



RESEARCH CENTER  
Saclay - Île-de-France

FIELD

Activity Report 2018

# Section Dissemination

Edition: 2019-03-07



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## AVIZ Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific Events Organisation

#### 8.1.1.1. General Chair, Scientific Chair

- Jean-Daniel Fekete co-organized the Dagstuhl Seminar on **Progressive Data Analysis and Visualization** in 2018
- Jean-Daniel Fekete co-organized the Dagstuhl Seminar on **Provenance and Logging for Sense Making** in 2018
- Pierre Dragicevic co-organized the **Journée Visu 2018**.
- Tobias Isenberg co-organized for BELIV 2018.

### 8.1.2. Scientific Events Selection

#### 8.1.2.1. Chair of Conference Program Committees

- Petra Isenberg was paper chair for InfoVis 2019.

#### 8.1.2.2. Member of the Conference Program Committees

- Jean-Daniel Fekete was a member of the program committee for VIS 2018
- Jean-Daniel Fekete was a member of the best paper committee for PacificVis 2018.
- Pierre Dragicevic was a member of the program committee for VIS 2018.
- Tobias Isenberg was a member of the program committee for ACM/Eurographics Expressive 2018.
- Tobias Isenberg was a member of the program committee for IEEE VR 2018.
- Tobias Isenberg was a member of the program committee for EuroVis 2018.
- Tobias Isenberg was a member of the program committee for IVAPP 2018.
- Petra Isenberg was a member of the program committee for CHI.

#### 8.1.2.3. Reviewer

- Jean-Daniel Fekete reviewed for CHI and PacificVis
- Pierre Dragicevic reviewed for VIS, UIST, EuroVis, alt.CHI, EICS, TEI, IHM.
- Tobias Isenberg reviewed for CHI, Expressive, InfoVis, PacificVis, SciVis, VAST, VISAP, and VR.
- Xiyao Wang reviewed for IHM, and TEI.
- Petra Isenberg reviewed for: CHI, EuroVA, EuroVis, ISS

### 8.1.3. Journal

#### 8.1.3.1. Member of the Editorial Boards

- Pierre Dragicevic is member of the editorial board of the Journal of Perceptual Imaging (JPI).
- Pierre Dragicevic is member of the editorial board of the Springer Human-Computer Interaction Series (HCIS).
- Tobias Isenberg is member of the editorial board of Elsevier's Computers & Graphics journal.
- Petra Isenberg is member of the editorial board of IEEE Transactions on Visualization and Computer Graphics.
- Petra Isenberg is Associate Editor in Chief for IEEE Computer Graphics and Applications.

### 8.1.3.2. Reviewer - Reviewing Activities

- Jean-Daniel Fekete reviewed for TVCG
- Pierre Dragicevic reviewed for TOCHI, TVCG, JPI.
- Steve Haroz reviewed for Cognition, Journal of Experimental Psychology: General, Meta-Psychology
- Petra Isenberg reviewed for: Morgan Claypool (book proposal)

### 8.1.4. Invited Talks

- Jean-Daniel Fekete: Seminar EDF Lab Chatou "Progressive data analysis: a new language paradigm for scalability in exploratory data analysis", Chatou, Sep. 19, 2018
- Jean-Daniel Fekete: séminaire de recherche Medialab, « Nouvelles visualisations de réseaux pour de nouvelles formes d'explorations et d'analyses », Sciences Po Paris, April 3rd, 2018
- Jean-Daniel Fekete: Delft Data Science Seminar: Visual Data Science and its role in Computational Medicine The role of visualization in the hypothetico-deductive method, Delft University of Technology, January 6th, 2018.
- Tobias Isenberg: "Illustrative Visualization and Abstraction of Scientific Data". M3DISIM joined Inria/Ecole Polytechnique research team, Orsay, France, November 2018.
- Tobias Isenberg: "Illustrative Visualization and Abstraction of Scientific Data". GraphDeco research team, Sophia-Antipolis, France, December 2018.
- Steve Haroz: "Open Practices in Visualization Research". Panel discussion at Evaluation and Beyond - Methodological Approaches for Visualization workshop, 21 Oct 2018.
- Petra Isenberg: "Evaluation in Visualization". Keynote at the EMBL-EBI Workshop on Innovations in data visualisation for drug discovery, June 2018.
- Petra Isenberg: "Micro Visualizations for Pervasive and Mobile Data Exploration". Seminar Series Talk, Technical University of Dresden, May 2018.

### 8.1.5. Leadership within the Scientific Community

- Jean-Daniel Fekete is the Chair of the Steering Committee of the IEEE Information Visualization Conference.
- Jean-Daniel Fekete is member of the VIS Executive Committee.
- Jean-Daniel Fekete is a member of the Eurographics Publication Board.
- Jean-Daniel Fekete is the Chair of the EuroVis Best Phd Award.
- Tobias Isenberg has been a member of the Executive Committee of the Visualization and Computer Graphics Technical Committee of the IEEE Computer Society and served as Publications Chair.
- Tobias Isenberg is a member of the Steering Committee of Expressive (Joined Symposium on Computational Aesthetics, Sketch-Based Interfaces & Modeling, and Non-Photorealistic Animation & Rendering).
- Steve Haroz is the Open Practices chair of the IEEE Information Visualization conference.

### 8.1.6. Scientific Expertise

- Pierre Dragicevic reviewed for an NSERC Discovery Grant proposal.

### 8.1.7. Research Administration

- Pierre Dragicevic: Member of the Commission Consultative de Spécialistes de l'Université Paris-Sud (CCSU).

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- “Visualization and Visual Analytics” taught by Jean-Daniel Fekete, Master 2 in Data Science, 32 hours, École Polytechnique, France.
- “Photorealistic Rendering” taught by Tobias Isenberg at Polytech Paris-Sud and Université Paris-Saclay, France.
- “Introduction to Computer Graphics” taught by Tobias Isenberg at Polytech Paris-Sud, France.
- “Non-Photorealistic Rendering” taught by Tobias Isenberg at the University of Granada, Spain.
- guest lecture on “Introduction to Data Visualization” taught by Tobias Isenberg at Université Côte d’Azur, Nice, France.
- guest lecture on “Illustrative Visualization” taught by Tobias Isenberg at ENSTA, France.
- “Interactive Information Visualization” taught by Petra Isenberg at Université Paris Sud.
- “Visual Analytics” taught by Petra Isenberg at CentraleSupélec.

### 8.2.2. Supervision

- PhD: Marc Barnabé, Multiscale reconstruction of microbial ecosystems using semi-supervised machine learning, Université Paris-Sud, 2018, Jean-Daniel Fekete, Evelyne Lutton, INRA.
- PhD in progress: Mickaël Sereno, Collaborative Data Exploration and Discussion Supported by AR, Univ. Paris-Sud; 2018, Tobias Isenberg
- PhD in progress: Xiyao Wang, Augmented Reality Environments for the Interactive Exploration of 3D Data, Univ. Paris-Sud; 2017, Tobias Isenberg
- PhD in progress: Sarkis Halladjian, Spatially Integrated Abstraction of Genetic Molecules, Univ. Paris-Sud; 2017, Tobias Isenberg
- PhD in progress: Haichao Miao, Visual Abstraction and Modeling for DNA Nanotechnology, TU Wien, Austria, 2016, Tobias Isenberg

### 8.2.3. Juries

- Jean-Daniel Fekete: Member of the PhD committee of Dr. Marion Dumont.
- Jean-Daniel Fekete: Member of the PhD committee of Dr. Germán Leiva.
- Jean-Daniel Fekete: Member of the HdR committee of Dr. Eric Lecolinet.
- Pierre Dragicevic: Member of the hiring committee for Concours CRCN 2018 Centre Inria Rennes Bretagne Atlantique.
- Pierre Dragicevic: PhD defense committee of Bruno Fruchard (Télécom Paris Tech).
- Pierre Dragicevic: Mid-term PhD evaluation committee of Stacy Hsueh (Université Paris-Saclay).
- Pierre Dragicevic: Reviewer for Marguerite Peron’s M2 internship.
- Petra Isenberg: Member of the PhD committee of Dr. Ulrike Kister
- Petra Isenberg: Reviewer Master Pro thesis, Ayoub Jaa, Université Paris Sud
- Petra Isenberg: Co-Supervisor Master thesis, Mathieu Louvet, Université Paris Sud
- Petra Isenberg: Co-Supervisor Master thesis, Mina Alipour, CentraleSupélec
- Petra Isenberg: Academic Tutor Master thesis: Marvin Rea

## 8.3. Popularization

### 8.3.1. Articles and contents

- [Lonni Besançon](#)’s PhD work was featured in [Le Monde’s Binaire blog](#).
- Steve Haroz was interviewed on the [Data Stories podcast](#), October 10, 2018

### 8.3.2. Creation of media or tools for science outreach

- Pierre Dragicevic and Yvonne Jansen: the [data physicalization wiki](#) and the [List of Physical Visualizations and Related Artefacts](#) (500 weekly visits) are continuously being updated.

## **CEDAR Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific Events Organisation**

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

Ioana Manolescu has been a general chair of the IEEE International Conference on Data Engineering (ICDE) 2018.

### **9.1.2. Scientific Events Selection**

#### *9.1.2.1. Member of the Conference Program Committees*

Ioana Manolescu has been a member of the program committees of: the International Workshop on Semantic Big Data (SBD), in conjunction with ACM SIGMOD 2018; the Data Engineering Meets Semantic Web Workshop (DESWeb) in conjunction with IEEE ICDE 2018; the WebDB workshop, in conjunction with ACM SIGMOD 2018; the 34th *Conférence sur la Gestion de Données – Principes, Technologies et Applications* (BDA) 2018.

### **9.1.3. Journal**

#### *9.1.3.1. Member of the Editorial Boards*

Yanlei Diao has been the Editor-in-Chief of the ACM SIGMOD Record, SIGMOD's quarterly newsletter.

Ioana Manolescu has been an associate editor of the PVLDB (Proceedings of VLDB) Journal 2018.

### **9.1.4. Invited Talks**

Ioana Manolescu has given invited keynotes at the Extended Semantic Web Conference (ESWC) 2018, and at the 34<sup>ème</sup> *Conférence sur la Gestion de Données – Principes, Technologies et Applications* (BDA) 2018.

### **9.1.5. Leadership within the Scientific Community**

Yanlei Diao and Ioana Manolescu are both members of the PVLDB Endowment Board of Trustees.

Ioana Manolescu has been the president the ACM SIGMOD "Jim Gray" PhD Award Committee.

Ioana Manolescu is a member of the steering committee (*Comité de Pilotage*) of "Bases de Données Avancées" (BDA), the informal association organizing the database research community in France and french-speaking countries.

### **9.1.6. Research Administration**

Y. Diao is on the advisory board of the Data Science Initiative (DSI), a joint center between the applied mathematics and computer science departments of Ecole Polytechnique.

Ioana Manolescu has been a member of Inria's Commission d'Evaluation and of the Bureau des Comités de Projets of Inria Saclay.

Team members have participated to the following hiring committees:

- Associate professor – Ecole Polytechnique, Yanlei Diao. Jury member.
- Full professor – INSA Lyon, Ioana Manolescu. Jury member.
- Associate professor – Ecole Polytechnique, Ioana Manolescu. Jury member.
- Inria researcher – Inria Nancy, Ioana Manolescu. Jury member.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Master: Y. Diao is a Professor at Ecole Polytechnique, where she teaches “System for Big Data” in M1; she also teaches “Systems for Big Data Analytics” in M2 in the Data Science Master Program of Université Paris Saclay.
- Master: I. Manolescu, Architectures for Massive Data Management, 12h, M2, Université Paris-Saclay.
- Master: I. Manolescu, Database Management Systems, 52h, M1, École Polytechnique.
- Licence: I. Manolescu, Giant Global Graph, 18h, L3, École Polytechnique.

### 9.2.2. Supervision

PhD in progress: Maxime Buron: “Raisonnement efficace sur des grands graphes hétérogènes”, since October 2017, François Goasdoué, Ioana Manolescu and Marie-Laure Mugnier (GraphIK Inria team in Montpellier)

PhD in progress: Tien Duc Cao: “Extraction et interconnexion de connaissances appliquée aux données journalistiques”, since October 2016, Ioana Manolescu and Xavier Tannier (LIMSI/CNRS and Université de Paris Sud)

PhD interrupted in July 2018: Sejla Čebirić: “CloudSelect: Data Mobility Within, Across and Outside Clouds”, since September 2015, François Goasdoué and Ioana Manolescu. The student joined the industry.

PhD in progress: Ludivine Duroyon: “Data management models, algorithms & tools for fact-checking”, since October 2017, François Goasdoué and Ioana Manolescu (Ludivine is in the Shaman team of U. Rennes 1 and IRISA, in Lannion)

PhD in progress: Enhui Huang: “Interactive Data Exploration at Scale”, since October 2016, Yanlei Diao and Anna Liu (U. Massachussets at Amherst, USA)

PhD in progress: Luciano di Palma, “New sampling algorithms and optimizations for interactive exploration in Big Data”, since October 2017, Yanlei Diao and Anna Liu (U. Massachussets at Amherst, USA)

PhD in progress: Felix Raimundo: “Nouveaux algorithmes et optimisations pour l’analyse profonde du génome à l’échelle de la population”, since October 2017, Yanlei Diao and Avinash Abhyankar (New York Genome Center, USA)

PhD interrupted in April 2018: Alexandre Sevin: “Exploration interactive de données sur de grandes sources de données hétérogènes”, since October 2017, Yanlei Diao and Peter Haas (U. Massachussets at Amherst, USA). The student joined the industry.

PhD in progress: Khaled Zaouk: “Performance Modeling and Multi-Objective Optimization for Data Analytics in the Cloud”, since October 2017, Yanlei Diao

### 9.2.3. Juries

Ioana Manolescu reported on the PhD thesis of Louis Jachiet (Inria Grenoble).

## 9.3. Popularization

### 9.3.1. Articles and contents

- In books/journals for the general public: Our research on computational fact-checking has been featured in Le Journal Toulousain in an article titled “La science se met au service de l’information”, in February 2018 (<http://www.lejournaltoulousain.fr/societe/la-science-se-met-au-service-de-linformation-pour-detecter-les-fake-news-54906>). Further, I. Manolescu has been interviewed as an expert for an article in Le Figaro, in March 2018 (<http://www.lefigaro.fr/secteur/high-tech/2018/03/08/32001-20180308ARTFIG00341-sur-twitter-les-fake-news-voyagent-plus-vite-que-les-vraies-informations.php>).



### **9.3.2. Interventions**

- Ioana Manolescu participated to a televised debate on fake news and the media in “Le Grand Barouf Numérique”, a technology/society meet up organised by the city of Lille, in March 2018. The debate was broadcast by France 3 (<https://france3-regions.francetvinfo.fr/hauts-de-france/nord-0/lille/debat-fake-news-medias-sont-ils-malades-1446365.html>).
- Ioana Manolescu has participated to a debate on regulating the news media in “Les Journées de l’Economie”, a national event organized in Lyon, in November 2018 (<http://www.touteconomie.org/index.php?arc=bv1&manif=594>)

### **9.3.3. Creation of media or tools for science outreach**

Our research on computational fact-checking has been featured in a documentary (<http://www.universcience.tv/video-tech-check-des-scientifiques-face-aux-fake-news-19501.html>) by UniverScience.TV, the organization responsible of preparing scientific short movies next to Cité des Sciences. The movie has been featured in an article in Le Monde ([https://www.lemonde.fr/sciences/video/2018/01/24/comment-la-science-aide-a-reperer-les-fake-news\\_5246356\\_1650684.html](https://www.lemonde.fr/sciences/video/2018/01/24/comment-la-science-aide-a-reperer-les-fake-news_5246356_1650684.html)).

## COMETE Project-Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific events organisation

#### 8.1.1.1. Member of the organizing committee

Catuscia Palamidessi is member of:

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

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

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

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

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

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

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

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

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

Frank D. Valencia is member of:

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

Konstantinos Chatzikokolakis is member of:

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

### 8.1.2. Scientific events selection committee

#### 8.1.2.1. Chair of conference program committee

Konstantinos Chatzikokolakis:

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

### 8.1.2.2. Member of conference program committees

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

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

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

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

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

**FACS 2018.** The 15th International Conference on Formal Aspects of Component Software. Pohang, South Korea, 10–12 October 2018.

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

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

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

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

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

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

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

**BMDA 2018:** Workshop on Big Mobility Data Analytics

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

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

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

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

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

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

### 8.1.3. Journals

#### 8.1.3.1. Member of the editorial board

Catuscia Palamidessi is:

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

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

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

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

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

Konstantinos Chatzikokolakis is:

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

#### 8.1.3.2. Reviewing

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

#### 8.1.4. Other Editorial Activities

Catuscia Palamidessi is/has been:

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

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

Frank D. Valencia has been:

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

#### 8.1.5. Participation in other committees

Catuscia Palamidessi has been serving in the following committees:

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

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

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

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

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

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

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

Member of the **EAPLS PhD Award** Committee. From 2010.

### 8.1.6. Invited talks

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

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

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

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

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

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

Konstantinos Chatzikokolakis has given invited talks at the following conference:

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

### 8.1.7. Service

Catuscia Palamidessi has served as:

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

Frank Valencia has served as:

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

Konstantinos Chatzikokolakis has served as:

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

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

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

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

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

### 8.2.2. Supervision

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

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

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

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

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

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

### 8.2.3. *Juries*

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

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

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

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

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

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

Catuscia Palamidessi has been examiner of the following habilitation thesis:

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

### 8.2.4. *Other didactical duties*

Catuscia Palamidessi has been:

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

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

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

## 8.3. Popularization

### 8.3.1. *Education*

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

Catuscia Palamidessi has been:

- Invited speaker at **PLMW@POPL 2019**, the Programming Logic Mentoring Workshop 2019 (affiliated to POPL 2019). This workshop aims at encouraging graduate students and senior undergraduate students to pursue careers in programming language research, and at educating them on the research career.
- A participant in the round table at the **FLOC Women in Logic workshop**, a workshop organized to encourage women's presence in the logic community. Oxford, UK, 8 July 2018.

### **8.3.2. Interventions**

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

Catuscia Palamidessi has given an invited talk at:

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

## COMMANDS Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Selection

#### 10.1.1.1. Member of the Conference Program Committees

- F. Bonnans: PGMO Days 2018.

### 10.1.2. Journal

#### 10.1.2.1. Member of the Editorial Boards

- F. Bonnans: Associate Editor of “Applied Mathematics and Optimization” and of “Series on Mathematics and its Applications, Annals of The Academy of Romanian Scientists”.

### 10.1.3. Invited Talks

- F. Bonnans: CAESAR workshop, Palaiseau, Sept. 5-7, 2018.

### 10.1.4. Leadership within the Scientific Community

- F. Bonnans: French representative to the IFIP-TC7 committee (International Federation of Information Processing; TC7 devoted to System Modeling and Optimization).
- F. Bonnans: member of the PGMO board and Steering Committee (Gaspard Monge Program for Optimization and Operations Research, EDF-FMJH).

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Master :

F. Bonnans: *Numerical analysis of partial differential equations arising in finance and stochastic control*, 18h, M2, Ecole Polytechnique and U. Paris 6, France.

F. Bonnans: *Optimal control*, 15h, M2, Optimization master (U. Paris-Saclay) and Ensta, France.

A. Kröner : *Optimal control of partial differential equations*, 20h, M2, Optimization master (U. Paris-Saclay), France.

### 10.2.2. Supervision

Finished PhD : C. Rommel, Data exploration for the optimization of aircraft trajectories. Started November 2015, finished Oct 2018 (CIFRE fellowship with Safety Line), F. Bonnans and P. Martinon.

PhD in progress : A. Le Rhun, Optimal and robust control of hybrid vehicles. Started September 2016 (IFPEN fellowship), F. Bonnans and P. Martinon.

PhD in progress : G. Bonnet, Efficient schemes for the Hamilton-Jacobi-Bellman equation. Started Oct. 2018. F. Bonnans and J.-M. Mirebeau, LMO, U. Orsay.

PhD in progress : P. Lavigne, Mathematical study of economic equilibria for renewable energy sources. Started Oct. 2018. F. Bonnans.

PhD in progress : E. Weill, Optimal control of partial differential equation systems: Application to heterogeneous cell populations. Started Oct. 2018. F. Bonnans and G. Batt, Inria and Institut Pasteur.



## **10.3. Popularization**

### ***10.3.1. Internal or external Inria responsibilities***

- F. Bonnans: codirection of a joint Allistene-Ancre commission (contribution to the national strategy for research), Numerics and Energy committee (2017-2018).
- F. Bonnans: Dimitrie Pompeiu Prize Committee (Academy of Romanian Scientists).
- P. Martinon is member of the CDT.

### ***10.3.2. Articles and contents***

- The work on races on curved tracks was covered in the Sciences page of Le Figaro.

### ***10.3.3. Internal action***

- The collaboration with startup Safety Line was presented to the “Journée Nationale des Nouveaux Arrivants”

## DATASHAPE Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. Member of Organizing Committees

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

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Member of the Conference Program Committees

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

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

Jean-Daniel Boissonnat is a member of the Editorial Board of *Journal of the ACM*, *Discrete and Computational Geometry*, *International Journal on Computational Geometry and Applications*.

Frédéric Chazal is a member of the Editorial Board of *SIAM Journal on Imaging Sciences*, *Discrete and Computational Geometry (Springer)*, *Graphical Models (Elsevier)*, and *Journal of Applied and Computational Topology (Springer)*.

Steve Oudot is a member of the Editorial Board of *Journal of Computational Geometry*.

### 10.1.4. Invited Talks

Frédéric Chazal, Abel Symposium, Geiranger, Norway, June 2018.

Frédéric Chazal, Colloquium de Mathématiques, Math Dept. Amiens, October 2018.

Frédéric Chazal, AI Research Center at National Cheng-Kung University, Taiwan, May 2018.

Frédéric Chazal, National Center for High-performance Computing, Taiwan, May 2018.

Jean-Daniel Boissonnat, Hamilton Mathematics Institute, Trinity College, Dublin, Ireland, June 2018.

Steve Oudot, Workshop “Topological Data Analysis meets Symplectic Topology”, Tel Aviv, Israel, May 2018.

Steve Oudot, Abel Symposium, Geiranger, Norway, June 2018.

Steve Oudot, Banff workshop on multiparameter persistence, Oaxaca, Mexico, August 2018.

Steve Oudot, ICERM, Brown University, Providence, USA, August 2018.

Steve Oudot, workshop on structural inference in high-dimensional models, Moscow, Russia, September 2018.

Clément Maria, Einstein workshop on Geometric and Topological Combinatorics, Freie Universität, Berlin, Germany, October 2018.

### 10.1.5. Leadership within the Scientific Community

Frédéric Chazal is co-responsible, with S. Arlot (Paris-Sud Univ.), of the “programme Maths-STIC” of the Labex Fondation Mathématique Jacques Hadamard (FMJH).

Frédéric Chazal has been a member of the Scientific council of the french “Agence pour les Mathématiques en Interaction avec l’Entreprise et la Société (AMIES)” until Dec. 2018.

Frédéric Chazal is a member of the “Comité de pilotage” of the SIGMA group at SMAI.

Steve Oudot is co-organizing the monthly seminar on combinatorial and computational geometry at Institut Henri Poincaré.

Steve Oudot is co-head (with Luca Castelli-Aleardi) of the GT Géométrie Algorithmique within the GdR Informatique Mathématique.

Steve Oudot is a member of the program committee of the DataIA convergence institute.

### 10.1.6. Scientific Expertise

- Consulting collaboration for IFPEN to explore potential applications of TDA (from February 2018 to Dec. 2018).

### 10.1.7. Research Administration

Frédéric Chazal is a member of the Équipe de Direction at Inria Saclay.

Marc Glisse, responsable Raweb pour DataShape

Steve Oudot is vice-president of the Commission Scientifique at Inria Saclay.

Clément Maria is a member of the CDT at Inria Sophia Antipolis-Méditerranée.

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Master: Frédéric Chazal and Quentin Mérigot, Analyse Topologique des Données, 30h eq-TD, Université Paris-Sud, France.

Master: Jean-Daniel Boissonnat and Marc Glisse, Computational Geometry Learning, 36h eq-TD, M2, MPRI, France.

Master: Frédéric Cazals and Frédéric Chazal, Geometric Methods for Data Analysis, 30h eq-TD, M1, École Centrale Paris, France.

Master: Frédéric Chazal and Julien Tierny, Topological Data Analysis, 38h eq-TD, M2, Mathématiques, Vision, Apprentissage (MVA), ENS Paris-Saclay, France.

Master: Steve Oudot, Topological data analysis, 45h eq-TD, M1, École polytechnique, France.

Master: Steve Oudot, Data Analysis: geometry and topology in arbitrary dimensions, 24h eq-TD, M2, graduate program in Artificial Intelligence & Advanced Visual Computing, École polytechnique, France.

Undergrad-Master: Steve Oudot, preparatory course for international programming contests, 54h eq-TD, L3/M1, École polytechnique, France.

Summer School on topological data analysis and persistent homology: Steve Oudot, advanced topics, 6h eq-TD, Trento, Italy, June 2018.

Summer School on geometric data: Frédéric Chazal and Marc Glisse, Introduction to Topological Data Analysis, 9h eq-TD, Fréjus, Sept. 2018.

Winter School on Computational Geometry, Amirkabir University of Technology, Tehran, Iran. Course on Delaunay Triangulation of Manifolds, March 2018.

### 10.2.2. Supervision

PhD : Claire Bréchet, Statistical aspects of distance-like functions , Defended on September 2018, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Bertrand Beaufils, Méthodes topologiques et apprentissage statistique pour l'actimétrie du piéton à partir de données de mouvement, started November 2016, Frédéric Chazal (co-advised by Bertrand Michel).

PhD: Jérémy Cochoy, Decomposition and stability of multidimensional persistence modules, Defended on December 10, 2018, Steve Oudot.

PhD in progress: Yitchzak Solomon, Inverse problems in topological data analysis, started September 1st, 2016, Steve Oudot (co-advised by Jeff Brock, Brown University).

PhD in progress: Nicolas Berkouk, Categorification of topological graph structures, started November 1st, 2016, Steve Oudot.

PhD in progress: Théo Lacombe, Statistics for persistence diagrams using optimal transport, started October 1st, 2017, Steve Oudot.

PhD in progress: Alba Chiara de Vitis, Concentration of measure and clustering, Jean-Daniel Boissonnat and David Cohen-Steiner.

PhD in progress: Siargey Kachanovich, Manifold reconstruction in higher dimensions, Jean-Daniel Boissonnat.

PhD in progress: Siddharth Pritam, Approximation algorithms in Computational Topology, Jean-Daniel Boissonnat.

PhD in progress: Raphaël Tinarrage, Persistence and stability of nerves in measured metric spaces for Topological Data Analysis, started September 1st, 2017, Frédéric Chazal and Marc Glisse.

PhD in progress: Vincent Divol, statistical aspects of TDA, started September 1st, 2017, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Owen Rouillé, September 2018, co-advised by C. Maria and J-D. Boissonnat.

### 10.2.3. Juries

J-D. Boissonnat was a member of the committee for the HDR defense of Aurélien Alvarez (Université d'Orléans).

F. Chazal was a member of the PhD defense committee of Jisu Kim (Carnegie Mellon University, advisors: A. Rinaldo and L. Wasserman), Claire Bréchet (Université Paris-Saclay, advisors: F. Chazal and P. Massart), Hariprasad Kannan (Centrale-Supelec, advisor: N. Paragios), Dorian Nogren (Ecole Polytechnique, advisor: M. Ovsjanikov).

S. Oudot was a member of the Ph.D. defence committee of Tim Ophelders (T.U. Eindhoven, advisors: Bettina Speckmann and Kevin Buchin).

## 10.3. Popularization

### 10.3.1. Interventions

- Frédéric Chazal: Fujitsu Forum, “Topological Data Analysis: from academic success to industrial innovation”, Tokyo, Japan, May 2018.
- Frédéric Chazal: “TDA and AI for biomedical applications”, Kaohsiung MEDical Technology Expo, Taiwan, May 2018.

## DEDUCTEAM Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific Events Organization

Guillaume Burel has been local organizer of the scientific days of the CNRS GDR GPL working groups LTP and MTV2.

#### 9.1.2. Scientific Events Selection

Frédéric Blanqui has been PC chair of the 13th International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP'18) with Giselle Reis.

Frédéric Blanqui is Workshop Chair of LICS and member of the Steering Committee of LICS.

Frédéric Blanqui is member of the Steering Committee of the International School on Rewriting (ISR) of the WG 1.6 of the International Federation for Information Processing.

Gilles Dowek has been a PC member of TYPES 2018.

Guillaume Burel has been PC member of the 30th Journées Francophones des Langages Applicatifs.

Guillaume Burel has reviewed a submission for the International Conference on Principles and Practice of Constraint Programming (CP). Guillaume Genestier reviewed submissions to the conferences Logic in Computer Science (LICS), Principles and Practice of Declarative Programming (PPDP) and European Symposium on Programming (ESOP).

#### 9.1.3. Journals

Gilles Dowek is an editor of TCS-C.

Frédéric Blanqui has reviewed a paper for Mathematical Structures in Computer Science (MSCS). Guillaume Burel has reviewed papers for the Computer Journal and Logical Methods in Computer Science (LMCS). Rodolphe Lepigre has reviewed a paper for International Conference on Foundations of Software Science and Computation Structures (FoSSaCS). Rodolphe Lepigre has reviewed a paper for the journal ACM Transactions on Programming Languages and Systems (TOPLAS). Franck Slama has reviewed a paper for the Journal of Functional Programming.

#### 9.1.4. Invited Talks

- Rodolphe Lepigre gave an invited talk entitled “The PML Language: Realizability at the Service of Program Proofs” at the Realizability Workshop (12-13 June 2018) in Luminy.
- Rodolphe Lepigre gave an invited talk entitled “An Overview of the PML<sub>2</sub> Language: Realizability, Subtyping and Cyclic Proofs” at LRI, for the starting days of the new Scalp working group of GDR IM. This is a presentation of his paper [32].
- Gilles Dowek has given an invited talk at NFM (Nasa Formal Methods).
- Jean-Pierre Jouannaud has given an invited talk at the workshop "Rewriting Techniques for Program Transformation and Evaluation" at FLoC, on July 8, 2018.

#### 9.1.5. Seminars

- Gilles Dowek has participated to the meeting "From Information to Cells" organized by Hélène Kirchner and Antoine Danchin. He has given a talk at the National Institute of Aerospace.
- Gilles Dowek has co-organized a seminar on Logic and Philosophy at the CNFHPST.

- Guillaume Burel has presented a talk entitled “Bridging holes on DEDUKTI proofs, an overview” at the scientific day of the Digicosme working group UPSCaLe.
- Bruno Barras has given a talk entitled “An analysis of bindlib” at the UPSCaLe meeting (June’18) held in Palaiseau.
- Mohamed Yacine EL HADDAD has presented his work at internal laboratory seminar of LSV (June’18) and SAMOVAR (November’18).
- Gaspard Férey has presented his work at internal laboratory seminar of LSV (June’18).
- Guillaume Genestier has presented his work at the internal laboratory seminar of Centre de Recherche en Informatique of Mines ParisTech (February’18) and LSV (June’18) and presented DEDUKTI at the doctoral seminar of La Société Informatique de France (June’18). He presented [16] in the WorkShop on Termination (WST) at Oxford (July’18).
- Rodolphe Lepigre has presented his work on "Termination checking using well-founded typing derivations" at a Deducteam seminar in September 2018.
- Rodolphe Lepigre has given a talk entitled “The PML<sub>2</sub> Language, Integrated Program Verification in ML” at the Max Planck Institute for Software Systems in Saarbrücken, in November 2018.
- Franck Slama has presented some previous work at an internal laboratory seminar of LSV in December 2017.
- François Thiré has presented his work on interoperability at the UPSCaLe seminar on March 2018, then he presented his paper [15] at the LFMT Workshop at Oxford (July’17).
- Aristomenis Papadopoulos has presented the work he did during his summer internship at a Deducteam seminar in September 2018.

### 9.1.6. Leadership within the scientific community

Gilles Dowek is president of the scientific board of the Société informatique de France.

He is a member of the Ethic council CERNA.

