.3. Reviewer

JEP'2014 - 30ème édition des Journées d'Etudes sur la Parole (D. Jouvét, Y. Laprie)

RFIA'2014 - 19ème congrès national sur la Reconnaissance de Formes et l'Intelligence Artificielle (D. Jouvét)

ISMIR'2014 - International Symposium of Music Information Retrieval (A. Liutkus)

INTERSPEECH'2014 - 15th Annual Conference of the International Speech Communication Association (A. Bonneau, D. Jouvét, Y. Laprie, S. Ouni)

ICASSP'2015 - 40th International Conference on Speech, Acoustic and Signal Processing (A. Bonneau, D. Jouvét, S. Ouni)

### 9.1.3. Journal

#### 9.1.3.1. Editorial board membership

IEEE Transactions on Audio, Speech, and Language Processing (E. Vincent)

Traitement du Signal (E. Vincent)

Speech Communications (D. Jouvét)

EURASIP Journal on Audio, Speech, and Music Processing (Y. Laprie)

### 9.1.3.2. Reviewing activities

Computer Speech and Language (D. Jouvét)  
 Traitement Automatique des Langues (D. Jouvét)  
 Traitement du Signal (D. Jouvét)  
 IEEE Transactions on Audio, Speech, and Language Processing (A. Liutkus)  
 Digital Signal Processing (A. Liutkus)  
 IEEE Letters on Signal Processing (A. Liutkus, Y. Laprie)  
 Signal Processing (A. Liutkus)  
 Speech Communication (S. Ouni)  
 Journal of the American Acoustical Society (Y. Laprie)

### 9.1.4. Miscellaneous

#### 9.1.4.1. Tutorial

Tutorial on Informed Audio Source Separation at ICASSP 2014 in Florence, Italy (A. Ozerov and A. Liutkus and G. Richard). <http://www.icassp2014.org/tutorials.html#3>

#### 9.1.4.2. Invited lecture

Les sons à domicile [62], Séminaire SAILOR "Imaginer des nouveaux lieux de vie" (E. Vincent)  
 Evaluation campaigns and reproducibility [68], Journée GdR ISIS "reproductibilité en traitement du signal et des images" (E. Vincent)  
 Acquisition and processing of X-ray and MRI data, in Spring school "Individualized-centered approaches to speech processing" in Dagstuhl, 7-9 April (Y. Laprie)  
 Construction of articulatory models and exploitation of articulatory data, in Spring school "Individualized-centered approaches to speech processing" in Dagstuhl, 7-9 April (Y. Laprie)  
 Language pathology, Séminaire "Dépistage des troubles des apprentissages" in EHESP, Rennes, 6-10 January (A. Piquard-Kipffer)  
 Phonological processes in beginning reading, Séminaire "Le bilan orthophonique" in ESE-NESR, Poitiers, 25 March (A. Piquard-Kipffer)  
 Relation of phonemic discrimination to learning to read, Séminaire "Les liens entre langage oral et langage écrit, la place de la discrimination phonémique" in Blaise Pascal University, Clermont-Ferrand, 6 May (A. Piquard-Kipffer)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master: Cadot Martine, Biostatistics, 60 hours, M1, University of Lorraine, France  
 Licence: Di Martino Joseph, Programming in C 1, 67 hours, L1, University of Lorraine, France  
 Licence: Di Martino Joseph, Programming in C 2, 85 hours, L2, University of Lorraine, France  
 Licence: Di Martino Joseph, Programming in C/C++, 45 hours, L3, University of Lorraine, France  
 Licence: Vincent Colotte, C2i - Certificat Informatique et Internet, 50h, L1, University of Lorraine, France  
 Licence: Vincent Colotte, System, 115h, L3, University of Lorraine, France  
 Master: Vincent Colotte, Introduction to Speech Analysis and Recognition, 18h, M1, University of Lorraine, France  
 Licence: Odile Mella, C2i - Certificat Informatique et Internet, 28h, L1, University of Lorraine, France

Licence: Odile Mella, Introduction to Web Programming, 30h, L1, University of Lorraine, France

Licence: Odile Mella, Computer Networking, 86h, L2-L3, University of Lorraine, France

Master: Odile Mella, Computer Networking, 45h, M1, University of Lorraine, France

Master : Odile Mella, Computer Networking, 14h, M2, University of Lorraine, France

Master : Odile Mella, Supervising students in company internship, M2, University of Lorraine, France

Adults : Odile Mella, Computer science courses for secondary school teachers (Informatique et Sciences du Numérique courses) (10HTED), ESPE of Academy Nancy-Metz, University of Lorraine, France

Ecole Audioprothèse: Anne Bonneau, Phonétique, 16 hours, Université de Lorraine

Licence: Piquard-Kipffer Agnès, Psycholinguistics, 30 hours, L1, University of Lorraine, France

Licence: Piquard-Kipffer Agnès, Reading, 24 hours, L2, Département Orthophonie, University of Lorraine, France

Master: Piquard-Kipffer Agnès, Dyslexia, 25 hours, Département Orthophonie, University of Lorraine, France

Master: Piquard-Kipffer Agnès, Deaf people & reading, 9 hours, Département Orthophonie, University of Lorraine, France

Master: Piquard-Kipffer Agnès, Psycholinguistics, 12 hours, Département Orthophonie, University Pierre et Marie Curie-Paris, France

Master: Piquard-Kipffer Agnès, Psychology, 70 hours, ESPE, University of Lorraine, France

Master: Piquard-Kipffer Agnès, French Language Didactics, 80 hours, ESPE, University of Lorraine, France

Master: Piquard-Kipffer Agnès, Psychology, 6 hours, University Blaise Pascal, France

Doctorat: Piquard-Kipffer Agnès, Language Pathology, 15 hours, EHESP, University of Sorbonne-Paris Cité, France

School of engineers: Vincent Colotte, XML, 20h, Telecom Nancy, France

Other: Vincent Colotte, Responsible for "Certificat Informatique et Internet" for the University of Lorraine (50000 students, 30 departments).

DUT: Slim Ouni, Programming in Java, 24 hours, L1, University of Lorraine, France

DUT: Slim Ouni, Web Programming, 24 hours, L1, University of Lorraine, France

DUT: Slim Ouni, Graphical User Interface, 48 hours, L1, University of Lorraine, France

DUT: Slim Ouni, Advanced Algorithms, 24 hours, L2, University of Lorraine, France

Licence: Slim Ouni, Innovation in Computer Science, 38 hours, L3, University of Lorraine, France

Master: Slim Ouni, Game Design, 30 hours, M1, University of Lorraine, France

Master: Slim Ouni, Innovative Information Technology, 30 hours, M1 University of Lorraine, France

Master: Slim Ouni, Multimedia in Distributed Information Systems, 31 hours, M2, University of Lorraine, France

DUT: Irina Illina, Programming in Java, 150 hours, L1, University of Lorraine, France

DUT: Irina Illina, Linux System, 65 hours, L1, University of Lorraine, France

DUT: Irina Illina, Supervision of student projects and stages, 50 hours, L2, University of Lorraine, France

### 9.2.2. Supervision

PhD : Arseniy Gorin, "Acoustic model structuring for improving automatic speech recognition performance", University of Lorraine, 26 November 2014, Denis Jouvét.

PhD in progress: Othman Lachhab, "Pathological voice recognition using voice conversion techniques", November 2010, El Hassane Ibn Elhaj and Joseph Di Martino.

PhD in progress : Dung Tran, "Uncertainty handling for noise robust automatic speech recognition", December 2012, Emmanuel Vincent and Denis Jouvét.

PhD in progress : Luiza Orosanu, "Speech recognition for helping communication for deaf or hard of hearing people", December 2012, Denis Jouvét.

PhD in progress: Nathan Souviraà-Labastie, "Localisation et séparation de sources sonores pour la reconnaissance de la parole en environnement réel", University Rennes 1, January 2013, Frédéric Bimbot and Emmanuel Vincent.

PhD in progress: Xabier Jaureguiberry, "Fusion et optimisation de modèles pour la séparation de sources audio", Télécom ParisTech, February 2013, Gaël Richard and Emmanuel Vincent.

PhD in progress: Imran Sheikh, "Exploitation du contexte pour la reconnaissance de noms propres dans les documents diachroniques", January 2014, Irina Illina.

PhD in progress: Baldwin Dumortier, "Contrôle acoustique d'un parc éolien", September 2014, Emmanuel Vincent and Madalina Deaconu.

PhD in progress: Quan Nguyen, "Mapping of a sound environment by a mobile robot", November 2014, Francis Colas and Emmanuel Vincent.

### **9.2.3. Juries**

Participation in PhD thesis Jury for Stefan Ziegler (University of Rennes 1, January 2014), D. Jouvét, reviewer.

Participation in PhD thesis Jury for Nicolas López (Télécom ParisTech, July 2014), E. Vincent, reviewer.

Participation in PhD thesis Jury for Thiago Fraga da Silva (University of Paris-South, September 2014), D. Jouvét, reviewer.

Participation in PhD thesis Jury for Antti Hurmalainen (Tampere University of Technology, Finland, October 2014), E. Vincent, reviewer.

Participation in PhD thesis Jury for Raphaël Laurent (University of Grenoble, October 2014), Y. Laprie, reviewer.

Participation in PhD thesis Jury for Lucie Steiblé (University of Strasbourg, December 2014), Y. Laprie, reviewer.

Participation in PhD thesis Jury for Fayssal Bouarourou (University of Strasbourg, December 2014), Y. Laprie.

### **9.2.4. Participation to external committees**

Titular member of the National Council of Universities (CNU section 61), E. Vincent

Member of a Selection Committee of University of Lorraine (UFR Math Info), LORIA, Y. Laprie

Elected member of the Conseil du Pôle Scientifique AM2I of University of Lorraine, Y. Laprie

Member of the Scientific Committee of an Institute for deaf people (La Malgrange), A. Piquard-Kipffer

Member of the Conseil du Pôle Scientifique AM2I of University of Lorraine, A. Piquard-Kipffer

Member of an expertise Committee for specific language disabilities (MDPH 54), A. Piquard-Kipffer

### **9.2.5. Participation to local committees**

Titular member of the Comité de Centre Inria, E. Vincent

Member of the Comipers Enseignant, E. Vincent

Member of the "Commission de développement technologique", A. Bonneau

Appointed member of the Conseil de Laboratoire (LORIA), Y. Laprie

member of the "Commission locale développement durable", D.Fohr

Leader of the "Commission des utilisateurs des moyens informatiques (CUMI)", D. Fohr

Member of DFD staff, I. Illina

### **9.3. Popularization**

Panelist at a public meeting of the SAILOR consortium on the topic of "Imagining new places to live", University of Lorraine, April 2014 (E. Vincent).

Demonstration at Journée Sciences et Musique, IRISA Rennes, October 2014 (N. Souviraà-Labastie, E. Vincent).

Vulgarization of music signal processing at Inria to students of the Lycée Loritz, June 2014 (Y. Laprie, A. Liutkus)

## OAK Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. General chair, Scientific chair

- I. Manolescu has been a co-chair of the 2nd International Workshop on Benchmarking RDF Systems (BeRSyS), in conjunction with VLDB 2014.

#### 8.1.1.2. Member of the organizing committee

- N. Bidoit has been co-organiser of the summer school Ecole Thématique Bases de Données, June 2014, Oléron, whose focus was on Massive and Distributed Data Management.

### 8.1.2. Scientific events selection

#### 8.1.2.1. Responsible of the conference program committee

- I. Manolescu has been a group leader (track chair) of the “Text Databases, XML and Keyword Search” track of the ACM SIGMOD Conference 2014.

#### 8.1.2.2. Member of the conference program committee

- I. Manolescu: Extending Database Technologies Conference (EDBT), IEEE International Conference on Data Engineering (ICDE), SIGMOD/PODS PhD Symposium, Data4U workshop (in conjunction with VLDB 2014). She has also participated in the program committee of Bases de Données Avancées (BDA) 2014.
- Bogdan Cautis served as program committee member for the international conferences EDBT 2014, SIGMOD 2014, and CIKM 2014, as well as the workshops UnCrowd 2014 and BUDA 2014 (with ACM SIGMOD). He also participated in the program committee of Bases de Données Avancées (BDA) 2014.

#### 8.1.2.3. Reviewer

- Bogdan Cautis served as reviewer for IEEE Transactions on Knowledge and Data Engineering.

### 8.1.3. Journal

#### 8.1.3.1. Member of the editorial board

- I. Manolescu has been the Editor in Chief of the ACM SIGMOD Record until June 2014; she is an associate editor of the ACM Transaction on Internet Technology, and a member of the review board of PVLDB 2014.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: Bogdan Cautis, Masses de Données, M2R IAC, 18 ETD, M2, UNIV. PARIS-SUD

Licence: Bogdan Cautis, Introduction au Bases de Données, 44 ETD, L1, IUT Orsay

Licence: Bogdan Cautis, Programmation et Administration des Bases de Données, 94 ETD, L1, IUT Orsay

Master: Benoît Groz, Bases de données dimensionnelles et OLAP, M2 Miage et M2 CA, 33 ETD, M2, UNIV. PARIS-SUD

Master: Benoît Groz, Principe d'utilisation des SGBD, M1 Miage et M1, 56 ETD, M1, UNIV. PARIS-SUD

Master: Ioana Manolescu, Masses de Données, M2R IAC, 26 ETD, M2, UNIV. PARIS-SUD

### **8.2.2. Supervision**

Raphael Bonaque: "Structured, Social and Semantic Search", since October 2013, Bogdan Cautis, François Goasdoué, and Ioana Manolescu.

Damien Bursztyn: "Scalable Techniques for Web Data Management", since January 2014, François Goasdoué and Ioana Manolescu

Jesús Camacho-Rodríguez : "Cloud-based Web Data Management", defended in September 2014, Dario Colazzo and Ioana Manolescu.

Alexandra Roatiş: "Scalable Database Techniques for the Semantic Web", defended in September 2014, Dario Colazzo, François Goasdoué, and Ioana Manolescu.

Aikaterini Tzompanaki: Foundations and Algorithms to Compute the Provenance of Missing Data, since November 2012, Melanie Herschel and Nicole Bidoit.

Stamatis Zampetakis: "Massively Parallel Algorithms for Semantic Web Data", since October 2012, François Goasdoué and Ioana Manolescu.

Ioana Ileana: "Extracting and Archiving Web Data: a holistic approach", defended in October 2014, Bogdan Cautis.

Paul Lagrée: "Adaptive Learning for Intelligent Crowdsourcing and Information Access", since October 2014, Bogdan Cautis.

### **8.2.3. Juries**

Bogdan Cautis has been a member of the PhD committee of Ryadh Dahimene (December 2014), CNAM, France.

Ioana Manolescu has reported on the PhD thesis of Laurent Pellegrino (Avril 2014), Université de Nice, France.

She has been a member of the PhD committees of Alexandra Roatis (September 2014, UNIV. PARIS-SUD), Jesús Camacho Rodríguez (September 2014, UNIV. PARIS-SUD) and Ioana Ileana (October 2014, Telecom ParisTech).

She has also been a member of the HDR committee of Fabian Suchanek (October 2014, Telecom ParisTech).

## **8.3. Popularization**

At the International Conference on Database Systems for Advanced Applications (DASFAA 2014), B. Cautis gave a lecture for the local Indonesian students, on "Searching the Social Web".

## ORPAILLEUR Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific Events Organization, General Chairs, Scientific Chairs

- “ECCB 2014”. Several members of the team were involved in the organization of the 13th edition of the European Conference on Computational Biology held in Strasbourg on September 2014. This conference attracted over 1100 participants (<http://www.eccb14.org>). Marie-Dominique Devignes was the scientific chair of the conference and the scientific editor of the proceedings [7] [76].
- “ECML-PKDD 2014”. Amedeo Napoli and Chedy Raïssi were the Conference chairs of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD 2014) which was held in Nancy between September 15th and September 19th, <http://www.ecmlpkdd2014.org/>, in conjunction with ILP 2014 (September 14-16, <http://dtai.cs.kuleuven.be/events/ilp2014/>). There were roughly 560 persons attending the ECML-PKDD Conference (50 of which were shared with ILP).
- “CCC”. Emmanuel Nauer co-organized the "Computer Cooking Contest" at ICCBR 2014 which held this year in Cork (Ireland) (see <http://liris.cnrs.fr/ccc/ccc2014/>).
- “FCA4AI 2014”. Amedeo Napoli organized with Sergei O. Kuznetsov (HSE Moscow) and Sebastian Rudolph (TU Dresden) the third workshop FCA4AI (“What can do FCA for Artificial Intelligence”) which was associated with the ECAI Conference in Prague (Czech Republic, August 2014, see <http://www.fca4ai.hse.ru/2014> and <http://ceur-ws.org/Vol-1257>).
- “ICCBR Workshops”. Jean Lieber with David B. Leake was in charge of the organization of the ICCBR-2014 workshops [82] (see <http://www.iccbr.org/iccbr14/>).
- “LD4KD”. Nicolas Jay organized with Mathieu D’Aquin and Ilaria tiddi (Open University, UK) the first workshop on Linked Data for Knowledge Discovery (LD4KD) collocated with the ECML/PKDD conference in Nancy, September 2014 (<http://events.kmi.open.ac.uk/ld4kd2014/>).

