



RESEARCH CENTER
Saclay - Île-de-France

FIELD

Activity Report 2017

Section Dissemination

Edition: 2018-02-19

ALGORITHMICS, PROGRAMMING, SOFTWARE AND ARCHITECTURE

1. COMETE Project-Team	4
2. DATASHAPE Project-Team	8
3. DEDUCTEAM Project-Team	11
4. GRACE Project-Team	13
5. MEXICO Project-Team	16
6. PARSIFAL Project-Team	19
7. SPECFUN Project-Team	22
8. TOCCATA Project-Team	25

APPLIED MATHEMATICS, COMPUTATION AND SIMULATION

9. COMMANDS Project-Team	29
10. DEFI Project-Team	30
11. DISCO Project-Team	34
12. GAMMA3 Project-Team (section vide)	39
13. GECO Project-Team	40
14. POEMS Project-Team	41
15. RANDOPT Team	45
16. SELECT Project-Team	47
17. TAU Team	49
18. TROPICAL Team	54

DIGITAL HEALTH, BIOLOGY AND EARTH

19. AMIBIO Team	58
20. GALEN Project-Team	61
21. LIFEWARE Project-Team	64
22. M3DISIM Project-Team	69
23. PARIETAL Project-Team	73
24. XPOP Project-Team	78

NETWORKS, SYSTEMS AND SERVICES, DISTRIBUTED COMPUTING

25. INFINE Project-Team	80
-------------------------------	----

PERCEPTION, COGNITION AND INTERACTION

26. AVIZ Project-Team	84
27. CEDAR Team	88
28. EX-SITU Project-Team	91
29. ILDA Project-Team	98
30. PETRUS Project-Team	102

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

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 CONCUR, the International Conference in Concurrency Theory. Since 2016.

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.

Frank D. Valencia is member of:

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

8.1.2. Scientific events selection

8.1.2.1. 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. July 2019.

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.

ICTAC 2017. The 14th International Colloquium on Theoretical Aspects of Computing. Hanoi, Vietnam, 23-27 October 2017.

TASE 2017. The 11th International Symposium on Theoretical Aspects of Software Engineering. Nice, France, 13-15 September 2017.

CONCUR 2017. The 28th International Conference on Concurrency Theory. Berlin, Germany, 5-8 September 2017.

CSL 2017. The 26th EACSL Annual Conference on Computer Science Logic. Stockholm, Sweden, 20-25 August 2017.

ICSOFT-PT 2017. The 12th International Conference on Software Paradigm Trends. Lisbon, Portugal, 24-26 July 2017.

ICALP 2017 (Track B). The 44th International Colloquium on Automata, Languages, and Programming. Warsaw, Poland, 10–14 July 2017.

FORTE 2017. The 37th IFIP International Conference on Formal Techniques for Distributed Objects, Components, and Systems. Neuchâtel, Switzerland, 19-22 June 2017.

CSR 2017. The 12th International Computer Science Symposium in Russia. Kazan, Russia, 8–12 June 2017.

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

ICDE 2017: IEEE International Conference on Data Engineering

CSF 2017: 30th IEEE Computer Security Foundations Symposium

POST 2017: 6th International Conference on Principles of Security and Trust

BIGQP 2017: International Workshop on Big Geo Data Quality and Privacy

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

RADICAL-2017. International Workshop Recent Advances in Concurrency and Logic - RADICAL

CP-ICLP-SAT-DP-17. Doctoral Program of the 23rd International Conference on Principles and Practice of Constraint Programming

8.1.2.2. *Reviewing*

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

8.1.3. *Journals*

8.1.3.1. *Member of the editorial board*

Catuscia Palamidessi is:

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

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

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

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

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

Konstantinos Chatzikokolakis is:

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

8.1.3.2. Reviewing

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

8.1.4. Other Editorial Activities

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 committee for the assignment of the Inria International Chairs.

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

President of the selection committee for the **EATCS Best Paper Award** at the ETAPS conferences. Since 2006.

8.1.6. Invited talks

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

FACS 2017. The 14th International Conference on Formal Aspects of Component Software. Barga, Portugal. 10-13 Oct, 2017.

Cybersecurity 2017. Focus Day on Cyber Security and Helthcare. In the context of the European Cyber Week. Rennes, France, 30 November 2017.