He is a member of the Comité National Français d’Histoire et de Philosophie des Sciences et des techniques.

He is a member of the scientific board of La Main à la pâte.

He is a member of the scientific board of the Institut Villebon Charpak.

He is a member of the scientific board of the Maison des sciences de Lorraine.

He is the president of the Board of teacher school (ESPE) of the University of Lorraine.

He is a member of the scientific board of SystemX.

He is a member of the scientific board of the team Humanités numériques at the Collège des Bernardins.

Gilles Dowek and Jean-Pierre Jouannaud are honorary members of IFIP-WG1.6.

Jean-Pierre Jouannaud is a permanent member of the visiting committee of Academia Sinica, Taiwan.

### 9.1.7. Scientific Expertise

Frédéric Blanqui reviewed a project for the Netherlands Organization for Scientific Research (NWO).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Master: Bruno Barras, proof assistants, 12h, M2, MPRI
- Master: Frédéric Blanqui, formal languages, 21h, M1, ENSIIE
- Master: Frédéric Blanqui, rewriting theory, 14h, M1, ENS Paris-Saclay

- Master: Frédéric Blanqui,  $\lambda$ -calculus and theories in first-order logic, 18h, M1/M2, ENS Paris-Saclay
- Master: Gilles Dowek has given a course at MPRI.
- Master: Gilles Dowek is in charge of the second year of Masters at the École normale de Paris Saclay.
- Master: Gilles Dowek has given a one week invited course at the University of Buenos Aires.
- Licence: Guillaume Genestier, logic tutorials, 45h, L3, ENS Paris-Saclay
- Licence: Guillaume Genestier, complexity remedial classes, 11h, L3, ENS Paris-Saclay
- Licence: Gaspard Férey, language theory, 44h, L3, EISTI
- Licence: François Thiré, (spring) logic project, 26h, L3 ENS Paris-Saclay
- Licence: François Thiré, (spring) Programmation 2 tutorials, 26h, L3 ENS Paris-Saclay
- Licence: François Thiré, (fall) Architectures and Systems tutorials, 36h, L3 ENS Paris-Saclay
- Frédéric Blanqui is co-director of the pole 4 of the doctoral school STIC of the University Paris-Saclay.
- Frédéric Blanqui is member of the committee of the doctoral school of the ENS Paris-Saclay.
- Frédéric Blanqui is in charge of following PhD students at LSV.

### 9.2.2. Supervision

- PhD Defended: Frédéric Gilbert, Gilles Dowek and Florent Kirchner,
- PhD in progress: Guillaume Bury, David Delahaye and Gilles Dowek,
- PhD in progress: Guillaume Genestier, termination in  $\lambda\Pi$ -calculus modulo theory, 01/10/17, Frédéric Blanqui and Olivier Hermant,
- PhD in progress: Mohamed Yacine El Haddad, using automated provers in proof assistants, 05/01/18, Frédéric Blanqui and Guillaume Burel,
- PhD in progress: Gaspard Férey, Associative-Commutative rewriting in the  $\lambda\Pi$ -calculus, 01/09/18, Gilles Dowek,
- PhD in progress: François Thiré, Design tools to make interoperability easier in DEDUKTI, 01/09/18, Gilles Dowek.

### 9.2.3. Juries

Gilles Dowek has been a member of the Jury of the PhD defence of Pierre Boutry. He has been an evaluator of the thesis of Thibault Gauthier. He has been a member of the Jury of the habilitation defence of Julien Signoles and of Alexei Grinbaum.

## 9.3. Popularization

### 9.3.1. Articles and contents

Gilles Dowek writes a monthly column in Pour la Science (12 issues) and has started a bi-monthly column in Le Monde (3 issues).

Gilles Dowek has given interviews to France Inter, Radio France Internationale, France Culture, Ouest France, Usbek et Rica, and Philosophie Magazine.

### 9.3.2. Education

Gilles Dowek has participated to meetings on scientific education in Switzerland, Belgium, and Côte d'Ivoire. He has been heard by a committee of the the Éducation Nationale on pedagogical data and privacy.

He has given a talk on job mutations to mathematics inspectors.

### 9.3.3. Interventions

Gilles Dowek has given popular science talks in Toulouse, Antony, Issoudun, Rueil Malmaison, Saint Louis, Saint-Cloud, Rennes, Nancy, Paris, Nîmes, St Quentin en Yvelines, Montbéliard, Molaix, St Agrève, Rhodes, Marcoule, and Juvisy.

## DEFI Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. General Chair, Scientific Chair

- P. Congedo is General Chair of the CWI-Inria workshop at Inria Paris research centre in Paris on September 25, 26 2018.

### 10.1.2. Member of the Organizing Committees

- L. Chesnel co-organized the Journée de rentrée (2018) of the Centre de Mathématiques Appliquées of École Polytechnique.
- L. Chesnel co-organizes the seminar of the Centre de Mathématiques Appliquées of École Polytechnique.
- L. Chesnel co-organizes the joint seminar of the Inria teams Defi-M3DISIM-Poems.
- H. Haddar co-organized a minisymposium at waves conference, Karlsruhe, July 2018
- H. Haddar co-organized a minisymposium at the conference Inverse problems: modeling and simulation, Malta, May 2018
- H. haddar co-organized a minisymposium at the Faculty of DSIT of Ecole polytechnique, May 2018.
- J.R. Li is Co-organizer of the summer school Ecole d'Été France Excellence, Data science for document analysis and understanding sponsored by the French Embassy in China, 07/2018. 4 weeks.

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- G. Allaire is member of the editorial boards of
  - Book series "Mathématiques et Applications" of SMAI and Springer,
  - ESAIM/COCV, Structural and Multidisciplinary Optimization,
  - Discrete and Continuous Dynamical Systems Series B,
  - Computational and Applied Mathematics,
  - Mathematical Models and Methods in Applied Sciences (M3AS),
  - Annali dell'Universita di Ferrara,
  - OGST (Oil and Gas Science and Technology),
  - Journal de l'Ecole Polytechnique - Mathématiques,
  - Journal of Optimization Theory and Applications.
- P.M. Congedo is Editor of Mathematics and Computers in Simulation, MATCOM (Elsevier).
- H. Haddar is
  - Member the editorial board of Inverse Problems
  - Associate Editor of the SIAM Journal on Scientific Computing
  - Guest editor of for a special issue in the journal Inverse Problems

#### 10.1.3.2. Reviewer - Reviewing Activities

We reviewed papers for top international journals in the main scientific themes of the team.



#### 10.1.4. Invited Talks

- G. Allaire
  - Seminar at BCAM, Bilbao (january 2018).
  - Séminaire JOFA, Pau (juin 2018).
  - ECCM-ECFD, ECCOMAS, Glasgow (juin 2018).
  - Summer school Sendai, Japon (August 2018).
  - Fifth workshop on thin structures, Naples, September 13-15, 2018.
  - Current trends and open problems in computational solid mechanics, Hannover, October 8-9, 2018.
- L. Chesnel
  - Conference on Mathematics of Wave Phenomena, July 2018.
  - SIAM conference on imaging science, Bologna, June 2018.
  - Inverse problems: modeling and simulation, Malta, May 2018.
  - Workshop du GDR ondes, Jussieu, March 2018.
- P.M. Congedo
  - von Karman Institute Symposium, Bruxelles, April 2018.
  - CERFACS Seminar, Toulouse, October 2018
  - VKI Lecture Series on Uncertainty Quantification, Bruxelles, September 2018.
  - Seminar at CEA-CESTA, Le Barp, September 2018.
- H. Haddar
  - ICAV conference, Hammamet, March 2018
  - SIAM conference on imaging science, Bologna, June 2018.
  - Waves conference, Karlsruhe, July 2018
  - Seminar at LJK, Grenoble, October 2018
  - Kickoff workshop of Mecawave, November 2018
  - Workshop "Inverse Problems: Theory and Applications", Reims, 2018

#### 10.1.5. Leadership within the Scientific Community

- G. Allaire is a board member of Institut Henri Poincaré (IHP). He is the chairman of the scientific council of IFPEN (French Petroleum Institute and New Energies). He is the chairman of the scientific council of AMIES (Agency for Interaction in Mathematics with Business and Society).

#### 10.1.6. Scientific Expertise

- G. Allaire is a member of th"comité national" CNRS, section 41 (mathematics).
- G. Allaire is a member of the scientific board of the Gaspard Monge program on optimization (PGMO) at the Jacques Hadamard Mathematical Foundation.
- J.R. Li is Member of the SIAM Committee on Programs and Conferences 2017-2019.
- J.R. Li is Member Elu of Inria Commission d'Evaluation, 2015-present.

#### 10.1.7. Research Administration

- J.R. Li is correspondant International for Centre de Mathematiques Appliquees, Ecole Polytechnique, 2018-present.
- J.R. Li is responsable for the Ecole Polytechnique part of the French-Vietnam Master Program in Applied Mathematics, 2016-present.

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

- Master: Grégoire Allaire, Approximation Numérique et Optimisation, for students in the second year of Ecole Polytechnique curriculum: 8 lessons of 1h30.
- Master: Grégoire Allaire, Transport and diffusion, for students in the third year of Ecole Polytechnique curriculum. 9 lessons of 2h jointly with F. Golse.
- Master: Housseem Haddar, Approximation Numérique et Optimisation, for students in the second year of Ecole Polytechnique curriculum: 8 TDs of 4h.
- Master: Housseem Haddar, Waves and imaging: Concepts, Theory and Applications, Master M2 "mathematical modeling": 9 lessons of 3h.
- Master: Lucas Chesnel, Variational analysis for partial differential equations, for students in the second year of Ecole Polytechnique curriculum: 8 TDs of 4h.
- Master: Lucas Chesnel, Numerical approximation and optimisation, for students in the second year of Ecole Polytechnique curriculum: 2 TDs of 4h + one project.
- Master: Lucas Chesnel, Modal Modélisation mathématique par la démarche expérimentale, for students in the second year of Ecole Polytechnique curriculum: 5 TDs of 2h.
- Master: Grégoire Allaire, Optimal design of structures, for students in the third year of Ecole Polytechnique curriculum. 9 lessons of 1h30.
- Master: Grégoire Allaire, Theoretical and numerical analysis of hyperbolic systems of conservation laws, Master M2 "mathematical modeling", 8 lessons of 3h.
- Master: Jing Rebecca Li, Lecturer of course Mathematical and numerical foundations of modeling and simulation using partial differential equations French-Vietnam Master in Applied Mathematics, University of Science, Ho Chi Minh City, 10/2018. 2 weeks.
- Master: P.M. Congedo, Numerical methods in Fluid Mechanics, ENSTA ParisTech, 12 h.
- Doctorat: Housseem Haddar, Lecturer at the kickoff workshop of GDR mecawave. Introduction to Inverse problems (2x1h30).
- Doctorat: P.M. Congedo, Introduction to Uncertainty Quantification, 12h, Doctorate School of University of Bordeaux, France.

### 10.2.2. Supervision

- Ph.D. A. Bissuel, Linearized Navier Stokes equations for optimization, floating and aeroacoustic (Dassault Aviation, defended in January 2018). G. Allaire.
- Ph.D. P. Geoffroy, Topology optimization by the homogenization method in the context of additive manufacturing (defended in December 2018). G. Allaire.
- Ph.D. in progress: S. Houbar sur la cavitation dans le fluide caloporteur induite par les mouvements des assemblages d'un réacteur (CEA, to be defended in 2020). G. Allaire and G. Campioni.
- Ph.D. in progress: M. Boissier, Optimisation couplée de la topologie des formes et de la trajectoire de lasage en fabrication additive (to be defended in 2020). G. Allaire and Ch. Tournier.
- L. Rakotondrainibe sur l'optimisation des liaisons entre pièces dans les systèmes mécaniques (Renault, to be defended in 2020). G. Allaire.
- F. Feppon sur l'optimisation topologique de systèmes couplés fluide-solide-thermique (Safran, to be defended in 2020). G. Allaire and Ch. Dapogny.
- Q. Feng sur les éléments finis multi-échelles pour Navier Stokes incompressible en milieu encombré (CEA, to be defended in 2019). G. Allaire and P. Omnes.
- J. Desai sur l'optimisation topologique de structures au comportement non-linéaire avec des méthodes de déformation de maillage (IRT SystemX, to be defended in 2021). G. Allaire and F. Jouve,

- Ph.D. in progress: B. Charfi, Identification of the sigular support of a GIBC, to be defended in 2019, H. Haddar and S. Chaabane
- PhD in progress: K. Napal, Transmission eigenvalues and non destructive testing of concrete like materials , to be defended in 2019, L. Chesnel H. Haddar and L. Audibert
- PhD in progress: M. Kchaou, Higher order homogenization tensors for DMRI modeling, to be defended in 2019, H. Haddar and M. Moakher
- PhD in progress: H. Girardon, Non destructive testing of PWR tubes using eddy current rotating coils, to be defended in 2021, H. Haddar and L. Audibert
- PhD in progress: J. Hao, Thesis topic: Algorithm and software development for analysis and classification of EEG measurements during administration of neuropsychological tests for AD/HD, 2017, J.R. Li and H. Rahioui. PhD stopped in Jan 2019.
- PhD in progress: M. Rihani, Maxwell's equations in presence of metamaterials (to be defended in 2021), A.-S. Bonnet-BenDhia and L. Chesnel.
- PhD in progress: F. Sanson, UQ in systems of solver for the atmospheric reentry (to be defended in July 2019), P.M. Congedo, O. Le Maitre.
- PhD in progress: N. Razaaly, Optimization under uncertainties of ORC turbine cascades, (to be defended in July 2019), P.M. Congedo.
- PhD in progress: M. Rivier, optimization under uncertainty through a Bounding-Box concept (to be defended in May 2020), P.M. Congedo.
- PhD in progress: Joao Reis, Advanced methods for stochastic elliptic PDEs (to be defended in October 2020), P.M. Congedo, O. Le Maitre.
- PhD in progress: G. Gori, Bayesian calibration of complex thermodynamic flows (to be defended in January 2019), P.M. Congedo, O. Le Maitre, A. Guardone.
- PhD in progress: Anabel Del Val, Advanced bayesian methods for aerospace applications (to be defended in October 2020), P.M. Congedo, O. Le Maitre, O. Chazot, T. Magin.
- PhD in progress: J. Carlier, Residual distribution schemes for cavitating two-phase flows (to be defended in October 2019), P.M. Congedo, M. Pelanti, R. Abgrall.
- PhD in progress: P. Novello, Deep learning for reentry atmosperic flows (to be defended in November 2021), P.M. Congedo, D. Lugato, G. Poette.
- PhD in progress: E. Solai, Virtual Prototyping of the EVE expander (to be defended in October 2021), P.M. Congedo, H. Beaugendre.

## 10.3. Popularization

### 10.3.1. Internal or external Inria responsibilities

- P.M. Congedo is Deputy Coordinator of "Maths/Engineering" Program of the Labex Mathématiques Hadamard.
- J.R. Li is Member Elu of Inria Commission d'Evaluation, 2015-present.

### 10.3.2. Internal action

- L. Chesnel provided some numerical experiments used in the exhibition "Rencontres diffractantes : quand les mathématiques inspirent l'art...". This exhibition was presented at Ensta ParisTech and at Inria Saclay.
- P.M. Congedo presented some research activities in aerospace in the context of UnithéauCafé du centre Inria de Saclay Ile-de-France.
- P.M. Congedo made a presentation in the context of the Fete de la science 2018, to several groups of young students (around 10-12 years old).
- H. Haddar made a joint presentation with O. Bunau from Xenocs on nanoparticle imaging using small angle X-ray diffraction technology in the context of UnithéauCafé at Inria de Saclay Ile-de-France.

## DISCO Project-Team

## 8. Dissemination

### 8.1. Promoting Scientific Activities

#### 8.1.1. Scientific Events Organisation

##### 8.1.1.1. Member of the Organizing Committees

Catherine Bonnet is member of the organizing committee of SIAM CT19, Chendu China, July 2019. Islam Boussaada is co-animator of the national working group GT OSYDI of the GDR MACS funded by CNRS. Giorgio Valmorbida was member of the Organizing committee of the 2nd Workshop on DELays and CONstraints on Distributed parameter systems (DECOD-2018).

#### 8.1.2. Scientific Events Selection

- Catherine Bonnet was Associate Editor for the conferences 2019 American Control Conference, Philadelphia, USA.
- Islam Boussaada was Associate Editor for 14th IFAC Workshop on Time Delay Systems, Budapest, Hungary.
- Frédéric Mazenc was Associate Editor for the conferences 2019 American Control Conference, Philadelphia, USA, and the 57th IEEE Conference on Decision and Control, Miami, USA, (2018).

##### 8.1.2.1. Member of the Conference Program Committees

- Catherine Bonnet is a member of the scientific committee of the GDRI (International Research Group funded by CNRS) SpaDisco since 2017.
- Catherine Bonnet, Islam Boussaada and Sorin Olaru are members of the International Program Committee of the Joint IFAC Conference 7th Symposium on System Structure and Control (SSSC 2019) and 15th IFAC Workshop on Delay Systems, Sinaia, Roumania, Sept 2019.
- Islam Boussaada was a member of the International Program Committee for 14th IFAC Workshop on Time Delay Systems (TDS 2018), Budapest, Hungary.
- Frédéric Mazenc and Giorgio Valmorbida are members (Associate Editors) of the *Control Editorial Board - IEEE - CSS*. Sorin Olaru was member of the International Program Committee of the 9th IFAC Symposium on Robust Control Design - ROCOND and of the IEEE Mediterranean Control Conference.

##### 8.1.2.2. Reviewer

The team reviewed papers for several international conferences including IEEE Conference on Decision and Control, IEEE American Control Conference, European Control Conference, IFAC World Congress.

#### 8.1.3. Journal

##### 8.1.3.1. Member of the Editorial Boards

Frédéric Mazenc is member of the editorial boards (Associate Editor) of the following journals:

- IEEE Transactions on Automatic Control;
- European Journal of Control;
- Journal of Control and Decision.

Sorin Olaru is member of the editorial boards (Associate Editor) of the following journals:

- IEEE Control Systems Letters;
- IMA Journal of Mathematical Control and Information, Oxford Press.

### 8.1.3.2. Reviewer - Reviewing Activities

The team reviewed papers for several journals including SIAM Journal on Control and Optimization, Automatica, IEEE Transactions on Automatic Control, IEEE Control Systems Magazine, Systems and Control Letters.

### 8.1.4. Invited Talks

Stefanella Boatto gave a talk at the biomathematics Seminar of Institut de Mathématiques de Marseille, Aix-Marseille université, February 2018, Marseilles, France. Title of her talk: '*Modelling epidemics dynamics due to Aedes mosquitoes : the example of Rio de Janeiro. How to approximate an epidemic attractor and to estimate the infectivity rate*'.

Frédéric Mazenc was a plenary speaker of the conference POSTA2018, August 2018, Hangzhou, China. Title of his talk: '*Stability of Positive Systems With Delay: Changes of Coordinates, Comparison Systems, Lyapunov Functionals*'.

Giorgio Valmorbida gave an invited talk at the International Workshop on Robust LPV Control Techniques and Anti-Windup Design, April 2018, Toulouse, France. Title of his talk: '*Anti-Windup Design for Synchronous Machines*'.

Giorgio Valmorbida gave an invited talk at the Meeting of the GT CSE (groupe de travail Commande de Systèmes Électriques) , May 2018, Paris, France. Title of his talk: '*Anti-Windup Design for Synchronous Machines*'.

Giorgio Valmorbida gave an invited talk at the 2nd Workshop on Stability and Control of Infinite-Dimensional Systems (SCINDIS-2018), May 2018, Wurzburg, Germany. Title of his talk: '*Convex Optimization Methods to Solve Integral Inequalities*'.

Giorgio Valmorbida gave an invited talk at the 2nd Workshop on DELays and CONstraints on Distributed parameter systems (DECOD-2018), November 2018, Toulouse, France. Title of his talk: '*Stability Analysis of Piece-wise Affine Discrete-Time systems*'.

### 8.1.5. Leadership within the Scientific Community

Catherine Bonnet is a member of the IFAC Technical Committees on *Distributed Parameter Systems* and on *Biological and Medical Systems*. She is a member of the management committee of the COST Action FRACTAL (2016-2020). Sorin Olaru is a member of the IFAC Technical Committees on *Robust Control* and on *Optimal control*. He is a member of the IEEE Technical Committee on *Hybrid Systems*. He is a Senior Member IEEE since 2012.

### 8.1.6. Scientific Expertise

Catherine Bonnet is a member of the Evaluation Committee of Inria since September 2015.

Since 2014, Frédéric Mazenc is an expert for the FNRS (Belgium). His mission consists in evaluating research projects funded by this institution.

Since 2012, Frédéric Mazenc is an expert for the ANVUR (National Agency for the Evaluation of Universities and Research Institutes, Italy). His mission consists in evaluating the contribution of Italian scientists.

Since 2011, Frédéric Mazenc is an expert for the Romanian National Council for Development and Innovation (Romania). His mission consists in evaluating research projects funded by the this institution.

### 8.1.7. Research Administration

Catherine Bonnet is a member of the administration council of the association *Femmes et Mathématiques*, of the *Parity Committee* of Inria and of the *Cellule veille et prospective* of Inria (both created in 2015). She is a member of the Bureau du Comité des Projets du CRI Saclay-Ile-de-France.

In 2018, Frédéric Mazenc is a member of the commission scientifique du CRI Saclay-Ile-de-France. Since October 2017, he is Correspondant Inria Saclay A.M.I.E.S., <http://www.agence-maths-entreprises.fr/>

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master : Stefanella Boatto, Challenges in Biomathematical Modelling, 3h, M1, CentraleSupélec, France.

Master : Catherine Bonnet, Stability of Delay Systems, 1.5h, M1, CentraleSupélec.

Licence : Islam Boussaada, Complex analysis, 60, L3, IPSA, France.

Licence : Islam Boussaada, Harmonic analysis, 60, L3, IPSA.

Licence : Sorin Olaru, Automatic Control, 8h , M1, CentraleSupélec.

Licence : Sorin Olaru, Signals and systems, 8h , L3, CentraleSupélec.

Licence : Sorin Olaru, Embedded systems, 8h , M1, CentraleSupélec.

Licence : Sorin Olaru, Numerical methods and Optimization, 24h, M1, CentraleSupélec.

Licence : Sorin Olaru, Hybrid systems, 16h, M2, CentraleSupélec.

Licence : Guillaume Sandou, Signals and Systems, 87h, L3, CentraleSupélec.

Licence : Guillaume Sandou, Model representation and analysis, 70h, L3, CentraleSupélec.

Licence : Guillaume Sandou, Mathematics and programming, 18h, L3, CentraleSupélec.

Licence : Giorgio Valmorbida, Embedded systems, 7.5h, M1, Coursus Ingénieur CentraleSupélec.

Master : Guillaume Sandou, Automatic Control, 8h, M1, CentraleSupélec.

Master : Guillaume Sandou, Numerical methods and optimization, 28h, M1 and M2, Centrale-Supélec.

Master : Guillaume Sandou, Modelling and system stability analysis, 21h, M2, CentraleSupélec.

Master : Guillaume Sandou, Control of energy systems, 22h, M2, CentraleSupélec.

Master : Guillaume Sandou, Robust control and mu-analysis, 9h, M2, CentraleSupélec.

Master : Guillaume Sandou, Systems identification, 32h, M2, ENSTA.

Master : Guillaume Sandou, System Analysis, 22h, M2, Ecole des Mines de Nantes.

Master : Giorgio Valmorbida, Numerical methods and optimisation, 6 h, 6hETD, niveau M1, Coursus Ingénieur CentraleSupélec.

Master : Giorgio Valmorbida, Commande d'Entraînements de Vitesse Variable 12 h, M1, Coursus Ingénieur CentraleSupélec.

Master : Giorgio Valmorbida, Control Theory, 7.5 h, M1, Coursus Ingénieur CentraleSupélec.

Master : Giorgio Valmorbida, Dynamical Systems, 9 h, M2, Master Automatique Traitement du Signal et de l'image - Université Paris-Saclay, France.

Master : Giorgio Valmorbida, Control 30h, niveau M1, Master Nuclear Energy - Université Paris-Saclay.

Doctorat : Islam Boussaada, Introduction to the qualitative theory of functional differential equations, 12h, University Mouloud Mammeri, Algeria

### 8.2.2. Supervision

PhD : Saeed Ahmed, title: *Observer Design and Output Feedback Stabilization of Time Varying Systems*, Bilkent University. Thesis defense: 03 July 2018, supervisors: Hitay Ozbay, Frédéric Mazenc.

PhD in progress : Nadine Aoun, Modélisation de réseaux de chaleur et gestion avancée multi-échelles de la production, de la distribution et de la demande. Modeling and multi-scale advanced management of production, distribution and demand in district heating networks. Supervisor: Guillaume Sandou.

PhD in progress : Leonardo Broering Groff, Periodic Event-Triggered Control, mars 2016. Supervisors: Giorgio Valmorbida and Joao Manoel Gomes da Silva Jr.

PhD in progress : Caetano Cardeliquio, Stability and stabilization of (possibly fractional) systems with delays. French Supervisor : Catherine Bonnet, Brazilian Supervisor : André Fioravanti.

PhD in progress : Mohamed Lotfi Derouiche, Sur l'optimisation par métaheuristiques avancées de lois de commande prédictive non linéaire. On the optimization of nonlinear predictive control laws using advanced metaheuristics algorithms. Supervisors: Soufienne Bouallegue, Joseph Haggège et Guillaume Sandou.

PhD : Nicolo Gionfra, Optimisation du pilotage d'un parc d'énergies renouvelables avec stockage et du réseau de distribution sous-jacent. Optimization of the control of a park of renewable sources considering storage means and distribution network. Supervisors: Houria Siguerdidjane et Guillaume Sandou. Defended in March 2018.

PhD in progress : Jean Mercat, Modele predictif des objets d'une scene routiere ; application à la sélection robuste des cibles pour les ADAS. Supervisor: Guillaume Sandou.

PhD in progress : Maxime Pouilly-Cathelain, Commande adaptative temps réel vis-a-vis de critères multiples de haut niveau. Supervisor : Guillaume Sandou.

### 8.2.3. Juries

- Catherine Bonnet was President of the Saclay-Ile-de-France Junior Researcher recruiting committee and a member of the National Inria Junior Researcher recruiting committee.
- Catherine Bonnet was reviewer of the PhD thesis of Mohamad Taki Asghar '*New advanced control strategies for steel making process*', 3 May 2018, Université de Nancy. She was President of the PhD Defense juries of Noussaiba Gasmi '*Observation et commande des systèmes dynamiques d'ordre non entier*', 14 November 2018, Université de Nancy, of Pierre-Marie Gibert '*Use of sinusoidal predictors for time-domain simulation of AC power systems*', 30 November 2018, Université de Lyon, of Abdelkrim Bahloul '*Sur la commande des robots manipulateurs industriels en co-manipulation robotique*', 7 December 2018, L2S, CentraleSupélec, and member of the PhD Defense jury of Bainan Liu '*Boundary observer-based output feedback control of coupled parabolic PDEs*', 17 December 2018, INSA centre Val de Loire.
- Frédéric Mazenc was a reviewer of the Phd thesis of Ricardo Sanz Diaz, '*Robust control strategies for unstable systems with input/output delays*', September 27, 2018, Universitat Politecnica de Valencia, Spain and of the Phd thesis of Mohammed Safi, '*Stabilité de Lyapunov de systèmes couplés impliquant une équation de transport*', October 31, 2018, LAAS, Université de Toulouse, France.
- Sorin Olaru was President of the PhD Defense jury of Dominique Monnet, '*Global Minmax optimization for robust Hinf control*', université de Brest, France, reviewer of the PhD Defense jury of Nadia Paola Rosero Ibarra, '*Modeling and Observation applied to physiology-aware control for cycling*', 12 November 2018, université Grenoble Alpes, France and member of the PhD Defense jury of Nassim Loukkas, '*State-membership state observer design based on explicit characterizations of the estimation-error bounds*', 6 June 2018, université Grenoble Alpes.
- Giorgio Valmorbida was a member of the jury of the Phd thesis of Fabien Niel, '*Modeling and control of a wing at low Reynolds number with high amplitude aeroelastic oscillations*', 26 January 2018, LAAS, université de Toulouse, France.

## 8.3. Popularization

### 8.3.1. Interventions

Catherine Bonnet awarded the price of Mathematics and Italian et Italien at the *Concours Général des lycées et des métiers du Ministère de l'Éducation nationale*, Grand Amphithéâtre de La Sorbonne, July 2018. She welcomed a group of middle school students, 17 December 2018.