#### 9.1.1.1. Scientific Animation

- The scientific animation in the Orpailleur team is based on two seminars, the Team Seminar and the BINGO seminar. The Team Seminar is held in general twice a month and is used either for general presentations of members of the team or for invited presentations of external researchers. The BINGO seminar is also held twice a month and is used for more specific presentations focusing on biological, chemical, and medical topics. Actually, both seminars are active and are useful instruments for researchers in the team.
- Members of the Orpailleur team are all involved, as members or as head persons, in various national research groups.
- The members of the Orpailleur team are involved in the organization of conferences and workshops, as members of conference program committees (ECAI, ECML-PKDD, ICCBR, ICDM, ICFCFA, IJCAI, KDD...), as members of editorial boards, and finally in the organization of journal special issues.

### 9.2. Teaching – Supervision – Committees

- The members of the Orpailleur team are involved in teaching at all levels of teaching, mainly at University of Lorraine. Actually, most of the members of the Orpailleur team are employed on university positions.
- The members of the Orpailleur team are also involved in student supervision, at all university levels, from under-graduate until post-graduate students.
- Finally, the members of the Orpailleur team are involved in HDR and thesis defenses, being thesis referees or thesis committee members.



## PANAMA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

Rémi Gribonval is a member of the IEEE Technical Committee on Signal Processing Theory and Methods (2012–2014), and a member of the Awards sub-committee.

Rémi Gribonval is a member of the program committee of the GRETSI.

Rémi Gribonval is a member of the Steering Committee of the SPARS international workshop (chairman until 2013).

Rémi Gribonval is in charge of the Action "Parcimonie" within the French GDR ISIS on Signal & Image Processing.

Rémi Gribonval organized a mini-symposium on "Dictionary learning and applications" at the international conference Curves & Surfaces in Paris.

Rémi Gribonval organized a session "Mathematical for Image Processing" at the SMAI-MODE conference in Rennes.

Rémi Gribonval was co-organizer of a one-day seminar in Lyon on sparse representations and compressive sensing for medical imaging sponsored by the GDR ISIS (french research groups in signal and image processing) and GDR STIC-SANTE.

Frédéric Bimbot is the Head of the "Digital Signals and Images, Robotics" in IRISA (UMR 6074).

Frédéric Bimbot is a member of the International Advisory Council of ISCA (International Speech Communication Association).

Frédéric Bimbot was a member of the Scientific Committee of Journées d'Analyse Musicale 2014 of the SFAM (Société Française d'Acoustique Musicale).

Rémi Gribonval and Frédéric Bimbot are the scientific coordinators of the Science and Music Day (Journée Science et Musique) organized by IRISA.

Nancy Bertin is a member of the IEEE Technical Committee on Audio and Acoustic Signal Processing (2013–2015).

## 9.2. Teaching

### 9.2.1. Teaching

Licence : N. Bertin, "Discovery of selected topics in audio signal processing research", 9 hours, L3, École Supérieure de Réalisation Audiovisuelle (ESRA), France.

Master : N. Bertin, "Audio rendering, coding and source separation", 9 hours, M2, Université Rennes 1, France.

Master : N. Bertin, "Audio indexing and classification", 9 hours, M2, Université Rennes 1, France.

Master : N. Bertin, "Fundamentals of Signal Processing", 24 hours, M1, Ecole Normale Supérieure de Bretagne, Rennes, France.

Master : R. Gribonval, "Sparse representations for inverse problems in signal and image processing", 10 hours, M2, Université Rennes 1, France.

Master : R. Gribonval, "Signal and image representations", 8 hours, M2, Université Rennes 1, France.

Master: R. Gribonval, coordination of the ARD module "Acquisition et Représentation de Données", M2, Université Rennes 1, France.

Laurent Albera gives lectures in Mathematics and in Signal Processing, and he supervises end of school year projects, mainly at the university of Rennes 1:

Licence: L. Albera, "Mathematics for electronics", 6 hours, L2, Université Rennes 1, France.

Licence: L. Albera, "Mathematics for electronics", 21 hours, L3, Université Rennes 1, France.

Licence: L. Albera, "Mathematics", 53 hours, L3, Ecole Supérieure d'Ingénieurs de Rennes, France

Master: L. Albera, "Cardiac source localization from ECG signals", project supervision (with Ansys), M2, Ecole Supérieure d'Ingénieurs de Rennes, France.

Master : L. Albera, "Blind equalization", 4.5 hours, M2, Université Rennes 1, France.

Master : L. Albera, "Inverse problems", 3 hours, M2, Université Rennes 1, France.

Laurent Albera is responsible of the "Signal Processing" branch of the SISEA (Signal, Images, Embedded Systems and Control) Master 2 of University of Rennes 1.

## 9.3. Popularization

### 9.3.1. *Journée science et musique*

**Participants:** Anaik Olivero, Jules Espiau de Lamaestre, Pierre Machart, Gilles Puy, Nancy Bertin, Frédéric Bimbot, Rémi Gribonval, Corentin Guichaoua, Srdan Kitic, Stéphanie Lemaile, Nicolas Keriven, Ewen Camberlein, Romain Lebarbenchon, Luc Le Magoarou, Nathan Souviraà -Labastie.

PANAMA coordinated the organization of a public event called "Journée Science et Musique" (Day of Music and Science). This yearly event organized by the METISS/ PANAMA Team since 2011 aims at sharing with the wide audience the latest innovations and research projects in music. The motivation for hosting this event is to explain and promote the technology behind audio-processing that people face in their daily lives. The event is free to everyone and people have the possibility to attend talks by selected speakers or meet numerous experts that demonstrate current projects in which people can interactively participate. Edition 2014 hosted 260 visitors.

### 9.3.2. *Radio and press*

Nancy Bertin and Rémi Gribonval co-authored a popularization article about compressed acoustic holography (with L. Daudet and F. Ollivier). It was accepted by the journal "Pour la Science" for publication in 2015.

Nancy Bertin, Jules Espiau and Rémi Gribonval (with L. Daudet, A. Bordenave and Inria audiovisual department) participated in the realization of a pedagogical video presenting the ANR ECHANGE project results on acoustic holography <http://videotheque.inria.fr/videotheque/embed/25816>.

Jules Espiau and Pierre Machart were interviewed in a one-hour scientific radio show on Radio Prune (radio of the Nantes region) at the occasion of the "Journée Science et Musique".

## PERCEPTION Project-Team

# 7. Dissemination

## 7.1. Promoting Scientific Activities

### 7.1.1. Journals

Radu Horaud is a member of the following editorial boards:

- advisory board member of the *International Journal of Robotics Research*, Sage,
- associate editor of the *International Journal of Computer Vision*, Kluwer, and
- area editor of *Computer Vision and Image Understanding*, Elsevier.

## POTIOC Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. member of the organizing committee

- IEEE VR 2015 Lab and project presentation Chair (M. Hachet)

#### 9.1.1.2. steering committee

- IEEE 3DUI (M. Hachet)

#### 9.1.1.3. workshop organisation

- first OpenViBE workshop, September 2014, satellite workshop of the 6th International BCI conference, Graz, Austria, co-organized with Inria teams Athena, Hybrid, Neurosys and with the company Mensia Technologies (F. Lotte)
- BCI Workshop for art, Academy of Media Arts Cologne (KHM), Germany, February 2014 (C. Mühl)
- Interco3D Workshop at IHM14 (M. Hachet and F. Lotte)
- Workshop «Perspectives on Gender and Product Design» at CHI 2014 (A. Brock)

#### 9.1.1.4. International Tutorials and Summer/Autumn/Winter schools

- "Design of BCI based on Oscillatory activity: signal processing and more", International BCCI Winter School on Neurotechnologies, Berlin, Germany, February 2014 (F. Lotte)
- "EEG Signal Processing and Classification for Brain Computer Interfacing (BCI) Applications", with A. Konar and A. Sinharay, ICASSP 2014, Florence, Italy, May 2014 (F. Lotte)

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

- 6th International BCI conference (F. Lotte)
- CHI 2015 Program Committee (M. Hachet)
- ITS 2014 Poster Committee (A. Brock)
- MobileHCI 2014 Poster Committee (A. Brock)
- PRNI 2014 (F. Lotte)
- SUI 2014 (M. Hachet)
- Web3D 2014 (M. Hachet)

#### 9.1.2.2. member of award committee

- Best talk and poster award committee, 6th International BCI Conference, Graz, Austria (F. Lotte)
- PhD Thesis award 2014 from AFIA (French Association for Artificial Intelligence) (F. Lotte)
- Best Poster award committee, SUI 2014, Honolulu, USA (M. Hachet)

#### 9.1.2.3. reviewer

- CHI 2014 (A. Brock, M. Hachet, F. Lotte)
- CHI 2015 (A. Brock, M. Hachet, F. Lotte)
- EICS 2014 (A. Brock)
- Eurohaptics 2014 (A. Brock)

- ICASSP 2014 (F. Lotte)
- IEEE SMC 2014 (F. Lotte)
- IHM 2014 (A. Brock, F. Lotte)
- International BCI conference 2014 (F. Lotte)
- ITS 2014 (A. Brock)
- MobileHCI 2014 (A. Brock)
- NordiChi 2014 (A. Brock)
- PRNI 2014 (F. Lotte)
- UIST 2014 (A. Brock, M; Hachet, F. Lotte)

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

- journal ACM JOCCH Guest editor, Special issue on « Interacting with the past » 2014 (M. Hachet)
- Brain-Computer Interfaces journal Guest editor, Special issue on “Affective Brain-Computer Interfaces”, 2014 (C. Mühl)

#### 9.1.3.2. reviewer

- ACM TOCHI (F. Lotte)
- BCI (F. Lotte)
- Behaviour & Information Technology (A. Brock)
- IEEE CG&A (F. Lotte)
- IEEE Trans. Affective Computing (F. Lotte)
- IEEE Trans. Biomed. Eng. (F. Lotte)
- IEEE Trans. on Computational Intelligence and AI in Games (J. Frey)
- IEEE Trans. Cybernetics (F. Lotte)
- IEEE Trans. on Haptics, Special Issue: Haptic Assistive Technology for Individuals who are Visually Impaired (A. Brock)
- IEEE Trans. Human Machine Systems (F. Lotte)
- International Journal of Human-Computer Studies (A. Brock)
- JMIHI (F. Lotte)
- J. Neural Eng. (F. Lotte)
- Pattern Recognition (J. Frey)
- PLOS-One (F. Lotte)
- Presence (F. Lotte)
- Proceedings of the IEEE (F. Lotte)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

#### Bordeaux University

- Master : Jérémy Laviolle, Experimentation and Development projects , 5h, M2, University of Bordeaux, France
- Master : Jérémy Laviolle, Programmation project , 5h, M1, University of Bordeaux, France
- Master : Jérémy Frey, Programmation project , 27h, M1, University of Bordeaux, France

- Master : Anke Brock, Virtual Reality and 3D Interaction, 7,5h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Martin Hachet, Virtual Reality and 3D Interaction, 12h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Fabien Lotte, Virtual Reality and 3D Interaction, 5h, M2 Cognitive Science, University of Bordeaux, France
- Master : Jérémy Laviolle, Initiation to Research, 5h, M2, Bordeaux University, Bordeaux, France
- Licence : Camille Jeunet, Knowledge and Representation, 16h, L3 Mathematics and Informatics applied to Human and Social Sciences, University of Bordeaux, France
- Licence : Camille Jeunet, Human Sciences and Methods, 16h, L1 Mathematics and Informatics applied to Human and Social Sciences, University of Bordeaux, France
- Licence : Camille Jeunet, Cognitive Psychology, 16h, L1 Psychology, University of Bordeaux, France
- Licence : Camille Jeunet, Scientific Methodology, 16h, L2 Psychology, University of Bordeaux, France

#### **Enseirb MatMéca**

- Master : Anke Brock, Video Games and Interaction, 12h eqtd, 3rd year (M2), Enseirb, Bordeaux, France
- Master : Martin Hachet, Video Games and Interaction, 9h eqtd, 3rd year (M2), Enseirb, Bordeaux, France
- Master : Jérémy Laviolle, Project Multimedia Analysis, 16h, 3rd year (M2), Enseirb, Bordeaux, France

#### **Optical Institute Graduate School**

- Master : Jérémy Laviolle, High Performance Programming, 20h, 2nd year (M1), Optical Institute Graduate School, Bordeaux, France
- Master : Jérémy Laviolle, Image Analysis, 20h, 2nd year (M1), Optical Institute Graduate School, Bordeaux, France

#### **Other Universities**

- Master : Anke Brock, Human-Computer Interaction, 12h eqtd, 2nd year (M2SIR), University Toulouse, France
- Master: Fabien Lotte, Virtual Reality, Accesibility and Brain-Computer Interaction, 4h, M1/M2 level, ENSSAT Lannion, France

### **9.2.2. Supervision**

#### **PhD Students**

- Damien Clergeaud, "Interactive Collaboration in Virtual Reality for Aerospace Scenarii", started November 1st, 2014, Pascal Guitton
- Jérémy Frey (PhD candidate in Computer Science, Bordeaux University), "Using Passive Brain-Computer Interfaces to assess and optimize 3D User Interfaces", started October 1st, 2012, Fabien Lotte and Martin Hachet
- Renaud Gervais, "Organic User Interfaces", started December 1st, 2012, Martin Hachet
- Camille Jeunet (PhD candidate in Cognitive Sciences, Bordeaux University), "Improving User training approaches for Brain-Computer Interface", started October 1st, 2013, Fabien Lotte, Martin Hachet, Bernard N'kaoua and Sriram Subramanian.
- Joan Sol Roo, "Interaction with Spatial Augmented Reality", started November 1st 2014, M. Hachet

- Lorraine Perronet (PhD candidate in Computer Science, Rennes University): “Neurofeedback and brain Rehabilitation based on EEG and fMRI”, 2014-2017 (expected), Fabien Lotte co-supervising with Anatole Lécuyer, Christian Barillot and Maureen Clerc
- Stephanie Lees (PhD candidate in Computer Science, Ulster University, UK): “Assessing and Optimising Human-Machine Symbiosis through Neural signals for Big Data Analytics”, 2014-2018 (expected), Fabien Lotte co-supervising with Damien Coyle, Paul McCullagh and Liam Maguire

#### Master Students

- Damien Clergeaud, « Interactive juggling », Martin Hachet
- Jean Bui Quang, « Hybrid optical bench », Martin Hachet
- Julia Schumacher (Master student in Computational Neuroscience, BCCN, Germany), "Explanatory feedback for Brain-Computer Interface training", Fabien Lotte
- Loïc Renault (Master student in Neurosciences, Bordeaux University), "The impact of self-paced training on BCI performances", Fabien Lotte
- Joao-Pedro berti Ligabo (Master student, Institut d'Optique Graduate School), "EEG signal denoising in OpenViBE", Fabien Lotte and Alison Cellard
- Dennis Wobrock (Master student in Cognitics, ENSC), "Physiological computing for 3D user interaction", Fabien Lotte co-supervising with Julien Castet
- Morgane Sueur (Master 1 Cognitive Science), "Human Learning in BCIs", Camille Jeunet
- Aurélien Appriou (Master 1 Cognitive Science), "Assessing stereoscopy with EEG", Jérémy Frey

#### Other Supervision

- Bachelor : supervision of student project about "Using BCIs for stroke rehabilitation", Bordeaux University, France, Camille Jeunet
- Master : supervision of student project on 3D tangible tabletops, M2, Bordeaux University, France, Anke Brock and Renaud Gervais

#### 9.2.3. Juries

- Thesis Reviewer: Thi Thuong Huyen Nguyen, November 2014, INSA de Rennes, "Proposition of new metaphors and techniques for 3D interaction and navigation preserving immersion and facilitating collaboration between distant user », Martin Hachet
- Thesis Reviewer: Matthieu Duvinage, University of Mons, Belgium, 2014, Fabien Lotte
- Thesis Reviewer: Wojciech Samek, TU Berlin, Germany, 2014, Fabien Lotte
- Thesis Examiner: Yosra Rekik, December 2014, Université Lille 1, « comprendre, modéliser, et concevoir l'interaction gestuelle tactile", Martin Hachet
- Thesis Examiner: Romain Trachel, Inria Sophia-Antipolis/Université de Marseille, France, 2014, Fabien Lotte
- Thesis Examiner: Damien Lesenfants, Liège University, Belgium, 2014, Fabien Lotte
- Thesis Examiner: Jonathan Grizou, Inria Bordeaux Sud-Ouest/Bordeaux University, France, 2014, Fabien Lotte

### 9.3. Popularization

#### Popularization talks

- Presentation about Inria to High School Students during Aquitec, January (C. Jeunet)
- Presentation about Cognitive Sciences and Inria to High School Students at a local high school, March (C. Jeunet)

- Tangible and Gestural Interaction Forum (<http://fitg.lille.inria.fr/>), presentation (20mins) in Tourcoing, France, May 14th (J. Laviolle)
- Talk about Brain Computer Interfaces at "Café de la Connaissance", May (A. Cellard and C. Jeunet)
- New European Media Summit, Brussels, Belgium , September 30th (J. Laviolle, F. Lotte)
- Presentation on "How to design the computers of the future" and speedmeeting during "Filles et mathématiques: une équation lumineuse" (event to raise interest in mathematics in female high school students), University Toulouse, December 10th (A. Brock)



## PRIMA Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

- Sabine Coquillart is member of the organizing committee and co-chair of the Program Committee for GRAPP 2014 Lisbon, Portugal.
- Sabine Coquillart is member of the organizing committee for IEEE VR 2015, Arles, France

#### 8.1.1.2. Member of the conference program committee

- James Crowley: Ubicomp 2014.
- Sabine Coquillart: 3DCVE 2014, GRAPP 2014, IEEE 3DUI 2014, IEEE VR 2014, ISVC 2014, SVR 2014-13-12-11-10, VRST 2014-13, WSCG 2014.
- Thierry Fraichard: Associate Editor for ICRA 2014 and IROS 2014.