QuaSy 2017. Quantitative Systems: Theory and Applications. Como, Italy, 16-17 October 2017.

Women in Logic 2017, Reykjavik, Island, June 2017.

CrossFyre 2017 Workshop on Cryptography, Robustness, and Provably Secure Schemes. Paris. April 2017.

FORSE 2017 (Keynote speaker). 1st International Workshop on FORmal methods for Security Engineering. Porto, Portugal. 19–21 February, 2017.

8.1.7. Service

Catuscia Palamidessi has served as:

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

Frank Valencia has served as:

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

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, 2017.

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, 2017.

Master: Konstantinos Chatzikokolakis and Catuscia Palamidessi have been teaching a course on the Foundations of Privacy at the **MPRI**, the Master Parisien pour la Recherche en Informatique. University of Paris VII. A.Y. 2016-17 and 2017-18. Total for each semester: 24 hours plus 6 hours for the exam and the exercise session is preparation to the exam.

8.2.2. Supervision

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

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

PhD in progress (2016-) **Tymofii Prokopenko**. Ecole Polytechnique and ENS Cachan. Grant Digiteo-Digicosme. Co-supervised by Konstantinos Chatzikokolakis, Catuscia Palamidessi, and Serge Hadad (ENS Cachan).

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

PhD terminated (2015-17) **Joris Lamare**. Ecole Polytechnique. Grant MSR Center. Co-supervised by Catuscia Palamidessi and Konstantinos Chatzikokolakis. Joris has stopped his PhD due to personal reasons.

PhD completed (2014-17) **Michel Guzman**. Title: On the Expressiveness of Spatial Constraint Systems [11]. Ecole Polytechnique. Grant Inria CORDI-S. Co-supervised by Catuscia Palamidessi and Frank D. Valencia.

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:

Nicolas Bonifas (Ecole Polytechnique, France). Member of the committee board at the PhD defense. Title of the thesis: *Geometric and Dual Approaches to Cumulative Scheduling*. Supervised by Philippe Baptiste. Defended in December 2017.

Maggie Mhanna (CentraleSupelec, France). Member of the committee board at the PhD defense. Supervised by Pablo Piantanida. Defended in January 2017.

8.2.4. Other didactical duties

Catuscia Palamidessi is:

Member of the advising committee for Hamid Ebadi, PhD student supervised by David Sands, Chalmers University, Sweden, since 2014. Also reviewer and member of the committee for the half-way thesis defense (Licentiate) that took place in June 2015.

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. Since December 2014.

Member of the advising committee for the PhD of Andrea Margheri (PhD student supervised by Rosario Pugliese), University of Florence, Italy. 2014-16.

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.

DATASHAPE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Frédéric Chazal co-organized, with M. Meila (Univ. of Washington) the NIPS 2017 workshop “Synergies in Geometric Data Analysis”, December 2017.
- Frédéric Chazal co-organized the workshop “Functionality in Geometric Data”, Schloss Dagstuhl, Germany, January 2017

10.1.2. Journal

10.1.2.1. 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*.

10.1.3. Invited Talks

Jean-Daniel Boissonnat has been invited and gave a talk at NYU-AD on November 19, 2017.

Frédéric Chazal, Foundations of Computational Mathematics (FoCM'17), Computational Topology and Geometry workshop, Barcelona, Spain, July 2017.

Frédéric Chazal, Applied Topology in Bedlewo 2017 Conference, Bedlewo, Poland, June 2017.

Frédéric Chazal, UC Davis Statistical Sciences Symposium, Davis, USA, May 2017.

Frédéric Chazal, Applied and Computational Algebraic Topology, Hausdorff Institute, Bonn, Germany, April 2017.

Frédéric Chazal, The First International Conference on the Mathematics of Data Science, Hong Kong Baptist University, Hong Kong, March 2017.

Frédéric Chazal, CNA/Ki-Net Workshop: Dynamics and Geometry from High Dimensional Data, Carnegie Mellon University, March 2017.

Frédéric Chazal, Colloquium, collaborative research center Discretization in Geometry and Dynamics, Munich, February 7, 2017.

Frédéric Chazal, Statistics/Learning at Paris-Saclay, workshop at IHES, January 19, 2017.