## **EX-SITU Project-Team**

# **9. Dissemination**

## **9.1. Promoting Scientific Activities**

### **9.1.1. Scientific Events Organisation**

#### *9.1.1.1. Member of the Organizing Committees*

- ACM/ISMIR 2018, International Society for Music Information Retrieval Conference, Music and Technology co-chair: Wendy Mackay
- HAMAC International Research Workshop 2018, Human-Machine Collaboration in Embodied Interaction, main organiser: Baptiste Caramiaux
- UIST 2018, ACM Symposium on User Interface Software and Technology, Publicity Co-Chair: Michael Wessely
- UIST 2018, ACM Symposium on User Interface Software and Technology, Video Preview Co-Chair: Carla Griggio
- UIST 2018, ACM Symposium on User Interface Software and Technology, Doctoral Symposium jury: Wendy Mackay
- CHI 2018 workshop “Rethinking Interaction: From instrumental interaction to human-computer partnerships Toolkits”, organizers: Wendy Mackay, Michel Beaudouin-Lafon
- Interaction 2018, Program Co-Chair: Nolwenn Maudet

### **9.1.2. Scientific Events Selection**

#### *9.1.2.1. Chair of Conference Program Committees*

- IHM 2018, Conférence Francophone d’Interaction Homme-Machine, Work-in-Progress (TeC) co-chair: Cédric Fleury

#### *9.1.2.2. Member of the Conference Program Committees*

- ACM CHI 2019, *ACM CHI Conference on Human Factors in Computing Systems*: Michel Beaudouin-Lafon, Wendy Mackay, Theophanis Tsandilas
- ACM UIST 2018, *ACM Symposium on User Interface Software and Technology*: Michel Beaudouin-Lafon, Wendy Mackay
- ACM UIST 2018 Doctoral Symposium: Wendy Mackay
- ACM UIST 2018 Best Paper Award Committee: Wendy Mackay
- ACM UIST 2018 Student Innovation Awards Committee
- IUI 2018, *ACM IUI Conference on Intelligent User Interfaces*: Wendy Mackay
- IUI 2019, *ACM IUI Conference on Intelligent User Interfaces*: Wendy Mackay
- MOCO 2018, *International Conference on Movement and Computing*: Sarah Fdili Alaoui
- 3DCVE 2018, *IEEE VR Workshop on Collaborative Virtual Environments*: Cédric Fleury
- ACM C&C 2018, *Creativity and Cognition*: Andrew Webb

#### *9.1.2.3. Reviewer*

- ACM CHI 2018-19, *ACM CHI Conference on Human Factors in Computing Systems*: Andrew Webb, Carla Griggio, Wanyu Liu, Sarah Fdili Alaoui, Cédric Fleury, Michael Wessely, Baptiste Caramiaux
- ACM UIST 2018, *ACM Symposium on User Interface Software and Technology*: Theophanis Tsandilas, Michael Wessely



- ACM DIS 2018, *ACM Conference on Designing Interactive Systems*: Nolwenn Maudet, Sarah Fdili Alaoui, Wendy Mackay
- ACM ISS 2018, *ACM International Conference on Interactive Surfaces and Spaces*: Ignacio Avelino, Philip Tchernavskij
- IEEE VR 2018-19, *Virtual Reality Conference*: Cédric Fleury
- Interaction 19: Carla Griggio, Germán Leiva
- ACM C&C 2018, *Creativity and Cognition*: Sarah Fdili Alaoui
- MOCO 2018, *Movement Computing*: Sarah Fdili Alaoui, Baptiste Caramiaux
- Mobile HCI '18 Late Breaking, *19th International Conference on Human-Computer Interaction with Mobile Devices and Services*: Germán Leiva, Philip Tchernavskij
- IHM 2018, *Conférence Francophone d'Interaction Homme-Machine*: Theophanis Tsandilas, Baptiste Caramiaux
- Salon des Refusés 2018, workshop at <PROGRAMMING> 2018, *The International Conference on the Art, Science, and Engineering of Programming*: Philip Tchernavskij

### 9.1.3. Journal

#### 9.1.3.1. Member of Editorial Boards

- Editor for the Human-Computer Interaction area of the ACM Books Series (published with Morgan & Claypool Publishers): Michel Beaudouin-Lafon (2013-)
- CACM, *Communications of the ACM Web Editorial Board*, ACM: Wendy Mackay (2008-)
- ACM, *ACM New Publications Board*, ACM: Wendy Mackay (2015-)
- TOCHI, *Transactions on Computer Human Interaction*, ACM: Michel Beaudouin-Lafon (2009-), Wendy Mackay (2016-)
- PloS ONE: Baptiste Caramiaux (2018-)
- JIPS, *Journal d'Interaction Personne-Système*, AFIHM: Michel Beaudouin-Lafon (2009-)

#### 9.1.3.2. Reviewer - Reviewing Activities

- TOCHI, *Transactions on Computer Human Interaction*, ACM: Baptiste Caramiaux
- CG&A, *Computer Graphics and Applications*, IEEE: Cédric Fleury
- *Frontiers in Robotics and AI*, Virtual Environments section: Cédric Fleury

### 9.1.4. Invited Talks

- Univ. of California San Diego (UCSD), *Towards Unified Principles of Interaction*, March 2018: Michel Beaudouin-Lafon
- Univ. of California San Diego (UCSD), *Human-Computer Partnerships*, March 2018: Wendy Mackay
- ETH Zürich, *Towards Unified Principles of Interaction*, 11 April 2018: Michel Beaudouin-Lafon
- Université de Zürich, *Human-Computer Partnerships*, 12 April 2018: Wendy Mackay
- Creativity Across Disciplines Symposium, Aarhus University, *Towards a Unified Theory of Interaction*, 5 April 2018: Wendy Mackay
- Workshop on Human-Computer Partnerships, ACM CHI 2018, *Human-in-the-loop? or Human-Computer Partnerships?*, May 2018: Wendy Mackay
- SIG: Transparent Statistics Guidelines, Panel Discussion, ACM CHI 2018, May 2018: Wendy Mackay
- SIFED 2018 : Symposium International Francophone sur l'Écrit et le Document, *Interactions à base d'esquisses sur papier et ordinateur*, 1 June 2018, Tours, France: Theophanis Tsandilas

- DATAIA-JST International Symposium on Data Science and AI, *AI and HCI: Towards Human-Computer Partnerships*, Paris, 11 July 2018: Michel Beaudouin-Lafon
- Science & Research Panel, *Interactive Materials with Printed Electronics*, 2018 Fab14 Paris, 13 July 2018: Micheal Wessely
- Rencontres Jeunes Chercheurs, RJIHM, *Experiment Design in HCI*, July: Wendy Mackay
- Workshop on Human-Computer Collaboration in Embodied Interaction (HAMAC), *Creating Human-Computer Partnerships*, IRCAM, Paris, 8 July 2018: Michel Beaudouin-Lafon
- Inria seminar Unithé ou Café, *Machine Learning and Teaching for Interaction Design*, 13 Septembre 2018: Baptiste Caramiaux
- Visual Computing Conference, Stuttgart, *Human-Computer Partnerships*, 8 October 2018: Wendy Mackay
- ECSS 2018, *European Computer Science Summit, Informatics Europe*, Gothenberg, 11 October 2018: Wendy Mackay
- GOTO Copenhagen, Keynote address, *Human-Computer Partnerships*, November 2018: Wendy Mackay
- Université de Poitiers, Techné Séminaire 1 *Technologie Numérique pour l'Education, Designing Interactive Systems*, 15 November 2018: Wendy Mackay
- Université de Poitiers, Techné Séminaire 2 *Technologie Numérique pour l'Education, Exploratory Experiment Design*: 15 November 2018: Wendy Mackay

### 9.1.5. Scientific Expertise

#### International

- NSERC Evaluation: Wendy Mackay, external expert (2018)
- ACM SIGCHI “Lifetime Service Award” committee member: Michel Beaudouin-Lafon

#### National

- Agence Nationale de la Recherche (ANR), Appel à projets jeunes chercheuses et jeunes chercheurs: Theophanis Tsandilas, reviewer
- ERC Generator program, Université de Lille: Michel Beaudouin-Lafon, external expert
- CNRS INS2I “Cellule ERC”: Michel Beaudouin-Lafon, member

### 9.1.6. Research Administration

Information Science and Technology (STIC) Department, Université Paris-Saclay: Michel Beauouin-Lafon (chair since June 2018), Wendy Mackay (member)

Research division, Université Paris-Saclay: Michel Beaudouin-Lafon (advisor for Digital Sciences since June 2018)

Digiteo RTRA research network, Université Paris-Saclay: Michel Beauouin-Lafon (director since June 2018)

STIC Doctoral School, Université Paris-Saclay: Michel Beaudouin-Lafon (adjunct director of pole 3 until May 2018)

CNRS INS2I, “Conseil Scientifique de l’Institut”: Michel Beaudouin-Lafon (member)

Telecom ParisTech, “Comité de la recherche”: Michel Beaudouin-Lafon (member)

Pôle Systematic, Working group on Information Systems: Michel Beaudouin-Lafon (member of steering committee)

Computer Science Department, Université Paris-Sud: Michel Beaudouin-Lafon (vice-President for research)

“Conseil de Laboratoire”, LRI: Wendy Mackay, Cédric Fleury (members)

- “Conseil Scientifique”, LRI: Michel Beaudouin-Lafon (member)  
 CCSU, “Commission Consultative de Spécialistes de l’Université”, Université Paris-Sud: Michel Beaudouin-Lafon, Wendy Mackay (members)  
 “Commission Locaux”, LRI: Theophanis Tsandilas (member)  
 “Commission Scientifique”, Inria: Theophanis Tsandilas (member), since March 2017  
 “Comité de sélection, Professeur”, Université de Bordeaux: Michel Beaudouin-Lafon (president)  
 “Comité de sélection, Maître de Conférence”, Université Paris-Sud: Wendy Mackay  
 “Tenure review committee”, University of California, Irvine: Wendy Mackay

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence : Sarah Fdili Alaoui, *Programmation des interfaces interactives avancées*, 22.5h, L3, Univ. Paris-Sud  
 International Masters: Theophanis Tsandilas, *Probabilities and Statistics*, 32h, M1, Univ. Paris-Saclay  
 HCID Masters: Sarah Fdili Alaoui, *Business Development Labs*, 30h, M1, Univ. Paris-Sud  
 HCID Masters: Sarah Fdili Alaoui, *Innovation & Entrepreneurship thesis*, 3h, M2, Univ. Paris-Sud  
 HCID Masters: Sarah Fdili Alaoui, *Design Project*, 36h, M1 et M2, Univ. Paris-Sud  
 HCID Masters: Michel Beaudouin-Lafon, Wendy Mackay, *Fundamentals of Situated Interaction*, 21 hrs, M1/M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Sarah Fdili Alaoui, *Stage en entreprise*, 2h, M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Sarah Fdili Alaoui, *Creative Design*, 27h, M1 et M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Sarah Fdili Alaoui, *Digital Fabrication*, 13,5h, M1 et M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Michel Beaudouin-Lafon, *Fundamentals of Human-Computer Interaction*, 21 hrs, M1/M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Michel Beaudouin-Lafon & Cédric Fleury, *Groupware and Collaborative Interaction*, 31.5 hrs, M1/M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Wendy Mackay, *Career Seminar* 6 hrs, M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Wendy Mackay, *Design of Interactive Systems*, 21 hrs, M1/M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Wendy Mackay, *Advanced Design of Interactive Systems*, 21 hrs, M1/M2, Univ. Paris-Sud  
 Interaction & HCID Masters: Baptiste Caramiaux, *Gestural and Mobile Interaction*, 24 hrs, M1/M2, Univ. Paris-Sud  
 Polytech: Sarah Fdili Alaoui, *Graphisme et Visualisation*, 18h, “Apprentis” 5th year, Univ. Paris-Sud  
 Polytech: Cédric Fleury, *Projet Java-Graphique-IHM*, 24 hrs, 3st year, Univ. Paris-Sud  
 Polytech: Cédric Fleury, *Interaction Homme-Machine*, 18 hrs, 3st year, Univ. Paris-Sud  
 Polytech: Cédric Fleury, *Option Réalité Virtuelle*, 56 hrs, 5th year, Univ. Paris-Sud  
 Polytech: Cédric Fleury, *Réalité Virtuelle et Interaction*, 48 hrs, “Apprentis” 5th year, Univ. Paris-Sud

### 9.2.2. Supervision

*PhD students*

PhD: Wanyu Liu, *Modeling the speed-accuracy trade-off of pointing tasks using the tools of information theory*, 22 November 2018. Advisors: Olivier Rioul (Institut Mines Telecom) & Michel Beaudouin-Lafon

PhD: Carla Griggio, *Interactive Human-Machine Learning*, Université Paris-Saclay, 11 December 2018. Advisor: Wendy Mackay

PhD: Germán Leiva, *Interaction-driven Software Development*, Université Paris-Saclay, 12 December 2018. Advisors: Wendy Mackay & Michel Beaudouin-Lafon

PhD: Michael Wessely, *Sketching and Physical Prototyping for Creative Fabrication Design*, Université Paris-Saclay, 13 December 2018. Advisors: Theophanis Tsandilas & Wendy Mackay

PhD: Marianela Ciolfi Felice, *Substrates and Co-adaptive Instruments for Creativity*, Université Paris-Saclay, 14 December 2018. Advisors: Wendy Mackay & Sarah Fdili Alaoui

PhD in progress: Yujiro Okuya, *Sensorimotor interface for Collaborative Virtual Environments based on heterogeneous interactive devices: application to industrial design*, October 2015. Advisors: Patrick Bourdot (LIMSI-CNRS) & Cédric Fleury

PhD in progress: Stacy (Shu-Yuan) Hsueh, *Embodied design for Human-Computer Co-creation*, November 2015. Advisors: Wendy Mackay & Sarah Fdili Alaoui

PhD in progress: Philip Tchernavskij, *Towards Unified Principles of Interaction*, October 2016. Advisor: Michel Beaudouin-Lafon

PhD in progress: Jean-Philippe Rivière, *Embodied Design for Human-Computer Partnership in Learning Contexts*, October 2017. Advisors: Wendy Mackay, Sarah Fdili Alaoui & Baptiste Caramiaux

PhD in progress: Yiran Zhang, *Telepresence for remote and heterogeneous Collaborative Virtual Environments*, October 2017. Advisors: Patrick Bourdot (LIMSI-CNRS) & Cédric Fleury

PhD in progress: Téó Sanchez, *Co-Learning in Interactive Systems*, September 2018. Advisors: Baptiste Caramiaux & Wendy Mackay

PhD in progress: Elizabeth Walton, *Inclusive Design in Embodied Interaction*, November 2018. Advisors: Baptiste Caramiaux, Sarah Fdili Alaoui & Wendy Mackay

PhD in progress: Miguel Renom, *Theoretical bases of human tool use in digital environments*, October 2018. Advisors: Michel Beaudouin-Lafon & Baptiste Caramiaux

PhD in progress: Dimitrios Christaras Papageorgiou, *Design, implementation and evaluation of a conceptual model of interactive substrates*, October 2018. Advisor: Michel Beaudouin-Lafon

PhD in progress: Han Han, *Participatory design of digital environments based on interaction substrates*, October 2018. Advisor: Michel Beaudouin-Lafon

PhD in progress: Viktor Gustafsson, *Co-adaptive Instruments fo Game Design*, October 2018. Advisor: Wendy Mackay

PhD in progress: Yi Zhang, *Generative Design using Instrumental Interaction, Substrates and Co-adaptive Systems*, October 2018. Advisor: Wendy Mackay

#### Masters students

Téó Sanchez, ENS, Sorbonne Université, “Gesture Interaction with Active Machine Learners”: Baptiste Caramiaux

Miguel Renom, “Transfer of tool-based skills from physical to digital tools”: Michel Beaudouin-Lafon

Dimitrios Christaras Papageorgiou, “Prototype of an environment based on information substrates and digital instruments”: Michel Beaudouin-Lafon

Tong Xue, “Analysis of information substrates and digital instruments in existing interactive software”: Michel Beaudouin-Lafon

Viktor Gustafsson, “Narrative Substrates for Interactive Video Games”: Wendy Mackay

Yi Zhang, “Situated Breakdowns in Video-Mediated Communication”: Wendy Mackay

Wuji Geng, “Interaction Museum Design”: Wendy Mackay

Krishnan Chandran, “Collocated Collaboration over Augmented Reality Models”: Theophanis Tsandilas and Cédric Fleury

### 9.2.3. *Juries*

#### PhD theses

Emaline Brulé, Télécom ParisTech (advisor: Annie Gentes): Wendy Mackay, reporter

Julien Gori, Télécom ParisTech (advisor: Olivier Rioul): Michel Beaudouin-Lafon, invited

Benjamin Bressolette, Centrale Marseille (advisor: Richard Kronland-Martinet): Michel Beaudouin-Lafon, examiner

#### Habilitations

- Marcos Serrano, Université de Toulouse, November 2018: Michel Beaudouin-Lafon, reviewer
- Eric Lecolinet, Télécom ParisTech, December 2018: Michel Beaudouin-Lafon, examiner

## 9.3. Popularization

### 9.3.1. *Articles and contents*

- Radio show “Les P’tits Bateaux” on France Inter public radio: Michel Beaudouin-Lafon (interviews in response to children questions on 10 June 2018, 16 September 2018, 7 October 2018)
- Panel at “*La Fabrique de la Danse*”, Centre 104, Paris, 5 Avril 2018: Baptiste Caramiaux (panel member)

### 9.3.2. *Interventions*

- Le Plateau des Recherches Infinies: art-science project with photographer Didier Goupy presenting the portraits of 100 researchers of Université Paris-Saclay. Fête de la Science, Gif-sur-Yvette, October 2018
- Workshop on “Rapid Prototyping with Interactive Materials”, Fab14, Toulouse, July 2018: Michael Wessely
- Workshop “*Relational Listening*”, CLOUD/Danslab, Lake Studios, Berlin, 22 July 2018: John MacCallum (co-facilitator).

## GALEN-POST Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. Member of the Organizing Committees

R. Güler organized the Workshop “COCO + Mapillary Joint Recognition Challenge” at ECCV 2018, September 2018, Munich, Germany.

R. Güler organized the Workshop “Posetrack Challenge Articulated People Tracking in the Wild”, at ECCV 2018, September 2018, Munich, Germany.

F. Malliaros was a member of the organizing committee of the 3<sup>rd</sup> International Workshop on Learning Representations for Big Networks (BigNet), The Web Conference (WWW), Lyon, France, 2018.

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Chair of Conference Program Committees

H. Talbot chaired the 2nd Workshop on Reproducible Research in Pattern Recognition organized at ICPR 2018, Beijing, China.

#### 10.1.2.2. Member of the Conference Program Committees

H. Talbot. Member of the board and program committee for the International Symposium in Mathematical Morphology, to take place in Saarbrücken, Germany, May 2019.

E. Chouzenoux. Member of the technical committees “Signal Processing Theory and Methods” of the IEEE Signal Processing Society and “SAT Signal and Data Analytics for Machine Learning” of EURASIP.

F. Malliaros. Member of the program committee at: AAAI Conference on Artificial Intelligence (AAAI), The Web Conference (WWW), Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL), Conference on Neural Information Processing Systems (NeurIPS), International Conference on Complex Networks and Their Applications (Complex Networks)

#### 10.1.2.3. Reviewer

The members of the team reviewed numerous papers for several international conferences, such as for the annual conferences on Computer Vision and Pattern Recognition (CVPR), Medical Image Computing and Computer Assisted Intervention (MICCAI), Neural Information Processing Systems (NIPS) and International Conference on Learning Representations (ICLR), IEEE International Conference and Acoustics Speech and Signal Processing (ICASSP), IEEE International Conference on Image Processing (ICIP), IEEE Statistical Signal Processing workshop (SSP), European Signal Processing Conference (EUSIPCO), Joint Urban Remote Sensing Event (JURSE).

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

Hugues Talbot: Senior Area Editor for IEEE Signal Processing Letters

Maria Vakalopoulou: Lead Guest Editor for the special issue on Remote Sensing, in Computer Vision and Image Understanding (CVIU)

Emilie Chouzenoux: Associate Editor of the IEEE Transactions on Signal Processing

Jean-Christophe Pesquet: Associate Editor of the SIAM Journal on Imaging Sciences

#### 10.1.3.2. Reviewer - Reviewing Activities

H. Talbot: IEEE Pattern Analysis and Machine Intelligence, IEEE Transaction on Image Processing, Computer Vision and Image Understanding, J. on Mathematical Imaging and Vision, Signal Processing Letters, Transactions on Signal Processing.

M. Vakalopoulou: International Journal of Computer Assisted Radiology and Surgery (IJCARS), IEEE Trans. on Geoscience and Remote Sensing (TGRS), Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), ISPRS Journal of Photogrammetry and Remote Sensing, Computer Methods and Programs in Biomedicine (CMPB), Pattern Recognition Letters, Computer Vision and Image Understanding (CVIU), SPIE Optical Engineering (OE), Remote Sensing MDPI.

E. Chouzenoux: IEEE Trans. on Image Processing, IEEE Trans. Signal Processing, SIAM Journal on Imaging Science, Journal of Optimization Theory and Applications, Journal of Global Optimization.

J.-C. Pesquet: IEEE Trans. on Signal Processing, IEEE Trans. on Image Processing, IEEE Trans. on Information Theory (IEEE-TI), Signal Processing, SIAM Journal on Optimization, SIAM Journal on Imaging Sciences, Journal of Mathematical Imaging and Vision, Journal of Optimization Theory and Applications, Mathematical Programming.

F. Malliaros: Data Mining and Knowledge Discovery (DAMI), ACM Transactions on Knowledge Discovery from Data (TKDD).

M. C. Corbineau: Signal Processing: Image Communication (SPIC), Computer Vision and Image Understanding (CVIU).

M. Papadomanolaki: Computer Vision and Image Understanding (CVIU), Journal of Basic and Applied Research International, Journal of Geography, Environment and Earth Science International.

M. Sahasrabudhe: Computer Vision and Image Understanding (CVIU).

D. Khuê Lê-Huu: IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), International Journal of Computer Vision (IJCV).

#### 10.1.4. Invited Talks

J.-C. Pesquet:

SAMSI workshop on Operator Splitting Methods in Data Analysis, Raleigh, March 2018, New York University, March 2018,

Entropy workshop, Barcelona, May 2018,

SIAM Conference on Imaging Science, Bologna, Italy, June 2018,

Aalto University, Helsinki, October 2018,

Polish Science Academy, Warsaw, December 2018.

H. Talbot:

Heartflow, Redwood City, California, April 2018,

Imperial College, London, October 2018,

Institut Henri Poincaré, Paris, December 2018.

E. Chouzenoux:

CRIStAL, Lille, February 2018,  
Ann Arbor University, USA, April 2018,  
International Conference Inverse Problems: Modeling and Simulation (IPMS 2018), Malta, 21st-25th May 2018,  
Heriot Watt University, Edimburg, UK, June 2018,  
SIAM Conference on Imaging Science, Bologna, Italy, June 2018.

F. Malliaros:

The Web Conference, Lyon, France, April 2018,  
Paris Descartes University, Paris, France, May 2018,  
ACM International Conference on Information and Knowledge Management (CIKM), Turin, Italy, October 2018.

E. Oyallon:

SONY CSL, Paris, January 2018,  
DeepMind CSML Seminar Series, January 2018,  
Imaging in Paris Seminar, IHP, January 2018,  
Criteo, Paris, May 2018,  
SequeL, Lille, May 2018,  
GE Healthcare, Bures-sur-Yvette, June 2018,  
NAVER LABS, Grenoble, June 2018,  
GT DeepNet, LRI/TAO, Gif-sur-Yvette, December 2018,  
GREYC, Caen, December 2018.

M. Vakalapolou:

ONERA, March 2018,  
Telecom ParisTech - LTCI, May 2018,  
CNRS Workshop on Artificial Intelligence and its Applications, CentraleSupélec, July 2018.

A. Celikkanat:

Paris-Saclay Junior Conference on Data Science and Engineering (JDSE2018) (Poster), Orsay, France, 13-14th September 2018.

M. C. Corbineau:

SIAM Conference on Imaging Science, Bologna, Italy, June 2018.

R. A. Guler:

Inria Paris, March 2018,  
University of Amsterdam, April 2018  
Max Planck Institute for Intelligent Systems, Tübingen, July 2018.

### ***10.1.5. Leadership within the Scientific Community***

J.-C. Pesquet is senior member of the Institut Universitaire de France and a Fellow of IEEE.



## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Master : Corbineau, Marie-Caroline and Pesquet, Jean-Christophe. Advanced course on Optimization, 33h, M1, CentraleSupélec, FR

Master : Chouzenoux, Emilie and Pesquet, Jean-Christophe and Corbineau, Marie-Caroline. Foundations of Distributed and Large Scale Computing, 26h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec, MVA ENS Cachan, Master Optimization Paris Sud and ESSEC Business School, FR

Master: Pesquet, Jean-Christophe. Introduction to Optimization, 6h, MVA ENS Cachan, FR

Master: Malliaros, Fragkiskos. Machine Learning, 27h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC Business School, FR

Master: Malliaros, Fragkiskos. Network Science Analytics, 27h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC Business School and M.Sc. in Artificial Intelligence, CentraleSupélec, FR

Master: Malliaros, Fragkiskos. Introduction to Machine Learning, 33h, 2<sup>nd</sup> year course at Centrale-Supélec, FR

Master: Malliaros, Fragkiskos. Mathematical Modeling of Propagation Phenomena – Propagation on Graphs, 15h, 1<sup>st</sup> year course at CentraleSupélec, FR

Master: Sahasrabudhe, Mihir: Programming and Languages, 24h, M.Sc. in Data Science and Business Analytics, CentraleSupélec and ESSEC Business School, FR

Master: Sahasrabudhe, Mihir and Battistella, Enzo: Introduction to Machine Learning, 28h, 2nd year CentraleSupélec, FR

Master: Chouzenoux, Emilie. Advanced Machine Learning, 24h, 3rd year CentraleSupélec, FR

Master: Papadomanolaki, Maria. Deep Learning, 3rd year CentraleSupélec and MVA ENS Cachan, FR

Master: Marmin, Arthur, Cours de soutien de mathématiques, 28h, 2nd year CentraleSupélec, FR

Master: Celikkanat, Abdulkadir. Network Science Analytics, 20h, M.Sc. in Data Sciences and Business Analytics, ESSEC and 3rd year CentraleSupélec, FR

Master: Celikkanat, Abdulkadir. Mathematical Modeling of Propagation Phenomena - Propagation on Graphs, 12h, 3rd year CentraleSupélec, FR

Master: Estienne, Théo. Deep Learning, 7h30, 3rd year CentraleSupélec, FR

Master: Papadomanolaki, Maria. Deep Learning, 7h30, 3rd year CentraleSupélec, FR

Master: Oyallon, Edouard. Deep Learning, 12h, 3rd year CentraleSupélec, FR

Master: Oyallon, Edouard. Deep Learning, 1h, MVA ENS Cachan, FR

Master: Vakalopoulou, Maria. Deep Learning, 12h, 3rd year CentraleSupélec, FR

Master: Vakalopoulou, Maria. Introduction to Machine Learning, 12h, 2nd year CentraleSupélec, FR

Master: Talbot, Hugues. Discrete Optimisation, 2nd year course, CentraleSupélec, 30h, FR

Master: Talbot, Hugues. Big Data, Techniques and Platforms, M.Sc in Data Science and Business Analytics, CentraleSupélec and ESSEC Business School, 30h, FR

### 10.2.2. Lecturing activities

Chouzenoux, Emilie and Talbot, Hugues. Enjeux et technologies de l'intelligence artificielle. CentraleSupélec Exed, 2 days (×2), FR.

Oyallon, Edouard. Introduction to Deep Learning. Ateliers Statistiques de la Société Française de Statistique, 2 days, IHP, Paris, FR.

Oyallon, Edouard. Advanced Deep Learning. Mathematical Coffees, 3 hours, Huawei, Paris, FR.

Chouzenoux, Emilie. Parallel Stochastic Computing. Mathematical Coffees, 3 hours, Huawei, Paris, FR.

Vakalopoulou, Maria. Introduction to Computer Vision, Applications to Medical Images. Summer School on Artificial Intelligence, 5 hours, CentraleSupélec, FR.

Pesquet, Jean-Christophe. Proximal Splitting Methods in Image Processing, Lake Como School of Advanced Studies on Computational Methods for Inverse Problems in Imaging, 12 hours, May 2018, Italy.

### 10.2.3. Supervision

PhD (defended) : Siddhartha Chandra, Deep Structured Prediction for Dense Labeling Tasks in Computer Vision, 2014-2018, supervised by Iasonas Kokkinos. Defended on 11st May 2018.

PhD (defended) : Stefan Kinauer, Représentations à base de parties pour la vision 3D de haut niveau, 2014-2018, supervised by Iasonas Kokkinos. Defended on 31st August 2018.

PhD (defended) : Afef Cherni, Méthodes modernes d'analyse de données en biophysique analytique, 2015-2018, supervised by Emilie Chouzenoux and Marc-André Delsuc (IGBMC, Strasbourg). Defended on 20th September 2018.

PhD (defended): Clara Jaquet. Vers la simulation de perfusion du myocarde à partir d'image tomographique scanner. 2014-2018. Supervised by Hugues Talbot and Laurent Najman (ESIEE). Defended on 13 December 2018.

PhD in progress : Mihir Sahasrabudhe, Understanding Correlations in High-Dimensional Spaces and their Applications in Medical Imaging and Computer Vision, 2015-2019, supervised by Nikos Paragios

PhD in progress : Marie-Caroline Corbineau, Fast online optimization algorithms for machine learning and medical imaging, 2016-2019, supervised by Emilie Chouzenoux and J.-C. Pesquet

PhD in progress : Loubna El Gueddari, Parallel proximal algorithms for compressed sensing MRI reconstruction - Applications to ultra-high magnetic field imaging, 2016-2019, supervised by J.-C. Pesquet and Ph. Ciuciu (Inria PARIETAL)

PhD in progress: Diane Genest. Imagerie du Modele alevin de poisson / Application a la toxicologie du developpement. 2016-2019. Supervised by Hugues Talbot and Jean Cousty (ESIEE).

PhD in progress: Daniel Antunes: Contraintes géométriques et approches variationnelles pour l'analyse d'image. 2016-2019. Supervised by Hugues Talbot and Jacques-Olivier Lachaud (U. Savoie-Mont Blanc)

PhD in progress: Guillaume Chassagnon, Development of new quantitative imaging biomarkers for obstructive and interstitial lung diseases, 2016-2019, supervised by N. Paragios

PhD in progress: Maïssa Sghaier, clinical Task-Based Reconstruction in tomosynthesis, 2017-2020, supervised by E. Chouzenoux, J.-C. Pesquet and G. Palma (GE Healthcare)

PhD in progress: Arthur Marmin, Rational models optimized exactly for chemical processes improvement, 2017-2020, supervised by Marc Castella (Telecom Paristech) and J.-C. Pesquet

PhD in progress: Roger Sun, Deep learning and computer vision approaches on medical imaging and genomic data to improve the prediction of anticancer therapies' efficacy, 2017-2020, supervised by N. Paragios

PhD in progress: Marie-Charlotte Poilpre: Méthode de comparaison faciale morphologique, adaptée aux expertise judiciaires, basée sur la modélisation 3D. 2017-2020. Supervised by Hugues Talbot and Vincent Nozick (U. Paris-Est)

PhD in progress: Théo Estienne, Improving anticancer therapies efficacy through Machine Learning on Medical Imaging & Genomic Data, 2017-2020, supervised by N. Paragios

PhD in progress: Abdulkadir Celikkanat, Representation learning methods on graphs, 2017-2020, supervised by N. Paragios (TheraPanacea, Paris) and F. Malliaros

PhD in progress: Maria Papadomanolaki, Change Detection from Multitemporal High Resolution Data with Deep Learning, 2017-2021, supervised by M. Vakalopoulou and K. Karantzalos (National Technical University of Athens).

PhD in progress: Enzo Battistella, Development of novel imaging approaches for tumour phenotype assessment by noninvasive imaging 2017-2020, supervised by M. Vakalopoulou and N. Paragios.

PhD in progress: Thanh Xuan Nguyen. Détection et étude morphologique des sources extragalactiques par analyse variationnelle. 2018-2021. Supervised by Hugues Talbot and Laurent Najman (ESIEE)

PhD in progress: Marvin Lerousseau. Apprentissage statistique en imagerie médicale et en génomique pour prédire l'efficacité des thérapies anti-tumorales. 2018-2021. Supervised by Nikos Paragios (Therapanacea), Eric Deutch (IGR) and Hugues Talbot.

PhD in progress: Yunshi Huang, Majorization-Minimization approaches for large scale problems in image processing, 2018-2021, supervised by E. Chouzenoux.

PhD in progress: Georgios Panagopoulos, Influence maximization in social networks, 2018-2021, supervised by F. Malliaros and M. Vazirgiannis (École Polytechnique).

#### **10.2.4. Juries**

The faculty members of the team participated to numerous PhD Thesis Committees, HDR Committees and served as Grant Reviewers.

Emilie Chouzenoux, Marie-Caroline Corbineau, Fragkiskos Malliaros, Edouard Oyallon, Jean-Christophe Pesquet, Mihir Sahasrabudhe and Hugues Talbot were part of the jury committee for several end-of-course internship presentations in CentraleSupélec.

### **10.3. Popularization**

#### **10.3.1. Interventions**

Enzo Battistella, Marie-Caroline Corbineau, Théo Estienne and Maria Vakalopoulou have participated at the 'Demi-journée Recherche' organised by CentraleSupélec for the first year students of the school.

**GAMMA3 Project-Team (section vide)**

## GRACE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Selection

#### 9.1.1.1. Member of the Conference Program Committees

- D. Augot was in the program committee of FAB 2018, Foundations and Applications of Blockchain, Los Angeles.
- D. Augot was in the program committee of WTSC 2018, Workshop on Trusted Smart Contracts, Curaçao.
- D. Augot was in the program committee of WAIFI 2018, Workshop on the Arithmetic of Finite Fields, Bergen, Norway.
- D. Augot was in the program committee of BCT 2018, International Workshop on Cryptocurrencies and Blockchain Technology, in conjunction with ESORICS 2018, Barcelona.
- A. Couvreur was in the program committee of the *Journées codes et cryptographie (C2) 2018*.

#### 9.1.1.2. Reviewer

- D. Augot: ISIT 2018 (International Symposium on Information Theory)
- B. Smith: ANTS 2018, Indocrypt 2018, PKC 2019

### 9.1.2. Journal

#### 9.1.2.1. Member of the Editorial Boards

- F. Morain is member of the editorial board of the *Applicable Algebra in Engineering, Communication and Computing*, Springer.
- With Thomas Johansson, Marine Minier, Faina Soloveva, Victor Zinonviev, D. Augot is guest editor for a special issue of *Designs, Codes and Cryptography*, devoted to WCC2017, Workshop on Coding and Cryptography, St Petersburg, Russia.

#### 9.1.2.2. Reviewer - Reviewing Activities

- A. Couvreur: *Designs, Codes and Cryptography*, Asiacrypt 2018, IEEE Transactions on information theory, *Advances in Mathematics of communication*, etc...
- J. Lavauzelle: *Designs, Codes and Cryptography* (special issue WCC 2017)
- B. Smith: *Designs, Codes, and Cryptography*, *Finite Fields and their Applications*, *Journal of the London Mathematical Society*, *Mathematics of Computation*,

### 9.1.3. Invited Talks

- D. Augot was an invited speaker of the Munich Workshop on Coding and Cryptography (MWCC) 2018
- D. Augot was an invited speaker at ACA 2018, Application of Computer Algebra, Santiago de Compostela
- D. Augot was invited at Dasgsthul Seminar 18511, Algebraic Coding Theory for Networks, Storage, and Security, and gave here a talk.
- B. Smith was an invited speaker at the *International Workshop on the Arithmetic of Finite Fields (WAIFI 2018)* (Bergen, Norway).
- B. Smith was an invited speaker at the *Journées Codage et Cryptographie 2018* (Aussois, France).