#### 8.1.1.3. Reviewer

- James Crowley: Ubicomp 2014, ICPR 2014, CVPR 2014, IE 2014, ICRA 2014.
- Sabine Coquillart: 3DCVE 2014, GRAPP 2014, IEEE 3DUI 2014, IEEE VR 2014, ISVC 2014, SVR 2014-13-12-11-10, VRST 2014-13, WSCG 2014.
- Thierry Fraichard: IROS 2014.
- Patrick Reignier: IUI 2014, ROMAN 2014, UCAM I 2014,
- Dominique Vaufreydaz: MTEL 2014, UBICOMM 2014, ROMAN 2014], Workshop on Assistance and Service Robotics in a Human Environment at IROS 2014, WUSPE2013

### 8.1.2. Journal

#### 8.1.2.1. Member of the editorial board

- Dominique Vaufreydaz: International Journal On Advances in Internet Technology 2014, Journal of Robotics and Autonomous Systems, special issue: Assistive Robotics

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

#### 8.2.1.1. James Crowley

- Computer Vision, Course 24h EqTD, M2 year, Master of Science in Informatics at Grenoble,
- Intelligent Systems, Cours 54h EqTD, ENSIMAG.

James Crowley is Director Master of Science in Informatics at Grenoble.

### 8.2.1.2. Sabine Coquillart

- Sabine Coquillart teaches a course on Virtual Reality and 3D User Interfaces for the GVR Master 2R, 2013-2014.
- Sabine Coquillart teaches a one day course on 3D User Interfaces and Augmented Reality for the Numerical Modeling and Virtual Reality Master 2 in Laval, 2013-2014.

### 8.2.1.3. Thierry Fraichard

Master: Thierry Fraichard, Introduction to Perception and Robotics, 23h eqTD, M1 MOSIG, Univ. of Grenoble, France.

Master: Thierry Fraichard, Motion in Dynamic Workspaces, 2h eqTD, Computer Science Master, Bar Ilan Univ., Israel.

Co-responsibility of the Graphic, Vision and Robotics track of the international MOSIG Master programme.

### 8.2.1.4. Patrick Reignier

Master: Patrick Reignier, Projet Génie Logiciel, 55h eqTD, M1, ENSIMAG/Grenoble INP, France.

Master : Patrick Reignier, Développement d'applications communicantes, 18h eqTD, M2, ENSIMAG/Grenoble - INP, France

Master : Patrick Reignier, Introduction aux applications réseaux, 18h eqTD, M2, ENSIMAG/Grenoble - INP, France

Master: Patrick Reignier, Programmation Internet, 18h eqTD, M1, ENSIMAG/Grenoble INP, France

Master : Patrick Reignier, Algorithmique, 50h eq TD, M1, ENSIMAG/Grenoble INP, France

Licence: Patrick Reignier, Projet C, 20h eqTD, L3, ENSIMAG/Grenoble INP, France.

Patrick Reignier is supervising the industrial part of the "formation en apprentissage" of the ENSIMAG engineering school.

## 8.2.2. Supervision

### 8.2.2.1. PhD defended in 2014

- Julian Quiroga, "Scene Flow from RGBD Images", Thèse doctorale de l'Université de Grenoble, 7 November 2014, Directed by Frederic Devernay and James L. Crowley
- Evanthia Mavridou, "Robust Image Description Using the Laplacian Profile and Radial Fourier Transform", Thèse doctorale de l'Université de Grenoble, 25 November 2014, directed by James L. Crowley and Augustin Lux.
- Dimitri Mason, "Inspirez ! Explorez ! Soutien à la créativité en conception d'interfaces homme-machine", Thèse doctorale de l'Université de Grenoble, 25 Sept 2014, Directed by Alexandre Demeure and Gaelle Calvary.

### 8.2.2.2. Current Doctoral Students

- Varun Jain, Perception of Human Emotions, University of Grenoble, expected March 2015, James Crowley
- Sergi Pujades-Rocamora, Modeles de cameras et algorithmes pour la creation de contenu video 3D, expected fall 2015, Remi Ronfard (HDR) et Frederic Devernay
- Etienne Balit, Multimodalite et interaction sociale, University of Grenoble, expected Fall 2016, Patrick Reignier (Professor), Dominique Vaufreydaz.
- Viet Cuong Ta, Multiple Users localization in public large-scale space, University of Grenoble, expected Fall 2016, Eric Castelli (HDR, Mica laboratory Hanoi, Vietnam), Dominique Vaufreydaz.

- Remi Paulin, Human-Robot Motion, University of Grenoble, expected Fall 2016, Thierry Fraichard (HDR).
- Chen Jingtao, Doctoral student of University of Grenoble, expected 2017, directed by S. Coquillard
- Grégoire Nieto, Doctoral student of University of Grenoble, expected 2017, directed by F. Devernay
- Romain Brügier, Doctoral student of University of Grenoble, expected 2017, directed by F. Devernay
- J. L. Crowley Alberto Quintero Delgado, Doctoral student of University of Grenoble, expected 2017, directed by F. Devernay

### 8.2.3. *Juries*

Thierry Fraichard served as an jury member for the PhD of Jean Gregoire from Ecole Nationale Supérieure des Mines de Paris, "Priority-Based Coordination of Mobile Robots", and for the PhD of Helene Vorobieva from Université d'Evry, "Conception et methode de validation des lois de controle pour des systemes de conduite automatisee du vehicule".

James L. Crowley served on the following doctoral and Habilitation Juries:

- Président, Thesis Jury of Arturo ESCOBEDO, Thèse Doctorale Université de Grenoble, Oct 2014
- Président, Thesis Jury of Simon COURTEMANCHE, Thèse Doctorale Université de Grenoble, Oct 2014
- Président, Thesis Jury of Yann LAURILLAU, Habilitation, Université de Grenoble, Nov 2014
- Président, Thesis Jury of Vineet GANDHI, Thèse Doctorale Université de Grenoble, Dec 2014

Patrick Reignier served on the following doctoral Juries:

- Member doctoral jury of Aysha Kashif, Thèse Doctorale Université de Grenoble, Jan 2014
- Reporter doctoral jury of Olfa Mabrouk University Paris Est Créteil, Nov 2014

Sabine Coquillard served on the following doctoral juries:

- Member doctoral jury of Thi Thong Huyen NGUYEN, INSA Rennes. Nov. 2014
- Member doctoral jury of Reporter doctoral jury of Jérôme Ardouin, INSA Rennes, Dec. 2014

## 8.3. Popularization

- James Crowley participated in the Radio emission Science Publique presented by Michel Alberganti on Radio France Culture on Friday 21 February from 14h00 to 15h00. Theme of the program: "Should we fear intelligent robots?"
- Patrick Reignier was interviewed by a journalist of Science et Vie for a paper on Artificial Intelligence

## REVES Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

G. Drettakis chairs the EG Working group on Rendering. He also heads the steering committee of the Gouraud-Phong Immersive Space at Sophia-Antipolis.

#### 9.1.1.2. member of the organizing committee

G. Drettakis served on several ad-hoc ACM and IEEE Committees, concerning policy and EIC searches.

### 9.1.2. Scientific events selection

#### 9.1.2.1. member of the conference program committee

George Drettakis and Adrien Bousseau served on the Eurographics 2014 international program committee. Adrien Bousseau served on the SIGGRAPH 2014 program committee and the SIBGRAPI 2014 program committee. George Drettakis served on the EGSR 2014 international program committee.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

G. Drettakis is an associate editor-in-chief for IEEE Transactions on Computer Graphics and Visualization.

#### 9.1.3.2. reviewer

G. Drettakis and A. Bousseau are frequent reviewers for ACM Transactions on Graphics, IEEE Transactions on Computer Graphics and Visualization, Computer Graphics Forum.

### 9.1.4. Conferences

#### 9.1.4.1. Attendance

- Sylvain Duchêne, Rodrigo Ortiz Cayon, Adrien Bousseau and George Drettakis attended the Eurographics Symposium on Rendering in Lyon.
- Emmanuel Iarussi, Rodrigo Ortiz Cayon and Adrien Bousseau attended the Eurographics conference in Strasbourg.
- Adrien Bousseau and George Drettakis attended the SIGGRAPH conference in Vancouver.
- Kenneth Vanhoey attended the ACM Siggraph Asia 2014 conference in Shenzhen, China

### 9.1.5. Summer Schools

#### 9.1.5.1. Attendance

Rodrigo Ortiz Cayon attended a summer school on virtual reality at ESTIA - Bidart, France.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Masters: G. Drettakis organizes and teaches Computer Graphics at the ECP (Paris) (9h), A. Bousseau teaches 3h at the same course. G. Drettakis teaches 6h in the MAPI M1 Module (Jeux Video), A. Bousseau teaches 3h in this program. A. Bousseau organizes and teaches the Computer Graphics module in the Master 1 International in Computer Science of University Nice Sophia Antipolis (9h), G. Drettakis teaches 4.5h in this program.

Licence: Emmanuel Iarussi is a teaching assistant for the course on Human Computer Interaction at IUT - University Nice Sophia-Antipolis.

### 9.2.2. Supervision

- PhD in progress: Rodrigo Ortiz-Cayon, Inpainting and Artifact Removal for Image Based Rendering, (started November 2013), Advisor: George Drettakis.
- PhD in progress: Emmanuel Iarussi, Computer-Assisted Drawing, since October 2012, Advisor: George Drettakis, Co-advisor: Adrien Bousseau
- PhD in progress: Sylvain Duchene, Image-Based Relighting, since October 2011 (to defend in March 2015), Advisor: George Drettakis.
- PhD in progress: Uditha Kasthuriarachchi, Mixed rendering of captured and virtual content, since November 2014, Advisor: George Drettakis.
- PhD defended: Gaurav Chaurasia, Algorithms and Perceptual Analysis for Interactive Free View-point Image-Based Navigation [12], since October 2010 (defended February 2014), Advisor: George Drettakis
- PhD defended: Emmanuelle Chapoulie, Gestures and direct manipulation for immersive virtual reality [11], since October 2010 (defended June 2014), Advisor: George Drettakis
- Internship: Ayush Tewari. Advisor: George Drettakis, Co-advisor: Adrien Bousseau
- Internship: Rahul Arora. Advisor: Adrien Bousseau
- Internship: Uditha Kasthuriarachchi. Advisor: George Drettakis

### 9.2.3. Juries

- G. Drettakis was a member of the Ph.D. committee of J. Ardouin in Rennes (December).

## 9.3. Popularization

### 9.3.1. Popularization, Invited Talks

- We participated in the VERVE workshop on virtual reality technologies for ageing, which took place at the Institut Claude Pompidou on Nov. 6th. Over 200 participants (patients, families and caregivers) visited during this day. George Drettakis gave a short interview on our research for local television.
- Adrien Bousseau presented his work on sketch-based modeling at Lycée de Vence during the Fête de la science 2014. He also participated to a “cafe science” during the Semaine du Cerveau event in Marseille.
- Adrien Bousseau gave an invited talk at the Amadeus Global Technical Forum, December 2014.
- Adrien Bousseau and George Drettakis gave invited talks at UC Berkeley in the context of the associate team CRISP.

### 9.3.2. Demos

We gave demos to companies visiting the site, often including presentations in the immersive space: Visteon, Optis. We also gave demos and presentations at the Mediterranean Days event, to university and high school students (“stages 3eme”), as well as representatives from the Sustainable Design School in Nice.

## RITS Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

Fawzi Nashashibi: co-organiser of the session "Advanced Perception, Localization and Control for Ground Robots" of the International Conference on Control, Automation, Robotics and Vision (ICARCV 2014);

Joshué Pérez Rastelli: co-Chair of the Poster Session IIIB1, Vehicle Environment Perception III of the IEEE Intelligent Vehicles Symposium 2014.

Oyunchimeg Shagdar: co-chair of the International Workshop on vehicular networking and intelligent transportation systems, 2015.

#### 9.1.1.2. Member of the organizing committee

Vicente Milanés: publicity co-chair of the International Conference on Internet of Vehicles 2014.

Michel Parent : organization of a session on "International Connected Vehicle & ITS" at IoT China 2014 Conference (Oct. 28-30, 2014, Shanghai, China)

#### 9.1.1.3. Invited speaker

Guy Fayolle: invited speaker at Heriot-Watt University (Edinburgh), where he presented various aspects of the article [20].

Fawzi Nashashibi: invited speaker at ETSI ITS meeting in at Berlin (February), Franco-British Workshop; keynote speaker at the IROS'14 PPNIV workshop (Chicago, September) and participant of the roundtable "Towards driverless vehicles?"; participant of the euRobotics-aisbl meeting (Frankfurt); invited speaker at the AHB030 committee of the TRB'14 conference (Washington, January), at Princeton University on "Automated Urban Vehicles" ( January 10, 2014, Princeton, USA)

Michel Parent: invited speaker at VDI - Automated Driving 2014 (<http://www.vdi-wissensforum.de/en/events/822/event/01KO905/>), and at iMobility Challenge Conference (<http://www.imobilitychallenge.eu/roadshow/view/id/15>)

Oyunchimeg Shagdar: invited speaker at 6th ETSI ITS Workshop 2014, Berlin, March 2014; Seminar "Industrial connected objects, M2M, and Networking" Paris June 2014.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference program committee

Guy Fayolle: program committee member of the regular Int. Symposium on Computer and Information Sciences (Krakow, Poland, oct. 27-28 2014).

Vicente Milanés: member of the IPC in the International Conference on Internet of Vehicles 2014.

Fawzi Nashashibi: technical program committee member of the IEEE Intelligent Vehicles Symposium 2014, of the 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014), 2014 IEEE International Conference on Robotics and Automation (ICRA'14), 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'14).

Joshué Pérez Rastelli: technical program committee member of the IEEE Intelligent Vehicles Symposium 2014.

Oyunchimeg Shagdar: technical program committee member of the IARIA international conference on Emerging network Intelligence (EMERGING), 2014, and of the IEEE Vehicular Technology Conference (VTC 2014).

Anne Verroust-Blondet: technical program committee member of MMEDIA 2014.

#### 9.1.2.2. Reviewer

Guillaume Bresson: 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014).

Fawzi Nashashibi: 2014 IEEE Intelligent Transportation Systems Conference, 2014 IEEE Intelligent Vehicles Symposium, International conference on embedded computer Systems: Architecture, MOdeling and Simulatons (SAMOS) XIV, 2014 IEEE International Conference on Robotics and Automation, 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems, 2014 Transportation Research Board, 2014 Intelligent Transportation Systems World Congress.

Michel Parent: IEEE Control Systems Society Conference, IEEE Intelligent Transportation Systems Conference, IFAC World Congress, ITS World Congress, IEEE International Conference on Robotics and Automation (ICRA).

Evangeline Pollard: 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014), IEEE Intelligent Vehicles Symposium 2014, IEEE Vehicular Technology Conference (VTC 2014), International IEEE Conference on Intelligent Transportation Systems 2014, IEEE International Conference on Intelligent Robots and Systems 2014.

Joshué Pérez Rastelli: International IEEE Conference on Intelligent Transportation Systems 2014, 2014 IEEE Intelligent Vehicles Symposium, International conference on embedded computer Systems: Architecture, MOdeling and Simulations (SAMOS) XIV.

Oyunchimeg Shagdar: IEEE Vehicular Technology conference (VTC) 2014, International IEEE Conference on Intelligent Transportations Systems (ITSC) 2014, IEEE International conference on connected vehicles and expo (ICCVE) 2014, IEEE Intelligent Vehicles Symposium (IV) 2014, IARIA conference on Emerging network Intelligence (Emerging) 2014.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

Guy Fayolle: associate editor of the journal *Markov Processes and Related Fields*.

Vicente Milanés: editor-in-chief of *Journal of Computer and Communications*, guest editor Special Issue of *Electronics journal on: Intelligent and Cooperative Vehicles*, associate editor of *Journal of Intelligent Systems*, associate editor of *Journal of Intelligent Transportation and Urban Planning*.

Fawzi Nashashibi: associate editor of the journal *Traitement du signal*.

Joshué Pérez Rastelli: guest-Editor of *IEEE Intelligent Transportation Systems Magazine*, special issue of ELECTRO-MOBILITY, July 2014.

Oyunchimeg Shagdar: associate editor of *Wiley International Journal of Communication Systems*.