Mathijs Wintraecken gave an invited talk at the SoCG workshop on Algorithms for the Medial Axis in Brisbane, June 2017.

Steve Oudot, BIRS workshop on Topological Data Analysis: developping abstract foundations, Banff, Canada, August 2017.

Steve Oudot, Mini-Symposium on Computational Topology, Brisbane, Australia, July 2017.

Steve Oudot, Dagstuhl seminar on Topology, computation and data analysis, Dagstuhl, Germany, July 2017.

Steve Oudot, Applied Topology Seminar, Brown University, USA, April 2017.

Steve Oudot, TRIPODS workshop on Geometry and topology for data, ICERM, USA, December 2017.

Steve Oudot, workshop on Mathematical signal processing and data analysis, Bremen University, Germany, September 2017.

Steve Oudot, Conférence de rentrée Maths-Info, ENS Cachan, September 2017.

10.1.4. Leadership within the Scientific Community

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

Steve Oudot is co-head of the GT Géométrie Algorithmique since September 2017.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Collège de France : Jean-Daniel Boissonnat, Géométrie algorithmique: données, modèles, programmes, avril-juin 2017.

Master: Frédéric Chazal, 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: Steve Oudot, Topological Data Analysis, 45h eq-TD, M1, École Polytechnique, France.

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

Master: Frédéric Chazal, Topological Data Analysis, 16h eq-TD, M2, Mathématiques, Vision, Apprentissage (MVA), ENS Paris-Saclay, France.

Winter School on Computational geometry and topology for data analysis, Jean-Daniel Boissonnat, Frédéric Chazal, Sophia-Antipolis, january 2017.

10.2.2. Supervision

PhD: Eddie Aamari, A Statistical Approach of Topological Data Analysis, September 1st, 2017, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Claire Brécheteau, Statistical aspects of distance-like functions , started September 1st, 2015, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Bertrand Beauflis, 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: Mathieu Carrière, Topological signatures for geometric data, defended November 21st, 2017, Steve Oudot.

PhD in progress: Jérémie Cochoy, Decomposition and stability of multidimensional persistence modules, started September 1st, 2015, Steve Oudot.

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: François Godi, Data structures and algorithms for topological data analysis and high dimensional geometry, 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).

10.2.3. Juries

Frédéric Chazal was a member of the PhD defense committee of Aruni Choudhary, MPI (reviewer) and Aurelien Vasseur (co-advisor).

Jean-Daniel Boissonnat was a member of the PhD defense committee of Eddie Amari.

Steve Oudot was a member (examiner) of the PhD defence committees of Jérémie Dubut and Nicolas Ninin (Cosynus team, Ecole polytechnique).

10.3. Popularization

10.3.1. Inria-Industry Meeting

Marc Glisse, Miro Kramar and Steve Oudot held a booth for half a day.

Marc Glisse played for a small video which is now on the InriaInnovation YouTube channel <https://youtu.be/IKNjGk-Z6b4>.

DEDUCTEAM Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Selection

8.1.1.1. Member of the Conference Program Committees

G. Burel was a member of the 12th International Workshop on the Implementation of Logics.

8.1.1.2. Reviewer

G. Burel, S. Martiel, and F. Gilbert reviewed submissions to the Logic In Computer Science conference.

G. Burel reviewed submissions to the Formal Structures for Computation and Deduction conference.

8.1.2. Journal

8.1.2.1. Reviewer - Reviewing Activities

G. Burel reviewed articles for the Computer Journal and the Journal of Logic and Computation.

8.1.3. Invited Talks

G. Burel gave an invited lecture at the 28th Journées Francophones des Langages Applicatifs, entitled “Exprimer ses théories en Dedukti, le vérificateur de preuves universel”.

8.1.4. Scientific Expertise

G. Dowek is a member of the scientific concil of La Société Inforamatique de France.

G. Dowek is a member of the scientific concil of La Main à la Pâte.

G. Dowek is a member of the Commission de réflexion sur l’Éthique de la Recherche en sciences et technologies du Numérique d’Allistene.

8.1.5. Research Administration

F. Blanqui is co-director of the pole 4 (programming: models, algorithms, languages and architectures) of Paris-Saclay University’s doctoral school on computer science.