### 9.1.4. Industrial Show

- F. Levy-dit-Vehel demoed our Private Information Retrieval protocol at “FIC”, International Security Forum, Lille, January 2018.

### 9.1.5. Leadership within the Scientific Community

- D. Augot is member of the scientific committee of the **C2-CCA seminar**, held three or four times a year, with a France wide audience, and which is the seminar of “groupe de travail” C2 “codage et cryptographie” of the GDR IM “groupement de recherche informatique mathématique”.
- D. Augot is leading the scientific committee of the **blocksem** seminar of Plateau de Saclay.

### 9.1.6. Scientific Expertise

- A. Couvreur was evaluator for research grants attribution by university of Crete.

### 9.1.7. Research Administration

- F. Morain is vice-head of the Département d’informatique of Ecole Polytechnique; in charge of years 1 and 2 for Computer Science courses.
- F. Morain is member of the Board of Master Parisien de Recherche en Informatique (MPRI).
- A. Couvreur is member of Inria Saclay *Commission Scientifique*.
- D. Augot was member of the jury for two Inria Grenoble Rhône-Alpes positions
- D. Augot was member of the jury for a position at Institut Mines-Télécom.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence :

- F. Morain, Lectures for INF311: “Introduction à l’informatique”, 15h (equiv TD), 1st year (L3), École polytechnique. Coordinator of this module (350 students).
- J. Lavauzelle, *Éléments de programmation* (1I002), 13.5h, L1, Université Pierre et Marie Curie, France
- A. Couvreur, INF411 *Introduction à la programmation et à l’algorithmique*, 40h, L3, École Polytechnique, France
- B. Smith, CSE101 *Introduction to Computer Programming*, 36h, L1, École polytechnique, France

Master :

- F. Morain is the scientific leader of the Graduate Degree *Cybersecurity: Threats and Defense* of École Polytechnique.
- A. Couvreur, *Coding theory and application to cryptography*, 20h, M2, MPRI (Université Paris VII, ENS Paris, ENS Cachan, École Polytechnique), France
- F. Morain and A. Couvreur, INF558, *Introduction to cryptology*, 36h, M1, École Polytechnique.
- B. Smith, INF568 *Advanced Cryptography*, 36h, M1, École polytechnique
- B. Smith and F. Morain, *Algorithmes arithmétiques pour la cryptologie*, 20h, M2, MPRI (Université Paris VII, ENS Paris, ENS Cachan, École Polytechnique), France
- F. Levy-dit-Vehel, discrete maths, 21h, M1, ENSTA.
- F. Levy-dit-Vehel, cryptography, 24h, M2, ENSTA.

Doctorat :

- A. Couvreur, *Introduction to code based cryptography*, 6 hours. Spring school *Post Scryptum*

### 9.2.2. Supervision

- PhD : J. Lavauzelle, *Codes à propriétés locales : constructions et applications à des protocoles cryptographiques*, Université Paris Saclay.
- PhD : E. Barelli, *Étude de la sécurité de certaines clés compactes pour le schéma de McEliece utilisant des codes géométriques*, Université Paris Saclay.

### 9.2.3. Juries

- D. Augot, A. Couvreur, and F. Levy-dit-Vehelwere in the jury of J. Lavauzelle's PhD defense, le 30 novembre 2018, à Palaiseau: *Codes à propriétés locales : constructions et applications à des protocoles cryptographiques*
- D. Augot and A. Couvreur were in the jury of E. Barelli's PhD defense, le 10 décembre 2018 à Palaiseau: *Étude de la sécurité de certaines clés compactes pour le schéma de McEliece utilisant des codes géométriques*
- D. Augot was in in the committee of
  - Victor Cauchois, le jeudi 13 Décembre 2018 à Rennes: *Couches de diffusion linéaires à partir de matrices MDS*
  - Sviat Covanov, le 5 juin 2018 à Nancy: *Multiplication algorithms: algebraic complexity and fast asymptotic methods*
  - Jonathan Detchart, le 5 décembre 2018, à Toulouse: *Optimisation de codes correcteurs d'effacements par application de transformées polynomiales*

## 9.3. Popularization

### 9.3.1. Internal or external Inria responsibilities

- D. Augot is member of the "comité de pilotage" the "BART" (Blockchain advanced research and technologies) research initiative, with Institut Mines Télécom and System-X.

### 9.3.2. Interventions

- D. Augot was interviewed on blockchains by three representatives of the French National Assembly.
- D. Augot was interviewed by "France Stratégie", an institution attached to the Prime Minister to support forward thinking of the French government.
- F. Levy-dit-Vehel demoed our Private Information Retrieval protocol with partitionned locally decodable codes

## ILDA Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Organisation

#### 9.1.1.1. General Chair, Scientific Chair

- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga (general co-chair)

#### 9.1.1.2. Member of the Organizing Committees

- VIS 2019, the IEEE Visualization Conference (SciVis, InfoVis, VAST): Anastasia Bezerianos (Workshops co-chair)
- VIS 2018, the IEEE Visualization Conference (SciVis, InfoVis, VAST): Anastasia Bezerianos (Communities co-chair)
- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Caroline Appert (Doctoral Consortium co-chair)
- IHM 2018, 30ème Conférence Francophone sur l'Interaction Homme-Machine: Caroline Appert (Doctoral Consortium panel member)

### 9.1.2. Scientific Events Selection

#### 9.1.2.1. Chair of Conference Program Committees

- CHI 2019, 37th ACM SIGCHI Conference on Human Factors in Computing Systems: Anastasia Bezerianos (SC - subcommittee chair)
- CHI 2018, 36th ACM SIGCHI Conference on Human Factors in Computing Systems: Emmanuel Pietriga (SC - subcommittee chair)

#### 9.1.2.2. Member of the Conference Program Committees

- CHI 2018, 36th ACM SIGCHI Conference on Human Factors in Computing Systems: Anastasia Bezerianos
- TheWebConf (WWW) 2019, 28th Web Conference, research track Web Content Analysis, Semantics, and Knowledge: Emmanuel Pietriga
- ESWC 2019, 16th Extended Semantic Web Conference: Emmanuel Pietriga
- ISWC 2018, 17th International Semantic Web Conference: Emmanuel Pietriga
- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga
- EICS 2018 TechNote, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Caroline Appert, Olivier Chapuis
- VOILA @ ISWC 2018, Visualizations and User Interfaces for Ontologies and Linked Data, workshop co-located with ISWC 2018: Emmanuel Pietriga
- TheWebConf (WWW) 2018, 27th Web Conference, research track Web Content Analysis, Semantics, and Knowledge: Emmanuel Pietriga
- IHM 2018, 30ème Conférence Francophone sur l'Interaction Homme-Machine: Caroline Appert

#### 9.1.2.3. Reviewer

- ACM CHI 2019, Conference on Human Factors in Computing Systems: Caroline Appert, Olivier Chapuis, Emmanuel Pietriga, Hugo Romat



- ACM UIST 2018, Interface Software and Technologies Symposium: Olivier Chapuis, Caroline Appert
- ACM ISS 2018, International Conference on Interactive Surfaces and Spaces: Olivier Chapuis
- AVI 2018, Advanced Visual Interfaces: Olivier Chapuis
- IEEE VIS 2018, Visualization Conference (InfoVis): Anastasia Bezerianos
- IHM 2018, Conference of the Association Francophone d'Interaction Homme-Machine: Olivier Chapuis, Bruno Fruchard, Marie Destandau

### **9.1.3. Journal**

#### *9.1.3.1. Member of the Editorial Boards*

- ACM ToCHI, Transactions on Computer-Human Interaction: Caroline Appert (associate editor and member of EiC search committee)

#### *9.1.3.2. Reviewer - Reviewing Activities*

- IEEE TVCG, Transactions on Visualization and Computer Graphics: Emmanuel Pietriga, Anastasia Bezerianos
- Information Visualization Journal: Emmanuel Pietriga
- Journal of Multimodal Interfaces: Caroline Appert
- Interacting with Computers: Caroline Appert

### **9.1.4. Invited Talks**

- Olivier Chapuis: Expressive and multi-user interaction, desktops, wall displays and beyond, Dresden Talks on Interaction & Visualization, Technische Universität Dresden (Germany), May 2018.
- Caroline Appert: Low-cost Tangible Interaction with TouchTokens, Conference FAB' 14, Paris Saclay, July 2018.
- Anastasia Bezerianos: How interactive visualizations can aid us make better or at least more consistent choices, University of Calgary (Canada), Nov 2018.
- Anastasia Bezerianos: Visualization Perception at large and small scales, University of St. Andrews (UK), Dec 2018.

### **9.1.5. Leadership within the Scientific Community**

- ANR, CES chair - Interaction, Robotique: Caroline Appert

### **9.1.6. Scientific Expertise**

- H2020, ERC Advanced Grants (reviewer): Caroline Appert, Emmanuel Pietriga
- ANR, CES chair - Interaction, Robotique: Caroline Appert
- NSERC, Canadian Discovery Grands (reviewer): Anastasia Bezerianos

### **9.1.7. Research Administration**

- Scientific coordinator of Inria's evaluation seminar for period 2015-2018, theme Interaction and visualization: Emmanuel Pietriga
- Deputy Director of the Laboratoire de Recherche en Informatique (LRI): Olivier Chapuis
- President of Inria Saclay - Île de France's Commission for Technological Development (CDT): Emmanuel Pietriga
- Deputy head of Pôle "Données, Connaissances, Apprentissage et Interaction" at École Doctorale Paris Saclay (ED STIC): Caroline Appert

### **9.1.8. Learned societies**

- Association Francophone d'Interaction Homme-Machine (AFIHM), in charge of the relation with the SIF: Olivier Chapuis.
- SigCHI Paris Local Chapter, chair: Anastasia Bezerianos.
- SigCHI Paris Local Chapter, vice chair: Caroline Appert.

### 9.1.9. Hiring committees

- Univ. Paris-Sud hiring committee, Commission Consultative des Spécialistes de l'Université 27ème section (computer science), members: Caroline Appert, Anastasia Bezerianos.
- Assistant Professor position, Computer Science, Université Paris-Sud, 2018: Caroline Appert, Emmanuel Pietriga.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master Co-head: Anastasia Bezerianos, M2 Interaction and HCID, Univ. Paris-Saclay (until Aug 2018).

Ingénieur: Emmanuel Pietriga, Data Visualization (INF552), 36h, 3A/M1, École Polytechnique.

Ingénieur: Caroline Appert, Data Visualization (INF552), 18h, 3A/M1, École Polytechnique.

Master: Emmanuel Pietriga, Data Visualization, 24h, M2 Informatique Décisionnelle, Univ. Paris-Dauphine.

Master: Caroline Appert, Evaluation of Interactive Systems - Introduction, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Caroline Appert, Evaluation of Interactive Systems - Advanced, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Introduction to Programming of Interactive Systems, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Career Seminar, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Mixed Reality and Tangible Interaction, 11h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Information Visualization, 10h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, HCI Project, 21h, M2 Interaction and HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Design Project, 21h, M1 HCID, Univ. Paris-Saclay.

Master: Anastasia Bezerianos, Introduction aux Systèmes Interactifs, 21h, M1 Informatique, Univ. Paris-Saclay.

Master: Raphaël James, Programming of Interactive Systems, 12h, Univ. Paris-Saclay

Master: Raphaël James, Fundamentals of HCI, 21h, Univ. Paris-Saclay

Master: Tong Xue, Design of Interactive Systems, 21h, Univ. Paris-Saclay

License: Raphaël James, Algorithm/C/C++, 29h, Polytech

License: Tong Xue, Introduction à l'informatique graphique, 33h, Univ. Paris-Sud

Licence: Bruno Fruchard, Visualisation, 10h, Télécom Paristech.

Licence: Bruno Fruchard, Interaction Homme-Machine, 8h, Télécom Paristech.

Licence: Bruno Fruchard, Paradigmes de programmation, 8h, Télécom Paristech.

Licence: Bruno Fruchard, Projet d'apprentissage collaboratif thématique (student supervision), 6h, Télécom Paristech.

IUT: Marie Destandau, Programmation et administration des bases de données, 32h, Univ. Paris-Sud

IUT: Marie Destandau, Suivi de projet, 27h, Univ. Paris-Sud

IUT: Marie Destandau, Bases de données avancées, 18h, Univ. Paris-Sud

### **9.2.2. Supervision**

PhD in progress : Eugénie Brasier, Interaction techniques for remote manipulation in multi-display environments, since October 2018, Advisors: Caroline Appert

PhD in progress : Raphaël James, Environnements de réalité physique et augmentée utilisés dans l'analyse visuelle collaborative, since October 2018, Advisors: Anastasia Bezerianos, Olivier Chapuis, Tim Dwyer

PhD in progress : Tong Xue, Interactive Visualization for Data Journalism, since October 2018, Advisors: Anastasia Bezerianos, Emmanuel Pietriga

PhD in progress : Marie Destandau, Interactive Visual Exploration of Webs of Data, since October 2017, Advisors: Caroline Appert, Emmanuel Pietriga

PhD in progress : Anna Gogolou, Iterative and expressive querying for big data series, October 2016, Advisors: Anastasia Bezerianos, Themis Palpanas

PhD in progress : Hugo Romat, Visual exploration and interactive manipulation techniques for collections of heterogeneous data and documents, since June 2016, Advisors: Caroline Appert, Emmanuel Pietriga

PhD in progress : Bruno Fruchard, Techniques d'interaction exploitant la mémoire spatiale pour faciliter l'accès rapide aux commandes et aux données, since October 2015 – December 2018, Advisors: Eric Lecolinet, Olivier Chapuis

### **9.2.3. Juries**

PhD: Kashyap Todi, Hasselt University, Belgium: Emmanuel Pietriga (rapporteur)

PhD: Anonymous, University of Swinburne, Australia: Emmanuel Pietriga (rapporteur)

PhD: Ulrich von Zadow PhD, Technische Universität Dresden, Germany: Olivier Chapuis (reviewer)

PhD: Juliette Rambourg, Université de Toulouse, France: Caroline Appert (rapporteur)

PhD: Julien Gori, Université Paris Saclay, France: Caroline Appert (président)

PhD: Marion Dumont, Université Paris-Est, France: Caroline Appert (examinateur)

PhD: Fatemeh Rajabiyazdi, University of Calgary, Canada: Anastasia Bezerianos (rapporteur)

PhD: Amira Chalbi, Université Lille 1, France: Anastasia Bezerianos (examinateur)

HDR: Marcos Serrano, Université de Toulouse, France: Caroline Appert (président)

## INFINE-POST Team

# 8. Dissemination

## 8.1. Promoting Scientific Activities

### 8.1.1. Scientific Events Organisation

#### 8.1.1.1. Member of the Organizing Committees

1. **Aline C. Viana** is Publicity co-Chair of: IEEE PICom 2018; IEEE MiSeNet 2018 (jointly with IEEE Infocom 2018); DCOSS 2018; DCOSS 2019; CoUrb 2019 (jointly with DCOSS 2019).
2. **Aline C. Viana** is Student Travel Grant co-chair of IEEE Infocom 2019.

### 8.1.2. Scientific Events Selection

#### 8.1.2.1. Chair of Conference Program Committees

1. **Emmanuel Baccelli** was chair of the RIOT Summit 2018.

#### 8.1.2.2. Member of the Conference Program Committees

1. **Aline C. Viana** is/was TPC member of: Altogel 2018; Algotel 2019; NTMS 2018; LADaS 2018.

### 8.1.3. Journal

#### 8.1.3.1. Member of the Editorial Boards

1. **Aline C. Viana** is an Editorial Board member of Urban Computing Spring book series (<http://www.springer.com/series/15552>), since Feb. 2018; an Associate Editor of ACM SIGCOMM Computer Communication Review (ACM CCR), since May 2014; an Editorial Board member of Wireless Communications and Mobile Computing Open Access Journal of John Wiley&Sons and Hindawi since 2016.

#### 8.1.3.2. Reviewer - Reviewing Activities

1. in 2018, **Emmanuel Baccelli** reviewed for ACM Transactions on IoT, ACM ICN, IEEE Transactions on Cloud Computing, IEEE Journal on Internet of Things, JSAC, PEMWN.
2. **Aline C. Viana** reviewed papers for ACM SIGCOMM CCR Journal, elsevier Pervasive and Mobile Computing Journal and Computer Communication Elsevier Journal, IEEE Trans. on Network and Service Management, on IEEE Internet Computing.

### 8.1.4. Standardization

1. **Emmanuel Baccelli and Cedric Adjih** have participated at several working groups at IETF during 2018.
2. **Emmanuel Baccelli and Cedric Adjih** have participated at several IETF hackathons during 2018.

### 8.1.5. Invited Talks

1. in 2018, **Emmanuel Baccelli** gave invited talks as EPO in Berlin, at Paris Open Source Summit, at the 2018 French-Japanese Workshop on Cybersecurity in Tokyo, and at OSIS 2018 in Paris.
2. in 2018, **Cedric Adjih** presented FIT IoT-LAB at the IoT Tunisia Forum 2018, described ICN IoT challenges at IoT Tunisia Workshop 2018, and in december, at a scientific seminar in University Paris 13.
3. **Aline C. Viana** was invited to give a talk at (1) LNCC, Petrópolis, Brazil, workshop on Urban Computing and Society in November 2018; (2) Univ. de la Rochelle, workshop CoFaBras 2018 in October 2018

4. **Aline C. Viana** was the keynote speaker of the CoUrb 2018 Workshop jointly organized with SBRC 2018, Brazil in May 2018. She will be a keynote at the GDR RSD Winter School in February 2019.

### 8.1.6. Research Administration

1. **Aline C. Viana** is the President of the Scientific Commission at Inria Saclay, responsible for the selection of candidates for the CORDI-S, Post-Doc and Delegation campaigns.
2. **Aline C. Viana** is the international coordinator of the EMBRACE associated team of Inria.
3. Together with the members of the team, **Aline C. Viana** has submitted the short proposal of the new team as well as has presented it at the B CEP and CEP. The long versio of the team proposal will be sent by next week.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

- Master : Emmanuel Baccelli, “IoT & Security”, summer semester seminar, Freie Universitaet Berlin.
- Master : Emmanuel Baccelli, “IoT & Security”, winter semester seminar, Freie Universitaet Berlin.
- Master : Emmanuel Baccelli, “Operating Systems for Small Connected Devices in the Internet of Things”, 3h cours magistral, Formation PESTO Corps des Mines, Telecom ParisTech, Paris France
- Engineering School: Cédric Adjih, “Internet of Thing”, 3h pratical courses, Telecom SudParis
- Engineering School: Cédric Adjih, “Internet of Thing”, 6h practical courses, ENSEA
- Lectures to under-graduation, masters and PhD students at foreign Universities: “Complete trajectory reconstruction from sparse mobile phone data”, 1h, Nov. 2018, LNCC, Petrópolis, Brazil
- Short-courses at conference: “Humans in the communication loop: enablers of next generation networks”, 4h, May 2017, SBRC 2018 conference, Brazil <http://www.sbrc2018.ufscar.br/minicurso-1-mc-1/>.

### 8.2.2. Supervision

- PHD Guangshuo Chen has defended his PhD in April 2018. *Thesis title*: Human Habits Investigation: from Mobility Reconstruction to Mobile Traffic Prediction. Ecole Polytechnique/ ED STIC Univ. Paris Saclay. Advisor: Aline C. Viana
- Roni Shigueta has defended his PhD in July 2018. *Thesis title*: Channel resource allocation of wireless interfaces of mobile devices.Co-tutelle: PUC-PR and Ecole Polytechnique/ ED STIC Univ. Paris Saclay. Advisors: Aline C. Viana and Mauro Fonseca (UTFPR, Brazil)
- PhD in progress: Licia Amichi, “Modelling explo- ration factor of human beings”, since Sep. 2018.
- PhD in progress: Lucas Santos, “Investigating causalities in habits of human visits”, since May 2018.
- PhD in progress: Douglas Teixeira, “Context-enhanced human predictability in short-term datasets with high spatial resolution”, since April 2018.
- PhD in progress: Joao B. Borges, “Revealing motifs in human mobility”, since Nov. 2018.
- PhD in progress: Rafael Costa, “Human-enhanced forward- ing strategies for Device-to-Device (D2D) communication”, since Sep 2017.

### 8.2.3. Juries

- **Reviewer for PhD thesis committee:**Aline Viana was reviewer for the following PhDs: H. Chelle (INP/Univ. de Toulouse, Dec. 2018); Y. Zhou (CentraleSupélec, Jui.2018); F. Coriat (UPMC, Dec. 2018);
- **Examiner for PhD thesis committee:**Aline Viana was examiner for the committees of the following PhDs: A. Boubrima (INSA-Lyon/AGORA, Feb. 2019); L. Pajević (KTH, Nov. 2018);
- **Mid-term Examiner PhD thesis committee:**Emmanuel Baccelli was mid-term reviewer for the PhD of Benjamin Beurdouche (Inria, June 2018). Aline Viana was mid-term examiner for the following PhDs: M. Sardara (Cisco/TPT, Jun. 2018); M. Charfi and I. D. Adamou (CentraleSupélec, Jun. 2018); C. Bertier (Thales/UPMC, Avr. 2018);

## LIFEWARE Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Organisation

#### 9.1.1.1. Member of the Organizing Committees

Philippe Dague and François Fages were co-organizers of the Workshop on Computational Systems Biology for Cancer **CSBC**, Institut des Systèmes Complexes, Paris, France, 24-26 jan. 2018.

### 9.1.2. Scientific Events Selection

#### 9.1.2.1. Member of the Conference Program Committees

- Gregory Batt was member of the scientific program committee of
  - the 19th International Conference on Systems Biology (ICSB 2018), Oct 28 - Nov 1, Lyon, France
- François Fages was member of the program committee of
  - **VEMDP'18** Verification of Engineered Molecular Devices and Programs. July 19, 2018, Oxford, United Kingdom. An affiliated workshop of **CAV 2018**.
  - **CMSB'18** 16th International Conference on Computational Methods in Systems Biology. 12th-14th September 2018, Faculty of Informatics, Masaryk University, Brno, CZ.
  - **MCU'18** 8th International Conference on Machines, Computations and Universality, June 28-30, 2018, Fontainebleau, France.
  - **IJCAR'18** 9th International Joint Conference on Automated Reasoning, part of the Federated Logic Conference **FLOC'18**, July 14-17, 2018, Oxford, UK.
  - **DataMod'18** 7th International Symposium “From Data to Models and Back”, 25-26 June 2018, Toulouse, France
  - **WCB'18** 13th International Workshop on Constraint-based Methods for Bioinformatics, Oxford co-located with **FLOC'18**, July 2018.

#### 9.1.2.2. Reviewer

- Jakob Ruess has reviewed scientific articles for
  - the 57th IEEE Conference on Decision and Control (CDC 2018), Dec. 17-19, Miami, USA;
  - the 17th European Control Conference (ECC 2019), June 25-28, Naples, Italy;
  - the Bioinformatics conference, Feb 22-24 2019, Prague, Czech Republic.
- Sylvain Soliman reviewed papers for
  - IJCAR and CMSB.

### 9.1.3. Journal

#### 9.1.3.1. Member of the Editorial Boards

- François Fages is member of
  - the Editorial Board of the Computer Science area of the Royal Society Open Science journal, since 2014;
  - the Editorial Board of the journal RAIRO OR Operations Research, since 2004.

### 9.1.3.2. Reviewer - Reviewing Activities

In addition to their Editorial Board and Program Committee duties,

- Grégory Batt reviewed journal articles for *ACS Synthetic Biology*, *Cell Systems*, *Nature Communications*, and *Current Opinion in Systems Biology*;
- François Fages reviewed journal articles for *PLOS Computational Biology*, *Interface Focus*, *Natural Computing*, *BMC Systems Biology* and the book *Automated Reasoning for Systems Biology and Medicine*;
- Jakob Ruess reviewed journal articles for *PLOS Computational Biology*, *Journal of Mathematical Biology*, *Journal of Computational Physics*, *Processes*, and *Entropy*;
- Sylvain Soliman reviewed journal articles for *Journal of Theoretical Biology* and *Transactions in Computational Biology and Bioinformatics*.

### 9.1.4. Invited Talks

- Virgile Andreani gave an invited talk on *Modèles de résistance bactérienne aux antibiotiques* to *Journée apprentissage de modèles statistiques et stochastiques à partir de données biologiques*, Mar 2018, Rennes, France;
- Grégory Batt gave invited talks on
  - *Balancing a genetic toggle switch by real-time control and periodic stimulations*, IEEE Conference on Control Technology and Applications (CCTA 2018), Aug 21-24 2018, Copenhagen, Denmark
  - *Impact of phenotypic variability on commitment to apoptosis*, *Computational Systems Biology of Cancer*, Sept 2018, Paris
  - *Balancing a genetic toggle switch by real-time control and periodic stimulations*, iSSB / Genoscope seminar, Dec 2018, Evry, France
- François Fages gave invited talks on
  - *Vers une informatique de la cellule: programmes biochimiques naturels et synthétiques*, Conférence de rentrée de l'ENS Paris-Saclay (3h), Sep. 2018;
  - *Modeling and Design of Biological Systems*, Discrete Models and Formal Verification in Biology, Cambridge, UK, août 2018;
  - *Modeling and Design of Biological Systems*, Summer school on New strategies in medical diagnosis and personalized medicine, Ninh Binh, Vietnam, Jul. 2018;
  - *Computer-Aided Biochemical Programming of Synthetic Micro-reactors as Diagnostic Devices*, Groupe de Travail sur la biologie systémique symbolique, GT BIOSS, Marseille, Jul. 2018;
  - *Turing Completeness of Continuous Chemical Reaction Networks, an Informatic Perspective to Systems Biology and Synthetic Biology*, MODELIFE days, Université Provence Alpes Côte d'Azur, Nice, June 2018;
  - *A Constraint-based Implementation of Tropical Equilibrations in BIOCHAM towards integrating Stability Conditions for Computing Correct Model Reductions*, Scientific Meeting, Bonn, Allemagne, March 2018;
  - *From Turing Completeness of Continuous CRN to Abstract CRN Synthesis Workflow*, Formal Methods for the Synthesis of Biomolecular Circuits, Dagstuhl, Allemagne, Feb. 2018;
  - *Coupled Models of the Cell Cycle and Circadian Clock for Chronotherapy Optimization*, Computational Systems Biology for Cancer, Paris, Jan. 2018.

Jakob Ruess gave invited talks on

- *Virtual reality for bacteria*, C3BI Seminar, Feb 2018, Paris, France.

- *Shaping bacterial population behavior through computer-interfaced control of individual cells*, Symposium on "Cybergenetics-at the interface between living and non-living regulatory systems" at the Annual Meeting of the German Association for General and Applied Microbiology (VAAM), Apr 2018, Wolfsburg, Germany.

### 9.1.5. Leadership within the Scientific Community

- Grégory Batt is
  - co-responsible of the working group on Symbolic Systems Biology (GT Bioss), gathering >150 researchers in 25 research teams; and member of
  - the Technical Committee on Systems Biology of IEEE and CSS societies;
  - the scientific board of the French research network on Systems and Synthetic Biology (GdR BioSynSys), gathering 40 labs and 300 researchers;
  - the scientific board of the French research network on Bioinformatics (GdR BIM), gathering 56 labs and several hundreds of researchers;
  - the scientific committee of the Advanced Course on Computational Systems Biology summer school, Aussois, 2019;
  - the scientific committee of the Curie International Course on Systems Biology of Cancer, Paris, 2018.
- François Fages is member of
  - the Steering Committee of the International Conference on Computational Methods in Systems Biology, CMSB, since 2008.
  - the **Think Tank of the structuring program MODELIFE** “Modélisation physique et Mathématique du vivant”, Université Provence Alpes Côte d’Azur.

### 9.1.6. Scientific Expertise

- Grégory Batt
  - was responsible for the Predictive Systems Biology chapter of the 2018-2022 strategic plan of Inria;
  - was reviewer and panel member of the ITMO Cancer/Inserm call on single-cell approaches to cancer;
  - and reviewer for the MIT International Science & Technology Initiatives (MISTI) Global Seed Funds and for the Leverhulme Trust.
- François Fages
  - was member of the Comité de sélection Maître de Conférence, ENS Paris-Saclay;
  - of the thesis advisory committee of one PhD student;
  - and evaluator of one European Research Council ERC Consolidator Grant;
  - one European Research Council ERC Starting Grant;
  - and one DigiCosme, Univ. Paris-Saclay project.
- Jakob Ruess has been a member of thesis advisory committee for two PhD students.

### 9.1.7. Research Administration

- François Fages is member of the “Comité des Projets du centre” Inria Saclay-IdF
- Sylvain Soliman is member of the “Commission Scientifique” of Inria Saclay-IdF

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching



Master: Grégory Batt (coordinator and teacher: 35h) and Jakob Ruess (25h), *Computational Biology*, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master: Grégory Batt (3h) *Synthetic Biology and Control course in Molecular and Cellular Biology* Sorbonne Université, Paris.

Master: François Fages (coordinator module 24h and teacher 12h) *C2-19 Biochemical Programming*, Master Parisien de Recherche en Informatique (MPRI), Paris.

Master: François Fages (co-coordinator module 36h and teacher 18h) and Sylvain Soliman (co-coordinator, teacher 18h) *INF555 - Constraint-based Modeling and Algorithms for Decision Making Problems* Master Artificial Intelligence, Ecole Polytechnique.

Master Modélisation en Pharmacologie Clinique et Epidémiologie Villejuif. François Fages (3h) *Méthodes de modélisation informatique des processus cellulaires: cycle cellulaire et horloge circadienne*,

Bachelor 2: Eléonore Bellot (teacher 64h) *CSE201 Object-oriented Programming in C++* TD and project supervision

Thematic Research School: Advances in systems and synthetic biology, Evry. François Fages and Sylvain Soliman (3h) *BIOCHAM Workshop*

### 9.2.2. Supervision

PhD in progress: Virgile Andreani, Calibration efficace de modèles de résistance bactérienne aux antibiotiques à l'aide d'un plan d'expériences optimal, ED STIC, Ecole Polytechnique, Sept. 2016, Gregory Batt

PhD in progress: Sebastian Sosa, "Understanding cost of protein production in yeast", ED FdV, Université Sorbonne Paris Cité, Feb. 2018, Gregory Batt

PhD in progress: Chetan Aditya, "Control of heterogenous synthetic microbial systems", ED FdV, Université Sorbonne Paris Cité, Feb. 2018, Gregory Batt

PhD in progress: Elise Weill, "Optimal control of partial differential equation systems: Application to heterogeneous cell populations", ED STIC, Ecole Polytechnique, Oct. 2018, Frédéric Bonnans and Gregory Batt

PhD in progress: Arthur Carcano, "Iterative design of single-cell experiments to learn single-cell models of biological systems", ED FdV, Université Sorbonne Paris Cité, Oct. 2018, Jakob Ruess and Gregory Batt

PhD in progress : Eléonore Bellot, "Réduction de modèles différentiels par résolution de contraintes d'algèbre tropicale (min,+)", ED STIC, Ecole Polytechnique, Sept. 2018, F. Fages & S. Soliman (50-50%)

PhD in progress : Jérémy Grignard, "Apprentissage de modèles à partir de données pour la conception d'expériences de criblage et la recherche de médicaments", ED STIC, Ecole Polytechnique, dec. 2018, F. Fages & T. Dorval, Servier (50-50%)

PhD in progress : Julien Martinelli, "Apprentissage de modèles mécanistes à partir de données temporelles, application à la personnalisation de la chronothérapie des cancers", ED STIC, Ecole Polytechnique, oct. 2018, F. Fages & A. Ballesta, Inserm (50-50%)

Master's Thesis in progress : Elisabeth Degrand, "Evolving Chemical Reaction Networks", KTH Stockholm, Sweden, F. Fages & M. Hemery (50-50%)

### 9.2.3. Juries

- Grégory Batt participated in the juries of
  - HdR of Benjamin Pfeuty, Université de Lille, *Rapporteur*, 23/11/2018
  - PhD of Arnaud Bonnaffoux, ENS de Lyon, *Président du Jury*, 12/10/2018
  - PhD of Alexandre Deloupy, Sorbonne Université, *Rapporteur*, 14/12/2018

- François Fages participated in the jurys of
  - HDR Thi Bich Han Dao, Université d'Orléans, *Président du jury*, 14 mars 2018.
  - PhD Alexandre Rocca, Université Grenoble, *Rapporteur*, 7 mai 2018.
  - PhD Benjamin Miraglio, Université de Nice, *Rapporteur*, 16 février 2018.
- Jakob Ruess was member of the jury of the PhD thesis of Mathieu Pichené, 25/06/2018.