#### 9.1.3.2. Reviewer

Guy Fayolle: *PTRF, MPRF, QUESTA, IEEE-IT, JSP, AMS Mathematical Reviews*.

Vicente Milanés: *IEEE Trans. on Intelligent Transportation Systems*.

Fawzi Nashashibi: *Transportation Research Part C, IJRR, IJVAS, IEEE Transactions on Instrumentation and Measurement, IEEE Robotics and Automation Magazine, IEEE Transactions on ITS, IEEE TVT, IEEE Sensors*.

Michel Parent: *Journal of Intelligent Transportation Systems, Transportation Research Board Journal*.

Joshué Pérez Rastelli: *IEEE Robotics and Automation Magazine, Ad Hoc Networks, Mathematics and Computers in Simulation, Information Sciences, Dyna, Revista Bimestral de Ingeniería Multidisciplinar, Robotics, Electronics, IEEE Intelligent Transportation Systems Magazine*.

Evangeline Pollard: *IEEE Transactions on Vehicular Technology (TVT)*, *IEEE Transactions on Aerospace and Electronics Systems (AES)*.

Oyunchimeg Shagdar: *IEEE Transactions on Dependable and Secure computing*, *IEEE Transactions on Vehicular Technology*, *IEEE Transactions of Wireless Communications* and *Wiley International Journal of Communications Systems*.

Anne Verroust-Blondet: *Computer & Graphics*, *International Journal of Information and Communication Technology (IJICT)*, *Journal of Theoretical Biology*, *Information Sciences*.

#### 9.1.4. Other

Guy Fayolle: member of the working group IFIP WG 7.3 and scientific advisor at the Robotics Laboratory of Mines ParisTech. In this respect, he participates in the contract COVADEC, which is an industrial project (FUI / FEDER 15) involving 8 partners, among which Peugeot, Valeo, Armines and All4tec. The acronym stands for *Conception et Validation des Systèmes Embarqués d'Aide à la Conduite*. Armines will propose a Markov chain analysis aiming at optimizing test generation, taking into account non independent parameters.

Fawzi Nashashibi: scientific advisor at the *Robotics Laboratory of Mines ParisTech*, member of the European working group on Automation of the iMobility Forum, member of the International Committee on Vehicle Highway Automation (AHB30), Topic Leader at the euRobotics (aisbl) robotics network.

Michel Parent: project evaluator for the European Commission and for the Belgium Ministry of Research ("Service Public de la Wallonie DGO6"), French representative for ISO TC184 SC2 (Service Robots), participate as French representative to the ISO TC204 WG14 on the standards for driving assistance and full automatic driving.

Anne Verroust-Blondet: expert for the call "H2020 REFLECTIVE-7-2014" at European Commission, member of the CES 31 committee ("Cultures, patrimoines") for the "Blanc" and "Young researcher" 2014 programmes of the French National Research Agency (ANR), scientific correspondent of the Inria European Partnerships Department for the Inria Paris-Rocquencourt research centre.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: Fawzi Nashashibi, "Programmation avancée", 84h, L1, Université Paris-8 Saint-Denis, France.

Licence: Guillaume Trehard, "C programming language", L1, 50h, DUT Génie Electrique et Informatique Industrielle, IUT Chartres, France

Master: Jean-Marc Lasgouttes, "Analyse de données", 54h, 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, France.

Master: Fawzi Nashashibi, "Détection d'obstacles et fusion multicateurs", 4h, M2, INSA de Rouen.

Master: Joshué Pérez Rastelli, "Robotique et contrôle temps réel", M1, 15 hours, Leonard Da Vinci University -l'ESILV- (La Defense, France), Apr-May 2014.

Master: Joshué Pérez Rastelli, "Standards for Automobiles", M2, 30 hours, François Rabelais University (Tours, France), François Rabelais University (Tours, France), Feb-March 2014.

Master: Joshué Pérez Rastelli, "Digital environment and road – ITS applications", M2, 32.5 hours, Feb-March 2014.



Master: Guillaume Trehard, “C++ programming language”, M1, 30h, Paris 8 University, France.

Engineering school: Evangeline Pollard, “Le véhicule autonome”, 1.5 h, Ecole des Ponts ParisTech, Champs-sur-Marne, France, Sept. 2014.

### 9.2.2. Supervision

PhD : Ines Ben Jemaa, “Dissemination of Geo-localized information in cooperative ITS”, Mines ParisTech, December 17th 2014, Mines ParisTech, supervisor: Arnaud De La Fortelle, co-supervisor Paul Muhlethaler and Oyunchimeg Shagdar

PhD : Esmâ Elghoul, “Segmentation de maillages 3D par l'exemple”, Télécom ParisTech, September 29th 2014, supervisor: Anne Verroust-Blondet

PhD in progress : Mohammad Abu Alhoul, “Communications par lumière visible et communications radio pour La Conduite Automatique”, Mines ParisTech, 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, supervisor: Anne Verroust-Blondet, co-supervisor: Guillaume Bresson

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, supervisor: Fawzi Nashashibi, co-supervisor: Joshué Pérez-Rastelli

PhD in progress : Younes Bouchaala, “Utilisation de la communication véhicule-à-véhicule pour l'amélioration de la sécurité sur la route”, Université de Versailles, supervisor: Paul Muhlethaler, co-supervisor: Oyunchimeg Shagdar

PhD in progress : Fernando Garrido, “Optimal trajectory generation for autonomous vehicles in smart cities”, Mines ParisTech, supervisor: Fawzi Nashashibi, co-supervisor: Joshué Pérez-Rastelli

PhD in progress : Pierre Merdrignac, “Développement d'un système coopératif Perception-Communication pour l'amélioration de la sécurité des personnes vulnérables”, supervisor: Fawzi Nashashibi, co-supervisor: Oyunchimeg Shagdar and Evangeline Pollard

PhD in progress : Sofiene Mouine, “Identification d'espèces végétales par une approche de description géométrique locale d'images de feuilles”, Télécom ParisTech, supervisor: Anne Verroust-Blondet, co-supervisor: Itheri Yahiaoui

PhD in progress : Guillaume Trehard, “Gestion des intersections pour la conduite urbaine autonome”, Mines ParisTech, supervisor: Fawzi Nashashibi, co-supervisor: Evangeline Pollard

PhD in progress : Zahraa Yasseen, “Garment design and shape description for Sketch-based applications”, Télécom ParisTech, supervisor: Anne Verroust-Blondet, co-supervisor: Ahmad Nasri

### 9.2.3. Juries

Fawzi Nashashibi was member of the HDR jury of:

- Dominique GRUYER: “Fusion de données: de la perception de l'environnement aux systèmes coopératifs”, Université d'Évry Val d'Essonne, February 28th, 2014.

Fawzi Nashashibi was the President of the jury of:

- Nicole AL-ZOGHBY: “Distributed Data Fusion in VANETs”, Université de Technologie de Compiègne, February 2014.

Fawzi Nashashibi was a jury member of the following PhD students:

- Guillaume BRESSON: “Localisation d'une flotte de véhicules communicants par approche de type SLAM visuel décentralisé”, Université Blaise Pascal – Clermont II, February 2014.
- Maxime BOUCHER: “Quelques contributions en localisation et cartographie simultanées multi-capteurs : application à la réalité augmentée”, Université d'Évry Val d'Essonne, September 2014.
- Laetitia LAMARD: “Approche modulaire pour le suivi temps réel de cibles multi-capteurs pour les applications routières”, Université Blaise Pascal – Clermont II, July 10th, 2014.

### **9.3. Popularization**

Several members of the team have participated in:

- The exhibition Futur-en-Seine (June 12-22 2014).
- The final Demonstration of Link & Go Project: Automated driving functionalities and SLAM, September 2014 at Magny les Hameaux, France.
- Showcase of CityMobil2: Autonomous maneuver in urban scenarios. September 2014, at Leon, Spain.
- Showcase of CATS project: Autonomous functionalities. October 2014, at Ploiesti, Rumania.
- Large-scale demonstration of automated transport of CityMobil2, December 2014, at La Rochelle.

## SEMAGRAMME Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific events organisation

Philippe de Groote, Maxime Amblard have organised a workshop on the occasion of the award of a Doctor Honoris Causa degree from the Université de Lorraine ([hk-workshop.loria.fr](http://hk-workshop.loria.fr)).

Hans Kamp (Johan Anthony Willem Kamp) is a Dutch philosopher, linguist and logician. His work in formal semantics, most notably his Discourse Representation Theory, is widely used both in linguistics and in natural language processing. The workshop has focused on discourse semantics, especially on issues of its structure and dynamics, based on DRT.

It was held in the International Room of the MSH-Lorraine. The workshop was organised by Archives Poincaré, LORIA and ATILF, and it is supported by MSH-Lorraine, Université de Lorraine, CNRS and Inria.

Maxime Amblard organises the workshop (In)Cohérence du discours 2, with the SLAM project (Schizophrenia and Language: Analysis and Modelling).

The objective of the workshop was to discuss the latest advances in the modelling of discourses, in particular the kind held with pathological (e.g. schizophrenics). The adopted modelling paradigm is that of formal semantics, which falls within the scope of both linguistics and logic while also making ties to the philosophy of language.

##### 8.1.1.1. Organizing committee membership

- Philippe de Groote and Maxime Amblard were members of the organisation committee of the workshop in honor of Hans Kamp
- Maxime Amblard and Jiří Maršík were members of the organisation committee of the workshop (In)Coherence du discours 2

#### 8.1.2. Member of the steering committee

- Philippe de Groote and Sylvain Pogodalla are members of the steering committee of the international conference series *Logical Aspects of Computational Linguistics (LACL)*.

##### 8.1.2.1. Conference program committee membership

- Maxime Amblard:
  - member of the scientific committee of the conference *Traitement Automatique des Langues Naturelles (TALN) 2014*
  - member of the scientific committee of the workshop in honor of Hans Kamp
  - member of the scientific committee of the workshop (In)Coherence du discours 2
- Philippe de Groote:
  - member of the program committee of the international conference *Formal Grammar (FG'14)*
  - member of the program committee of the international conference *Logical Aspects of Computational Linguistics (LACL'14)*
  - member of the program committee of the EACL 2014 workshop on *Type Theory and Natural Language Semantics (TTNLS)*
  - member of the scientific committee of the workshop in honor of Hans Kamp
- Guy Perrier:

- member of the program committee of the international conference PoTAL 2014, which was held in Warsaw, Poland.
- member of the scientific committee of the conference *Traitement Automatique des Langues Naturelles (TALN) 2014*.
- Sylvain Pogodalla:
  - member of the scientific committee of the international conference *Traitement Automatique des Langues Naturelles (TALN) 2014*.
  - member of the scientific committee of international conference *Logical Aspects of Computational Linguistics (LACL) 2014*.

#### 8.1.2.2. Reviewer

- Sylvain Pogodalla:
  - reviewer for the *International Conference on Computational Linguistics (Coling 2014)*.
  - reviewer for the international workshop on *Logic and Engineering of Natural Language Semantics 11 (LENLS11)*.

### 8.1.3. Journal

#### 8.1.3.1. Editorial board membership

- Philippe de Groote:
  - area editor of the *FoLLI-LNCS series*.
  - associate editor of *Higher-Order and Symbolic Computation*.
  - member of the editorial board of *Cahiers du Centre de Logique*.
- Sylvain Pogodalla: member of the editorial board of the journal *Traitement Automatique des Langues*.

#### 8.1.3.2. Reviewing activities

- Philippe de Groote: reviewer for the *Journal of Logic and Computation*, and for the conferences *LICS, LACL, and FG*.
- Sylvain Pogodalla: reviewer for the *Journal of Language Modelling*.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master: Sylvain Pogodalla, *Computational Linguistic Formalisms: Semantics and Discourse*, 25h, M2, Université de Lorraine, France

Master: Jiří Maršík, *Fundamental Artificial Intelligence*, 10h, M2, Université de Lorraine, France

Master: Jiří Maršík, *Cognitif Aspect of Computational Linguistic*, 12h, M1, Université de Lorraine, France

Licence : Guy Perrier, *Initiation au TAL*, 20h, L2, Université de Lorraine, France

### 8.2.2. Supervision

PhD: Sai Qian, *Accessibility of Referents in Discourse Semantics*, Université de Lorraine, Nov. 7 2014, Philippe de Groote and Maxime Amblard

PhD in progress: Jiří Maršík, *Modeling Discourse in a Dynamics framework : formal integration and evaluation*, since september 2013, Philippe de Groote and Maxime Amblard

PhD in progress : Aleksandre Maskharashvili, *Generation and Discourse with Abstract Categorical Grammars*, since November 2012, Philippe de Groote and Sylvain Pogodalla.

### 8.2.3. Juries

- Philippe de Groote and Maxime Amblard were members of the PhD committee of Sai Qian, *Accessibility of Referents in Discourse Semantics*, Nov. 11 2014, Université de Lorraine.
- Philippe de Groote was president of the PhD committee of Hugo Férée, *Complexité d'ordre supérieur et analyse récursive*.
- Guy Perrier was president of the PhD committee of Shashi Narayan, *Generation and Simplification of Sentences*, Université de Lorraine, November 7 2014.
- Guy Perrier was member of the PhD committee of Arseniy Gorin, *Acoustic Model Structuring for Improving Automatic Speech Recognition Performance*, November 26 2014.
- Sylvain Pogodalla was member of the jury of the *Prix de thèse en Intelligence Artificielle* awarded by the Association Française pour l'Intelligence Artificielle (AFIA).

### 8.3. Popularization

- Maxime Amblard is member of the editorial board of *interstice* (i), a french revue popularisation for computer sciences (<http://interstices.info>). He is the head of the rubric *informatique -ou presque- dans les films*.
- Maxime Amblard gave an interview for the *journal du CNRS* about Real Humans (a television drama series), may 2014.
- Maxime Amblard has participate to a television report about the SLAM project for *France 3 Lorraine*, may 2014.
- Maxime Amblard wrote an article about the SLAM project for the *Journal du CNRS*, january 2014.
- In November, Bruno Guillaume has demonstrated the prototype ZombiLingo and Jiří Maršík the ACGTK graphical output during the "Forum Sciences Cognitive" in Nancy.
- Jiří Maršík has participated to the regional final of the competition *Ma thèse en 180 secondes*.
- Jiří Maršík gave a talk to high school students at the Summer Camp of Mathematics and Physics (Letní matematicko-fyzikální soustředění) about treating words as fractions and algebraic expression where syntacticality is verified by cancelling out, Faculty of Mathematics and Physics of the Charles University (Matematicko-fyzikální fakulta Univerzity Karlovy).

### 8.4. Other Scientific Animation

- Maxime Amblard is an elected member of the "conseil d'UFR" of the UFR mathematics and computer sciences, until Dec. 2014.
- Maxime Amblard is an elected member of the "conseil de laboratoire" - Loria.
- Maxime Amblard is an elected member of the "conseil scientifique" of the Université de Lorraine (member of the board of the council since Nov. 2014).
- Maxime Amblard is an invited member of the "Pôle scientifique AM2I" of the Université de Lorraine.
- Maxime Amblard was member of the CA of the scientific association ATALA until june 2014.
- Maxime Amblard was member of the "comité de sélection" McF 4169 (CNU section 17 and 72) - Université Paris Descartes
- Bruno Guillaume is an elected member of the "Pôle scientifique AM2I" of the Université de Lorraine.
- Bruno Guillaume is a member of the Comipers (Inria commity for PhD and Post-doctoral selection).
- Bruno Guillaume was one of the two redactors of the CPER 2015-2020 project "Langues, Connaissances et Humanités Numériques" (Languages, Knowledge and Digital Humanities) in which ten laboratories of the Université de Lorraine are implied.

## SIROCCO Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organization

#### 9.1.1.1. Member of the organizing committee

- C. Guillemot has been keynote chair of IEEE-ICIP 2014 and area chair of Eusipco 2014.
- C. Guillemot is member of the IEEE IVMSP technical committee.
- C. Guillemot is member of the award committee of the Eurasip Image communication journal.
- C. Guillemot is member of the committee in charge of the IEEE Brillouin-Glavieux award.
- C. Labit is member of the GRETSI association board.
- C. Labit has been president of the organization committee of 2013 Grets-EEA Signal-Image-Vision thesis prize
- A. Roumy is member of the GRETSI association board.
- A. Roumy is local liaison officer for Eurasip.

### 9.1.2. Scientific events selection

#### 9.1.2.1. Member of the conference programme committee

- C. Guillemot has been a member of technical program committees of international conferences of the field (EUSIPCO 2014, IEEE-ICIP 2014, EUVIP-2014).
- O. Le Meur has been a member of the technical program committees of the international conferences DICTA 2014, QoMex 2014, EUVIP 2014, ICME 2014.
- O. Le Meur co-organized a special session on Visual saliency: emerging models and applications in multimedia processing? at ICME 2014.

### 9.1.3. Journal

- C. Guillemot is associate editor of the Eurasip International Journal on Image Communication.
- C. Guillemot is associate editor of the IEEE Trans. on Image Processing.
- C. Guillemot is associate editor of the International Journal on Mathematical Imaging and Vision.
- C. Guillemot is senior member of the editorial board of the IEEE Journal on selected topics in signal processing.