F. Blanqui is referent of LSV PhD students.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

F. Blanqui gave a M1 course (16h) on rewriting theory in the MPRI at the ENS Paris-Saclay.

F. Blanqui gave a M1 course (21h) on language theory at the ENSIIE.

G. Dowek’s paper *Rules and derivations in an elementary logic course* has been published in the IfCoLog Journal of Logics and their Applications [11].

8.2.2. Supervision

F. Blanqui supervised the internships of A. Defourné and R. Bocquet.

F. Blanqui and O. Hermant supervised the internship of G. Genestier.

F. Blanqui and O. Hermant supervise the PhD of G. Genestier.

G. Dowek supervises the PhD of G. Férey and F. Gilbert.

G. Dowek and D. Delahaye supervise the PhD of G. Bury.

G. Dowek and S. Graham-Lengrand supervise the PhD of F. Thiré.

8.2.3. *Juries*

F. Blanqui was member of the jury for the best scientific production of the year within Paris-Saclay University's doctoral school on computer science.

F. Blanqui has been in the jury for the PhD of R. Lepigre on "Semantics and Implementation of an Extension of ML for Proving Programs", Chambéry.

GRACE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

B. Smith was a member of the organizing committee and Short Talk Chair for IEEE EuroS&P 2017 (Paris, April 2017)

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- D. Augot was co-chair of Workshop on Coding and Cryptography (WCC) 2017 at St Petersburg (Russia).

9.1.2.2. Member of the Conference Program Committees

B. Smith: LatinCrypt 2017, ECC (International Workshop on Elliptic Curve Cryptography) 2017.
 D. Augot and A. Couvreur : Fifth Code-based Cryptography Workshop 2017, Tenerife, Spain.
 A. Couvreur: WCC 2017 (Workshop on Coding and Cryptography 2017, St Petersburg, Russia).
 A. Couvreur : AGC²T 2017 (Arithmetic Geometry Cryptography and Coding Theory 2017, Marseille, France).
 D. Augot: International Conference on Mathematical Aspects of Computer and Information Sciences
<https://macis2017.sba-research.org/>

9.1.2.3. Reviewer

B. Smith: IFIPSEC2017, Africacrypt 2017, WCC 2017, Asiacrypt 2017, Eurocrypt 2017, MACIS 2017, PKC 2018
 J. Lavauzelle: MACIS 2017
 A. Couvreur: Crypto 2017, Eurocrypt 2017, ISIT 2017.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

F. Morain is member of the editorial board of the *Applicable Algebra in Engineering, Communication and Computing*, Springer.

9.1.3.2. Reviewer - Reviewing Activities

B. Smith: Theory of Computing Systems, Springer Women in Mathematics, Research in Number Theory, IEEE Transactions on Information Theory, Journal of Cryptographic Engineering.
 A. Couvreur: IEEE Transactions on Information Theory, IEEE Transactions on Communication, Journal of Number Theory, SIAM Journal on Applied Algebra and Geometry.

9.1.4. Invited Talks

B. Smith was an invited speaker at the annual FMF Symposium, a public science event at Universiteit Groningen (Groningen, NL, November 2017)
 B. Smith was an invited speaker in the SIAM Applied Algebraic Geometry minisymposium on Applications of Computational Algebraic Geometry to Cryptology (Atlanta, USA, August 2017).

- B. Smith was an invited speaker at the FoCM workshop on Computational Number Theory (Barcelona, ES, July 2017)
- B. Smith was an invited speaker at the Summer School on Real-World Crypto and Privacy (Sibenik, HR, June 2017)
- B. Smith was an invited speaker at JeudiX, a public science outreach event of École polytechnique (Paris, January 2017)

9.1.5. Animation of Seminars

- D. Augot is member of the scientific committee of the CCA seminar, “Codage, Cryptographie et Algorithmes”, <https://cca.inria.fr>
- D. Augot, with Bernadette Charron-Bost, is heading the scientific committee of the Blocksem seminar at Polytechnique, on blockchains, <http://www.lix.polytechnique.fr/blocksem>
- D. Augot, with Fabrice Le Fessant, organised the Open Source Spring on blockchains <http://www.open-source-innovation-spring.org/>