## 9.3. Popularization

### 9.3.1. Articles and contents

Our publication on distinguishing resistance from resilience to antibiotic treatments [6] has been the object of a press release, institutional communications (at [Inria](#) and at [Institut Pasteur](#)), and some press attention, including notably by the UK daily mail journal.

### 9.3.2. Interventions

- Eléonore Bellot and Elise Weill participated at Fête de la Science in October 2018 at Inria Saclay île-de-France.
- Eléonore Bellot has received college school students for a visit to our research team on the design of logical gates in synthetic biology and their simulation in BIOCHAM.
- François Fages has received college school students for a visit to our research team with the question “Can we program any function ?”, answered negatively by proving Cantor’s theorem.

### 9.3.3. Creation of media or tools for science outreach

- François Fages has created several [BIOCHAM notebooks associated to his course at MPRI](#) and available online.
- François Fages and Sylvain Soliman have created one [BIOCHAM tutorial notebook presented at ASSB 2018](#) and available online.

## **M3DISIM Project-Team**

# **10. Dissemination**

## **10.1. Promoting Scientific Activities**

### **10.1.1. Scientific events organisation**

#### *10.1.1.1. General chair, scientific chair*

R. Chabiniok, Organization of “MRI & Modelling workshop” related to the Inria Associate Team ToFMOD at Inria Paris-Saclay where hosting 14 international speakers from France, UK, USA, Switzerland, Chile, Czech Republic from the domains of MRI, cardiology and modelling (June 21)

R. Chabiniok, Co-chair of the section “Groupe de recherche en imagerie cardiaque” at French Congress of Radiology (Journées Francophones de Radiologie, JFR), Paris (October 12-15)

D. Chapelle, Co-chair of organising committee for VPH2020 Conference (Paris, August 2020)

D. Chapelle, Session co-chair in VPH18 Conference

M. Genet, Session co-chair at the 8th World Congress on Biomechanics, Dublin (July)

F. Clément, Session *Methodological developments for Systems Biology (A)*, ICSB 2018

P. Moireau, Session co-chair in VPH18 Conference

#### *10.1.1.2. Member of organizing committees*

M. Genet, Co-organizer of the Paris-Saclay University Biomechanics Seminar Series

A. Le Gall, Member of the organizing committee of WEARE 2018

A. Le Gall, Member of the organizing committee of the youth session of the national congress of the french society anesthesiology, intensive care, and peri-operative medicine

A. Le Gall, Member of the organizing committee of the youth days of teaching of the national congress of the french society anesthesiology, intensive care, and peri-operative medicine

P. Moireau, Member of the a organizing committee of the VPH2020 conference (Paris, August 2020)

P. Moireau, Member of the organizing committee of the Inria-Saclay teams (Poems-M3disim-Defi) scientific computing seminar

### **10.1.2. Scientific events selection**

#### *10.1.2.1. Reviewer*

F. Clément *American Control Conference* 2019

P. Moireau, reviewer for VPH18

### **10.1.3. Journal**

#### *10.1.3.1. Member of editorial boards*

D. Chapelle, Member of the editorial board of journal *Computers & Structures*

D. Chapelle, Member of the editorial board of journal *ESAIM: M2AN*

#### *10.1.3.2. Reviewer - Reviewing activities*

J.M. Allain, reviewer for “Acta Biomateriala”, “Journal of the Mechanical Behavior of Biomedical Materials” and “Journal of Applied Mathematics and Mechanics”

R. Chabiniok, reviewer for “Biomechanics and Modeling in Mechanobiology”, “Transactions Of Society For Modeling And Simulations” and “Journal of Imaging”

D. Chapelle, reviewer for “Biomechanics and Modeling in Mechanobiology”, “Computers & Structures”, “International Journal for Numerical Methods in Biomedical Engineering”, “Meccanica”

F. Clément, Reviewer for “Journal of Mathematical Biology”, “PLOS Computational Biology” and “Endocrinology”

M. Genet, Reviewer for “Biomechanics and Modeling in Mechanobiology”

S. Imperiale, reviewer for “Journal of Mathematical Analysis”, “Journal of Computational Acoustics”, “SIAM Journal on Scientific Computing” and “SIAM Journal on Numerical Analysis”

P. Moireau, reviewer for “AMSES” and “IEEE Control Systems Letters”

F. Robin, Reviewer for “Journal of Mathematical Biology”

#### **10.1.4. Invited talks**

J. M. Allain, invited seminar at Century institut, France.

F. Caforio, seminar tours at the School of Biomedical Engineering and Imaging Sciences, King’s College London, UK, Simula Research Laboratory, Oslo, Norway and KFU university, Graz, Austria

R. Chabiniok, seminar tours at Institute for Clinical and Experimental Medicine, Mathematical Institute of Charles University and Children’s Heart Center at Motol University Hospital, Prague, Czech Republic

R. Chabiniok, invited lectures at Journées Francophones de Radiologie diagnostique et interventionnelle), France and at International Symposium on Modeling, Simulation and Optimization of the Cardiovascular System, Lukasklause Magdeburg, Germany

D. Chapelle, invited seminars at Politecnico di Milano (MOX), and for Dassault-Systèmes’ Living Heart Project

M. Genet, invited seminar at the School of Biomedical Engineering and Imaging Sciences, King’s College London, UK

S. Imperiale, invited lecture at ICERM, Brown University, USA

P. Le Tallec, seminar tours at University of Michigan, Michigan State University, Notre Dame University and University of Wisconsin at Madison, USA

P. Le Tallec, invited lecture at Charif University, Iran

P. Moireau, invited lectures at VPH18, CEMRACS2018 Luminy and FoMICS Summer School

P. Moireau, invited seminars at MOX, Politecnico di Milano, Italy and LMT, ENS Cachan, France

F. Robin invited seminar at Institut Élie Cartan de Lorraine, Nancy

#### **10.1.5. Leadership within the scientific community**

D. Chapelle, Member of the board of directors of the VPH Institute

D. Chapelle, Member of the steering committee of the BioMedical Engineering Institute coordinated by Ecole Polytechnique

F. Clément, member of the direction and scientific board of GdR REPRO

A. Le Gall, Chair of youth committee of SFAR (French Society of Anesthesia and Reanimation)

P. Le Tallec, Director of LMS (Solid Mechanics Laboratory) Ecole Polytechnique

P. Le Tallec, President of the Mechanics department at University Paris-Saclay

P. Moireau, Member of the steering committee of Department of Mathematics of Université Paris Saclay and Jacques Hadamard Foundation

#### **10.1.6. Scientific expertise**

R. Chabiniok, Honorary medical consultant at Saint-Thomas hospital (King’s College London)

R. Chabiniok, scientific consultant for the joint project of Institute for Clinical and Experimental Medicine in Prague (IKEM) and Czech Technical University

F. Clément, Reviewer for ANR

F. Clément, expert of the BCDE (Cell Biology, Development and Evolution) ITMO (Multi Organization Thematic Institute) of the French National Alliance for Life and Health Sciences Aviesan.

F. Clément, expert for the INRA scientific prospective on predictive approaches in biology and ecology

S. Imperiale, Consultant for CEA

P. Le Tallec, Consultant for CEA

P. Le Tallec, Consultant for Michelin

P. Moireau, Reviewer for ANR

### 10.1.7. Research administration

J.M. Allain, Scientific Advisory Board, chair BioMecAM

R. Chabiniok, in charge of the objectives of Inria Associate team ToFMOD (with UT Southwestern Medical center Dallas, USA)

R. Chabiniok, in charge of coordination of clinical-modeling projects in the M $\overline{E}$ DISIM team, Inria Saclay

D. Chapelle, Head of Science of Inria Saclay-Ile-de-France, and member of the Inria Evaluation Committee

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Bachelor: J.M. Allain, “Introductory Projects in Physics”, 10h, (L1), École Polytechnique, France

Bachelor: J.M. Allain, “Classical Mechanics”, 32h, (L2), École Polytechnique, France

Bachelor: F. Caforio, “PEIP1 S2 M2 – Mathematical analysis in two and three dimensions, linear algebra in  $\mathbb{R}^n$ ”, 22h, (L1), Polytech Paris-Sud, France

Bachelor: F. Caforio, “Math 255 – Differential calculus for physics (mathematical analysis in two and three dimensions)”, 42h, (L2), Université Paris-Sud, France

Bachelor: M. Genet, “Continuum Mechanics I”, 40h, (L3), École Polytechnique, France

Bachelor: M. Genet, “Modeling and Simulation in Industrial Mechanics”, 36h, (L3), École Polytechnique, France

Bachelor: S. Imperiale, “MA102 – Analyse pour les EDP”, 24h, (L3), ENSTA ParisTech, France

Bachelor: F. Kimmig, “Modeling and simulation in industrial mechanics”, 32h, (L3), École Polytechnique, France

Bachelor: P. Le Tallec, “MEC 431 – Mécanique des Milieux Continus 2”, (L3), École Polytechnique, France

Bachelor: P. Le Tallec, “Continuum mechanics”, 32h, (L3), Shanghai ParisTech, China

Bachelor: P. Moireau, “MAP 431 – Analyse variationnelle”, 40 h, (L3), Ecole Polytechnique, France

Bachelor: P. Moireau, “MODAL 472 – Expérimentation numérique pour les EDP”, 40 h, (L3), Ecole Polytechnique, France

Bachelor: F. Robin, “General mathematics”, 13h, (L1), Sorbonne Universités, France

Bachelor: F. Robin, “Probability and differential equation”, 22h (L2), Sorbonne Universités, France

Bachelor: F. Robin, “Power series and integral with parameters”, 20, (L2), Sorbonne Universités, France

Master: J.M. Allain, “Projects in Mechanics”, 6h, (M1), École Polytechnique, France

Master: J.M. Allain, “Cellular motility”, 32h, (M2), École Polytechnique, France

Master: J.M. Allain, “Supervision of the Experimental Center”, 45h, (M1), École Polytechnique, France

Master: D. Chapelle: “Biomechanical Modeling of Active Tissues”, 33h, (M2), Université Paris-Saclay, France

Master: M. Genet, “Plasticity and Fracture”, 18h, (M1), École Polytechnique, France

Master: S. Imperiale, “MA2610 Calcul Scientifique – Mécanique des solides”, 4h, (M1), Centrale/Supélec, France

Master: S. Imperiale, “Simnum – Programmation C++”, 18h, (M1), ENSTA ParisTech, France

Master: P. Le Tallec, “Nuclear Energy on Continuum Mechanics”, 15h, (M2), INSTN, France

Master: P. Moireau, “Biomechanical Modeling of Active Tissues”, 12h, (M2), Université Paris-Saclay, France

Master: P. Moireau, “Méthodes et problèmes inverses en dynamique des populations”, 12h, (M2), UPMC, France

Master: P. Moireau, “AMS305 – Complétion de données et identification dans les problèmes gouvernés par des équations aux dérivées partielles”, 16h, (M2), Université Paris-Saclay, France

### 10.2.2. Supervision

PhD in progress: E. Berberoglu (ETHZ, Switzerland), “Image Guided Computational Cardiac Mechanics”, started February 2017, supervisors: M. Genet and S. Kozerke (ETHZ, Switzerland)

PhD in progress: F. Caforio, “Modélisation mathématique et numérique de la propagation d’ondes élastique dans le coeur”, started: Nov. 2015, supervisors: D. Chapelle and S. Imperiale

PhD in progress: C. Della Valle, “Modélisation et estimation des dynamiques d’assemblage de protéines”, supervisors: M. Doumic and P. Moireau, Université Paris Sciences et Lettres,

PhD in progress: C. Giraudet, “Cornea biomechanics”, started 10/2018; supervisors: J.M. Allain and P. Le Tallec

PhD in progress: M. Gusseva, “Cardiac Biomechanical Modeling for Chronic Ventricular Loading”, supervisors: R. Chabiniok, D. Chapelle, T. Hussain, Université Paris-Saclay, started in December 2017

PhD: U. Khristenko, Université Paris-Saclay, P. Le Tallec, defended Jan 17th

PhD in progress: F. Kimmig, “Multi-scale modeling of muscle contraction – From stochastic dynamics of molecular motors to continuum mechanics, in interaction with experimental assays”, supervisors: M. Caruel and D. Chapelle, Université Paris-Saclay, started in September 2016

PhD in progress: A. Le Gall, “Cardiac modelling for monitoring purposes during general anaesthesia and at Intensive Care Unit”, supervisors: R. Chabiniok, D. Chapelle, E. Gayat, Université Paris-Saclay, started in November 2016

PhD in progress: C. Patte, “Lung multiscale poromechanical modeling: from breathing to pulmonary fibrosis-induced chronic remodeling”, started November 2017, supervisors: M. Genet and D. Chapelle

PhD in progress: F. Robin “Multiscale modeling of the morphodynamics in ovarian follicles”, started October 2016, supervisors: F. Clément & Romain Yvinec [INRA]

PhD in progress: N. Tueni, “Multiscale modeling of cardiac mechanics”, started January 2018, supervisors: M. Genet and J.-M. Allain

PhD in progress: F. Wijanto, “Modélisation multi-échelle des fibres de collagènes”, started: Sept. 2015, supervisors: J.-M. Allain and M. Caruel

Supervision of a project research in CEMRACS 2018 “ Multiscale population dynamics : interactions between scales in developmental and reproductive biology” (F. Clément, M. Postel and R. Yvinec)

### **10.2.3. Juries**

D. Chapelle, PhD Jury of A. Marboeuf, Ecole Polytechnique, March 8

P. Le Tallec, PhD reviewer of R. Mlika, INSA Lyon, Jan 24

P. Le Tallec, PhD Jury of Q. Pierron, ENSTA ParisTech, May 18

P. Le Tallec, PhD reviewer of L. Poirel, Inria Bordeaux, Nov 28

P. Moireau, PhD Jury of U. Khristenko, Université Paris-Saclay, Jan 17th

P. Moireau, PhD Jury of T. Kritter, Bordeaux University, Oct 1st

### **10.3. Popularization**

J.M. Allain, Co-authored a popularization paper in the “Reflets de la Physique” journal (january-february 2018)

D. Chapelle, Interview in *Sciences et Avenir* (November issue)

M. Genet, Presentation at JeudiX—Research Days at École Polytechnique

C. Patte, Fête des Sciences day, organized by Inria. October 11th

## MEXICO Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. General Chair, Scientific Chair

Matthias Függer was

- general co-chair of the IEEE International Symposium on Asynchronous Circuits and Systems (ASYNC) 2018 ([www.async2018.wien](http://www.async2018.wien))
- general co-chair of the Workshop of Emergent Algorithms and Network Dynamics (WENDY) 2018 ([wendy.paris](http://wendy.paris))

Serge Haddad is a member of the steering committee of the Petri Nets conference.

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Chair of Conference Program Committees

Thomas Chatain was co-chair of the program committee of ACSD 2018 [interests.institute/acsd2018/](http://interests.institute/acsd2018/).

#### 10.1.2.2. Member of the Conference Program Committees

- Matthias Függer was a PC member of
  - the *21st IEEE International Symposium on Design and Diagnostics of Electronic Circuits and Systems (DDECS 2018)*,
- Stefan Haar was a PC member of
  - the *18th International Conference on Applications of Concurrency to Systems Design (ACSD 2018)*,
  - the workshop *Algorithms and Theories for the Analysis of Event Data 2018 (ATAED 2018)*, and
  - the *International Workshop on Petri Nets and Modeling (PeMod '18)*.
- Laurent Fribourg was a PC member of
  - *Model-Based Design of Cyber Physical Systems (CyPhy'18)*, October 4-5, 2018, Torino, Italy,
  - *12th International Conference on Reachability Problems (RP'18)*, September 24-26 2018, Marseille, France,
  - *8th International Conference on New Computational Methods for Inverse Problems (NCMIP'18)*, Ecole normale supérieure Paris-Saclay, France.
- Serge Haddad was a PC member of
  - *12th International Workshop on Verification and Evaluation of Computer and Communication Systems (VECOS 2018)*, Grenoble, France, September 2018
  - *5th International Symposium on Formal Approaches to Parallel and Distributed Systems (FPAD 2018)*, Orléans, France, July 2018

#### 10.1.2.3. Reviewer

- Matthias Függer reviewed for Automatica, ASYNC'18, DDECS'18, Philosophical Transactions, DISC'18, PODC'18, SIROCCO'18, STACS'18.
- Stefan Schwoon reviewed for MFCS and FSTTCS.



- Stefan Haar reviewed for FOSSACS 2019.

### 10.1.3. Journals

#### 10.1.3.1. Member of the Editorial Boards

- Matthias Függer is guest editor for the special issue *Selected Papers from the 24th IEEE International Symposium on Asynchronous Circuits and Systems - ASYNC 2018*
- Stefan Haar is an associate editor for *Journal of Discrete Event Dynamic Systems*

#### 10.1.3.2. Reviewer - Reviewing Activities

- Thomas Chatain reviewed for *Journal of Discrete Event Dynamic Systems, Transactions of the Society for Modeling and Simulation International*.
- Stefan Schwoon reviewed for *Journal of Discrete Event Dynamic Systems, Acta Informatica, ACM Transactions on Programming Languages and Systems*.
- Stefan Haar reviewed for *Scientific Annals of Computer Science* and *IEEE Transactions on Automatic Control*.

### 10.1.4. Invited Talks

- Serge Haddad gave an invited talk on “Time and Stochastic Petri Nets” at the tutorials of Petri Nets 2018, the 25th June 2018, Bratislava, Slovakia
- Matthias Függer gave an invited talk at ACSD’18 on "Challenges of circuit design: Circuits as robust distributed algorithms"

### 10.1.5. Scientific Expertise

- Stefan Schwoon acted as reviewer for the ERC 2018 Starting Grant call.
- Serge Haddad was expert for the allocation of the grants "Prime d'Investissement Recherche de l'Université" of Sorbonne Université

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Note: we only list the teaching activities of researchers here, not those of our assistant and full professors.

Licence: Stefan Haar taught one half of the L3 course on formal languages (18 h EQ TD) at ENS Paris-Saclay.

Master: Matthias Függer and Stefan Haar each taught a module of 10 h EQTD in the *Jaques Herbrand* master MI course *Introduction à la recherche*.

Laurent Fribourg taught one half of M2 course on “Hybrid Automata” at MPRI (Master Parisien de Recherche en Informatique).

### 10.2.2. Supervision

PhD:

- Thomas Chatain is the supervisor of the PhD thesis of Mathilde Boltenhagen.
- Stefan Haar is the supervisor of the PhD theses of
  - **Juraj Kolčák** *Unfoldings and Abstract Interpretation for Parametric Biological Regulatory Networks*, started in March 2017, and of
  - **Hugues Mandon** on *Computational models and algorithms for the prediction of cell reprogramming strategies*, started on Oct. 1st,
 both at ENS Paris-Saclay.
- Laurent Fribourg is the supervisor of the PhD theses of

- **Adnane Saoud** *Compositional controller synthesis for cyber-physical systems*, started in October 2016, co-supervised by Antoine Girard (CentraleSupélec), funded by Digicosme projet Emergence Codecsys
- **Jawher Jerray** *Formal analysis of real-time systems*, started in October 2018, co-supervised by Etienne André (Paris 13), funded by University Paris 13, ED Galilée.
- Serge Haddad is the supervisor of the PhD thesis of Igor Khmel'nitsky on Machine Learning and Verification of Infinite-state Systems co-supervised with Alain Finkel.

### 10.2.3. Juries

- Thomas Chatain reviewed the PhD thesis of Thi Thanh Huyen Nguyen, directed by Laure Petrucci and defended at Université Paris 13 in December 2018.
- Stefan Schwoon reviewed the PhD thesis of Adrien Pommellet, directed by Tayssir Touili and defended at Université Paris 13 in July 2018. He also acted as examiner for the PhD thesis of Huu Vu Nguyen.

## 10.3. Popularization

Laurent Fribourg was interviewed by *L'Édition de l' Université Paris-Saclay* in: “La cyberphysique prépare l'usine de demain”, May 2018.

### 10.3.1. Internal or external Inria responsibilities

- Laurent Fribourg is Head of Institut Farman (FR 3311 CNRS & ENS Paris-Saclay).
- Serge Haddad is Head of the Computer Science Department of ENS Paris-Saclay.
- Stefan Haar is the president of Inria's COST-GTRI.

## PARIETAL Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. General Chair, Scientific Chair

Bertrand Thirion co-organized the “Imagerie médicale et apprentissage automatique : vers une intelligence artificielle ?” colloque at Collège de France on May, 2nd, 2018.

#### 10.1.1.2. Member of the Organizing Committees

Demian Wassermann: MICCAI 2018

Gaël Varoquaux: PyParis 2018

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Member of the Conference Program Committees

- Philippe Ciuciu: Chairman of scientific oral sessions in ISBI 2018 (Washington DC) and EUSIPCO 2018 (Roma)
- Bertrand Thirion: Member of Program Committee for the OHBM 2018 meeting (Singapore),
- Gaël Varoquaux: program committee of NIPS, ICML, ICLR.
- Alexandre Gramfort: program committee of NIPS, ICML, ICLR.
- Demian Wassermann: ISMRM 2018

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- Philippe Ciuciu: Associate Editor for EUSPICO 2018, Roma
- Philippe Ciuciu: Associate Editor for ISBI 2019, Venice
- Alexandre Gramfort: Editor, NeuroImage, Journal of Machine Learning Research (JMLR), Frontiers in Brain Imaging Methods
- Bertrand Thirion: Editor, Frontiers in Brain Imaging Methods

#### 10.1.3.2. Reviewer - Reviewing Activities

- Philippe Ciuciu is reviewer for Nature Communication, Biological Psychiatry, Plos Computational Biology, Scientific Reports, Journal of Neuroscience, IEEE Trans Signal Processing, IEEE Signal Processing Letters, IEEE Trans Medical Imaging, Frontiers in Neuroscience, Magnetic Resonance in Medicine, SIAM Imaging Science
- Gaël Varoquaux: Nature Methods, JMLR, PLOS Bio, NeuroImage, IEEE TBME, IEEE TMI, Annals of Applied Statistics, Biological Psychiatry, MedIA, Science, GigaScience
- Alexandre Gramfort: JMLR, PLOS Computational Biology, NeuroImage, IEEE TBME, IEEE TMI, IEEE TSP, MedIA, NIPS, ICML, ICLR, ICASSP, Scientific Reports, Frontiers in Brain Imaging Methods, Journal of Neuroscience Methods
- Bertrand Thirion: Nature communications, Neuroimage, Medical Image Analysis, IEEE TMI, PNAS, PLOS Comp Bio, Brain Structure and Function, NIPS, ICML, IPMI, OHBM, PRNI, AISTATS

- Denis Engemann PLOS Biology, PLOS Computational Biology, Scientific Reports, Neuroimage, Neuroimage Clinical, Human Brain Mapping, Journal of Machine Learning Research, Brain Topography, Brain Connectivity, Journal of Alzheimer's Disease, Neuroscience of Consciousness, PLOS ONE, Frontiers in Neuroscience, Journal of Computational Neuroscience, Psychiatry and Clinical Neurosciences, Sensors
- Demian Wassermann: NeuroImage, MRM, JMRI, Brain Structure and Function, Cortex, MedIA.

#### 10.1.4. Invited Talks

- Philippe Ciuciu, May 2018: Keynote Lecture at the 8th International Conference on New Computational Methods for Inverse Problems, "Distribution-controlled and optimally spread sampling trajectories for accelerated Magnetic Resonance Imaging" ([http://complement.farman.ens-cachan.fr/documents\\_web\\_NCMIP\\_2018/NCMIP\\_2018\\_program.pdf](http://complement.farman.ens-cachan.fr/documents_web_NCMIP_2018/NCMIP_2018_program.pdf))
- Philippe Ciuciu, Nov 2018: Heriott-Watt University, "SPARKLING: variable-density k-space filling curves for accelerated T2\*-weighted MRI"
- Philippe Ciuciu, Dec 2018: SHFJ, CEA Orsay, "Recent Advances in Compressed Sensing MRI for Highly Accelerated T2\*-weighted Imaging"
- Denis Engemann, Dec 2018, ICM, Paris, MEG user day, 'Preparing data for source reconstruction: dos and dongs'
- Denis Engemann, Nov 2018, ICM, Paris, 'Machine Learning with MEG EEG in Cognitive Neurology. Challenges and Opportunities'
- Denis Engemann, Nov 2018, Paris Machine Learning Meetup, invited talk, 'Random forest methods for EEG-based diagnosis of disorders of consciousness'
- Denis Engemann, Oct 2018, CRNL, Lyon, invited talk, 'Large-Scale Analysis of MEG/EEG in Cognitive Neurology. Challenges and Opportunities'
- Denis Engemann, Oct 2018, CRNL, Lyon, 3-day MNE-Python training workshop
- Denis Engemann, Apr 2018, Hôpital Erasme, Brussels, invited talk, 'The Challenge of Large-Scale and Population Analysis using MEG/EEG' LCFC
- Alexandre Gramfort, Fév 2018, invited talk, séminaire du Centre de Mathématiques Appliquées (CMAP) de l'Ecole Polytechnique
- Alexandre Gramfort, Mars 2018, invited talk, conseil d'administration Institut National du Cancer (INCA), Paris
- Alexandre Gramfort, Mars 2018, invited talk, Center for Data Science, Grenoble
- Alexandre Gramfort, June 2018, invited talk, ICML workshop of reproducibility in machine learning, Stockholm
- Alexandre Gramfort, June 2018, oral presentations, OHBM Conference, Singapore
- Alexandre Gramfort, June 2018, invited talk, DTU, Copenhagen
- Alexandre Gramfort, Aug 2018, oral presentations, Biomag International Conference, Philadelphia
- Alexandre Gramfort, Sept 2018, invited talk, Imperial College, UK
- Alexandre Gramfort, Sept 2018, invited talk, BCG Gamma FreshFromTheLabs Conference, Paris
- Alexandre Gramfort, Oct 2018, invited talk, Universität Heidelberg, Heidelberg
- Alexandre Gramfort, Nov 2018, oral presentation, Society for Neuroscience conference, San Diego
- Alexandre Gramfort, Nov 2018, invited talk, France is AI conference, Paris
- Alexandre Gramfort, Dec 2018, invited talk, Montreal Artificial Intelligence and Neuroscience (MAIN) workshop, Montreal
- Bertrand Thirion, Jan 2018, IHES, Bures sur Yvette, 'Toward a rigorous statistical framework for brain mapping'

- Bertrand Thirion, June 2018, IPHT seminary, Gif sur Yvette, 'A rigorous causal framework for brain mapping'
- Bertrand Thirion, May 2018, High Tech Peripherique conference, 'Large-scale machine learning for medical imaging'
- Bertrand Thirion, April 2018, Tau seminary, Gif sur Yvette, 'Causal analysis for Brain Mapping'
- Bertrand Thirion, July 2018, JST workshop in Paris, 'Toward rigorous e-sciences: High-dimensional statistical inference'
- Bertrand Thirion, Dec 2018, ESSI colloquium, Evry, 'High-dimensional statistical inference for e-sciences'
- Demian Wassermann, Feb 2018, Stanford Medical School, 'Microstructure Imaging with Diffusion MRI'
- Demian Wassermann, June 2018, Harvard Medical School, 'Random Effect Models for Structure Connectivity-Based Cortical Clustering'
- Demian Wassermann, June 2018, New York University, 'Recent advances in Micro and Macro scale brain analysis with Diffusion MRI'
- Gaël Varoquaux, Sept 2018, IPAM (Institute for Pure and Applied Mathematics), UCLA, Long Program Science at Extreme Scales: Where Big Data Meets Large-Scale Computing
- Gaël Varoquaux, August 2018, keynote speaker NeuroInformatics, Montreal
- Gaël Varoquaux, August 2018, invited talk MILA (Montreal Institute for Learning Algorithms), Montreal
- Gaël Varoquaux, August 2018, invited talk MNI (Montréal Neurological Institute), Montréal
- Gaël Varoquaux, August 2018, invited talk Institut de Gériatrie, Montréal
- Gaël Varoquaux, June 2018, invited talk, BCG Gamma days, Paris
- Gaël Varoquaux, Nov 2018, invited talk, chair DAMI (Data, Analytics and Models for Insurance), Paris
- Gaël Varoquaux, Feb 2018, invited talk, Gatsby institute for theoretical neuroscience, UCL, London
- Gaël Varoquaux, Dev 2018, invited talk, Journée Nationale de la Science Ouverte, Paris
- Gaël Varoquaux, Sept 2018, invited talk, MASES International Workshop on Machine Learning and Software Engineering in Symbiosis, ASE (Automated Software Engineering), Montpellier
- Gaël Varoquaux, Sept 2018, invited talk, MICCAI workshop, Granada
- Gaël Varoquaux, June 2018, invited talk, Machine learning in the real world, Paris
- Gaël Varoquaux, July 2018, invited talk, DataIA–Japan Science and Technology agency, Paris
- Gaël Varoquaux, Feb 2018, invited talk, Pycon Belarus, Minsk
- Gaël Varoquaux, May 2018, invited talk, Brainhack Paris
- Gaël Varoquaux, Oct 2018, invited talk, Biomarker days, Toulouse

#### ***10.1.5. Leadership within the Scientific Community***

- Demian Wassermann: Organising committee of the BrainHack community — Paris Chapter
- Demian Wassermann: ISMRM and MICCAI action organization towards reducing gender and minority biases.

#### ***10.1.6. Scientific Expertise***

- Philippe Ciuciu has been member of the 45th ANR Scientific Evaluation Committee in charge of evaluating the projects dealing with maths, signal processing, computer science methods for medicine and biology.

- Alexandre Gramfort has been member of the 45th ANR Scientific Evaluation Committee (CE23) in charge of evaluating the projects dealing with machine learning, data knowledge, statistics, optimization.
- Demian Wassermann FET-OPEN ERCA Action
- Gaël Varoquaux was expert for the startup incubator agoranov

### 10.1.7. Research Administration

- In Nov 2018, Philippe Ciuciu Elected Vice-Chair of the SAT Biomedical Image & Signal Analytics (EURASIP technical committee) for 2019-2020.
- In Dec 2018, Philippe Ciuciu has been Elected IEEE Signal Processing Society Representative at the 2019 IEEE ISBI conference.

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Master: Alexandre Gramfort, Optimization for Data Science, 20h, Msc 2 Data Science Master Ecole Polytechnique, France

Master: Alexandre Gramfort, DataCamp, 20h, Msc 2 Data Science Master Ecole Polytechnique, France

Master: Alexandre Gramfort, Source Imaging with EEG and MEG, 7h, Msc 2 in Biomedical Imaging at Télécom Paristech

Doctoral School: Alexandre Gramfort, Sparse Optimization, 4h, school at iTWIST workshop, Marseille

Master: Bertrand Thirion, Functional neuroimaging and BCI, 12h, Master MVA, ENS Paris-Saclay, France

Master: Philippe, fMRI course: From acquisition to data Analysis, 6h, Msc 2 in Biomedical Imaging, Université Paris-Sud

Bachelor: Demian Wassermann, CSE201 class, 15h, C++ programming, Ecole Polytechnique

Extension: Demian Wassermann, Data Science, 20h, Ecole Polytechnique

Master: Gaël Varoquaux, Machine learning in Python, 3h, ENSAE

Master: Gaël Varoquaux, Functional brain connectivity, 7h, Msc 2 in Biomedical Imaging at Télécom Paristech

### 10.2.2. Supervision

The following PhD defense have taken place

HdR : Gaël Varoquaux, Estimating brain functional connectivity and its variations from fMRI, Université Paris VI, 25/03/2018

PhD : Stanislas Chambon, *Learning from electrophysiology time series: From scoring to event detection*, Université Paris-Saclay, 14/12/2018, under the direction of Alexandre Gramfort

PhD : Tom Dupré La Tour, *Non-linear models for neurophysiological time series*, Université Paris-Saclay, 26/11/2018, under the direction of Alexandre Gramfort

PhD : Yousra Bekhti, *Contributions to sparse source localization for MEG/EEG brain imaging*, Université Paris-Saclay, 22/03/2018, under the direction of Alexandre Gramfort

PhD : Mainak Jas, *Advances in automating analysis of neural time series data*, Université Paris-Saclay, 12/04/2018, under the direction of Alexandre Gramfort

PhD : Arthur Mensch, , Université Paris-Saclay, 30/09/2018, under the direction of Bertrand Thirion, Gaël Varoquaux and Julien Mairal.