### 9.1.4. Scientific animation

- C. Guillemot is member of the Selection and Evaluation Committee of the “Pôle de Compétitivité” Images and Networks of the Region of Ouest of France.
- C. Guillemot is member as scientific expert of the CCRRDT (Regional Committee of Research and Technological Development) of the Brittany region.
- C. Guillemot is member of the “bureau du Comité des Projets” as well as of the “commission personnels” in charge of the postdoc and delegation recruitments.
- C. Labit is the Vice-president of the Scientific Board, in charge of Research and Innovation, for the University of Rennes1 (since June 1st, 2008)
- C. Labit is president of the Rennes-Atalante Science Park and of the start-up incubator Emergys (since April, 2007).

- C. Labit is member of the ICT strategic steering committee (CPS-7) of the National Research Agency (ANR).
- A. Roumy is a member of the Selection and Evaluation Committee (CDT Commission Développement Technologique) for the Inria technological development grants.
- A. Roumy is titular member of the National Council of Universities (CNU section 61, 2012-2015).

## 9.2. Patents and Standardization

### 9.2.1. Patents

- Four patents have been filed jointly by Technicolor and Inria in the area of video analysis and compression.
- One patent has been filed jointly by Thomson Video Networks, Univ. Rennes 1 and Inria in the area of UHD HEVC-based video coding.

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

Master: C. Guillemot, Image and video compression, 8 hours, M2 computer science, Univ. of Rennes 1, France.

Master: C. Guillemot, Image and video compression, 8 hours, M2 SISEA, Univ. of Rennes 1, France.

Master: O. Le Meur, Selective visual attention, 13 hours, M2, Univ. of Paris 8, France.

Master: O. Le Meur, Acquisition/Image Processing/Compression, 22 hours, M2 MITIC, Univ. of Rennes 1, France.

Master: A. Roumy, Magistère program, Information Theory, Computer science and telecommunications, 18 hours, Ecole Normale Supérieure de Cachan, Ker Lann campus, France.

Engineering degree: C. Guillemot, Video communication, 12 hours, Télécom Lille 1, Villeneuve-d'Ascq, France.

L1: L. Guillo, Programming, Univ. of Rennes 1, France.

Engineering degree: C. Labit, Entrepreneurship and innovation, 3 hours, ESIR, Rennes, France.

Engineer degree: O. Le Meur, Image Processing, video analysis and compression, 54 hours, ESIR2, Univ. of Rennes 1, France.

Engineer degree: O. Le Meur, Visual communication, 65 hours, ESIR3, Univ. of Rennes 1, France.

Engineering degree: A. Roumy, Image processing and numerical analysis, 51 hours, ECAM Rennes, France.

### 9.3.2. Invited Talks

- O. Le Meur gave a talk at UESTC (University of Electronic Science and Technology of China), School of Electronic Engineering, Chengdu, China. Prof. Bing ZENG and Prof. Hongliang LI. Title of the talk: exemplar-based inpainting methods, July 2014.
- O. Le Meur gave a talk at Sichuan University, Chengdu, China. Prof. Qionghua WANG. Title of the talk: exemplar-based inpainting methods, July 2014.
- O. Le Meur gave a talk at the National Research Group (GdR), Information Signal Image viSion (ISIS). Special session on visual attention. Title of the talk: Modelling the visual scanpath, 19th June 2014.

### 9.3.3. Supervision

PhD : M. Bevilacqua, Image and video super-resolution using neighbor embedding algorithms, Univ. of Rennes 1, defense on the 4th of June 2014, A. Roumy and C. Guillemot (contract with Alcatel/Lucent)

PhD : S. Cherigui, Techniques de codage d'images basees representations parcimonieuses de scenes et prediction spatiale multi-patches, University of Rennes 1, defense on the 18th of June 2014, C. Guillemot (contract with Technicolor)

PhD : M. Ebdelli, Video inpainting techniques : application to object removal and error concealment, Univ. of Rennes 1, defense on the 20th of June 2014, C. Guillemot and O. Le Meur.

PhD in progress : J. Aghaei Mazaheri, Sparse representations and dictionary learning for satellite image compression, Oct. 2011-Sept. 2014, C. Guillemot and C. Labit (contract with Astrium)

PhD in progress : M. Bevilacqua, Image and video super-resolution using neighbor embedding algorithms, Feb. 2011-Jan. 2014, A. Roumy and C. Guillemot (contract with Alcatel/Lucent)

PhD in progress : B. Huang, Video compression with generalized lifting, Apr. 2012-March 2015, C. Guillemot (Cifre contract with Orange)

PhD in progress : D. Khaustova, Objective evaluation of 3D video quality, Dec. 2011-Nov. 2014, O. Le Meur (Cifre contract with Orange)

PhD in progress : M. Alain, Spatio-temporal linear embedding for epitome-based video compression, Oct. 2012-Sept. 2015, C. Guillemot (Cifre contract with Technicolor)

PhD in progress : N. Dhollande, HEVC codec optimization based on content pre-analysis, Oct. 2012-Sept. 2015, O. Le Meur and C. Guillemot (Cifre contract with Thomson Video Networks)

PhD in progress : M. Le Pendu, HDR video compression, Dec. 2012-Nov. 2015, C. Guillemot (Cifre contract with Technicolor)

PhD in progress : Julio-Cesar Ferreira, multi-view super-resolution, Oct. 2013-March 2015, C. Guillemot, G. Carrijo, E. Da Silva (Co-tutelle with University of Uberlandia, Brazil).

PhD in progress: D. Gommelet, LDR-compatible HDR video compression, Oct. 2014- Sept. 2017, C. Guillemot and A. Roumy (Cifre contract with Envivio).

#### 9.3.4. Juries

- C. Guillemot has been member (rapporteur) of the jury of the PhD committee of:
  - J.J. Micallef, Univ. of Malta, Jan. 2014
  - E. Mora, Telecom Paris Tech, Feb. 2014
  - Tuan Tran Thai, ISAE/Univ. of Toulouse, June 2014
- C. Guillemot has been member (president) of the jury of the PhD committee of:
  - E. Vidal, Univ. of valenciennes, Apr. 2014
  - W. Lu, INSA of Rennes, July 2014
- O. Le Meur has been member (as examiner) of the jury of the PhD committee of:
  - Hamed Rezazadegan Tavakoli, University of Oulu, Finland, 2014.
- A. Roumy has been member (as examiner) of the jury of the PhD committee of:
  - A. UNSAL, Eurecom Telecom ParisTech, Nov. 2014.

#### 9.4. Popularization

- A. Roumy participated in the in-service training for teacher in Computer Science (Informatique et Science du Numérique (ISN), level bac -1 to bac+2) and gave a 3h course on video and image compression.
- As part of a seminar dedicated to teachers of secondary and preparatory schools, Laurent Guillo presented a possible use of Agility methods for pupils' projects and he animated the related workshop, ENS Rennes, October 2014.



## SMIS Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

Philippe Pucheral:

- PC member of EDBT' 14, MOBIWIS' 14, EDBT' 15, MOBIWIS' 15, DATA' 15
- Member of the direction committee of the PRISM Lab.
- Member of the HDR committee of the STV doctoral school (UVSQ)
- Elected member of the ED STIC doctoral school of University Paris-Saclay, 'Data, Knowledge and Interactions' committee (about 250 PhD students)
- Co-founder of the "Masses de Données Distribuées" French summer school and co-organizer of its last three editions (2010, 2012, 2014)

Luc Bouganim:

- PC member of EDBT' 15, PDA@IOT' 14, HardBD' 14, EUC' 14, BDA' 14
- President of the Inria Post-Doc and Delegation Commission
- Member of the Inria "Bureau du Comité des Projets" (BCP)
- Member of the Inria "Cordi-S" (Inria PhD grant) commission
- Member of the Inria "PES" commission
- Member of the UVSQ-PRiSM "Conseil de Laboratoire"

Nicolas Ancaux:

- PC member of BDA' 14 Demo. Track
- Member of the Inria " Commission des Développements Technologiques " (CDT)

Benjamin Nguyen:

- PC member of ECML-PKDD' 14, ACOMP' 14, EDA' 14
- Member of APVP Steering Committee
- Member of recruiting Committee of CNAM' 14, Paris-Sud' 14
- Member of PRiSM Steering Committee until 08/14
- Co-director (with Fabrice Le Guel) of the Institut de la Société du Numérique, Privacy WG.

Quoc-Cuong To:

- PC member of FDSE'2014
- External reviewer of EDBT'2014

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

SMIS is a joint project-team with University of Versailles St-Quentin (UVSQ) and CNRS. Hence SMIS members are naturally deeply involved in teaching.

Besides academic teaching, SMIS has set up a software and hardware platform named 'PDIS- Privacy by Design Information System' which is used to conduct programming activities with Master and Engineer students. This platform capitalizes on the PlugDB engine. It is now available at ENSIIE and INSA Centre Val de Loire engineer schools and at UVSQ. It is also being integrated in the UVSQ FabLab (VSL - Versailles Sciences Lab).

P. Pucheral:

- Full professor at UVSQ : courses on databases, DBMS architecture and security in Master1, Master2 and engineer school ISTY
- Director of the research Master COSY (UVSQ)
- Co-Director of the future Master DataScale to be launched at Univ. Paris-Saclay (UPSay) in 2015 with UVSQ, ENSIIE, Télécom SudParis and Télécom ParisTech

L. Bouganim: (90h/y)

- Courses on DBMS architecture, data security, database technology in Master1 and Master2 (AFTI, Orsay) and in engineering school (ENST Paris)

B. Nguyen:

- Courses on Databases, programming in Masters 2 and Licence
- MOOC on Introduction to relational databases (co authors Serge Abiteboul, Yannick Le Bras)
- Director of the UVSQ Computer Science Masters until august 2014
- Co-Director (with Franck Quessette, UVSQ) of the in-house training course for Computer Science high-school teachers at UVSQ for Academie de Versailles
- Member of Labex Digicosme Master's Committee until august 2014

N. Anciaux: (90h/y)

- Courses on database internal mechanisms and database security, in Master1 and Master2 (AFTI, Orsay) and in engineering school (ENSTA ParisTech, Telecom Paristech)

I. Sandu Popa:

- Associate professor at UVSQ. Courses on databases, DBMS architecture and security in Licence, Master1, Master2 and engineer school ISTY

P. Tran-Van:

- Courses on distributed and secure databases in engineering school ENSIIE.

### 9.2.2. Supervision

PhD in progress : Quoc-Cuong To, Secure Global Computations on Personal Data Servers, since October 2012, co-supervised by Benjamin Nguyen and Philippe Pucheral

PhD in progress : Saliha Lallali, Document Indexing for Embedded Personal Databases, since November 2012, co-supervised by Nicolas Anciaux, Iulian Sandu Popa and Philippe Pucheral

PhD in progress : Athanasia Katsouraki, Access and Usage Control for Personal Data in Trusted Cells, since October 2013, co-supervised by Luc Bouganim and Benjamin Nguyen

PhD in progress : Niv Dayan, Database Algorithms and Flash Internals, since December 2011, co-supervised by Philippe Bonnet and Luc Bouganim

PhD in progress : Dai-Hai Ton-That, Secure Management and Sharing of Private Personal Traces, since November 2012, co-supervised by Iulian Sandu Popa and Karine Zeitouni (Univ. of Versailles)

PhD in progress : Paul Tran Van, Secure Data Sharing in Personal Cloud, since October 2014, Co-supervised by Benjamin André (Cozy Cloud), Philippe Pucheral and Nicolas Anciaux.

### 9.2.3. Juries

P. Pucheral:

- PhD committee member (president) of Sara Hachem (UVSQ, February 2014)
- HDR reviewer of Sébastien Gambis (U. Rennes 1, June 2014)
- HDR committee member (president) of Sophie Chabridon (Télécom SudParis, November 2014)
- HDR committee member of Nicolas Anciaux (UVSQ, December 2014)
- HDR committee member of Sofian Maabout (U. Bordeaux, December 14).

L. Bouganim:

- PhD committee member of Matteo Casalino (Univ. Claude Bernard - Lyon 1, July 2014)
- PhD committee member of Jean-Pierre Lozi (UPMC, Paris 6, July 2014).
- PhD reviewer of Pierre Olivier (Université de Bretagne Sud, December 2014).
- HDR tutor of Nicolas Anciaux (UVSQ, December 2014).

### 9.3. Popularization

- "Les enjeux du Big Data", TV interview of P. Pucheral, Future-Mag, Arte, September 20th, 2014.
- Tutorial on experimental methodology at the BDA summer school 2014 "Masses de données distribuées". L. Bouganim
- Tutorial on managing personal data with strong privacy guarantees at EDBT 2014 [18].
- Présentation invitée au Lycée Albert Einstein sur 'Minimum Exposure', Sainte-Geneviève-des-Bois, Apr. 2014, B. Nguyen.
- Séminaire en deux parties à Luminy, pour les enseignants de CPGE sur 'les bases de données en CPGE, programme officiel et aspects transactionnels', Marseille, 2014-04-22, B. Nguyen.
- Présentation invitée aux journées "La Science Informatique pour tous les lycéens", à Rocquencourt, Apr. 2014, B. Nguyen.
- Le droit à l'oubli numérique, table ronde, Colloque 'La protection des données personnelles : approche pluridisciplinaire', Paris, Dec. 2014, B. Nguyen.
- 'Représenter et interroger efficacement de grands volumes de données : une introduction aux bases de données relationnelles', olympiades de mathématiques, Paris, May 2014, B. Nguyen
- 'Comment garantir la confidentialité des données médicales ?', Environrisk, Atelier risques numériques, Nov. 2014. Chairman: B. Nguyen (Inria). Speakers : N. Anciaux (Inria), C. F. Viala (YesProfile).
- 'Garantir la confidentialité des données personnelles', Futur en Seine, Rencontres Inria-Industries, June 2014, N. Anciaux.
- 'Vers un modèle de gestion des données respectueux de la vie privée : application à la collecte limitée d'informations personnelles', IREP "BIG DATA" Seminar, May 2014, N. Anciaux.
- 'Les patients dans l'écosystème de santé - Enjeux d'information et questions de communication', International Seminar organized by the "Institut des sciences de la communication CNRS" with the participation of the "Groupe de réflexion avec les associations de malades (GRAM Inserm)", Dec. 2014, N. Anciaux et P. Pucheral.
- 'La protection des données personnelles - approche pluridisciplinaire', Seminar organized by the Digital Society Institute (ISN), Dec. 2014, N. Anciaux and P. Pucheral
- 'Démonstration du Dossier Médico-Social Portable et sécurisé', Rencontres Inria Industrie, Télécoms du futur, Nov. 2014, Q. Lefebvre and N. Anciaux.
- 'Table ronde : Sécurité des Réseaux et Contenus', Rencontres Inria Industrie, Télécoms du futur, Nov. 2014, L. Bouganim

## STARS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Organisation

#### 9.1.1.1. General chair, scientific chair

François Brémond was organizer of a PANORAMA (see section 8.2.1.2 ) special session, part of VISAPP Lisbon, Portugal, 5-8 January 2014.

#### 9.1.1.2. Member of the organizing committee

François Brémond was a member of the Management Committee and COST Action IC1307 in 2014.

Guillaume Charpiat organized a weekly computer vision student seminar <sup>0</sup> in Sophia-Antipolis (about 40 participants).

### 9.1.2. Scientific Events Selection

#### 9.1.2.1. Member of the conference program committee

Jean-Paul Rigault is a member of the *Association Internationale pour les Technologies à Objets* (AITO) which organizes international conferences such as ECOOP.

François Brémond was program committee member of the conferences and workshops: IEEE Workshop on Applications of Computer Vision (WACV 2014).

François Brémond was program committee member of VS-Re-ID-2014, CAVAU 2014, PETS2014, ATC 2014 and the first International Conference on Cognitive Computing and Information Processing (CCIP-15) at JSSATEN.

François Brémond was area chair of AVSS'14.

#### 9.1.2.2. Reviewer

Guillaume Charpiat reviewed for the conference CVPR (Computer Vision and Pattern Recognition).

Monique Thonnat reviewed for ICPR Conference.

François Brémond was reviewer for the conferences : CVPR2014, ECCV2014, Intelligent Vehicles 2014, VOT2014, CONTACT2014, ChaLearn2014, ACCV2014, WACV 2015.

### 9.1.3. Journal

#### 9.1.3.1. Member of the editorial board

François Brémond was handling editor of the international journal "Machine Vision and Application".

#### 9.1.3.2. Reviewer

Guillaume Charpiat reviewed for the journals IJCV (International Journal of Computer Vision), JMIV (Journal of Mathematical Imaging and Vision), CVIU (Computer Vision and Image Understanding), and TIP (Transactions on Image Processing).

Jean-Paul Rigault reviewed for the SoSym (Software and System Modeling) journal (Springer).

Monique Thonnat reviewed for Image and Vision Computing Journal.

François Brémond was reviewer for the International Journal of Neural Systems and for the IEEE Pervasive Computing.

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<sup>0</sup><http://www-sop.inria.fr/members/Guillaume.Charpiat/VisionSeminar/>

François Brémont was reviewer for the journal "IEEE Computing Now".

François Brémont was reviewer for the Pervasive and Mobile Computing Journal, ACM Multimedia and Society Journal, Journal of Healthcare Engineering, Sensors Journal, and for Health and Wellbeing Journal.