9.1.6. Research Administration

- F. Morain is vice-head of the Département d'informatique of Ecole Polytechnique.
- F. Morain is member of the Board of Master Parisien de Recherche en Informatique (MPRI).
- A. Couvreur is member of LIX's *Conseil de laboratoire*.
- B. Smith was the International Correspondent for CRI Saclay.
- B. Smith was a member of the COST-GTRI.
- D. Augot is elected member of the “conseil académique consultatif” de Paris-Saclay.
- D. Augot was in the “comité de sélection” for a “maître de conférences” position in Grenoble
- D. Augot was heading the “comité de sélection” for a “maître de conférences” position in Rouen

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence:

- B. Smith, Computer Programming (CSE101), 23h EqTD, L1, École polytechnique, France
- J. Lavauzelle, 1I001, *Éléments de programmation*, tutorial class (17.5h equiv TD), L1, Université Pierre et Marie Curie
- J. Lavauzelle, 2I003, *Initiation à l'algorithmique*, tutorial class (47.5h equiv TD), L2, Université Pierre et Marie Curie
- A. Couvreur and E. Barelli, INF411, ”Les bases de la programmation et de l'algorithmique“, 21.3h (equiv TD), 2nd year (L3), Ecole Polytechnique, France.
- E. Barelli, INF311, ”Introduction à l'informatique“, 26.7h(equiv TD), 1st year, Ecole Polytechnique, France.

Master:

- B. Smith, Advanced Cryptology (INF568), 55h EqTD, M1, École polytechnique, France
- B. Smith and F. Morain, Algorithmes Arithmétiques pour la Cryptologie (2-12-2), 20h EqTD, M2, Master Parisien de Recherche en Informatique (MPRI), France
- A. Couvreur and F. Morain, Introduction to Cryptology (INF558), 40h, M1, École polytechnique, France
- A. Couvreur, Error Correcting Codes and Applications to Cryptography, (2-13-2), 15h, M2, MPRI, FRANCE

Master 2 intern

- D. Augot was the director of Rémi Clarisse internship on the Chor-Rivest cryptosystem

Students project

- D. Augot was managing two groups of polytechniques students on their own project: one about a voting system based on homomorphic encryption (with CEA List), the second about a medical kidney exchange scheme secured and enforced by the Hyperledger/fabric blockchain (with Orange)

9.2.2. Supervision

PhD : Cyril Hugounenq, Volcans et calcul d'isogénies, Université Paris Saclay, 25/09/2017,
F. Morain & L. Goubin & L. De Feo.

9.2.3. Juries

- D. Augot
 - examinator of the PhD defense of Sarah Kamel, “Sécurité pour les réseaux sans fil”, le 10 mars 2017 (Télécom Paris Tech)
 - examinator of the PhD defense of Francisco Vial-Prado, “Contributions to the design and analysis of fully homomorphic encryption schemes, le 12 juin 2017 (Université Versailles Saint-Quentin)
 - examinator of the PhD defense of Vlad Dragoi “Approche algébrique pour l'étude et la résolution de problèmes algorithmiques issus de la cryptographie et de la théorie des codes”, le 6 juillet 2017 (University of Rouen).
 - examinator of the PhD defense of Mohamed A. M. Saeed Taha “Algebraic Approach for Code Equivalence”, le 18 décembre 2017 (University of Rouen).
- A. Couvreur
 - PhD : Hervé Talé Kalachi (University of Rouen).
 - Agrégation de Mathématiques.

9.3. Popularization

- A. Couvreur gave the *Conférence inaugurale* of the *Semaine des mathématiques* in the accadémie de Créteil: *Cryptographie, le langage des secrets*.

MEXICO Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Matthias Függer is general co-chair of ASYNC 2018

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Laurent Fribourg was a PC member of:
 - 7th International Conference on New Computational Methods for Inverse Problems, Cachan, 2017
 - The 27th International Symposium on Logic-based Program Synthesis and Transformation, Namur, Belgium, 2017
 - Seventh Workshop on Design, Modeling and Evaluation of Cyber Physical Systems, Seoul, 2017.
- Matthias Függer was a member of the PC of DDECS'17.
- Stefan Haar was a member of the PCs of the conferences MSR 2017 and ACSD 2017 and of the workshop ATAED 2017.
- Serge Haddad was a PC member of the *International Workshop on Petri Nets and Software Engineering* (PNSE) 2017 at Zaragoza, Spain, and of the *11th International Conference on Verification and Evaluation of Computer and Communication Systems* (VECOS) 2017 at Montreal, Québec, Canada. He was also a member of the scientific committee of *Ecole d'été temps-réel* (ETR 2017).