PhD : Carole Lazarus, , Université Paris-Saclay, 30/09/2018, under the direction of Philippe Ciuciu.

PhD in progress : Pierre Ablin, , 01/10/2016, coadvised by Alexandre Gramfort and Jean-François Cardoso,

PhD in progress : Mathurin Massias, , 01/10/2016, coadvised by Alexandre Gramfort and Joseph Salmon,

PhD in progress : Hicham Janati, , 01/10/2017, , coadvised by Alexandre Gramfort and Marco Cuturi

PhD in progress : Quentin Bertrand, , 01/10/2018, coadvised by Alexandre Gramfort and Joseph Salmon

PhD in progress : Hubert Banville, , 01/10/2018, coadvised by Alexandre Gramfort and Denis Engemann

PhD in progress : David Sabbagh, , 01/10/2018, coadvised by Alexandre Gramfort and Denis Engemann

PhD in progress : Jérôme-Alexis Chevalier, , 01/10/2017, coadvised by Bertrand Thirion and Joseph Salmon

PhD in progress : Hugo Richard, , 01/10/2018, coadvised by Bertrand Thirion and Olivier Grisel

PhD in progress : Thomas Bazeille, , 01/10/2018, advised by Bertrand Thirion

PhD in progress : Tuan Binh Nguyen, , 01/10/2018, coadvised by Bertrand thirion and Sylvain Arlot

PhD in progress : Valentin Iovene, , 01/10/2018, advised by Demian Wassermann

PhD in progress : Antonia Machlouzarides Shalit, , 01/10/2018, coadvised by Demian Wassermann and Bertrand Thirion

PhD in progress : Loubna El Gueddari, , 01/10/2016, coadvised by Philippe Ciuciu and Alexandre Vignaud

PhD in progress : Hamza Cherkaoui, , 01/10/2017, advised by Philippe Ciuciu

PhD in progress : Patricio Cerda Reyes, , 01/10/2016, coadvised by Gaël Varoquaux and Balazs Kegl

PhD in progress : Maeliss Jallais, , 01/10/2018, advised by Demian Wassermann

PhD in progress : Jerome Dockès, , 01/10/2016, coadvised by Fabian Shuchanek and Gaël Varoquaux

### 10.2.3. *Juries*

Alexandre Gramfort has been involved in the following PhD committees:

- Marine Le Morvan (Reviewer) / Mines ParisTech
- Jérémy Guillon (Examiner) / Inria Paris
- Rémi Leblond (Examiner) / Inria Paris
- Andreas Trier (Reviewer) / DTU, Copenhagen

Alexandre Gramfort was involved in a hiring committee for Telecom ParisTech and a hiring committee for Université Paris Diderot.

Bertrand Thirion has been involved in the following committees:

- PhD Sebastian Tarando / ESSI Evry
- PhD Guillermo Gallardo / Inria Sophia-Antipolis
- Habilitation Florent Meyniel / Université Paris VI

Bertrand Thirion was involved in a hiring committee for Centrale-Supelec.

Gaël Varoquaux was involved in a hiring committee for Centrale-Supelec and a hiring committee for Inria Saclay.

Demian Wassermann was involved in the following committees:

- PhD Guillermo Gallardo / Inria Sophia-Antipolis
- Habilitation Daniel Margulies / ICM – UPMC

## 10.3. Popularization

### 10.3.1. Internal or external Inria responsibilities

- Philippe Ciuciu has been member of the Inria Saclay scientific commission since 2016
- Alexandre Gramfort is member of the steering committee of the Paris-Saclay Center for Data Science
- Alexandre is a Member of the technical development committee of Inria Saclay since Dec 2018
- Bertrand Thirion is Deputy head of research of Inria Saclay research center
- Bertrand Thirion, Leader of the Datasense research axis of the Digicosme Labex
- Bertrand Thirion, Member of the steering committee of the Dataia Convergence Institute
- Bertrand Thirion, Member of the steering committee of the Computer Science Department of Paris Saclay University.
- Gaël Varoquaux was Member of the technical development committee of Inria Saclay until Dec 2018
- Gaël Varoquaux is member of the doctoral monitoring committee of Inria Saclay
- Gaël Varoquaux is member of the steering committee of the Paris-Saclay Center for Data Science

### 10.3.2. Articles and contents

- Gaël Varoquaux was interviewed by [ActuIA](#)
- Alexandre Gramfort was interviewed by [ActuIA](#)
- Alexandre Gramfort was interviewed by [Libération](#)
- Alexandre Gramfort, Olivier Grisel Gaël Varoquaux are interviewed by [Les Echos](#)

### 10.3.3. Interventions

- Olivier Grisel gave an interview at the Paris Open Source Summit

### 10.3.4. Internal action

- In June 2018, Philippe Ciuciu did a training session on the DRF Impulsion funding mechanism at the seminar of new hired CEA DRF scientists"
- In April 2018, Denis Engemann and Alexandre Gramfort gave a 2-day educational course for cognitive neuroscientists at NeuroSpin on analysis of MEG and EEG data using Python.

### 10.3.5. Creation of media or tools for science outreach

Philippe Ciuciu made Two videos together with the CEA communication division on COSMIC project (funded by CEA)

- Long version: [https://www.youtube.com/watch?v=gQh6D\\_vpkSo&t=23s&fbclid=IwAR0OcU3JEy4KQmo6DD-iN8otjlowyeXDkEF7ljniuzOkI-aWhGqyHhQzruo](https://www.youtube.com/watch?v=gQh6D_vpkSo&t=23s&fbclid=IwAR0OcU3JEy4KQmo6DD-iN8otjlowyeXDkEF7ljniuzOkI-aWhGqyHhQzruo)
- Short version: [https://www.youtube.com/watch?v=p\\_KMEQGK-WA&fbclid=IwAR3xcf8e98M77IF9mpQSDWfKppjOt7p](https://www.youtube.com/watch?v=p_KMEQGK-WA&fbclid=IwAR3xcf8e98M77IF9mpQSDWfKppjOt7p)

Gaël Varoquaux, Olivier Grisel, Alexandre Gramfort, Guillaume Lemaître, Joris van den Bossche participated in a general-public movie about scikit-learn: <https://www.youtube.com/watch?v=twqdxTCkeyk&t=9s>



## PARSIFAL Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Organisation

#### 9.1.1.1. General Chair, Scientific Chair

D. Miller is the General Chair of LICS (Logic In Computer Science), starting July 2018.

#### 9.1.1.2. Member of the Organizing Committees

D. Miller is on the Steering Committee for the FSCD conference series and the CPP conference series.

D. Miller is a member of the SIGLOG advisory board, starting November 2015.

### 9.1.2. Scientific Events Selection

#### 9.1.2.1. Chair of Conference Program Committees

B. Accattoli co-chaired LSFA 2018: 13th Workshop on Logical and Semantic Frameworks with Applications, Fortaleza, Brazil, September 26-28, 2018.

G. Scherer chaired ML2018: the ML Family Workshop 2018 in Saint Louis, US, on Friday September 28th 2018.

L. Straßburger chaired TYDI 2018: Workshop on “Twenty Years of Deep Inference” in Oxford July 7, 2018.

#### 9.1.2.2. Member of the Conference Program Committees

B. Accattoli was on the PPDP 2018 Program Committee: 20th International Symposium on Principles and Practice of Declarative Programming, Frankfurt, Germany, 3–5 September 2018.

S. Graham-Lengrand was on the LFMTF 2018 Program Committee: Workshop on Logical Frameworks and Meta-Languages: Theory and Practice, Oxford, UK, 7 July 2018.

L. Straßburger was on the PC for LACompLing 2018: Symposium on Logic and Algorithms in Computational Linguistics, Stockholm, 28–31 August 2018

D. Miller was on the program committee for IJCAR-2018: 9th International Joint Conference on Automated Reasoning, Oxford, 14-17 July 2018.

D. Miller was a member of the jury for selecting the 2018 Ackermann Award (the EACSL award for outstanding doctoral dissertation in the field of Logic in Computer Science).

Member of the EATCS Distinguished Dissertation Award Committee since March 2013.

G. Scherer was on the POPL 2019 Program Committee: Principles Of Programming Languages, 13-19 January 2019 Cascais/Lisbon, Portugal

#### 9.1.2.3. Reviewer

G. Scherer reviewed for Computer Science Logic (CSL).

L. Straßburger was reviewer for the following conferences:

- LICS 2018
- IJCAR 2018
- FSCD 2018
- AiML 2018
- ARQNL 2018

B. Accattoli reviewed for LICS 2018, FSCD 2018, PPDP 2018, LSFA 2018.

### 9.1.3. Journal

#### 9.1.3.1. Member of the Editorial Boards

D. Miller is on the editorial board of the following journals:

- Journal of Automated Reasoning
- Journal of Applied Logics

#### 9.1.3.2. Reviewer - Reviewing Activities

G. Scherer reviewed for Mathematical Structures in Computer Science (MSCS).

L. Straßburger was reviewer for the following journals:

- Transactions on Computational Logic, ToCL (2x)
- Logical Methods in Computer Science, LMCS
- Mathematical Structures in Computer Science, MSCS
- Journal of Logic, Language and Information, JLLI
- Journal of Automated Reasoning, JAR
- Notre Dame Journal of Formal Logic, NDJFL

B. Accattoli reviewed for Logical Methods in Computer Science (LMCS) and Theoretical Computer Science (TCS).

### 9.1.4. Invited Talks

S. Graham-Lengrand gave an invited talk at the JFLA 2018 (January), and an invited lecture series at the 8th Summer School on Formal Techniques (May).

B. Accattoli gave an invited talk at the *IFIP Working Group 1.6: Rewriting* on July 8 2018 in Oxford, UK.

D. Miller was an invited speaker and panelist at the Workshop on Proof Theory and its Applications, 6–7 September 2018 in Ghent, Belgium.

D. Miller gave a colloquium talk at the Technical University of Vienna on 31 October 2018 and at the Cyber Security Lab, NTU, Singapore, 21 March 2018.

### 9.1.5. Scientific Expertise

G. Scherer participated to a scientific expertise of the implementation of the Tezos blockchain – implemented in OCaml.

### 9.1.6. Research Administration

L. Straßburger was reviewer for the NWO (Netherlands Organisation for Scientific Research).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : G. Scherer, Programmation Fonctionnelle, 50, L1, Paris 8 (Vincennes / Saint Denis), France

Licence : K. Chaudhuri, Programmation avancée en OCaml, 40 hours eq TD, L3, École polytechnique, France

Bachelor : K. Chaudhuri, Computer programming, principal instructor, École polytechnique, France (This program has no direct equivalent in the traditional French university system; the closest would be L1.)

Licence: S. Graham-Lengrand, “*INF412: Fondements de l’Informatique: Logique, Modèles, Calcul*”, 32 hours eq. TD, L3, École Polytechnique, France.

Master: S. Graham-Lengrand, “*INF551: Computational Logic*”, 45 hours eq. TD, M1, École Polytechnique, France.

Master: B. Accattoli, “*Logique linéaire et paradigmes logiques du calcul*”, 18 hours eq. TD, M2, Master Parisien de Recherche en Informatique (MPRI), France.

Master: D. Miller, “*Logique linéaire et paradigmes logiques du calcul*”, 18 hours eq. TD, M2, Master Parisien de Recherche en Informatique (MPRI), France.

Summer School: B. Accattoli, “The Complexity of Beta-reduction”, 4.5h, International School on Rewriting (ISR) 2018, Cali, Colombia.

### **9.2.2. Supervision**

PhD : Sonia Marin, Modal Proof Theory through a Focused Telescope, Université Paris-Saclay, 30 January 2018, encadrant(s): Lutz Straßburger, Dale Miller.

PhD in progress: Ulysse Gérard and Matteo Manighetti supervised by Dale Miller.

PhD in progress: François Thiré (since 1st October 2016), supervised by S. Graham-Lengrand (joint with G. Dowek).

PhD in progress: Maico Leberle supervised by Dale Miller and Beniamino Accattoli.

### **9.2.3. Juries**

D. Miller was the a reporter for the PhD juries of Michael Lettmann (TU Vienna, 30 October 2018)

## **9.3. Popularization**

L. Straßburger serves as member of the “commission développement technologique (CDT)” for Inria Saclay–Île-de-France (since June 2012).

F. Lamarche was site co-ordinator for the Activity Report for Inria Saclay–Ile-de-France.

### **9.3.1. Interventions**

G. Scherer and M. Manighetti participated the “Fête de la Science” exhibit at Inria Saclay on the whole day of October 11th, 2018. They manned an activity on sorting algorithms for colored plastic pieces.

### **9.3.2. Internal action**

G. Scherer spoke at the “Unithé ou café” meeting, a Saclay-internal popularization meeting, on February 1st, 2018.

## PETRUS Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organization

#### 10.1.1.1. Member of the Organizing Committees

- Luc Bouganim: Co-organizer of Ecole thématique BDA Masses de Données Distribuées, Aussois, June 2018
- Iulian Sandu Popa: 34ème Conférence sur la Gestion de Données – Principes, Technologies et Applications (BDA 2018), Bucarest, 22-26 octobre 2018
- Iulian Sandu Popa: Colloque National Capteurs et Sciences Participatives (CASPA), Paris, 1-4 avril 2019

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Member of the Conference Program Committees

- Nicolas Ancaux: VLDB'18, VLDB'19, SIGMOD'19, DATA'18, BDA'18
- Luc Bouganim: Associate Editor for VLDB'18
- Philippe Pucheral: DATA'18, MOBILITY'18
- Iulian Sandu Popa: DATA'18, ICDE'19, IEEE MobileCloud'19

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- Nicolas Ancaux: Associate Editor of the VLDB Journal

#### 10.1.3.2. Reviewer - Reviewing Activities

- Iulian Sandu Popa: ACM Transactions on Spatial Algorithms and Systems, IEEE Transactions on Parallel and Distributed Systems, Geoinformatica

### 10.1.4. Invited Talks

- Iulian Sandu Popa: "Highly Distributed Queries on Personal Data Management Systems with Strong Privacy Guarantees", New Jersey Institute of Technology (NJIT), Newark, April 9, 2018. [https://web.njit.edu/cs/CS\\_Seminar/abstract.php?id=391](https://web.njit.edu/cs/CS_Seminar/abstract.php?id=391)
- Célia Zolynski and Nicolas Ancaux: "L'avènement d'une gestion individuelle de nos données personnelles. Regards croisés sur certains enjeux de vie privée", Kick-Off of the DATAIA Institute, Fev. 2018. slides: <http://petrus.inria.fr/~ancaux/papers/D36.pdf>
- Philippe Pucheral: "Privacy-by-Obligation: Une réponse au paradoxe du Cloud Personnel ?", Inria Scientific days, June 28th, 2018.
- Célia Zolynski and Nicolas Ancaux: "GDPR and Personal Cloud: from Empowerment to Responsibility (GDP-ERE)", DATAIA-JST International Symposium on Data Science and AI, July 2018. Link: <http://dataia.eu/actualites/dataia-jst-international-symposium-data-science-and-ai>, slides: [http://dataia.eu/sites/default/files/DATAIA\\_JST\\_International\\_Symposium/DATAIA-JST\\_SYMPOSIUM\\_Nicolas\\_Anciaux\\_Celia\\_Zolynski.pdf](http://dataia.eu/sites/default/files/DATAIA_JST_International_Symposium/DATAIA-JST_SYMPOSIUM_Nicolas_Anciaux_Celia_Zolynski.pdf)
- Philippe Pucheral: "Protection de la vie privée : potentiel et paradoxe du Cloud Personnel", SystemX seminar, October 18th, 2018. <https://www.irt-systemx.fr/philippe-pucheral-animera-un-seminarsystemx-le-18-octobre/>

- Nicolas Ancaux: "Personal Data Management Systems using Trusted Execution Environments", Zenith seminar, Inria / Univ. Montpellier, Nov. 2018. <https://team.inria.fr/zenith/zenith-seminar-nicolas-anciaux-personal-data-management-systems-using-trusted-execution-environments-21-nov-2018/>

### 10.1.5. Research Administration

- Philippe Pucheral: Member of the HDR committee of the STV doctoral school (UVSQ) since 2014
- Philippe Pucheral: Member of the steering committee of the ED STIC doctoral school of University Paris-Saclay, 'Data, Knowledge and Interactions' committee (about 250 PhD students) since 2014
- Philippe Pucheral: Member of the bureau of the DAVID lab board since 2016
- Nicolas Ancaux: Member of the Council of the Doctoral College of the University Paris-Saclay
- Nicolas Ancaux: Correspondent for the Doctoral school ED STIC of University Paris-Saclay at Inria Saclay
- Nicolas Ancaux: Responsible for the 'Mission Jeunes Chercheurs' (MJC) at Inria Saclay
- Nicolas Ancaux: Responsible for the 'Formation par la Recherche' (FPR) at Inria Saclay
- Nicolas Ancaux: Member of the bureau of the DAVID lab board
- Luc Bouganim: Member of the Scientific Commission (CS) of Inria Saclay-IDF (Cordi-S, Post-Doc, Delegation)
- Luc Bouganim: Member of the Commission for Technological Development (CDT) of Inria Saclay-IDF

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

- Licence : Iulian Sandu Popa, Bases de données (niveau L3), 96, UVSQ, France. Guillaume Scerri, Initiation aux bases de données (niveau L2), 63, UVSQ, France. Guillaume Scerri, Fondements de l'informatique (niveau L1), 36, UVSQ, France. Guillaume Scerri, Théorie des Langages (niveau L2), 45, UVSQ, France.
- Master : Iulian Sandu Popa, Bases de données relationnelles (niveau M1), Gestion des données spatiotemporelles (niveau M2), Sécurité des bases de données (niveau M2), 96, UVSQ, France. Philippe Pucheral, responsable of the DataScale master, courses in M1 and M2 in databases and in security, introductory courses for jurists, UVSQ, France. Luc Bouganim, Bases de données relationnelles et XML (niveau M1 et M2), 40, AFTI, France. Guillaume Scerri, Bases de données relationnelles (niveau M1), 36, UVSQ, France. Guillaume Scerri, Sécurité et bases de données pour juristes, 4.5, UVSQ, France. Guillaume Scerri, Sécurité, 18, UVSQ, France.
- Engineers school : Nicolas Ancaux, courses on Databases (module IN206, niveau M1), 21, and Advanced databases (module ASI13, niveau M2), 24, at ENSTA ParisTech. Nicolas Ancaux, Systèmes d'Information "privacy by design" (niveau M1), 30, at ENSIIE Evry, France. Luc Bouganim, Systèmes d'Information "privacy by design" (niveau M1), 42, ENSIIE Evry et INSA CVL, France.

### 10.2.2. Supervision

- PhD : Paul Tran Van, Partage de documents sécurisé dans le Cloud Personnel, UVSQ, April 3, 2018, Nicolas Ancaux and Philippe Pucheral
- PhD in progress: Axel Michel, Secure Distributed Computations, October 2015, Benjamin Nguyen and Philippe Pucheral
- PhD in progress : Julien Loudet, Highly Distributed Queries on Personal Data Management Systems with Strong Privacy Guarantees, July 2016, Luc Bouganim and Iulian Sandu Popa

- PhD in progress: Riad Ladjel, Secure Distributed Computation for the Personal Cloud, October 2016, Nicolas Ancaix, Philippe Pucheral and Guillaume Scerri
- PhD in progress: Dimitris Tsoulovos, Privacy-by-design Middleware for Urban-scale Mobile Crowd-sensing, April 2017, Nicolas Ancaix and Valérie Issarny (Inria Mimove)
- PhD in progress: Robin Carpentier, Secure and efficient data processing in trusted execution environments for the personal cloud, October 2018, Nicolas Ancaix, Iulian Sandu Popa and Guillaume Scerri

### **10.2.3. Juries**

- Nicolas Ancaix : Reviewer of the PhD of Sakina MAHBOUBI (Université de Montpellier, 21/11/2018)
- Luc Bouganim : Reviewer of the PhD of Arezki Laga (University of Bretagne Sud, 20/12/2018)

## **10.3. Popularization**

- Nicolas Ancaix: "Respectez les données personnelles de vos clients avec PLUGDB", Inria Tech Talk, French Tech Central - Station F, 12 Dec. 2018. video: [https://youtu.be/9y3VdMe\\_sAQ](https://youtu.be/9y3VdMe_sAQ), slides: <https://french-tech-central.com/events/inria-tech-talk-respectez-les-donnees-personnelles-de-vos-clients-avec-plugdb/>
- Nicolas Ancaix: auditions de la mission de préfiguration du « Health Data Hub », DREES, July 2018. Slides: <http://petrus.inria.fr/~ancaix/papers/D39.pdf>
- Nicolas Ancaix: interview, magazine La Recherche N°535, Mai 2018, "IA : les défis de la stratégie française", pp.14-16, by Gautier Cariou. Link: <https://www.larecherche.fr/parution/mensuel-535>

## POEMS-POST Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Advisory and management activities

- E. Lunéville is the Head of UMA (Unité de Mathématiques Appliquées) at ENSTA ParisTech.
- P. Ciarlet is coordinator of the *Mathematics & Engineering Program* of the Mathematics Hadamard Labex (LMH)

### 10.1.2. Scientific events organisation end selection

- S. Chaillat co-organized with X. Claeys (LJLL, EPI ALPINES) the symposium of the International Association for Boundary Element Methods (IABEM), which took place in Paris in June 2018. They were about 140 attendees.
- A.-S. Bonnet-Ben Dhia co-organized a workshop entitled “*Advanced Theoretical and Numerical Methods for waves in structured Media*” in Paris in March 2018, in the framework of the GDR Ondes. They were about 90 attendees.

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- A. S. Bonnet-Ben Dhia is an associate editor of SIAP (*SIAM Journal of Applied Mathematics*).
- M. Bonnet is an associate editor of *Engineering Analysis with Boundary Elements*, *Journal of Optimization Theory and Application* and *Journal of Integral Equations and Applications*. He is in the editorial board of *Inverse Problems* and *Computational Mechanics*.
- P. Ciarlet is an editor of ESAIM:M2AN (*Mathematical Modeling and Numerical Analysis*).
- P. Joly is a member of the Book Series Scientific Computing of Springer Verlag.

#### 10.1.3.2. Reviewer - Reviewing Activities

The team members regularly review papers for many international journals.

## 10.2. Teaching - Supervision

### 10.2.1. Teaching

The permanent members of POEMS are involved in the engineering program at ENSTA ParisTech, the master program “*Analyse, Modélisation et Simulation*” (AMS) and the master program “*Modélisation et Simulation en Mécanique des Structures et Systèmes Couplés*” (MS2SC) of Université Paris-Saclay.

Eliane Bécache

- *Fonctions de variable complexe*, ENSTA (1st year)
- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Analyse et approximation par éléments finis d’EDP*, ENSTA (2nd year) and Master AMS (M1)
- *Résolution des problèmes de diffraction par équations intégrales*, ENSTA (3rd year), Master AMS (M2) and Master MS2SC (M2)

Marc Bonnet

- *Problème inverses et Identification*, Master MS2SC (M2)

- Co-head of the master program "*Modélisation et Simulation en Mécanique des Structures et Systèmes Couplés*" (MS2SC) of Université Paris-Saclay

Anne-Sophie Bonnet-Ben Dhia

- *Fonctions de variable complexe*, ENSTA (1st year)
- *Théorie spectrale des opérateurs autoadjoints*, ENSTA (2nd year) and Master AMS (M1)
- *Propagation et diffraction dans les guides d'ondes*, ENSTA (3rd year) and Master AMS (M2)
- *Non Destructive Testing*, Master "Acoustical Engineering" (M2)
- *Propagation des ondes élastiques dans les solides*, Master MS2SC (M2)

Laurent Bourgeois

- *Outils élémentaires pour l'analyse des équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *Complétion de données et identification dans les problèmes gouvernés par des équations aux dérivées partielles*, ENSTA (3rd year) and Master AMS (M2)

Stéphanie Chaillat

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Résolution des problèmes de diffraction par équations intégrales*, ENSTA (3rd year), Master AMS (M2) and Master MS2SC (M2)
- *Equations intégrales et multipôles rapides*, Ecole doctorale MODES (Univ. Paris Est, Marne la Vallée)

Colin Chambeyron

- *Remise à niveau en maths*, Licence (1st year), Paris-Dauphine University
- *Outils mathématiques*, Licence (L1), Paris-Dauphine University
- *Analyse - Optimisation*, Licence (L1), Paris-Dauphine University
- *Algèbre linéaire*, Licence (L2), Paris-Dauphine University

Patrick Ciarlet

- *Analyse et approximation par éléments finis d'EDP*, ENSTA (2nd year) and Master AMS (M1)
- *Préformation filière ModSim*, ENSTA (3rd year)
- *Calcul scientifique parallèle*, ENSTA (3rd year) and Master AMS (M2)
- *Modèles mathématiques et leur discrétisation en électromagnétisme*, ENSTA (3rd year) and Master AMS (M2)
- Deputy head of the master program "*Analyse, Modélisation et Simulation*" of Université Paris-Saclay

Sonia Fliss

- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Homogénéisation périodique*, ENSTA (3rd year), Master AMS(M2), Masters ANEDP, M4S
- *Propagation des ondes dans des milieux périodiques*, ENSTA (3rd year) and Master AMS (M2)



Laure Giovangigli

- *Calcul stochastique*, ENSTA (3rd year) and Master MMMEF (M2)

Christophe Hazard

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA (1st year)
- *Théorie spectrale des opérateurs autoadjoints*, ENSTA (2nd year) and Master AMS (M1)

Patrick Joly

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *Analyse fonctionnelle*, ENSTA (2nd year) and Master AMS (M2)
- *Propagation des ondes dans des milieux périodiques*, ENSTA (3rd year) and Master AMS (M2)

Maryna Kachanovska

- *Fonctions de variable complexe*, ENSTA (1st year)
- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year)
- *Systèmes Dynamiques: Analyse et Stabilité*, ENSTA (1st year)

Nicolas Kielbasiewicz

- *Programmation scientifique en C++*, ENSTA (2nd year) and Master AMS (M1)
- *Projet de simulation numérique*, ENSTA (2nd year) and Master AMS (M1)
- *Calcul scientifique parallèle*, ENSTA (3rd year) and Master AMS (M2)

Eric Lunéville

- *Introduction au calcul scientifique*, ENSTA (2nd year).
- *Programmation scientifique en C++*, ENSTA (2nd year) and Master AMS (M1)
- *Projet de simulation numérique*, ENSTA (2nd year) and Master AMS (M1)
- *Propagation et diffraction dans les guides d'ondes*, ENSTA (3rd year) and Master AMS (M2)

Jean-François Mercier

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA (1st year)
- *Fonctions de variable complexe*, ENSTA (1st year)
- *Théorie spectrale des opérateurs autoadjoints*, ENSTA (2nd year) and Master AMS (M1)

Axel Modave

- *La méthode des éléments finis*, ENSTA (2nd year) and Master AMS (M1)
- *Calcul scientifique à haute performance*, ENSTA (2nd year) and Master AMS (M1)
- *Calcul scientifique parallèle*, ENSTA (3rd year) and Master AMS (M2)
- *Modèles mathématiques et leur discrétisation en électromagnétisme*, ENSTA (3rd year) and Master AMS (M2)

### 10.2.2. Supervision

PhD: Antoine Bensalah, "*Une approche nouvelle de la modélisation mathématique et numérique en aéroacoustique par les équations de Goldstein et applications en aéronautique*", July 2018, Patrick Joly and Jean-François Mercier

PhD: Léandre Giret, "*Analyse numérique d'une méthode de décomposition de domaine non-conforme pour les équations SPN multigrupes*", June 2018, Patrick Ciarlet and Erell Jamelot

PhD: Zouhair Adnani, "*Modélisation numérique tridimensionnelle de l'interaction sol-structure avec prise en compte des effets de site*", May 2018, Marc Bonnet and Stéphanie Chaillat

PhD: Arnaud Recoquillay, "*Méthodes d'échantillonnage appliquées à l'imagerie de guides d'ondes élastiques*", January 2018, Laurent Bourgeois

PhD in progress: Antoine Bera, "*Conception de perturbations invisibles pour les ondes électromagnétiques ou acoustiques*", October 2016, Anne-Sophie Bonnet-Ben Dhia and Lucas Chesnel

PhD in progress: Sandrine Paolantoni, "*Analyse spectrale et simulation numérique de la diffraction électromagnétique par des métamatériaux*", October 2016, Christophe Hazard and Boris Gralak

PhD in progress: Yohanes Tjandrawidjaja, "*Modélisation de la propagation d'ondes guidées et de leur interaction avec des défauts localisés dans une plaque élastique anisotrope pour des applications en SHM*", October 2016, Anne-Sophie Bonnet-Ben Dhia and Sonia Fliss

PhD in progress: Emile Parolin, "*Non overlapping domain decomposition methods with non local transmission conditions for electromagnetic wave propagation*", October 2017, Patrick Joly and Xavier Claeys

PhD in progress: Clément Beneteau, "*Asymptotic analysis of time harmonic Maxwell equations in presence of metamaterials*", October 2017, Sonia Fliss and Xavier Claeys

PhD in progress: Hajer Methenni, "*Mathematical modelling and numerical method for the simulation of ultrasound structural health monitoring of composite plates*", October 2017, Sonia Fliss and Sébastien Impériale

PhD in progress: Damien Mavaleix, "*Modeling of the fluid-structure interaction resulting from a remote underwater explosion*", December 2017, Marc Bonnet and Stéphanie Chaillat

PhD in progress: Damien Chicaud, "*Méthodes de décomposition de domaine pour la résolution de problèmes harmoniques d'ondes électromagnétiques en milieux complexes*", October 2018, Patrick Ciarlet and Axel Modave

PhD in progress: Mahran Rihani, "*Équations de Maxwell en présence de méta-matériaux*", November 2018, Anne-Sophie Bonnet-Ben Dhia and Lucas Chesnel

PhD in progress: Yacine Abourrig, "*Boundary element method for modeling electromagnetic non-destructive testing: perturbative techniques for efficient and accurate parametric studies involving multiple simulations*", October 2017, Marc Bonnet and Edouard Demaldent

## 10.3. Popularization

### 10.3.1. Internal or external Inria responsibilities

- M. Kachanovska is a member of the *comité scientifique* of Inria-Saclay.
- A.-S. Bonnet-Ben Dhia is a member of the *bureau du comité des équipes-projets* (BCEP).

### 10.3.2. Interventions

- POEMS has been involved in the exhibition "*Rencontre diffractante*", which has been presented successively at ENSTA (from December 2017 to February 2018) and at Inria (in April and May 2018). The inspiring material of this exhibition was made up of numerical simulations of various diffraction problems studied within by POEMS team. They served as a basis for the creation of artistic objects made by several classes of the Ecole Boule. *Curators of the exhibition* : Jérôme Perez, ENSTA, and Virginie Gannac, doctor in art, design and applied arts from Université Paris I Sorbonne, Ecole Boule de Paris

- POEMS has been involved in the event "*Fête de la science*" at ENSTA-ParisTech in October 2018.
- E. Bécache presented a talk entitled "*Promenade mathématique*" during the day "*Filles et mathématiques, une équation lumineuse*" (March 27, 2018 at Ecole Polytechnique, Palaiseau) and during the awards ceremony of the National Olympiad of Mathematics (May 30, 2018 at Créteil).
- E. Bécache has been involved in a meeting of young female mathematics, organized on November 17-18, 2018 at ENSTA ParisTech.