Sabine Moisan was reviewer for the Journal of Software Engineering for Robotics (JOSER) and for the Computer Science and Information Systems (ComSIS) International Journal.

#### **9.1.4. Invited Talks**

François Brémont was invited at the Dagstuhl Seminar "Robots Learning from Experiences", Germany, 17-21 February 2014.

François Brémont was invited to give a talk in VideoSense Summer School on Privacy-respecting video analytics in Eurecom premises in Sophia Antipolis on 17 April 2014.

François Brémont gave an invited talk at SMILE Lab on Activity recognition, Tainan Taiwan, May 2014.

Baptiste Fosty has participated to the 13th édition des Trophées de la Communication, Nice, June 2014.

François Brémont gave an invited talk at PETS on Tracking and surveillance, Seoul Korea, August 2014.

François Brémont was invited to give a talk at SAME, "Enabling the Cloud of THINGS", Sophia Antipolis, 2 October 2014.

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Master : Annie Ressouche, Critical Software Verification and application to WComp Middleware, 20h, niveau (M2), Polytech Nice School of Nice University, FR and ESPRIT (Tunisia).

Jean-Paul Rigault is Full Professor of Computer Science at Polytech'Nice (University of Nice): courses on C++ (beginners and advanced), C, System Programming, Software Modeling.

### **9.2.2. Supervision**

PhD: Piotr Bilinski, Gesture Recognition in Videos, 5th December 2014, François Brémont.

PhD: Ratnesh Kumar, Fiber-based segmentation of videos for activity recognition, 15th December 2014, Guillaume Charpiat and Monique Thonnat.

PhD in progress: Julien Badie, People tracking and video understanding, October 2011, François Brémont.

PhD in progress : Carolina Garate, Video Understanding for Group Behaviour Analysis, August 2011, François Brémont.

PhD in progress : Auriane Gros, Evaluation and Specific Management of Emotionnal Disturbances with Activity Recognition Systems for Alzheimer patient, François Brémont.

PhD in progress : Minh Khue Phan Tran, Man-machine interaction for older adults with dementia, May 2013, François Brémont.

PhD in progress : Michal Koperski, Detecting critical human activities using RGB/RGBD cameras in home environment, François Brémont.

PhD in progress : Thi Lan Anh Nguyen, Complex Activity Recognition from 3D sensors, François Brémont.

### **9.2.3. Juries**

#### **9.2.3.1. PhD, HDR**

François Brémond was jury member of the following PhD and HDR theses:

PhD, Hajer Fradi, EURECOM, 28th January 2014.

PhD, Martin Hirzer, Graz University of Technology, Graz, Austria , March 2014.

Pre-PhD Effrosyni Doutsis, Nice University - I3S, 23 June 2014.

Pre-PhD Antoine Basset, Institut Curie, Paris, 8 July 2014.

PhD, Usman Niaz, EURECOM, Sophia Antipolis, 8 July 2014.

HDR, Thierry BOUWMANS, November 2014.

Jean-Paul Rigault was reviewer and jury president of the PhD of Nadezhda Baklanova, University of Toulouse, December 2014.

Guillaume Charpiat reviewed Eduardo Fernández-Moral's PhD thesis (Malaga University, Spain, September 2014).

#### *9.2.3.2. Expertise*

Jean-Paul Rigault was a member of the ISO Committee on the C++ language.

François Brémond was expert for the Proposal KIC Healthy Ageing (Innolife) Expert Group1: Independent living.

François Brémond was expert for EU European Reference Network for Critical Infrastructure Protection (ERNICIP) - Video Analytics and surveillance Group, at European Commission's Joint Research Centre in Brussels in August and October 2014.

François Brémond was expert for reviewing tutorial proposals for ICIP'14.

François Brémond participated to the expertise for NEM (New European Media) an EU ETP concerning media, creativity and content to provide future strategies for EU research funding under H2020.

François Brémond was expert for the committee selection for the tenure track, Mines School - ParisTech, June 2014.

### **9.3. Popularization**

François Brémond was invited to give a talk at Conférence des métiers at International Lycée (CIV) in Sophia 27 January 2014.

François Brémond was interviewed by Nice Matin on CoBTeK and Alzheimer issues, Opening of ICP, 10 March 2014.

François Brémond was interviewed by Monaco TV on MONAA and Autism issues, 12 March 2014.

François Brémond has participated to the ERCIM News 98 -Special theme: Smart Cities, July, 2014.

Guillaume Charpiat was part of the popularization MASTIC committee.

## TITANE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organization

#### 9.1.1.1. General chair, scientific chair

Florent Lafarge was co-chair of the ISPRS working group on point cloud processing. Pierre Alliez joined the Horizon 2020 Advisory Group for Societal Challenge 6 'Europe in a changing world – Inclusive, Innovative and Reflective Societies'. Pierre Alliez joined the Steering Board of the EUROGRAPHICS Workshop on Graphics and Cultural Heritage.

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsible of the conference program committee

Pierre Alliez was program co-chair of GMP (Geometric Modeling and Processing).

#### 9.1.2.2. member of the conference program committee

Florent Lafarge was a program committee member for PCV'14 and 3DV'14. Pierre Alliez was program committee member for EUROGRAPHICS Symposium on Geometry Processing, Shape Modeling International, EUROGRAPHICS Workshop on Graphics and Cultural Heritage and EUROGRAPHICS Workshop on Urban Data Modelling and Visualisation.

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

Pierre Alliez is an associate editor of ACM Transactions on Graphics since 2009, of Elsevier Graphical Models since 2010, and of Computer Aided Geometric Design since 2013.

#### 9.1.3.2. reviewer

Florent Lafarge was a reviewer for CVPR, ECCV, SIGGRAPH, SIGGRAPH Asia, EUROGRAPHICS, IJCV, JPRS, CVIU, T-VCG and Computers&Graphics.

## 9.2. Seminars and invited talks

Florent Lafarge was a keynote speaker at the ISPRS Commission V Symposium, Riva del Garda on June 23 (talk: "Dense image matching and surface reconstruction: when photogrammetry meets computational geometry").

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

Master: Pierre Alliez and Florent Lafarge, Algorithmes géométriques - théorie et pratique, 9h, M2, university Nice Sophia Antipolis, France.

Master: Pierre Alliez and Florent Lafarge, 3D Meshes and Applications, 32h, M2, Ecole des Ponts ParisTech, France.

Master: Pierre Alliez, Mathématiques pour la géométrie, 24h, M2, EFREI, France.

Master: Florent Lafarge, Traitement d'images numériques, 9h, M2, university Nice Sophia Antipolis, France.

Master: Florent Lafarge, Imagerie numérique, 10h, M2, university Nice Sophia Antipolis, France.

### **9.3.2. Supervision**

HdR: Florent Lafarge, Some contributions to geometric modeling of urban environments, University of Nice Sophia Antipolis, September 29.

PhD: Xavier Rolland-Neviere, Watermarking of 3D Models, defended November 12, Pierre Alliez.

PhD in progress: Simon Giraudot, Robust surface reconstruction, since October 2011, Pierre Alliez.

PhD in progress: Sven Oesau, Reconstruction of indoor scenes, since October 2012, Florent Lafarge and Pierre Alliez.

PhD in progress: Manish Mandad, Shape approximation with guarantees, since October 2012, Pierre Alliez.

PhD in progress : Dorothy Duan, Semantized Elevation Maps, since October 2013, Florent Lafarge.

PhD in progress : Jean-Dominique Favreau, Sketch-based modeling in multi-view context, since October 2014, Florent Lafarge.

### **9.3.3. Juries**

Florent Lafarge:

- Thesis reviewer: Trung Thanh Pham (University of Adelaide, Australia).

Pierre Alliez:

- Thesis reviewer: Thierry Guillemot (Telecom ParisTech).
- Thesis reviewer: Ricard Campos (University of Girona, Spain).
- Thesis reviewer: Henrik Zimmer (University of Aachen, Germany).
- Thesis committee: Jean-Luc Peyrot (CNRS-Université de Nice Sophia Antipolis).
- Thesis reviewer: Louis Cuel (Université de Savoie).
- Thesis reviewer: Alexandre Boulch (Ecole des Ponts ParisTech).
- HdR committee: Florent Lafarge (Université de Nice Sophia Antipolis).



## WILLOW Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. General chair, scientific chair

- J. Sivic is a program co-chair of IEEE International Conference on Computer Vision (ICCV), 2015.

#### 9.1.1.2. Member of the organizing committee

- Workshop co-organizer, THUMOS Challenge 2014: Action Recognition with a Large Number of Classes, in conjunction with RCCV'14, Zurich, Switzerland (Ivan Laptev).

### 9.1.2. Scientific events selection

#### 9.1.2.1. Area chairs

- European Conference on Computer Vision (ECCV), 2014 (I. Laptev).
- Asian Conference on Computer Vision (ACCV), 2014 (I. Laptev).
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015 (I. Laptev, J. Ponce).

#### 9.1.2.2. Member of the conference program committee

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014 (I. Laptev, M. Cho, J. Sivic).
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015 (R. Arandjelović, M. Cho, J. Sivic).
- European Conference on Computer Vision (ECCV), 2014 (R. Arandjelović, M. Cho, J. Sivic).
- Asian Conference on Computer Vision (ACCV), 2014 (M. Cho, S. Kwak, J. Sun).
- 29th Conference on Artificial Intelligence (AAAI), 2015 (I. Laptev).
- 5th Int Workshop on Human Behavior Understanding (HBU), 2014 (I. Laptev).

### 9.1.3. Journal

#### 9.1.3.1. 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.

#### 9.1.3.2. Reviewer

- International Journal of Computer Vision (R. Arandjelović, P. Bojanowski, M. Cho, S. Kwak, J. Sun).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (R. Arandjelović, M. Cho, S. Kwak).
- IEEE Transactions on Circuits and Systems for Video Technology (B. Ham, S. Kwak).

- IEEE Transactions on Image Processing (B. Ham, J. Sun).
- IEEE Signal Processing Letters (B. Ham).
- Computer Vision and Image Understanding (M. Cho).
- Pattern Recognition (R. Arandjelović).
- Pattern Recognition Letters (B. Ham).
- Signal Processing: Image Communication (B. Ham).
- EURASIP Journal on Image and Video Processing (B. Ham).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. HdR

HdR: Josef Sivic, “Visual recognition of objects, people and places”, École normale supérieure Paris.

### 9.2.2. Teaching

Licence : J. Ponce, “Introduction to computer vision”, L3, 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.

Master: I. Laptev, course “Visual object recognition and localization”, SkolTech, Moscow, January 2014, 30h.

Doctorat: I. Laptev, Tutorial on human action recognition, CVPR’14 tutorial “Emerging topics in human activity recognition”.

Doctorat: I. Laptev, course “Visual Recognition: Objects, Actions and Scenes”, University of Trento, Italy, July 2014, 20h.

### 9.2.3. Supervision

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 : Mathieu Aubry, “Visual recognition and retrieval of 3D objects and scenes”, started in 2011, J. Sivic and D. Cremers (TU Munich).

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 : Florent Couzinié-Devy, started in 2009, 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 1 Jan 2015, M. Aubry and J. Sivic.

PhD in progress : Vincent Delaitre, “Modeling and recognition of human-object interactions”, started in 2010, I. Laptev and J. Sivic.

PhD in progress : Warith Harchaoui, “Modeling and alignment of human actions in video”, started in 2011, I. Laptev, J. Ponce 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.

#### 9.2.4. *Juries*

- PhD thesis committee:
  - Antoine Fagette, UPMC, 2014 (I. Laptev, rapporteur).
  - Ivo Everts, Amsterdam University, 2014 (I. Laptev).
  - Piotr Bilinski, University of Nice, 2014 (I. Laptev).
  - Laurent Sifre, Ecole Polytechnique, 2014 (J. Sivic).
  - Omid Aghazadeh, KTH Stockholm, 2014 (J. Sivic).
- HDR thesis committee:
  - Josef Sivic, ENS Ulm, 2014 (J. Ponce).
  - Herve Jegou, Université de Rennes, 2014 (J. Ponce).
- Other:
  - Member of the PSL Research Council, 2012- (J. Ponce).
  - Member of the Mathematics and Systems Unit AERES evaluation committee at Mines ParisTech, January 2014 (J. Ponce).
  - Member of the faculty selection committee, Université de Marne la Vallée, 2014 (J. Ponce).
  - Head, AERES committee in charge of CMLA’s evaluation at ENS Cachan, 2014 (J. Ponce).
  - Member of the ESF/FCT evaluation committee for Portuguese research centers, 2014 (J. Ponce).
  - Member of the AERES evaluation committee at Ecole Centrale de Paris, 2014 (I. Laptev).
  - Member of the Inria postdoc selection committee, 2012- (I. Laptev).
  - Member of Inria Commission de developpement technologique (CDT), 2012- (J. Sivic).

#### 9.3. Invited presentations

- M. Cho, Invited talk, Ecole des Ponts ParisTech, Paris, France, Jan. 2014.
- I. Laptev, Plenary speaker, ICVGIP, Dec. 14-17, Bangalore, India, 2014.
- I. Laptev, Invited speaker, Inria Sophia-Antipolis, Dec. 5, 2014.
- I. Laptev, Invited speaker, KU Leuven, Belgium, November 24, 2014.
- I. Laptev, Invited speaker, Steklov Institute of Mathematics, Saint Petersburg, Russia, Nov. 17, 2014.
- I. Laptev, Invited speaker, Aalto Univ., Helsinki, Finland, Aug. 21, 2014.
- I. Laptev, Invited speaker, ECCV’14 Area Chair Workshop, Zurich, Switzerland, June 2014.
- I. Laptev, Invited speaker, CVPR’14 Workshop on Perceptual Organization, Columbus, USA, June 2014.
- I. Laptev, Invited speaker, Idiap Research Institute, Martigny, Switzerland, Feb. 2014.

- I. Laptev, Invited speaker, EPFL, Lausanne, Switzerland, Feb. 2014.
- I. Laptev, Invited speaker, Computer Vision Winter Workshop, Křtiny, Czech Republic, Feb. 2014.
- I. Laptev, Invited speaker, SkolTech, Moscow, Russia, Jan. 2014.
- I. Laptev, Invited speaker, Royal Institute of Technology, Stockholm, Sweden, Jan. 2014.
- J. Ponce, Invited speaker, Nanyang Technological University, Singapore, Dec. 2014.
- J. Ponce, Keynote speaker, 3DV conference, Tokyo, Dec. 2014.
- J. Ponce, Plenary speaker, European Workshop on Visual Information Processing, Paris, Dec. 2014.
- J. Sivic, Invited talk at the Center for Research in Computer Vision, University of Central Florida, April 2014.
- J. Sivic, Seminar, New York University, April 2014.
- J. Sivic, Seminar, University of Oxford, April 2014.
- J. Sivic, Seminar, KTH Stockholm, June 2014.
- J. Sivic, Seminar, Inria Sophia-Antipolis, July 2014.
- J. Sivic, Seminar, MPI Saarbruecken, July 2014.
- J. Sivic, Seminar, UC Berkeley, August 2014.
- J. Sivic, Seminar, Adobe Research, August 2014.
- J. Sivic, Talk at an invited workshop, CIFAR, Montreal, December 2014.
- J. Sivic, Invited talk, Smart City workshop, Paris, June 2014.

## WIMMICS Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific events organisation

#### 9.1.1.1. general chair, scientific chair

**Elena Cabrio** was scientific chair for the seminar *Frontiers ARG-NLP - Frontiers and Connections between Argumentation Theory and Natural Language Processing* (Bertinoro (Forli-Cesena), Italy, July 2014).

**Catherine Faron-Zucker** was scientific chair for the conference *Journées Francophones d'Ingénierie des Connaissances (IC)*.

**Serena Villata** was co-chair of the 2014 International Workshop on Semantic Web for the Law (SW4Law 2014), co-located with the 27th International Conference on Legal Knowledge and Information Systems JURIX-2014. She was co-chair of the 15th International Workshop on Computational Logic in Multi-Agent Systems CLIMA 2014, co-located with the European Conference on Artificial Intelligence ECAI 2014. She was co-chair of the Bertinoro Seminar on Frontiers and Connections between Argumentation Theory and Natural Language Processing.

**Nhan Le Thanh** was chair of the 2nd workshop e-PSP 2014, November 27, Sophia Antipolis <sup>0</sup>. He is the animator of the multidisciplinary e-PSP working group in Nice-Sophia Antipolis university on the theme of *Personalized eHealth*.

#### 9.1.1.2. member of the organizing committee

**Alain Giboin**: International Conference on the Design of Cooperative Systems (COOP 2014), and co-organizer of the COOP Workshop *Artefacts and Coordination Activities*, co-organizer of JMIC 2015, *Journée commune AFIA-ARCo pour la Modélisation de l'Irrationnel dans la Cognition : Modéliser l'Affectif* (Joint scientific day for the modeling of the irrational aspects of cognition: Modeling the Emotions).

### 9.1.2. Scientific events selection

#### 9.1.2.1. responsable of the conference program committee

**Elena Cabrio** was program chair of CLEF 2014 lab: *Multilingual Question Answering over Linked Data* (QALD-4), Sheffield, UK, September.