## **RANDOPT Team**

# **10. Dissemination**

## **10.1. Promoting Scientific Activities**

### ***10.1.1. Scientific Events Organisation***

- Anne Auger is the General Chair of the forthcoming ACM GECCO 2019 conference, Prague CZ (largest and most prestigious conference in the Evolutionary Computation domain).

### ***10.1.2. Member of the Organizing Committees***

- Anne Auger, Dimo Brockhoff and Nikolaus Hansen, co-organizer of the ACM-GECCO-2018 workshop on Black Box Optimization Benchmarking, together with Julien Bect, Rodolphe Le Riche, Victor Picheny, and Tea Tušar
- Anne Auger, Dimo Brockhoff, Nikolaus Hansen, and Konstantinos Varelas, co-organizer of the ACM-GECCO-2019 workshop on Black Box Optimization Benchmarking, together with Tea Tušar
- Dimo Brockhoff: co-organization of the Lorentz Center workshop on Many-Criteria Optimization (MACODA), September 2019, with Boris Naujoks, Michael Emmerich, and Robin Purshouse

### ***10.1.3. Scientific Events Selection***

#### ***10.1.3.1. Chair of Conference Program Committees***

- Anne Auger has been program chair of the PPSN 2018 conference, Coimbra, Portugal.
- Anne Auger was Theory track chair for the ACM GECCO 2018 conference, Kyoto, Japan.
- Nikolaus Hansen was ENUM track chair for the ACM GECCO 2018 conference, Kyoto, Japan.

#### ***10.1.3.2. Member of the Conference Program Committees***

- Dimo Brockhoff and Nikolaus Hansen were members of the program committee of the PPSN 2018 conference.

#### ***10.1.3.3. Reviewer***

- Dimo Brockhoff: GECCO'2018, GECCO'2018 student workshop, PPSN'2018, LeGO 2018, EMO'2019, and FOGA'2019

### ***10.1.4. Journal***

#### ***10.1.4.1. Member of the Editorial Boards***

- Anne Auger and Nikolaus Hansen members of the editorial board of the Evolutionary Computation journal.

#### ***10.1.4.2. Reviewer - Reviewing Activities***

- The three permanent members are frequent reviewers for the main two journals on Evolutionary Computation: IEEE transaction on Evolutionary Computation, Evolutionary Computation.
- Anne Auger is guest editor of Algorithmica special issue of papers selected from GECCO theory tracks 2018
- Anne Auger is guest editor of IEEE Transactions on Evolutionary Computation special issue on Theoretical Foundations of Evolutionary Computation 2018/2019

### ***10.1.5. Invited Talks***

- Dimo Brockhoff: "Benchmarking multiobjective optimizers: An algorithmic jam session of recent results", December 2018, Centre for Informatics and Systems, University of Coimbra, Portugal

### **10.1.6. Leadership within the Scientific Community**

- Anne Auger, Elected Member of the ACM-SIGEVO executive board
- Dimo Brockhoff, member of the International Advisory Committee for EMO-2019 in East Lansing, USA

### **10.1.7. Scientific Expertise**

- Anne Auger scientific expert for an audit on Artificial Intelligence of a large French industrial consortium.
- Dimo Brockhoff, external reviewer for the Luxembourg National Research Fund (FNR) in the CORE 2018 call

### **10.1.8. Research Administration**

- Anne Auger, member of the conseil de laboratoire of the CMAP, Ecole Polytechnique.

## **10.2. Teaching - Supervision - Juries**

### **10.2.1. Teaching**

- Master: Anne Auger, Course on Derivative-free Optimization of AMS and Optimization masters, 22.5 hours M2, Paris-Saclay University
- Master: Anne Auger, exercises for the courses Introduction to Machine Learning (MAP 534), M2 X/HEC and Advanced Machine Learning (MAP 541), 30 hours, Ecole Polytechnique, France
- Master: Anne Auger, exercises for the courses Advanced Machine Learning (MAP 541), M2 X/HEC and Advanced Machine Learning (MAP 541), 30 hours, Ecole Polytechnique, France
- Master: Anne Auger, 2nd year students of Ecole Polytechnique, Datacamp (solving practical machine learning problems) MAP 583, 20 hours, Ecole Polytechnique, France
- Master: Anne Auger, “Advanced Optimization”, 9h ETD, M2, Université Paris-Sud, France (joint course with D. Brockhoff)
- Master: Dimo Brockhoff, “Introduction to Optimization”, 31.5h ETD, M2, Université Paris-Sud, France
- Master: Dimo Brockhoff, “Advanced Optimization”, 22.5h ETD, M2, Université Paris-Sud, France (joint course with A. Auger)

### **10.2.2. Tutorials**

- Dimo Brockhoff gave the tutorial “Evolutionary Multiobjective Optimization” at the GECCO-2018 conference in Kyoto, Japan [9]
- Nikolaus Hansen gave the tutorials “CMA-ES and Advanced Adaptation Mechanisms” [8] and “A Practical Guide to Experimentation (and Benchmarking)” [11] at the GECCO-2018 conference in Kyoto, Japan.

### **10.2.3. Supervision**

- PhD in progress: Konstantinos Varelas, “Large-Scale Optimization, CMA-ES and Radar Applications”, Dec. 2017, Anne Auger and Dimo Brockhoff
- PhD in progress: Cheikh Touré, “Linearly Convergent Multi-objective Stochastic Optimizers”, Dec. 2017, Anne Auger and Dimo Brockhoff
- PhD in progress: Paul Dufossé, “Constrained Optimization and Radar Applications”, Oct. 2018, Nikolaus Hansen
- PhD in progress: Marie-Ange Dahito, “Mixed-Integer Blackbox Optimization for Multiobjective Problems in the Automotive Industry”, Jan 2019, Dimo Brockhoff and Nikolaus Hansen

#### **10.2.4. Juries**

- Anne Auger, member of Hiring committee for assistant professor positions for Toulouse 1 Capitole University, MCF 0225, section CNU 27
- Anne Auger, PhD jury of Asmaa Ghoumari, defense in Dec. 2018
- Dimo Brockhoff, PhD jury of Lukas Bajer, Charles University Prague, Czech Republic, defense in June 2018
- Dimo Brockhoff, PhD jury of Andreia P. Guerrero, University of Coimbra, Portugal, defense in December 2018

### **10.3. Popularization**

#### **10.3.1. Interventions**

- National events: Cheikh Touré made an intervention on Poker for "college" students at the Fête de la Science (explaining relation between the game and probability)

## SELECT Project-Team

## 9. Dissemination

### 9.1. Promoting Scientific Activities

#### 9.1.1. Scientific Events Organisation

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

Sylvain Arlot co-organized (with Christophe Giraud and Gilles Stoltz) the conference “Deux complices en statistique” (Two days in honor of Pascal Massart and Lucien Birgé), at IHES (Bures-sur-Yvette) and IMO (Orsay).

##### 9.1.1.2. Member of the Organizing Committees

- Gilles Celeux is one of the co-organizers of the international working group on model-based clustering. This year the workshop took place in Ann Arbor, USA.
- Sylvain Arlot is one of the co-organizers of the Junior Conference on Data Science and Engineering at Paris-Saclay (3rd edition in 2018).

#### 9.1.2. Scientific Events Selection

##### 9.1.2.1. Member of the Conference Program Committees

Jean-Michel Poggi was a member of the Scientific Programme Committee, ENBIS 2018, Nancy, 2-6, September 2018, and member of the Scientific Committee of the summer school on Clustering, Data, Analysis And Visualization Of Complex Data, May 21-25, 2018.

#### 9.1.3. Journal

##### 9.1.3.1. Member of the Editorial Boards

Gilles Celeux is Editor-in-Chief of the *Journal de la SFdS*. He is Associate Editor of *Statistics and Computing*, *CSBIGS*.

Pascal Massart is Associate Editor of *Annals of Statistics*, *Confluentes Mathematici*, and *Foundations and Trends in Machine Learning*.

Jean-Michel Poggi is Associate Editor of *Journal of Statistical Software*, *Journal de la SFdS*, and *CSBIGS*.

Sylvain Arlot is associate editor for the *Annales de l’Institut Henri Poincaré B, Probability and Statistics*.

##### 9.1.3.2. Reviewer - Reviewing Activities

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

#### 9.1.4. Invited Talks

The members of the team have given many invited talks on their research in the course of 2018.

#### 9.1.5. Leadership within the Scientific Community

Jean-Michel Poggi is:

- Vice-President of ECAS (European Courses in Advanced Statistics)
- Council Member of the ISI (2015-19)
- Member of the Board of Directors of the ERS of IASC (since 2014)
- Council member of FENStatS (Federation of European National Statistical Societies)

### **9.1.6. Scientific Expertise**

Jean-Michel Poggi was member of the Box Medal committee for 2018, and in the jury for the Marie-Jeanne Laurent Duhamel prize (SFdS).

### **9.1.7. Research Administration**

Jean-Michel Poggi is the vice-president of ECAS (European Courses in Advanced Statistics) since 2015.

Sylvain Arlot coordinates (jointly with Marc Schoenauer, Inria Saclay) the math-STIC program of the Labex Mathématique Hadamard.

Christine Keribin is treasurer of the Société Française de Statistique (SFdS).

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

### **9.2.1. Teaching**

SELECT members teach various courses at several different universities, and in particular the Master 2 “Mathématique de l’aléatoire” of Université Paris-Saclay.

### **9.2.2. Supervision**

PhD: Neska El Haouij, 2014, Jean-Michel Poggi, Meriem Jaïdane, Raja Ghozi (ENIT Tunisie), and Sylvie Sevestre-Ghalila (CEA LinkLab). Defended in July 2018.

PhD: Florence Ducros, 2015, Gilles Celeux and Patrick Pamphile. Defended June 2018.

PhD in progress: Claire Brécheteau, 2015, Pascal Massart

PhD in progress: Hedi Hadiji, 2017, Pascal Massart

PhD in progress: Guillaume Maillard, 2016, Sylvain Arlot and Matthieu Lerasle

PhD in progress: Jeanne Nguyen, 2015, Claire Lacour and Vincent Rivoirard (Univ Paris Dauphine)

PhD in progress: Benjamin Goehry, 2015, Pascal Massart and Jean-Michel Poggi

PhD in progress: Tuan-Binh Nguyen, 2018, Sylvain Arlot and Bertrand Thirion

### **9.2.3. Juries**

HDR: Emilie Lebarbier (Pascal Massart, referee; Sylvain Arlot, president)

Members of SELECT have participated in numerous juries during 2018.



## SPECFUN Project-Team

# 9. Dissemination

## 9.1. Promoting Scientific Activities

### 9.1.1. Scientific Events Organisation

- Alin Bostan is part of the Scientific advisory board of the conference series *Effective Methods in Algebraic Geometry* (MEGA).
- Alin Bostan was a member of the Scientific advisory board of the conference *Algèbre, arithmétique et combinatoire des équations différentielles et aux différences*, CIRM (Luminy, France);  $\sim 60$  participants.
- Alin Bostan is part of the scientific committee of the **GDR EFI** (“Functional Equations and Interactions”) dependent on the mathematical institute (INSMI) of the CNRS. The goal of this GDR is to bring together various research communities in France working on functional equations in fields of computer science and mathematics.
- Frédéric Chyzak is member of the steering committee of the *Journées Nationales de Calcul Formel* (JNCF), the annual meeting of the French computer algebra community.
- Frédéric Chyzak is elected member (and current chair) of the steering committee of the *International Symposium on Symbolic and Algebraic Computation* (ISSAC, 3-year term, 2016–2018).
- Georges Gonthier is a member of the steering committee of the *Certified Programs and Proofs Conference* (CPP).

#### 9.1.1.1. Member of the Organizing Committees

- Alin Bostan co-organizes, with Lucia Di Vizio, the *Séminaire Différentiel* between U. Versailles and Inria Saclay, with a bi-annual frequency ( $\sim 30$  participants per event).
- Alin Bostan co-organizes, with Lucia Di Vizio, the working group *Marches dans le quart de plan*, at Institut Henri Poincaré (Paris), with a bi-monthly frequency ( $\sim 15$  participants per event).

### 9.1.2. Scientific Events Selection

#### 9.1.2.1. Reviewer

- Frédéric Chyzak has served as reviewer for the selection of the international conference ISSAC 2018.

### 9.1.3. Journal

#### 9.1.3.1. Member of the Editorial Boards

- Alin Bostan is on the editorial board of the *Journal of Symbolic Computation*.
- Georges Gonthier is on the editorial board of the *Journal of Formalized Reasoning*.

#### 9.1.3.2. Reviewer - Reviewing Activities

- Alin Bostan has served as a reviewer for the journals: *Journal of Symbolic Computation*, *Journal of Combinatorial Theory, Series A*, *Applicable Algebra in Engineering Communications and Computing*, *Minnesota Journal of Undergraduate Mathematics*.
- Frédéric Chyzak has served multiple times as a reviewer for the *Journal of Symbolic Computation*.
- Pierre Lairéz has served as a reviewer for the *Journal of Symbolic Computation*, *Journal of the ACM* and *Journal of Physics A*.

### 9.1.4. Invited Talks

- Alin Bostan has been invited to give a talk at the *Workshop on algebraic and analytic aspects of power series*, Universidade Lisboa, Lisbonne, Portugal, Jan. 2018.
- Alin Bostan has been invited to give a talk at the conference *Algebra, Arithmetic and Combinatorics of Differential and Difference Equations*, CIRM (Luminy), France, May 2018.
- Alin Bostan has been invited to give a talk at the conference *Grands réseaux aléatoires et marches contraintes*, in honor of the 75th birthday of Guy Fayolle, Dijon, France, Aug. 2018.
- Alin Bostan has been invited to give a talk at the conference *Combinatorics and Arithmetic for Physics: special days*, IHES, Bures-sur-Yvette, France, Oct. 2018.
- Frédéric Chyzak was invited invited speaker at the conference *Rencontres Arithmétiques du GDR Informatique Mathématique* (RAIM 2018), Gif-sur-Yvette, France, Nov. 2018.
- Georges Gonthier was a plenary keynote speaker at the *Federated Logic Conference (FLoC 2018)* in Oxford, July 2018.
- Georges Gonthier was invited speaker at the *Workshop on Modular Knowledge (Tetrapod)* during FLoC 2018, Oxford, July 2018.
- Georges Gonthier ws the keynote speaker of the *Future of Mathematical Proofs* workshop at the Heidelberg Laureate Forum, September 2018.

### 9.1.5. Leadership within the Scientific Community

#### 9.1.5.1. Regular Research Seminar

The team organizes a **regular seminar**, with roughly 15–20 talks a year. The topics reflect the team’s interests: computer algebra, combinatorics, number theory, formal proofs, and related domains. This year, we reduced a bit the number of talks in our seminar, as we have invested much time in setting up a working group with a talk every second week (see 9.1.5.2).

#### 9.1.5.2. Research Working Group

This year we have set up a working group *Marches dans le quart de plan* around the study of walks in the quarter plan, a very active research topic in probability theory and enumerative combinatorics in recent years. The working group is organized at Institut Henri Poincaré, with a regularity of two sessions per month. The original purpose was to read the article “On the Nature of the Generating Series of Walks in the Quarter Plane” by T. Dreyfus, C. Hardouin, J. Roques, M. Singer, published in *Invent. Math.* this year. But the reality exceeded expectations: the working group attracted a dozen of people, working either in computer science or pure mathematics, who began to interact and a very good dynamic was created. Altogether, sixteen sessions have taken place so far, and we have decided to continue in 2019. From the team, Alin Bostan, Frédéric Chyzak, Guy Fayolle, and Pierre Lairez have given a total of 9 talks to this working group.

### 9.1.6. Scientific Expertise

- Georges Gonthier participated in a review of the software and algorithms of the Tezos blockchain conducted by the Inria Foundation during Spring 2018.

### 9.1.7. Research Administration

- Georges Gonthier serves on the Conseil de l’École Doctorale de Mathématiques Hadamard.

## 9.2. Teaching - Supervision - Juries

- Alin Bostan has served as a jury member of the French *Agrégation de Mathématiques – épreuve de modélisation, option C*.

### 9.2.1. Teaching

#### Licence:

Pierre Lairez, *Introduction à l’informatique (INF311)*, TD, 40h, L3, École polytechnique, France.

**Master:**

Frédéric Chyzak, *Algorithmes efficaces en calcul formel*, 18h, M2, MPRI, France.

Alin Bostan, *Algorithmes efficaces en calcul formel*, 40.5h, M2, MPRI, France.

Pierre Lairez, *Algorithmique avancée (INF550)*, TD, 18h, M2, École polytechnique, France.

Pierre Lairez, *Les bases de la programmation et de l'algorithmique (INF411)*, TD, 40h, M1, École polytechnique, France.

**9.2.2. Juries**

- Frédéric Chyzak has been a member of the hiring jury at Inria (Concours CRCN 2018).
- Alin Bostan has served as a referee in the PhD jury of Timothée Pecatte, *Bornes inférieures et algorithmes de reconstruction pour des sommes de puissances affines*, ENS Lyon, July 11, 2018.
- Alin Bostan has served as an examiner in the PhD jury of Boris Djalal, *Formalisations en Coq pour la décision de problèmes en géométrie algébrique réelle*, Inria Sophia Antipolis, December 3, 2018.
- Alin Bostan has served as a member of the monitoring PhD committee of Youssef Abdelaziz, Univ. Paris 6.
- Alin Bostan has served as a member of the monitoring PhD committee of Manon Bertin, Univ. Rouen.

**9.3. Popularization****9.3.1. Interventions**

- Georges Gonthier testified before the *Mission d'information commune sur les blockchains* of the *Assemblée Nationale* in March.
- Georges Gonthier gave a public lecture and debate on blockchains at the *Institut Diderot* in September, jointly with M. Odonnat (Banque de France).

**9.3.2. Internal action**

- Georges Gonthier gave a presentation at the *Journées Scientifiques Inria 2018* in Bordeaux.

## TAU Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. General Chair, Scientific Chair

Guillaume Charpiat Workshop Statistics/Learning at Paris-Saclay 2018

Isabelle Guyon Competition co-chair, ECML 2019

Michele Sebag Séminaire Annuel Académie des Technologies, 2018.

In 2016, Isabelle Guyon was Program Chair of NIPS (Neural Information Processing Systems) – with an increase of more than 40% in the number of submissions, 96% in terms of reviewers, and over 100% in terms of attendees as compared to the previous year. Lessons learned from the review process are described in a JMLR paper [19].

#### 10.1.1.2. Member of Organizing Committees

Isabelle Guyon Advisory committee **BayLearn 2018**; Co-organizer WCCI 2018 Special Session on Intelligent Power Systems; Co-organizer WCCI 2018 Special Session on Machine Learning and Deep Learning Methods applied to Vision and Robotics (MLDLMVR); Co-organizer ECCV 2018 workshop Chalearn Looking at People: Inpainting and Denoising in the Deep Learning Age; Co-organizer 2018 Multimedia Information Processing for Personality & Social Networks Analysis Workshop at ICPR; Co-organizer NeurIPS 2018 workshop on Challenges in Machine Learning;

Marc Schoenauer Steering Committee, Parallel Problem Solving from Nature (PPSN); Steering Committee, Learning and Intelligent Optimization (LION); organizer (with Herilalaina Rokotoari-son), Workshop COSEAL, Paris, Sept. 17-18, 2018.

Michele Sebag President of Steering Committee, Eur. Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD).

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Member of Conference Program Committees

All TAU members are members of the Program Committees of the main conferences in their respective fields of expertise.

#### 10.1.2.2. Reviewer

All TAU member review papers for the most prestigious conferences in their respective fields of expertise.

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

Isabelle Guyon Action editor, *Journal of Machine Learning Research* (JMLR); series editor, *Springer series Challenges in Machine Learning* (CiML).

Marc Schoenauer Advisory Board, *Evolutionary Computation Journal*, MIT Press, and *Genetic Programming and Evolutionary Machines*, Springer Verlag; Action editor, *Journal of Machine Learning Research*(JMLR).

Michèle Sebag Editorial Board, *Machine Learning*, Springer Verlag.

Paola Tubaro Associate Editorial Board, *Sociology*, Sage; Member of Editorial Board, *Revue Française de Sociologie*, Presses de Sciences Po.

#### 10.1.3.2. Reviewer - Reviewing Activities

All members of the team reviewed numerous articles for the most prestigious journals in their respective fields of expertise.

#### 10.1.4. Invited Talks

Guillaume Charpiat *Introduction aux réseaux de neurones*, Séminaire Parisien de Mathématiques Appliquées à l'Imagerie, Paris, 3 May. 2018; *Recalage et mise à jour d'images à l'aide de réseaux de neurones*, Journée Extraction d'attributs et apprentissage pour l'analyse des images de télédétection, GDR ISIS, Paris, 18 Oct. 2018.

Flora Jay *Deep Learning Methods for Population Genetics: Inferring Changes Population Size*, Journée Inférences évolutives, GDR GE et AEIM, Paris, 16 Mai 2018; *Inferring past history from genetic data using ABC and Deep Learning approaches*, INRA GenPhySE Seminar, Toulouse, 12 Dec. 2018.

Isabelle Guyon *Codalab: crowdsourcing DataIA* DATAIA Institute Kick-Off (Data Science, Intelligence & Society), 15 Feb. 2018; *Contests of contests*, La Recherche scientifique « hors murs » au 21e siècle, Colloque de l'Académie des sciences, Fondation Del Duca, 29 Nov. 2018; *Evaluating causation coefficients*, NeurIPS 2018 workshop on causal learning, 7 Dec, 2018.

Michèle Sebag *Qualité de la vie et santé économique, étude causale: Colloque de Cerisy* (Sept. 18); séminaire Université Québec à Montréal (Dec. 18); *Causal Modeling*: KAUST Conference on Computational and Statistical Interface to Big Data (Mar. 18); Leiden wshop on Space Weather (2018); *MonteCarlo Tree Search for Algorithm Selection and Calibration*: Dagstuhl Seminar (Sept. 18); NIPS Wshop on AutoML (Dec. 18); *Ingénieurs et Scientifiques*, ENPC (Juin 18). Exposés Journées Cabourg, Mar. 18; Rennes, Sep. 18; Toulouse, Oct. 18.

Marc Schoenauer *The Villani mission on Artificial Intelligence*, CISCO Headquarters, 9 Apr. 2018; *Le rapport Villani*, journée AFIA, 12 Apr. 2018; *Intelligence Artificielle : le rapport Villani*, Journée de la Recherche de l'Université de Brest, 25 May 2018; *Intelligence Artificielle, mythes et réalités*, Colloque Grands Projets et Systemes Complexes, Arcachon, 18 Jun. 2018; *Intelligence Artificielle, mythes et réalités*, Journée lab. CRISTAL (U. Lille), Gand, 6 Jul. 2018; *Shallow and Deep learning at TAU*, Keynote at the DATAIA-JST International Symposium on Data Science and AI, 10 Jul. 2018; *Une brève introduction à l'Intelligence Artificielle et au rapport Villani*, Académie des Technologies, 10 Oct. 2018; *Une brève introduction à l'Intelligence Artificielle*, Open-Lab PSA, 11 Oct. 2018; *A brief introduction to AI and Deep Learning*, Toulouse Symposium on Deep Learning, 18 oct. 2018; *A brief introduction to AI and Deep Learning*, PSA Stellab Seminar, Paris, 14 nov. 2018; *IA, une stratégie française : le rapport Villani*, Université Franco Italienne, Università Italo Francese, annual seminar, Paris, 21 Nov. 2018; *Some issues with Deep Learning*, Inria / Nokia-Bell Labs seminar, 27 Nov. 2018; *L'Intelligence Artificielle hier, aujourd'hui et demain*, 29e journée CASCIMODOT, Orléans, 12 Dec. 2018.

Paola Tubaro *Un champ de mines? Éthique, droit et politique dans la recherche sur les réseaux sociaux*, conférence MARAMI (Modèles & Analyse des Réseaux : Approches Mathématiques & Informatiques), Avignon, 17 Oct. 2018; *Modèles multi-agents et simulation*, Ecole thématique CNRS "Réseaux et complexité", 28 Sept. 2018; *Microworking in France: an inquiry into the human labour that makes AI possible*, OECD, Paris, 5 Dec. 2018; *Micro-work, artificial intelligence and the automotive industry*, Sant'Anna School of Advanced Studies, Pisa, 31 May 2018; *Online platform labor*, EIT Digital, Rennes, 14 Nov. 2018; *Les promesses et les périls du travail sur plateformes*, France Stratégie, 6 July 2018; *Faut-il interdire la parole problématique en ligne ?*, GEPS medical conference, Montpellier, 12 Jan. 2018

#### 10.1.5. Leadership within the Scientific Community

Isabelle Guyon President and co-founder of [ChaLearn](#), a non-for-profit organization dedicated to the organization of challenge.

Marc Schoenauer Chair of ACM-SIGEVO (Special Interest Group on Evolutionary Computation), 2015-2017, re-elected July 2017 (2-years term); Founding President (since 2015) of SPECIES (Society for the Promotion of Evolutionary Computation In Europe and Surroundings), that organizes the yearly series of conferences *EvoStar*.

Michèle Sebag Elected Chair of Steering Committee, ECML-PKDD; Head of the Research Programme, Institut de Convergence DataIA.

Paola Tubaro Convenor of the Social Network Analysis Group of British Sociological Association; co-founder of European Network on Digital Labor.

### 10.1.6. Scientific Expertise

Cécile Germain Evaluator for the H2020-2016-CNECT program; member of the DFG review panel within Germany's excellence strategy selection process.

Marc Schoenauer Member, Villani Mission on Artificial Intelligence [50] (see also the [AIforHumanity Web Site](#)); Conseil scientifique, MoveInSalcay platform, coordinated by Nokia-Bell Labs; Comité Scientifique IA, SCube (Scientipôle Savoirs & Société), Orsay; Scientific Committee, TrackML (see Section 7.6); Comité de sélection, Chaire ABEONA-ENS "Biais et Equité en IA"; Conseil Scientifique, Fondation de Recherche pour l'Aéronautique et l'Espace (FRAE).

Michèle Sebag Jury de sélection, LRI; ENS-Lyon; LIX-Ecole Polytechnique; LORIA; Univ. Dortmund; Univ. Liège. Evaluation NSERC, Canada.

### 10.1.7. Research Administration

Cécile Germain University officer for scientific computing; member of the Board of the Lidex *Center for Data Science*; member of the scientific council of faculty of Medicine (UPsud).

Isabelle Guyon Representative of UPSud in the DataIA *Institut de Convergence* Program Committee, University of Paris-Saclay.

Marc Schoenauer Deputy Scientific Director of Inria (in French, Directeur Scientifique Adjoint, DSA), in charge of AI.

Michele Sebag Deputy director of LRI, CNRS UMR 8623; elected member of the Research Council of Univ. Paris-Saclay; member of the STIC department council of Univ. Paris-Saclay; member of the Scientific Council of Labex AMIES, Applications des Mathématiques ds l'Industrie, l'Entreprise et la Société; member of the Scientific Council of IRT System'X; member of the CSFRS (Conseil supérieur de la formation et de la recherche stratégique).

Paola Tubaro Representative of CNRS in the DataIA *Institut de Convergence* Program Committee, University of Paris-Saclay; member of the Board, Maison des Sciences de l'Homme Paris-Saclay.

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Licence : Philippe Caillou, Computer Science for students in Accounting and Management, 192h, L1, IUT Sceaux, Univ. Paris Sud.

Licence : Aurélien Decelle, Computer Architecture, 26h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Introduction to Machine Learning, 57h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Object-oriented programming, 26h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Computer Architecture, 26h, L3, Univ. Paris-Sud.

Licence : François Landes, Mathematics for Computer Scientists, 51h, L2, Univ. Paris-Sud.

Licence : François Landes, Machine Learning and Artificial Life, 48h, L2, Univ. Paris-Sud.

Licence and Polytech : Cécile Germain, Computer Architecture

Licence : Isabelle Guyon, Project: Resolution of mini-challenges (created by M2 students), L2, Univ. Paris-Sud.

Master : François Landes, Machine Learning, 22h, M1 Polytech, U. Paris-sud.

Master : Guillaume Charpiat and Victor Berger, Advanced Machine Learning, 34h, M2 Recherche, Centrale-Supélec.

Master : Guillaume Charpiat, Introduction to Deep Learning, 6h, M2 Recherche, Telecom.  
 Master : Aurélien Decelle, Machine Learning, 26h, M1, Univ. Paris-Sud.  
 Master : Aurélien Decelle, Probability and statistics, 26h, M1, Univ. Paris-Sud.  
 Master : Cécile Germain, Parallel Programming  
 Master : Isabelle Guyon, Project: Creation of mini-challenges, M2, Univ. Paris-Sud.  
 Master : Michèle Sebag, Machine Learning, 12h; Deep Learning, 9h; Reinforcement Learning, 12h; M2 Recherche, U. Paris-sud. Summer School Deep Learning, Genova (Italy), 5h.  
 Master : François Landes, Machine Learning, 9h, M2 Recherche, U. Paris-sud.  
 Master : Paola Tubaro, Start -up project for engineering students, 24h, Telecom ParisTech.  
 Master : Paola Tubaro, Sociology of social networks, 24h, M2, EHESS/ENS.  
 Master : Flora Jay, Population Genetics, 10h, M2, Univ. Paris-Sud.  
 Doctorate: Paola Tubaro, Research Methods, 12h, University of Insubria, Italy.

### 10.2.2. Supervision

PhD François GONARD, *Cold-start recommendation : from Algorithm Portfolios to Job Applicant Matching*, Université Paris-Saclay, May 2018  
 PhD Thomas SCHMITT, *Collaborative Matching of Job Openings and Job Seekers*, Université Paris-Saclay, June 2018  
 PhD Hoang M. LUONG, *Squaring the Circle in Modelling Corporate Governance, Market Structure and Innovation: A Tobin's Q Approach to R&D Investment when Network Effects Are Present*, Paola Tubaro, with M. Ugur and S. Gorgoni, University of Greenwich, London, UK, Oct. 2018.  
 PhD in progress Eléonore BARTENLIAN, *Deep Learning pour le traitement du signal*, 1/10/2018, Michèle Sebag and Frédéric Pascal (Centrale-Supélec)  
 PhD in progress Victor BERGER, *Variational Anytime Simulator*, 1/10/2017, Michèle Sebag  
 PhD in progress Leonard BLIER, *Vers une architecture stable pour les systèmes d'apprentissage par renforcement*, 1/09/2018, Yann Ollivier (Facebook AI Research, Paris) and Marc Schoenauer  
 PhD in progress Tony BONNAIRE, *Reconstruction de la toile cosmique*, from 1/10/2018, Nabila Aghanim (Institut d'Astrophysique Spatiale) and Aurélien Decelle  
 PhD in progress Benjamin DONNOT, *Optimisation et méthodes d'apprentissage pour une conduite robuste et efficace du réseau électrique par anticipation sur base de parades topologiques.*, 1/09/2015, Isabelle Guyon and Antoine Marot (RTE)  
 PhD in progress Balthazar DONON, *Apprentissage par renforcement pour une conduite stratégique du système électrique*, 1/10/2018, Isabelle Guyon and Antoine Marot (RTE)  
 PhD in progress Guillaume DOQUET, *ML Algorithm Selection and Domain Adaptation*, 1/09/2015, Michele Sebag  
 PhD in progress Victor ESTRADÉ *Robust domain-adversarial learning, with applications to High Energy Physics*, 01/10/2016, Cécile Germain and Isabelle Guyon.  
 PhD in progress Loris FELARDOS, *Neural networks for molecular dynamics simulations*, 1/10/2018, Guillaume Charpiat, Jérôme Hénin (IBPC) and Bruno Raffin (InriAlpes)  
 PhD in progress Giancarlo FISSORE, *Statistical physics analysis of generative models*, 1/10/2017, Aurélien Decelle and Cyril Furtlehner  
 PhD in progress Julien GIRARD, *Vérification et validation des techniques d'apprentissage automatique*, 1/10/2018, Zakarian Chihani (CEA) and Guillaume Charpiat  
 PhD in progress Diviyan KALAINATHAN, *Causal models and quality of life at work*, 1/10/2017, Michèle Sebag and Isabelle Guyon

PhD in progress Zhengying LIU, *Automation du design des reseaux de neurones profonds*, 1/10/2017, Isabelle Guyon

PhD in progress Nizam MAKDOUD, *Motivations intrinsèques en apprentissage par renforcement. Application à la recherche de failles de sécurité*, 1/02/2018, Marc Schoenauer and Jérôme Kodjabachian (Thalès ThereSIS, Palaiseau).