**Fabien Gandon** was program Chair for ESWC 2014, European Semantic Web Conference, and for TICE 2014, Technologies de l'Information et de la Communication pour l'Enseignement.

**Alain Giboin** was program committee associate chair of *Computer-Supported Cooperative Work and Social Computing* (CSCW) 2015.

**Andrea Tettamanzi** was program co-chair for the area of fuzzy systems for IBERAMIA, the latin American conference on artificial intelligence.

**Fabien Gandon** was program chair of SemWeb.Pro <sup>0</sup> and *Concours Semanticpédia*<sup>0</sup>, April 29th, Paris, .

#### 9.1.2.2. member of the conference program committee

**Michel Buffa**: European Semantic Web Conference (ESWC), WWW Demo program committee, WWW Workshop on Semantic Web Collaborative Spaces (SWCS), ESWC 2014 developers workshop (SEMDEV).

<sup>0</sup><http://epsp-2014.sciencesconf.org/>

<sup>0</sup><http://semweb.pro/semwebpro-2014.html>

<sup>0</sup><http://www.semanticpedia.org/blog/>

**Elena Cabrio:** Knowledge Engineering and Knowledge Management conference (EKAW PhD Symposium), the International Conference on Computational Linguistics (COLING 2014), the European Conference in Artificial Intelligence (ECAI), the Association for Computational Linguistics conference (ACL), and the Extended Semantic Web Conference (ESWC).

**Olivier Corby:** 19th International Conference on Knowledge Engineering and Knowledge Management (EKAW), Third International Workshop on Querying Graph Structured Data (GraphQ), Journées Francophones d'Ingénierie des Connaissances (IC), *Des Sources Ouvertes au Web de Données - SoWeDo* IC Workshop, International Conference on Conceptual Structures (ICCS), ISWC Developers Workshop, Journées Francophones sur les Ontologies, Reconnaissance de Formes et Intelligence Artificielle (RFIA).

**Catherine Faron-Zucker:** International Conference on Conceptual Structures (ICCS), International Conference on Knowledge Engineering and Ontology Development (KEOD), Symposium on Educational Advances in Artificial Intelligence (EAAI), International Conference on Computing and Communication Technologies (RIVF 2015), Journées Francophones d'Ingénierie des Connaissances (IC), Technologies de l'Information et de la Communication pour l'Enseignement (TICE), Knowledge and Systems Engineering (KSE), Encuentro Nacional de Ciencias de la Computación (ENC).

**Fabien Gandon:** Extraction et Gestion des Connaissances (EGC), Hypertext, Journées francophones d'Ingénierie des Connaissances (IC), International Semantic Web Conference (ISWC), Reconnaissance de Formes et Intelligence Artificielle (RFIA), International Conference on Web Intelligence (WI), Making Sense of Microposts (#MSM2014), 3rd Workshop on Semantic Web Collaborative Spaces (SWCS).

**Alain Giboin:** member of the steering committee of the COOP conference series (International Conferences on the Design of Cooperative Systems). He was PC member of: Symposium on "Communication multimodale et collaboration instrumentée. Regards croisés sur Énonciations, Représentations, Modalité" (COMMON), International Conferences on the Design of Cooperative Systems (COOP), European Semantic Web Conference (ESWC), Journées francophones d'Ingénierie des Connaissances (IC), International Conference on Semantic Systems (SEMANTiCS), Technologies de l'Information et de la Communication pour l'Enseignement (TICE), 10e Journées francophones Mobilité et Ubiquité (UbiMob).

**Isabelle Mirbel:** 25th International Conference on Advanced Information Systems Engineering (CAISE), IEEE Eighth International Conference on Research Challenges in Information Science (RCIS), 20th International Working Conference on Requirements Engineering: Foundation for Software Quality (REFSQ), 32e congrès INFORSID.

**Alexandre Monin:** European Semantic Web Conference (ESWC), World Wide Web Conference (WWW) - WebScience Track, Journées francophones d'Ingénierie des Connaissances (IC), Technologies de l'Information et de la Communication pour l'Enseignement (TICE).

**Nhan Le Thanh :** 4th International Conference on Model & Data Engineering (MEDI).

**Andrea Tettamanzi:** 15th International Workshop on Computational Logic in Multi-Agent Systems (CLIMA), Florida Artificial Intelligence Research Society Conference (FLAIRS 2015), Genetic and Evolutionary Computational Conference (GECCO), International Conference on Intelligent Agent Technology (WI IAT), Journées Francophones d'Ingénierie des Connaissances (IC), International Joint Conference on Artificial Intelligence (IJCAI), Parallel Problem Solving from Nature (PPSN).

**Serena Villata:** European Conference on Artificial Intelligence (ECAI), International Conference on Legal Knowledge and Information Systems (JURIX), European Conference on Semantic Web (ESWC).

#### 9.1.2.3. reviewer

**Elena Cabrio:** member of the evaluation committee assigning the Best Dissertation Prize of ATALA (the French Natural Language Processing association).

**Olivier Corby:** European Conference on Semantic Web (ESWC).

**Catherine Faron-Zucker:** European Conference on Semantic Web (ESWC). She was reviewer of a follow up volume published at LNCS of eBISS 2014.

**Alain Giboin:** 26e Conférence francophone sur l'Interaction Homme-Machine (IHM), Computer Human Interaction (CHI 2015).

**Fabien Gandon:** European Conference on Social Intelligence (ECSI), International Conference on Semantic Systems (SEMANTiCS), World Wide Web Conference (WWW).

### 9.1.3. Journal

#### 9.1.3.1. member of the editorial board

**Isabelle Mirbel :** *Ingénierie des Systèmes d'Information* (Hermès).

#### 9.1.3.2. reviewer

**Elena Cabrio:** Journal of Web Semantics.

**Catherine Faron-Zucker:** International Journal of Human-Computer Studies, Revue d'Intelligence Artificielle.

**Fabien Gandon:** Intellectica, dossier *Philosophie du Web et Ingénierie des Connaissances*.

**Alain Giboin:** Revue d'Intelligence Artificielle. He was reviewer for the book *Communication and multi-activity at work*.

**Isabelle Mirbel:** Information and Software Technology Journal.

**Alexandre Monnin** was reviewer for *Literary and linguistic Computing* journal. He co-edited a special issue of the CNRS journal Intellectica entitled *Philosophy of the Web and Knowledge engineering* (with Gunnar Declerck). He wrote the introduction to this special issue (under the same title) and a paper with Pierre Livet (*Distinguishing/Making explicit. The ontology of the Web as an ontology of operations*).

**Andrea Tettamanzi:** IEEE Transactions on Systems, Man and Cybernetics – Systems and Information Sciences.

**Serena Villata:** Journal of Logic and Computation, Argument & Computation, ACM Transactions on Intelligent Systems and Technology.

### 9.1.4. Invited Speaker

**Fabien Gandon** was invited speaker at : ACM MEDES<sup>0</sup> on *Semantic and Social (Intra)Webs*, Summer School *Web Science and the mind*<sup>0</sup>, keynote on *Social and Semantic Web: Adding the Missing Links*, July 11th, WEBIST<sup>0</sup> (Keynote and Panelist), *Typed Graphs and Linked Data - Modelling and Analyzing Social-semantic Web Data*, Futur en Seine (Panelist), *25 ans du Web*, SophiaConf<sup>0</sup>, *Quand le lien fait sens*.

**Alexandre Monnin:**

presented a paper with Harry Halpin on *The history of decentralized knowledge from cybernetics to the Semantic Web and Google* at the ADAM ANR project international final workshop, at Mines ParisTech. He was invited to deliver a talk on *a new history of the Web* in Lyon, on October 20th during a conference organized at ENS LSHS by three labs (Datadata from ENSBA Lyon, NHumérisme from ENS Lyon and PAMAL from ESA Avignon) on media archeology. He participated in a two-day conference on the renewal of social science and Science and Technology Studies organized at Mines ParisTech (funded by DIM). He participated in a day-long training session as part of the MESR national priority, in Tours where he presented *An introduction to the Semantic Web*. He was invited to participate in the *Social Week* in Lille (November 23rd) alongside other researchers. He was invited to deliver a talk in Beirut (by visio conference) for a special session on *The philosophy of the Web*, on December 4th (other invitees include Peter Greenaway and Harry Halpin).

### 9.1.5. Scientific Society

**Catherine Faron-Zucker** is vice secretary of AFIA, Association Française d'Intelligence Artificielle.

<sup>0</sup><http://sigappfr.acm.org/MEDES/14/>

<sup>0</sup><http://www.summer14.isc.uqam.ca>

<sup>0</sup><http://www.webist.org/?y=2014>

<sup>0</sup><http://www.telecom-valley.fr/pagecmsblog/edition-2014>

**Alain Giboin** serves as scientific correspondent for Inria Sophia of COERLE (Inria Comité Opérationnel d'Evaluation des Risques Légaux et Ethiques), in tandem with the legal correspondent Sabine Landivier.

## 9.2. Teaching - Supervision - Juries

**Catherine Faron-Zucker** is responsible of Master track Web Science at Polytech'Nice UNS.

**Nhan Le Thanh** is coordinator of the bilateral scientific cooperation program (NiceCampus) between Univ. of Nice and Univ. Da Nang, Vietnam. He is director of the Computer Science department of IUT, Univ. Nice-Sophia Antipolis.

**Isabelle Mirbel** is Vice-dean of Science Department at University Nice-Sophia Antipolis.

**Andrea Tettamanzi** has coordinated the 3rd year of the *Licence* in Business Informatics (MIAGE) at the UFR Science of the Université Nice Sophia Antipolis (UNS). He acted as the coordinator of an Erasmus Mundus student and staff mobility project with East Asia (EMMA East 2011, EACEA Project no. 2010-2362), which closed this year, for which he wrote the final report for the European Commission.

### 9.2.1. Teaching

Master : **Michel Buffa**, Web 2.0, Web Services, HTML5, 40h, M2 MIAGE, UNS.

Master : **Michel Buffa**, Distributed Web development, 40h, M2, UNS.

Master : **Michel Buffa**, Java certification, 25h, M2, UNS.

Master : **Michel Buffa**, Plasticity of User Interfaces, HTML5, 8h, M2, UNS.

Master : **Michel Buffa**, New interaction means, HTML5, 8h, M2, UNS.

Master : **Michel Buffa**, Programmable Web, 40h, M2, UNS.

Master : **Michel Buffa**, Web technologies, 40h, M1, UNS.

Master : **Elena Cabrio**, Knowledge Engineering, 3h, M2 KIS, UNS.

Master : **Elena Cabrio**, Web Science, 3h, M2 IFI, UNS.

Master : **Olivier Corby, Catherine Faron Zucker, Fabien Gandon**, Semantic Web, 45h, M2, UNS.

Master : **Amosse Edouard**, Introduction to Android programming, 16h, M2 MBDS, UNS.

Master : **Amosse Edouard**, Distributed Architecture and Web Services, 20h, M2 MIAGE, UNS.

Master : **Fabien Gandon**, Knowledge Engineering, 4h, M2, UNS.

Master : **Alain Giboin**, Human-Computer-Interaction Design and Evaluation, 35h, M2, UNS.

Master : **Alain Giboin**, Task and Activity Analysis for HCI design and evaluation, 6h, M2 Sociology and Ergonomics of Digital Technologies, UNS.

Master : **Alain Giboin**, Economics and ICT: Ergonomics, 15h, M2 Economics and ICT, ISEM, UNS.

Master : **Isabelle Mirbel**, Project Management, 20h, M2 MIAGE, UNS.

Master : **Alexandre Monnin**, Knowledge Engineering, 3h, M2, UNS.

Master : **Alexandre Monnin**, REST, 6h, M2, UTT.

Master : **Serena Villata**, Knowledge Engineering, 3h, M2 KIS, UNS.

Master : **Serena Villata**, Web Science, 5h, M2 Miage, UNS.

Master : **Isabelle Mirbel**, Advanced databases, 78h, M1 MIAGE, UNS.

Master : **Isabelle Mirbel**, Requirement Engineering, 42h, M1 MIAGE, UNS.

Master : **Oumy Seye**, XML Technologies, 16h, M1 UNS.

Master : **Oumy Seye**, Systèmes Distribués, 16h, M1 UNS.

Master : **Andrea Tettamanzi**, Systèmes Distribués, 18h, M1 MIAGE, UNS.



- Master : **Andrea Tettamanzi**, Concurrency and Parallelism, 18h, M1 International, UNS.
- Master : **Andrea Tettamanzi**, Fuzzy Description Logics and Ontology Learning, in Ingénierie des connaissances, 10h, M2 Web, Polytech'Nice, UNS.
- Licence : **Amel Ben Othmane**, Databases, 64h, L1 IUT, UNS.
- Licence : **Isabelle Mirbel**, Databases, 63h, L3 MIAGE, UNS.
- Licence : **Nhan Le Thanh**, Logical Data Models and languages, 24h, L3 Pro, UNS.
- Licence : **Nhan Le Thanh**, Design and Development of DBMS services, 24h, L3 Pro. UNS.
- Licence : **Nhan Le Thanh**, Advanced Databases, 105h, L3, UNS.
- Licence : **Nhan Le Thanh**, Databases, 120h, L2, UNS.
- Licence : **Oumy Seye**, Interaction Homme Machine, 50H, L1, IUT UNS.
- Licence : **Oumy Seye**, Conception et Programmation orientées objet avancées, 30H, L2, IUT UNS.
- Licence : **Andrea Tettamanzi**, Algorithmique – Programmation Objet – Python, 50h, L2, UNS.
- Licence : **Andrea Tettamanzi**, Programmation Web Avancée (côté client), 39h, L2, UNS.
- Licence : **Andrea Tettamanzi**, Web, 18h, L3 MIAGE, UNS.

#### E-learning

- Michel Buffa** HTML5, 6 weeks, <http://www.w3techcourses.com/>, W3C.
- Fabien Gandon, Catherine Faron Zucker, Olivier Corby** Semantic Web, 7 weeks, <http://www.france-universite-numerique.fr/>, Inria, France Université Numérique. The course was prepared in 2014 and will take place in 2015.

**Fabien Gandon** gave a course on Semantic Web at URFIST, Rennes, 6H.

**Fabien Gandon** gave a course on Semantic Web and Linked Data Graphs at Winter School on Complex Networks<sup>0</sup>, 3.5H.

### 9.2.2. Supervision

- PhD **Rakebul Hasan**, *Explanations for Social Semantic Web*, UNS, November 4th, Fabien Gandon;
- PhD **Maxime Lefrançois**, *Meaning-Text Theory Lexical Semantic Knowledge Representation : Conceptualization, Representation and Operationalization of Lexicographic Definitions*, Inria, UNS, June 24th, Fabien Gandon, Christian Boitet;
- PhD **Nicolas Marie**, *Linked Data Based Exploratory Search*, Alcatel Lucent Bell Labs, December 12th, Fabien Gandon, Myriam Ribière;
- PhD **Oumy Seye**, *Sharing and Reusing Rules for the Web of Data*, University Gaston Berger, Saint-Louis, Sénégal, December 15th, Olivier Corby, Catherine Faron Zucker, Fabien Gandon, Moussa Lo.
- PhD in progress : **Amel Ben Othmane**, *Temporal and Semantic Analysis of Information Retrieved from Short and Spatio-Temporal Messages in Social Networks*, UNS, Nhan Le Thanh.
- PhD in progress : **Papa Fary Diallo**, *Co-Construction of Community Ontologies and Corpus in a Limited Technological Environment*, Inria, UNS, UGB, Isabelle Mirbel, Olivier Corby, Moussa Lo.
- PhD in progress : **Amosse Edouard**, *Studies of Spatial Semantic Aspect, Real Time Filtering Mechanisms and Semantic Enrichment of Short Messages on Dynamic Spatio-Temporal Social Networks*, UNS, Nhan Le Thanh.
- PhD in progress : **Amine Hallili**, *Assistant Conversational Agents with Natural Language and Intuition*, UNS, Catherine Faron, Fabien Gandon.
- PhD in progress : **Zide Meng**, *Temporal and Semantic Analysis of Richly Typed Social Networks from User-Generated-Content Sites on the Web*, UNS, Fabien Gandon, Catherine Faron Zucker.

<sup>0</sup><http://www-sop.inria.fr/members/Giovanni.Neglia/complexnetworks14/>

- PhD in progress : **Thi Hoa Hue Nguyen**, *Semantic Mappings with a Dataflow-based scientific workflow : an approach to develop dataflow applications using knowledge-based systems*, Vietnam, Nhan Le Thanh.
- PhD in progress : **Tuan Anh Pham**, *Study and integrate the mechanism of workflow control in MVC (Model View Controller) architecture: design and implement an APM (Activity Process Management) platform for dynamic information systems on the networks*, UNS, Nhan Le Thanh.

#### 9.2.2.1. PhD in codirection with other teams

- PhD in progress : **Abdoul Macina**, *Distributed Query Processing over a Wide-area Network*, UNS Labex UCN@Sophia, Johan Montagnat (Modalis, I3S), Olivier Corby;
- PhD in progress : **Chaka Kone**, *Infrastructure logicielle/matérielle pour le suivi émotionnel et du comportement dans la maladie d'Alzheimer et les pathologies associées*, Cécile Belleudy from LEAT, Nhan Le Thanh.

#### 9.2.3. Juries

- **Catherine Faron-Zucker** was reviewer for PhD of Houda Khrouf: *Structuring and Mining Event-based Data in The Social Web*, June 30th, Télécom ParisTech.
- **Fabien Gandon** was jury member for PhD of Bruno Paiva Lima da Silva : *Data Access over Large Semi-Structured Databases - A Generic Approach Towards Rule-Based Systems*, January 13th, Univ. Montpellier 2, LIRMM.  
He was reviewer for PhD of Fabrizio Orlandi : *Profiling User Interests on the Social Semantic Web*, March 31st, National University of Ireland, Galway.  
He was reviewer for HdR of Fabian Suchanek : *Contributions à l'avancement des grandes bases de connaissances*, Université Pierre et Marie Curie, Paris, October 10th.  
He was jury member for HdR of Sébastien Ferré: *Reconciling Expressivity and Usability in Information Access From File Systems to the Semantic Web*, IRISA, University Rennes 1, November 6th.
- **Alain Giboin** was jury member of the PhD thesis of François Palaci, *Contribution ergonomique à l'analyse prospective d'innovations technico-organisationnelles dans les systèmes complexes*, Université Technologique de Troyes.
- **Isabelle Mirbel** was reviewer of PhD : Salma Najar, *Adaptation dynamique des services sensibles au contexte selon une approche intentionnelle*, Univ. Paris I - Panthéon-Sorbonne, April 2014.
- **Andrea Tettamanzi** was reviewer of the PhD thesis of Mustafa Al Bakri, *Uncertainty-Sensitive Reasoning over the Web of Data*, Université de Grenoble, December 15.  
He was president of the jury of Maxime Lefrançois, *Représentation des connaissances sémantiques lexicales de la Théorie Sens-Texte : COnceptualisation, représentation, et opérationnalisation des définitions lexicographiques*, Université Nice Sophia Antipolis, June 24.

#### 9.2.4. Master Internship

- **Raphael Boyer**: (September 2014 - September 2015), *Maintenance of DBpedia.fr; Addressing boolean and n-relation questions with QAKiS*, Master student of MIAGE, University of Nice-Sophia Antipolis.
- **Fabrice Jauvat**: *Identifier et extraire les noms d'entreprises dans des contenus web et les relier à DBpedia*, L3 UNS, supervisor: Elena Cabrio, May-August.
- **Ahmed Missaoui**: *Translation of data from raw data to semantic data enriched with further information extracted from external information sources*, Master KIS UNS, supervisors: Serena Villata, Elena Cabrio and Catherine Faron.
- **Yoann Moise**: *Booster la visualisation des réponses d'un système automatique de question-réponse à l'aide du contenu multimédia*, L3 UNS, supervisor: Elena Cabrio, May-August.

- **Emilie Palagi:** *Evaluation et reconception des IHM explicatives du moteur de recherche exploratoire Discovery Hub*, Master 2, Sociologie et Ergonomie des technologies numériques, UNS, supervisors: Alain Giboin and Nicolas Marie.
- **Vivek Sachidananda:** *QAKiS - multimedia answers visualization* (October 2013 - June 2014), Master student of Multimedia at Telecom ParisTech. Supervisor: Elena Cabrio, co-supervision with Dr. Raphael Troncy (Assistant Professor at EURECOM).
- **Molka Tounsi:** *Publishing Antique Zoology Data on the Web of Data*, Master KIS UNS, supervisors: Serena Villata, Elena Cabrio and Catherine Faron.

### 9.3. Popularization

#### **Fabien Gandon**

Meeting Inria-Industry *Technologies du Web : ce réseau de ressources numériques mondial*<sup>0</sup>, Lille.

Amadeus QLM Staff Briefing keynote, *Semantic Web*, February 14th.

Invited speaker on *Quel avenir pour le Web ?* in the cycle of conferences *Les enjeux du Web 3.0 dans le secteur culturel* - Ministry of Culture and Inria.

Scientific days at Inria : *Relations between Inria and W3C* and *Presentation of LabCom SMILK*.

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<sup>0</sup><http://www.inria.fr/centre/lille/innovation/rii/rii-technologies-du-web/presentation>

## ZENITH Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

Participation in the editorial board of scientific journals:

- VLDB Journal: P. Valduriez.
- Journal of Transactions on Large Scale Data and Knowledge Centered Systems, R. Akbarinia.
- Distributed and Parallel Databases, Kluwer Academic Publishers: E. Pacitti, P. Valduriez.
- Internet and Databases: Web Information Systems, Kluwer Academic Publishers: P. Valduriez.
- Journal of Information and Data Management, Brazilian Computer Society Special Interest Group on Databases: P. Valduriez.
- Book series “Data Centric Systems and Applications” (Springer): P. Valduriez.
- Ingénierie des Systèmes d’Information, Hermès : P. Valduriez.
- Journal of Data Semantics (Springer): S. Cohen-Boulakia

Participation to the organization of conferences and workshops:

- Florent Masseglia was vice-chair of the international conference on data mining (ICDM 2014).
- Alexis Joly was chair of the LifeCLEF 2014 workshop (within CLEF 2014 conference) and co-organized the international workshop on Environmental Multimedia Retrieval (EMR 2014).
- Esther Pacitti organized the Mastodons International Workshop on “Big Data Management and Crowd Sourcing towards Scientific Data” in Montpellier in June.
- Patrick Valduriez co-organized (with Prof. Masaru Kitsuregawa, general director of NII, Japan) a workshop on big data sponsored by the French Embassy in Tokyo in November.

Participation in conference program committees :

- ACM SIGMOD Conf. 2014: R. Akbarinia, P. Valduriez (area chair), 2015: S. Cohen-Boulakia
- ADBIS East-European Conference on Advances in Databases and Information Systems: P. Valduriez (PC chair)
- VLDB 2015 : P. Valduriez (sponsor co-chair)
- ACM Symposium On Applied Computing (ACM SAC, Data Stream track), 2014: F. Masseglia
- Conférence Internationale Francophone sur l’Extraction et la Gestion de Connaissance (EGC), 2014: F. Masseglia
- IEEE Int. Conf. on Data Mining (ICDM), 2014: F. Masseglia (area chair)
- IEEE Ph.D. forum at ICDM, 2014: F. Masseglia
- Int. Conf. on Data Science and Advanced Analytics (DSAA), 2014: F. Masseglia
- Int. Conf. on Data Management Technologies and Applications (DATA), 2014: F. Masseglia
- Int. Conf. on Extending DataBase Technologies (EDBT), 2014: R. Akbarinia, A. Joly, F. Masseglia; 2015: E. Pacitti
- IEEE Int. Conf. on Data Engineering (ICDE) 2014: P. Valduriez, 2015: S. Cohen-Boulakia
- Data Integration in the Life Sciences (DILS) 2014: S. Cohen-Boulakia
- BPM 2015 (Business Process Management (BPM) 2015: S. Cohen-Boulakia
- ICDE 2015: Database and Semantic Web Workshop (DESWeb): P. Valduriez
- International Conference and Labs of the Evaluation Forum (CLEF), 2014: A. Joly

- Int. Workshop on Multimedia Analysis for Environmental Data (MAED), 2014: A. Joly
- Int. Workshop on Human Centered Event Understanding from Multimedia (HuEvent), 2014: A. Joly
- Int. Workshop Computer Vision for Analysis of Underwater Imagery (CVAU), 2014: A. Joly
- Workshop on Theory and Practice of Provenance (TAPP) 2014 et 2015: S. Cohen-Boulakia
- Sigmod Workshop on scalable workflow enactment engines and technologies (SWEET) 2014: S. Cohen-Boulakia
- ICDT workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR) 2015: S. Cohen-Boulakia

Reviewing in international journals :

- Knowledge and Information Systems (KAIS): F. Masegla
- Annals of Mathematics and Artificial Intelligence: F. Masegla
- Distributed and Parallel Databases: F. Masegla
- VLDB Journal: A. Joly
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI): A. Joly
- IEEE transactions on multimedia: A. Joly
- Journal of Mathematical Imaging and Vision (JMIV): A. Joly
- Transactions on Knowledge and Data Engineering: A. Joly
- EURASIP Journal on Image and Video Processing: A. Joly
- Computer Vision and Image Understanding Journal: A. Joly
- ACM Trans. on Database Systems: E. Pacitti

Other activities (national):

- Zenith participates in the Hemera and Grid'5000 communities by: contributing to the definition of "Storage 5000" (we help defining the financial model for teams to have their data in Grid5000) ; participating to Hemera meetings (Florent Masegla gave a talk on "Pattern Mining from Big Data, meeting of Sept. 18, Nantes); and contributing to the prospective document of Grid5000.
- Patrick Valduriez co-organized the CEA-EDF-Inria Summer School on Big Data Analytics, 16-20 june, Cadarache, France, and gave a tutorial on "Distributed and Parallel Data Processing".
- Patrick Valduriez is the scientific manager for the Latin America zone at Inria Direction des Relations Internationales (DRI), Member of the Scientific Committee at Agence Nationale de la Recherche (ANR) - Défi 7 Information and communication society and Member of the Scientific Committee of the BDA conference.
- Alexis Joly was keynote speaker of the scientific days of the University of Lyon 1 (2014).
- Esther Pacitti gave an invited talk on "Profile Diversity for Query Processing using User Recommendations" at the Mastodons CrEDIBLE Workshop, Sophia-Antipolis, 9 October, and at the Seminar on Methods and Tools for Open Data, INRA, Montpellier, 18 December.

Other activities (international):

- Florent Masegla gave a talk on "Pattern Mining from Big Data", to the French-Japanese workshop on Big Data in Tokyo in November.
- Florent Masegla was chair of the panel on "Privacy and Big Data", for the French-Japanese workshop on Big Data at Tokyo in November.

- Patrick Valduriez gave several talks in international events: “CloudMdsQL: Querying Heterogeneous Cloud Data Stores with a Common Language” at Inria-Technicolor Workshop on Storage and Processing of Big Data, Rennes, 3-4 december 2014, and at Workshop on DB Consistency in the Cloud, LIP6, Paris, 15-16 september 2014; “Cloud & Bigdata: opportunities and risks”, New Approaches to Economic Challenges” at OECD-ECLAC Workshop, Paris, 19 may 2014; and “Indexing and Processing Big Data” at Colloquium Indexing for Scientific Big data, Paris, 15 january 2014.
- Esther Pacitti gave talks on search and recommendation at the MUSIC Workshops, COPPE-UFRJ, Rio de Janeiro, 8 August 2014, LNCC, Petropolis, Rio de Janeiro, 20 October 2014, and at the GDRI Workshop on Innovative Research Issues on Web Science, Toulouse, 10-12 September.
- Sarak Cohen-Boulakia gave invited talks at Universities of Pennsylvania, April, and Humboldt, Berlin, December.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Most permanent members of Zenith teach at the Licence and Master degree levels at UM2.

Reza Akbarinia:

Master Research: Large scale data management, 6h, level M2, Faculty of Science, UM2

Licence: Computing Tools, 54h, Level L3, Faculty of Science, UM2

Florent Masseglia:

Master Research: Large scale data management, 3h, level M2, Faculty of Science, UM2

Summer School (EDF/Inria) on "Big Data Analytics": Pattern Mining from Big Data, 3h courses and 3h practical work, CEA, Cadarache.

Science Popularization: Jean-Philippe Bernard, Ph.D. student from doctoral school I2S is having a 30h doctoral module under Florent Masseglia's supervision.

Esther Pacitti:

IG3: Database design, physical organization, 54h, level L3, Polytech' Montpellier, UM2

IG4: Networks, 42h, level M1, Polytech' Montpellier, UM2

IG4: Object-relational databases, 32h, level M1, Polytech' Montpellier, UM2

IG5: Distributed systems, virtualization, 27h, level M2, Polytech' Montpellier, UM2

Industry internship committee, 50h, level M2, Polytech' Montpellier

Master Research: Large scale data management, 4,5h, level M2, Faculty of Science, UM2

Didier Parigot:

Master Research: Large scale data management, 6h, level M2, Faculty of Science, UM2

Patrick Valduriez:

Master Research: Large scale data management, 12h, level M2, Faculty of Science, UM2

Professional: Distributed Information Systems, 50h, level M2, Capgemini Institut

Professional: XML, 40h, level M2, Orsys Formation

Alexis Joly:

Master Research: Large scale data management, 6h, level M2, Faculty of Science, UM2

### 9.2.2. Supervision

- PhD in progress: Mehdi Zitouni Closed Pattern Mining in a Massively Distributed Environment started Sept. 2014, Univ. Tunis, Advisor: Florent Masegla, co-advisor: Reza Akbarinia
- PhD in progress : Ji Liu, Scientific Workflows in Multisite Cloud, started oct. 2013, Univ. Montpellier 2, Advisors: Esther Pacitti and Patrick Valduriez
- PhD in progress : Saber Salah, Optimizing a Cloud for Data Mining Primitives, started nov. 2012, Univ. Montpellier 2, Advisor: Florent Masegla, co-advisor: Reza Akbarinia
- PhD in progress : Valentin Leveau, Supervised content-based information retrieval in big multimedia data, started April 2013, Univ. Montpellier 2, Advisor: Patrick Valduriez, co-advisor: Alexis Joly and Olivier Buisson
- PhD in progress : Djamel-Edine Yagoubi, Indexing Time Series in a Massively Distributed Environment, started October 2014, Univ. Montpellier 2, Advisors: Florent Masegla and Patrick Valduriez, co-advisor: Reza Akbarinia

### 9.2.3. Juries

Members of the team participated to the following Ph.D. committees:

- F. Masegla: Andres Moreno (University of Nice/Sophia-Antipolis, reviewer).
- R. Akbarinia: Maximilien Servajean (UM2), Jesús Camacho Rodriguez (Univ. Paris-Sud).
- E. Pacitti: Julien Gaillard (Univ. Avignon); Lourdes Angelica Martinez Medina (Univ. Grenoble).
- P. Valduriez: Li Feng (National University of Singapore, reviewer), Fan Quinfeng (UVSQ, reviewer), Pierpaolo Cincilla (UPMC Paris 6, reviewer), Radu Tudoran (ENS Rennes, chair), Laurent Amsaleg (HDR, U. Rennes 1).

## 9.3. Popularization

Today, one of the main questions in science popularization and computer science teaching at school in France is: "how to scale?". Some of our recent actions in the domaine are mainly oriented towards this goal of scaling.

F. Masegla has coordinated a national network of colleagues for promoting code learning. This action has given the "KidEtCode" studios of Inria, and the involved colleagues have benefited from two training sessions on the subject. After some successful organizations of studios by colleagues in the network, F. Masegla has written a series of interviews where they give a feedback on "howto" set up a KidEtCode studio, find partners and provide relevant content.

F. Masegla has given a 3 days training to elementary school teachers. This event, called "Graines de sciences" (Ecole de Physique des Houches, <http://www.fondation-lamap.org/fr/graines-de-sciences>) was funded by "La main à la pâte" (<http://www.fondation-lamap.org/>), a French foundation dedicated to science popularization based on manual activities. The goal, here, was to give a 3h training to groups of a dozen of teachers, by mainly using games and activities they would be able to transfer in their classrooms. In <http://binaire.blog.lemonde.fr/2014/11/14/comment-semer-quelques-graines-de-sciences>, we give our point of view on how helping teachers to bring computer sciences in their classroom is more than feasible.

Following this autumn school for teachers, "La main à la pâte" is now working with Inria (Gilles Dowek, Pierre-Yves Oudeyer, Florent Masegla and Didier Roy), "France-IOI" and the University of Lorraine in order to write a school book on computer science teaching.

Zenith participated to the following events in Montpellier, and therefore participated in the effort of relaunching science popularization activities in Montpellier:

- F. Masegla co-organized and co-animated the Inria's stand at "La fête de la science" (Montpellier), held by Genopolys (a science village).
- F. Masegla organized and animated several "Kid&Code" studios in the greater metropolitan area of Montpellier, involving the network of media libraries and the network of extracurricular activities. He also has proposed a two sessions training to media libraries activity leaders. The goal is to accompany media libraries in the region of Montpellier and help them until they are autonomous in this activity.

F. Massegli is a member of the steering committee, and contributor, of interstices ( <https://interstices.info>), and a member of the scientific committee for the edition of “Datagramme”, the game from Inria on science popularization. He has participated to the two days training sessions on "science popularization" given by Claude Vadel in Paris, on Dec. 4 and 5, 2014.

F. Massegli is a member of the management board of "Les Petits Débrouillards" in Languedoc-Roussillon. He also is the scientific responsible for schools visits in the Lirmm Laboratory.

A. Joly presented the Pl@ntNet project and the associated iPhone app in several events including "Futur en Seine 2014" where it received the price of collaborative research, "les rencontres Inria/industries" , "LeWeb 2014", etc. Many news media articles, blogs, TV news and twitts also reported on Pl@ntNet (typing "Pl@ntNet" on Google is the best way to get most of them).

P. Valduriez gave a talk on “Cloud Big Data” at Université du Tiers Temps, Montpellier.