PhD in progress Marc NABHAN, *Sûreté de fonctionnement d'un véhicule autonome - évaluation des fausses détections au travers d'un profil de mission réduit*, 1/10/2017, Marc Schoenauer and Hiba Hage (Renault)

PhD in progress Anna PIAZZA, *Inter-Organisational Relationships and Organisational Performance: Network Analysis Applications to a Health Care System*, 01/09/2014, Paola Tubaro, with F. Pallotti and A. Lomi, at the University of Greenwich, London, UK

PhD in progress Adrian POL *Machine Learning Anomaly Detection, with application to CMS Data Quality Monitoring*, 01/10/2016, Cécile Germain.

PhD in progress Herilalaina RAKOTOARISON, *Automatic Algorithm Configuration for Power Grid Optimization*, 1/10/2017, Marc Schoenauer and Michèle Sebag

PhD in progress Théophile SANCHEZ, *Reconstructing the past: deep learning for population genetics*, 1/10/2017, Guillaume Charpiat and Flora Jay

PhD in progress Lisheng SUN, *Apprentissage Automatique: Vers une analyse de données automatisé*, 1/10/2016, Isabelle Guyon and Michèle Sebag

PhD in progress Corentin TALLEC, *Reinforcement Learning and Recurrent Neural Networks: Dynamical approaches*, 1/10/2016, Yann Ollivier

PhD in progress Marion ULLMO, *Detection et classification de la toile et des filaments cosmiques*, from 1/10/2018, Nabila Aghanim (Institut d'Astrophysique Spatiale) and Aurélien Decelle

PhD in progress Pierre WOLINSKI, *Learning the Architecture of Neural Networks*, 1/9/2016, Yann Ollivier (Facebook AI Research, Paris) and Guillaume Charpiat

### 10.2.3. Juries

- Guillaume Charpiat As a member of the "Commission Scientifique" of Inria Saclay: selection committee for post-docs and PhD students hiring; jury of the Gilles Khan PhD prize (SIF); jury for a "Maître de conférence" position at Université Paris-Sud.
- Cécile Germain PhD jury for Mehdi Cherti 26/01/18, Wenjie ZHENG, 13/06/2018; jury of the Telecom PhD prize 23/03/2018
- Isabelle Guyon PhD jury for Giorgos Borboudakis, 21 Nov. 2018, University of Crete, Heraklion, Greece; Master thesis jury for Marvin Lerousseau, 28 June 2018, INP Grenoble; Master thesis jury for Adrien Pavao, 5 Sep. 2018, U.P-Sud, Orsay.
- Michèle Sebag PhD reviewer: Antonio Vergari (Univ. Bari, Italy); Gaétant Hadjeres, LIX, Ecole Polytechnique; Romain Warlop, Univ. Lille. Pdt Jury: Hafiz Tiomoko, Centrale-Supélec; Stanislas Chambon, Telecom.
- Marc Schoenauer PhD jury for Wen SUN, Université d'Angers, 29/11/2018;
- Paola Tubaro PhD jury for Victorien Barbet, Aix-Marseille Université, 13/12/2018.

## 10.3. Popularization

### 10.3.1. Articles and contents

Isabelle Guyon

- Pionnière : Isabelle Guyon, professeur à l'université de Paris-Saclay, 7 Feb. 2018, [Usine Nouvelle](#)



- Isabelle Guyon veut démocratiser l'intelligence artificielle, Apr. 2018, [Le Monde](#)
- Portrait : Isabelle Guyon, sélectionneuse d'algorithmes, 16 May 2018, [Industries et Technologie](#)

Paola Tubaro *Notre vie privée, un concept négociable* [52], Antonio Casilli and Paola Tubaro, in *Le Monde*, Jan. 2018.

### **10.3.2. Interventions**

Guillaume Charpiat Séminaire d'Actualité Critique, *L'intelligence artificielle, entre fantasmes et recherche*, ENS Paris, 5 Apr. 2018.

Isabelle Guyon *Codalab, createur de défis*, UniThe ou Café, Inria Saclay, 5 Apr. 2018

Marc Schoenauer

- Congrès Européen Ethique et Gouvernance 2018, OCDE, Paris, 30 Mar. 2018;
- Audition publique sur l'Intelligence Artificielle et le travail, Comité économique et social européen (CESE), Bruxelles, 30 May 2018;
- Public debate with Jean-Marc David, Convention Systematic, 5 Jun. 2018; Conférence Legrain, ENS Paris, 5 Jul. 2018;
- Prix Design et Science de l'Université Paris-Saclay, 11 Oct. 2018.

Michèle Sebag *Usine Nouvelle*; Podcast Science et Avenir, discussion avec Cédric Villani.

## TOCCATA Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. General Chair, Scientific Chair

- S. Boldo, president of the 29th “Journées Francophones des Langages Applicatifs” (JFLA 2018)
- J.-C. Filliâtre, scientific chair and co-organizer of EJCP (École Jeunes Chercheurs en Programmation du GDR GPL) at Lyon on June 25–29, 2018. 5 days / 8 lectures / 25 participants. <https://ejcp2018.sciencesconf.org/>
- D. Gallois-Wong, co-chair of the Doctoral Programme of the 11th Conference on Intelligent Computer Mathematics (CICM 2018).

#### 10.1.1.2. Member of the Organizing Committees

- G. Melquiond, organizer of the 10th “Rencontres Arithmétiques du GDR Informatique-Mathématique” (RAIM 2018)

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Chair of Conference Program Committees

- S. Boldo, program chair of the 29th “Journées Francophones des Langages Applicatifs” (JFLA 2018).
- S. Boldo, program co-chair of the 26th IEEE Symposium on Computer Arithmetic (ARITH 2019), Kyoto, Japan.

#### 10.1.2.2. Member of the Conference Program Committees

- S. Boldo, PC of the 25th IEEE Symposium on Computer Arithmetic (ARITH 2018)
- S. Boldo, PC of the 7th ACM SIGPLAN Conference on Certified Programs and Proofs (CPP 2018)
- S. Boldo, PC of the Tenth NASA Formal Methods Symposium (NFM 2018)
- S. Boldo, PC of the Eleventh NASA Formal Methods Symposium (NFM 2019)
- J.-C. Filliâtre, PC of the 18th International Workshop on Automated Verification of Critical Systems (AVOCS 2018)
- J.-C. Filliâtre, PC of the 10th International Conference on Interactive Theorem Proving (ITP 2019)
- J.-C. Filliâtre, PC of the European Symposium on Programming (ESOP 2020)
- J.-C. Filliâtre, PC of the Symposium on Languages, Applications and Technologies (SLATE 2018)
- G. Melquiond, PC of the 26th IEEE Symposium on Computer Arithmetic (ARITH 2019)
- G. Melquiond, PC of the 10th International Conference on Interactive Theorem Proving (ITP 2019)

#### 10.1.2.3. Reviewer

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

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- G. Melquiond, member of the editorial board of *Reliable Computing*.
- J.-C. Filliâtre, member of the editorial board of *Journal of Functional Programming*.

#### 10.1.3.2. Reviewer - Reviewing Activities

The members of the Toccata team have reviewed numerous papers for numerous international journals.

#### 10.1.4. Invited Talks

J.-C. Filliâtre, invited speaker at the 8th International Conference on Interactive Theorem Proving (ITP 2018).

J.-C. Filliâtre, invited speaker at the Formal Integrated Development Environment (F-IDE 2018).

#### 10.1.5. Leadership within the Scientific Community

S. Boldo, elected chair of the ARITH working group of the GDR-IM (a CNRS subgroup of computer science) with J. Detrey (Inria Nancy).

J.-C. Filliâtre, chair of IFIP WG 1.9/2.15 verified Software.

#### 10.1.6. Scientific Expertise

G. Melquiond, member of the scientific commission of Inria-Saclay, in charge of selecting candidates for PhD grants, Post-doc grants, temporary leaves from universities (“délégations”).

C. Marché, member of the “Bureau du Comité des Projets” of Inria-Saclay (includes examination of proposals for creation of new Inria project-teams for Saclay research center).

S. Boldo, member of the program committee for selecting postdocs of the maths/computer science program of the Labex mathématique Hadamard.

S. Boldo, member of the national Inria admission committee.

J.-C. Filliâtre, grading the entrance examination at X/ENS (“option informatique”).

C. Marché, scientific expert for project evaluation, Dutch Research Council (NWO <https://www.nwo.nl/en>), The Netherlands, 2018.

C. Marché, scientific expert for project evaluation, National Science Centre (Narodowe Centrum Nauki - NCN <http://www.ncn.gov.pl/>), Poland, 2018.

C. Marché, scientific expert for promotion of academic staff, Chalmers University of Technology, Sweden, 2018.

S. Boldo, member of a hiring committee for an associate professor position in computer science at University Paris Diderot (IRIF laboratory).

C. Marché, member of DigiCosme committee for research and innovation (selection of projects for working groups, post-doc grants, doctoral missions, invited professors)

#### 10.1.7. Research Administration

G. Melquiond, member of the committee for the monitoring of PhD students (“*commission de suivi doctoral*”).

S Boldo, member of the CLFP (“*commission locale de formation permanente*”).

S. Boldo, member of the CCD, (“*commission consultative des doctorants*”).

S. Boldo will be deputy scientific director (DSA) of Inria Saclay research center from January 1st, 2019

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

J.-C. Filliâtre, *Langages de programmation et compilation*, 25h, L3, École Normale Supérieure, France.

J.-C. Filliâtre, *Les bases de l'algorithmique et de la programmation*, 15h, L3, École Polytechnique, France.

J.-C. Filliâtre, *Compilation*, 18h, M1, École Polytechnique, France.

G. Melquiond, *Programmation C++ avancée*, 12h, M2, Université Paris-Saclay, France.

### 10.2.2. Supervision

PhD: M. Clochard, “Methods and tools for specification and proof of difficult properties of sequential programs” [11], Université Paris-Saclay & Université Paris-Sud, March 30th 2018, supervised by C. Marché and A. Paskevich.

PhD: D. Declerck, “Verification via Model Checking of Parameterized Concurrent Programs on Weak Memory Models” [12], Université Paris-Saclay & Université Paris-Sud, Sep 24th 2018, supervised by F. Zaïdi (LRI) and S. Conchon.

PhD: M. Pereira, “Tools and Techniques for the Verification of Modular Stateful Code” [127], Université Paris-Saclay & Université Paris-Sud, Dec 10th 2018, supervised by J.-C. Filliâtre.

PhD in progress: M. Roux, “Model Checking de systèmes paramétrés et temporisés”, since Sep. 2015, supervised by Sylvain Conchon.

PhD in progress: A. Coquereau, “[ErgoFast] Amélioration de performances pour le solveur SMT Alt-Ergo : conception d’outils d’analyse, optimisations et structures de données efficaces pour OCaml”, since Sep. 2015, supervised by S. Conchon, F. Le Fessant et M. Mauny.

PhD in progress: F. Faissole, “Stabilité(s): liens entre l’arithmétique flottante et l’analyse numérique”, since Oct. 2016, supervised by S. Boldo and A. Chapoutot.

PhD in progress: R. Rieu-Helft, “Développement et vérification de bibliothèques d’arithmétique entière en précision arbitraire”, since Oct. 2017, supervised by G. Melquiond and P. Cuoq (TrustIn-Soft).

PhD in progress: D. Gallois-Wong, “Vérification formelle et filtres numériques”, since Oct. 2017, supervised by S. Boldo and T. Hilaire.

PhD in progress: Q. Garchery, “Certification de la génération et de la transformation d’obligations de preuve”, since Oct. 2018, supervised by C. Keller, C. Marché and A. Paskevich.

### 10.2.3. Juries

C. Marché: examiner of the habilitation thesis of J. Signoles, “From Static Analysis to Runtime Verification with Frama-C and E-ACSL”, Université Paris-Sud, July 9th 2018

C. Marché: examiner of the habilitation thesis of N. Kosmatov, “Combinations of Analysis Techniques for Sound and Efficient Software Verification”, Université Paris-Sud, Nov 20th 2018

C. Marché: president of the PhD defense of J.-C. Léchenet, “Certified Algorithms for Program Slicing”, Université Paris-Saclay, July 19th 2018

C. Marché: reviewer of the PhD defense of C. Laurenço, “Single-assignment Program Verification”, Universidad do Minho, Portugal, July 2nd 2018

S. Boldo: reviewer and president of the PhD defense of B. Djalal, “Formalisation en Coq pour la décision de problèmes en géométrie algébrique réelle”, Université Côte d’Azur, December 3rd 2018

S. Boldo: reviewer of the PhD of R. Picot, “Amélioration de la fiabilité numérique de codes de calcul industriels”, Sorbonne Université, March 27th 2018

S. Boldo: president of the PhD defense of S. Covanov, “Algorithmes de multiplication : complexité bilinéaire et méthodes asymptotiquement rapides”, Université de Lorraine, June 5th 2018

S. Boldo: president of the PhD defense of G. Davy, “Génération de codes et d’annotations prouvables d’algorithmes de points intérieurs à destination de systèmes embarqués critiques”, Université de Toulouse, December 6th 2018

J.-C. Filliâtre: licentiate doctorate examination at Chalmers University of Technology, Sweden, August 23, 2018.

## 10.3. Popularization

### 10.3.1. Internal or external Inria responsibilities

S. Boldo is the scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria.

She was also responsible (with M. Quet of the SCM) for the 2018 “Fête de la science” on October 11th 2018. About 260 teenagers were welcomed on 8 activities ranging from unplugged activities with Duplo construction toys to programming, and from applied mathematics to theoretical computer science.

### 10.3.2. Interventions

S. Boldo animated an activity at the Inria “Fête de la science” on October 11th 2018 the whole day long.

S. Boldo animated an activity and gave talks at the LRI “Fête de la science” on October 12th 2018.

S. Boldo gave a talk during at a *Girls can code* week on August 31st 2018 in Paris.

S. Boldo will give a talk to about 180 teenagers at the Marie Curie high school in Sceaux on February 8th, 2019

J.-C. Filliâtre gave a talk at *Mathematical Summer in Paris* on July 16, 2018.

J.-C. Filliâtre gave a talk *Parcours d’un informaticien* at the seminar “*Info Pour Tous*” (high school and undergraduate students). Video on YouTube. <http://seminairespour tous.ens.fr/ipt>

S. Dailler and C. Marché gave a demonstration of the SPARK environment, at the DigiHall Day (May 22 2018 <https://www.irt-systemx.fr/evenements/digihall-2018/>). DigiHall is a cluster of digital technologies of Paris-Saclay. More than 800 industrial and institutional decision-makers and academic counterparts took part in this first-of-its-kind event.

C. Marché presented the joint laboratory ProofInUse at the LabCom Colloquium (Maison de la Chimie, Paris, Sep. 27 2018 <http://ptolemee.com/colloque-labcom/index.html>) organized by ANR, with participation of numerous actors from both academia and industry.

### 10.3.3. Internal action

S. Boldo demonstrated popularization by an unplugged activity to all the new Inria staff at the welcome days on June 7th 2018

S. Boldo animated an unplugged activity to the AER service (team assistants) on July 3rd 2018

S. Boldo trained colleagues on unplugged activities for the “Fête de la science” (5 sessions of about 1h30)

S. Dailler and C. Marché gave a presentation of the joint laboratory ProofInUse, together with a demonstration of the SPARK environment, at the Software Day of the DigiCosme Labex (Saclay, June 7 2018 [https://digicosme.lri.fr/tiki-read\\_article.php?articleId=256](https://digicosme.lri.fr/tiki-read_article.php?articleId=256))

### 10.3.4. Creation of media or tools for science outreach

S. Boldo is supervising the popularization mission of C. Patte (M3DISIM team) in order to create a new popularization activity for teenagers in 2019.

C. Marché, main contributor of the site for the Why3 tool inside the Inria Saclay Virtual Showroom. Includes a short video introduction of Why3 for beginners using the TryWhy3 Web interface <http://why3.lri.fr/try/>

## TROPICAL Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. General Chair, Scientific Chair

- Stéphane Gaubert is the coordinator of the Gaspard Monge Program for Optimization, Operations Research and their interactions with data sciences (PGMO), a corporate sponsorship program, operated by Fondation Mathématique Jacques Hadamard, supported by Criteo, EDF, Orange and Thales, see <http://www.fondation-hadamard.fr/fr/pgmo/>.

#### 10.1.1.2. Member of the Organizing Committees

- S. Gaubert co-organizes the “Séminaire Parisien d’Optimisation” at Institut Henri Poincaré. <https://sites.google.com/site/spoihp/>.

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Chair of Conference Program Committees

- S. Gaubert, Chair of the PGMO days, EDF Labs Paris Saclay, Nov 20-21, 2018. <http://www.fondation-hadamard.fr/fr/pgmo/pgmodays>
- S. Gaubert, coorganizer, with A. Daniilidis and S. Tapia, of the workshop “Dynamical Aspects in Variational Analysis”, École polytechnique, Dec. 14th, 2018. <http://www.cmap.polytechnique.fr/~gaubert/VariationalAnalysisWorkshop/index.html>

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- S. Gaubert is member of the editorial committee of the collection Mathématiques et Applications, SMAI and Springer.
- S. Gaubert is associate editor of Linear and Multilinear Algebra.
- S. Gaubert is associate editor of RAIRO Operations research.

### 10.1.4. Invited Talks

- M. Akian
  - Majorization inequalities for valuations of eigenvalues, Mittag-Leffler institute, February 2018.
- X. Allamigeon
  - Log-barrier interior point methods are not strongly polynomial, Workshop on Tropical Algebra and Applications, Mittag-Leffler Institute, Stockholm, Sweden, January 2018
  - Log-barrier interior point methods are not strongly polynomial, Workshop on Algebraic and geometric aspects of semidefinite programming at ISMP, Bordeaux, France, June 2018
  - Performance evaluation of an emergency call center: tropical polynomial systems applied to timed Petri nets, Workshop on Tropical Mathematics & Optimisation for Railways, Birmingham University, UK, June 2018
  - First steps in the formalization of convex polyhedra in Coq, International Conference on Mathematical Software, Notre-Dame University, USA, July 2018

- S. Gaubert
  - Nonarchimedean convex programming and its relation to mean payoff games, invited plenary talk at Highlights of Logic, Automata, and Games, Berlin, September 2018.
  - Condition numbers in nonarchimedean semidefinite programming and their relation with stochastic mean payoff games, Mittag-Leffler institute, February 2018.
  - Inequalities for the spectral radii and spectral norms of nonnegative tensors, ISMP, Bordeaux, Invited session, July 2018.
  - Nonarchimedean Degenerations of Convex Programming – In Which Tropical Geometry Shows That Log-Barrier Interior Point Methods Are Not Strongly Polynomial, Computational and Applied Mathematics Colloquium, The University of Chicago, May 2018.

### 10.1.5. Leadership within the Scientific Community

- See Section 10.1.1.1 (coordination of PGMO).

### 10.1.6. Research Administration

- M. Akian :
  - Member of the “comité de liaison SMAI-MODE” since June 2015.
  - Member of the laboratory council of CMAP.
- S. Gaubert :
  - Chairman of the Gaspard Monge Program for Optimization, Operations Research and their interactions with data sciences (PGMO), see 10.1.1.1 for details.
  - Member of the scientific council of CMAP.
- X. Allamigeon:
  - Member of the scientific committee of Inria Saclay – Ile-de-France.
  - Member of the Applied Mathematics Department committee at Ecole Polytechnique.

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

- M. Akian
  - Course “Markov decision processes: dynamic programming and applications” joint between (3rd year of) ENSTA and M2 “Mathématiques et Applications”, U. Paris Saclay, “Optimization”, and shared with Jean-Philippe Chancelier (ENPC), 15 hours each.
- X. Allamigeon
  - Petites classes et encadrement d’enseignements d’approfondissement de Recherche Opérationnelle en troisième année à l’École Polytechnique (programme d’approfondissement de Mathématiques Appliquées) (niveau M1).
  - Cours du M2 “Optimisation” de l’Université Paris Saclay, cours partagé avec Manuel Ruiz (RTE) et Dominique Quadri (LRI, Université Paris Sud).
  - Co-responsabilité du programme d’approfondissement en mathématiques appliquées (troisième année) à l’École Polytechnique.
- J.B. Eytard
  - Cours de niveau L1-L2 à l’IUT d’Informatique d’Orsay (Univ. Paris-Sud), dans le cadre d’un monitorat (64h) (théorie des graphes, recherche opérationnelle, modélisation mathématique).
- S. Gaubert
  - Course “Systèmes à Événements Discrets”, option MAREVA, ENSMP.

- Course “Algèbre tropicale pour le contrôle optimal et les jeux” of “Contrôle, Optimisation et Calcul des Variations” (COCV) of M2 “Mathématiques et Applications” of Paris 6 University and École Polytechnique.
- Lecture of Operations Research, third year of École Polytechnique. The lectures notes were published as a book [66].
- M. Skomra
  - TD de mathématiques à l’UPMC.

### 10.2.2. Supervision

- PhD : Eric Fodjo, registered at École Polytechnique, since October 2013, thesis supervisor: Marianne Akian, defended on Jul 13 2017.
- PhD : Mateusz Skomra, registered at Univ. Paris Saclay since October 2015, thesis supervisor: Stéphane Gaubert, cosupervision: Xavier Allamigeon, defended on Dec. 5, 2018.
- PhD : Jean-Bernard Eytard, registered at Univ. Paris Saclay since October 2015, thesis supervisor: Stéphane Gaubert, cosupervision: Marianne Akian, Mustapha Bouhtou, defended on Nov. 12, 2018.
- PhD in progress: Paulin Jacquot, registered at Univ. Paris Saclay since November 2016, thesis supervisor: Stéphane Gaubert, cosupervision: Nadia Oujdane, Olivier Beaude (EDF).
- PhD in progress: Benoît Tran, registered at Univ Paris-Est Marne La Vallée, since September 2017, thesis supervisor: Jean-Philippe Chancelier (ENPC), cosupervision: Marianne Akian.
- PhD in progress: Maxime Grangereau, registered at Univ. Paris Saclay since Jan 2018, thesis supervisor: Emanuel Gobet, cosupervision: Stéphane Gaubert.
- PhD in progress: Omar Saadi, registered at Univ. Paris Saclay since October 2018, thesis supervisor: Stéphane Gaubert, cosupervision: Marianne Akian.
- PhD in progress: Marin Boyet, registered at Univ. Paris Saclay since October 2018, thesis supervisor: Stéphane Gaubert, cosupervision: Xavier Allamigeon.

### 10.2.3. Juries

- M. Akian
  - Jury of the 2018 competition for CR2 positions of Inria Saclay–Île-de-France.
  - Jury of the PhD thesis of E. Fodjo (Ecole Polytechnique, thesis supervisor, July 2018).
  - Jury of the PhD thesis of H. Gerard (ENPC, reviewer, Oct. 2018).
  - Jury of the PhD thesis of J.B. Eytard (Ecole Polytechnique, examiner, Nov. 2018).
- X. Allamigeon
  - Comité de suivi doctoral de D. Rouhling (Inria Sophia, Mai 2018)
  - Jury of the PhD thesis of M. Skomra (Ecole Polytechnique, examiner, Dec. 2018).
- S. Gaubert
  - Jury of the HdR of Welington de Oliveira (Sorbonne Universités –Paris I– examiner, Déc. 2018)
  - Jury of the PhD thesis of J.B. Eytard (Ecole Polytechnique, examiner, Nov. 2018).
  - Jury of the PhD thesis of T. Roget (Ecole Polytechnique, examiner, Nov. 2018).
  - Jury of the PhD thesis of M. Skomra (Ecole Polytechnique, examiner, Dec. 2018).

## 10.3. Conferences, Seminars

- M. Akian
  - The operator approach to entropy games, International workshop on game theory, IHP, June 2018, Paris.



- Majorization inequalities for valuations of eigenvalues, ANR/DFG PRCI Project Kick-off Meeting, July 2018, Bonn.
- Tropical geometry, Optimal Control and Mean-payoff Games, Dagstuhl Seminar “Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods”, Oct. 2018, Dagstuhl.
- X. Allamigeon
  - Tropical Linear Optimization, Polytopes à Paris, Paris, France, January 2018.
  - A formalization of convex polyhedra based on the simplex method, Séminaire de Géométrie Algorithmique et Combinatoire, Paris, France, March 2018.
  - Log-barrier interior point methods are not strongly polynomial, Journée de rentrée du CMAP, Palaiseau, France, October 2018.
  - First steps in the formalization of convex polyhedra in Coq, Seminar on Solvers Principles and Architectures, Rennes, France, October 2018.
- M. Boyet
  - The shadow vertex algorithm solves colorful one-versus-all tropical polynomial systems, PGMO Days, Nov. 21, 2018, Palaiseau.
- J.B. Eytard
  - A tropical approach to bilevel programming and a comparison with a competitive equilibrium problem, ROADEF, Feb. 2018, Université Bretagne Sud, Lorient.
  - Tropical geometry applied to bilevel programming and an application to price incentives in telecom networks, JFRO (journées franciliennes de recherche opérationnelle) sur le thème “optimisation bi-niveaux”, March 2018, CNAM, Paris.
  - Tropical geometry and discrete convexity applied to bilevel programming, IWOBIP 18, June 2018, Lille.
  - Tropical geometry applied to bilevel programming, ISMP, July 2018, Bordeaux.
  - How to use tropical geometry to solve bilevel programming problems ?, PGMO Days, Nov. 21, 2018, Palaiseau.
- S. Gaubert
  - Tropical spectrahedra and their relation with mean payoff games, University of Illinois at Chicago, May 2018.
  - Tropical spectrahedra and their relation with mean payoff games, International workshop on game theory, IHP, June 2018.
  - A convergent hierarchy of non-linear eigenproblems to compute the joint spectral radius of nonnegative matrices, 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS), Hong-Kong, Jul. 2018.
- P. Jacquot
  - Fast Computation of Equilibria in Splittable Routing Games: Application to Electricity Demand Response, SMAI Mode, Autrans, March 2018
  - Analysis of a Routing Game Model for Demand Side Management, ISMP, Bordeaux, July 2018.
  - Routing Game on Parallel Networks: the Convergence of Atomic to Nonatomic, CDC, Miami, December 2018
- M. Skomra
  - The condition number of stochastic mean payoff games, ISMP, Bordeaux, July 2018.
  - Condition Numbers of Stochastic Mean Payoff Games and What They Say about Nonarchimedean Semidefinite Programming, 23rd International Symposium on Mathematical Theory of Networks and Systems (MTNS), Hong-Kong, July, 2018.

- A. Sagnier
  - Talk at Ohio State University on «An arithmetic site of Connes-Consani type for  $\mathbb{Z}[i]$ », January 2018.
  - Talk at Rutgers University on «An arithmetic site of Connes-Consani type for  $\mathbb{Z}[i]$ », January 2018
  - Talk at Johns Hopkins University on «An arithmetic site of Connes-Consani type for  $\mathbb{Z}[i]$ », January 2018
  - Short communication at Toposes in Como on «An arithmetic site of Connes-Consani type for  $\mathbb{Z}[\sqrt{2}]$ », Università degli Studi dell’Insubria, Como, June 2018
  - Short communication at the International Congress of Mathematicians, ICM 2018 on «An arithmetic site of Connes-Consani type for  $\mathbb{Z}[i]$ », August 2018
  - Short communication at the Tensors conference on «Tropical tensor products» Polytecnico di Torino, Turin, September 2018.
  - Talk at University of Oslo on «An arithmetic site of Connes-Consani type for number fields with narrow class number 1», November 2018.
- B. Tran
  - A Stochastic Min-plus Algorithm for Deterministic Optimal Control, ISMP, July 2018, Bordeaux.
- C. Walsh
  - Seminar, Université de Nantes, December 14, 2018. Title of the talk: “The horofunction boundary of Teichmüller space”.

## XPOP Project-Team

# 10. Dissemination

## 10.1. Promoting Scientific Activities

### 10.1.1. Scientific Events Organisation

#### 10.1.1.1. General Chair, Scientific Chair

- Winter School **New Frontiers in high-dimensional probability and statistics**, Moscow, February 23-24, 2018
- Workshop "**Structural Inference in Inference in High-Dimensional Models**", Moscow, 5-8 September 2018

### 10.1.2. Scientific Events Selection

#### 10.1.2.1. Member of the Conference Program Committees

- **NIPS 2018**
- **COLT 2018**
- **useR!2018**

### 10.1.3. Journal

#### 10.1.3.1. Member of the Editorial Boards

- Stochastic Processes and their Applications
- Journal of Statistical Planning and Inference
- Journal of Computational and Graphical Statistics

### 10.1.4. Invited Talks

- **Analysis of adaptive stochastic gradient and MCMC algorithms**, June 2018
- **Langevin MCMC: theory and methods**, Singapour, June 2018
- **MCQMC 2018: Langevin Monte Carlo: theory and methods**, Rennes, July 2018
- **Langevin MCMC: theory and methods**, Singapour, August 2018
- **Huawei European Innovation Day, "Toward Bayesian Machine Learning"**, Roma, November 2018
- **Iberoamerican Pharmacometrics Network Congress 2018**, Guadalajara, Mexico.
- "Tests d'hypothèse et algorithmes de construction de modèle pour les modèles à effets mixtes", Toulouse, September 2018.
- **New algorithms and tools for population model building and evaluation**, Valparaiso, Chile, December 2018.

### 10.1.5. Leadership within the Scientific Community

- Eric Moulines is in charge of the academic supervision of the **International Laboratory of Stochastic Algorithms and High-dimensional inference**, National Research University, Higher School of Economics, funded by the Russian Academic Excellence Project.
- Eric Moulines is associate researcher of the **Alan Turing Institute**
- Eric Moulines is elected member of the French Académie des Sciences.

### 10.1.6. Scientific Expertise

- Marc Lavielle is member of the Scientific Committee of the High Council for Biotechnologies.

- Marc Lavielle is member of the evaluation committee of the [International Center for Mathematics \(CIMAT\)](#), Guanajuato, Mexico.
- Eric Moulines is member of the award committee of foundation "Charles Defforey".

### 10.1.7. Research administration

- Marc Lavielle is member of the Scientific Programming Committee (CPS) of the Institute Henri Poincaré (IHP).
- Eric Moulines is a board member of the Institut de Convergence DataIA.
- Julie Josse is elected member of the R foundation.

## 10.2. Teaching - Supervision - Juries

### 10.2.1. Teaching

Master : Julie Josse, Statistics with R, 48, M2, X-HEC

Master : Eric Moulines, Regression models, 36, M2, X-HEC

Engineering School : Eric Moulines, Statistics, 36, 2A, X

Engineering School : Eric Moulines, Markov Chains, 36, 3A, X

Engineering School : Erwan Le Pennec, Statistics, 36, 2A, X

Engineering School : Erwan Le Pennec, Statistical Learning, 36, 3A, X

Engineering School : Marc Lavielle, Statistics in Action, 48, 3A, X

### 10.2.2. Supervision

PhD in progress : Nicolas Brosse, September 2016, Eric Moulines

PhD in progress : Geneviève Robin, September 2016, Julie Josse and Eric Moulines

PhD in progress : Belhal Karimi, October 2016, Marc Lavielle and Eric Moulines

PhD in progress : Marine Zulian, October 2016, Marc Lavielle

PhD in progress : Wei Jiang , October 2017, Julie Josse and Marc Lavielle

## 10.3. Popularization

### 10.3.1. Internal or external Inria responsibilities

Eric Moulines is member of the Evaluation Committee of Inria.

### 10.3.2. Creation of media or tools for science outreach

Marc Lavielle developed and maintains the learning platform [Statistics in Action](#). The purpose of this online learning platform is to show how statistics (and biostatistics) may be efficiently used in practice using R. It is specifically geared towards teaching statistical modelling concepts and applications for self-study. Indeed, most of the available teaching material tends to be quite "static" while statistical modelling is very much subject to "learning by doing".

Julie Josse (with Nicholas Tierney and Nathalie Vialaneix) developed and maintains the website [R-miss-tastic](#), A resource website on missing data.