9.1.2.2. Reviewer

- Matthias Függer was a reviewer for ICALP, DISC, FMCAD, ICDCN, and OPODIS.
- Stefan Haar was a reviewer for FOSSACS.
- Stefan Schwoon was a reviewer for the following conferences taking place in 2017: STACS, TACAS, ESOP, ATVA, and FSTTCs.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Stefan Haar is associate editor of the *Journal of Discrete Event Dynamic Systems: Theory and Applications*.

9.1.3.2. Reviewer - Reviewing Activities

- Thomas Chatain was a reviewer for Acta Informatica, Artificial Intelligence and Journal of Discrete Event Dynamic Systems.
- Matthias Függer was a reviewer for MFCS.
- Stefan Haar was a reviewer for MSCS and IEEE Transactions on Automatic Control.
- Stefan Schwoon was a reviewer for Fundamenta Informaticae, International Journal on Software Tools for Technology Transfer, and the Journal of Discrete Event Dynamic Systems.

9.1.4. Invited Talks

- Laurent Fribourg gave the following invited talk: "Euler's Method Applied to the Control of Switched Systems", at 15th International Conference on Formal Modelling and Analysis of Timed Systems, Berlin, 2017
- Matthias Függer gave invited talks at the Theory of Hardware seminar in Vienna in February, the Noon seminar at Max-Planck Institute for Informatics in April, and the Distributed Computing Seminar at Labri in November.
- Serge Haddad gave the following invited talks:
 - at Centre Fédéré en Vérification, Bruxelles, Belgique on February 24, 2017, entitled *From Continuous Petri nets to Petri nets and Back*;
 - at LACL, Créteil on February 27, 2017, entitled *Probabilistic Disclosure: Maximisation vs. Minimisation*
 - at the MSR 2017 conference, Marseille, France, on November 16, 2017, entitled *Réseaux de Petri discrets et continus : apports réciproques*.
- Claudine Picaronny gave an invited talk on 'Vérification probabiliste, numérique ou statistique', on the 21th of april 2017 at Alea 17, CIRM Marseille, France

9.1.5. Scientific Expertise

- Serge Haddad was expert for the evaluation of the researcher premiums at University Pierre et Marie Curie

9.1.6. Research Administration

- Laurent Fribourg is a member of
 - Comité Direction of Department Sciences et technologies de l'information et de la communication of Université Paris-Saclay,
 - Bureau of Domaine d'Intérêt Majeur émergent du Réseau Francilien en Sciences Informatiques
- Stefan Haar is the president of Inria's *GTRI-COST* committee for international relations, and the head of the *SciLex* (Software Reliability and Security) axis of the *LABEXDIGICOSME*, and ipso facto a member of *DIGICOSME*'s executive committee and scientific commission.
- Serge Haddad was the president of the HCERES evaluation committee of the laboratory LIAS, Poitiers.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Stefan Haar taught one half of L3 level class on Formal Languages at ENS Paris-Saclay (15 h CM, 22.5 EQTD).
- Serge Haddad is professor at ENS Paris-Saclay. Claudine Picaronny, Thomas Chatain, and Stefan Schwoon are associate professors of the same university.
- Serge Haddad is the head of the Computer Science Department, and Stefan Schwoon is in charge of the L3 formation.
- Claudine Picaronny is a co-director of the ENS Paris-Saclay's Mathematics department and a member of the juries of the 'agrégation interne de Mathématiques' and of the second 'concours de Mathématiques' of ENS Paris-Saclay; she is also the coordinator of the mathematics/computer science examination of E3A, parts MP and MC.
- Matthias Függer is teaching "Initiation à la recherche" at ENS Paris-Saclay.

9.2.2. Supervision

Theses in progress:

Hugues Mandon, ENS Paris-Saclay since October 2016, on *computational models and algorithms for the prediction of Cell Reprogramming Strategies*, co-supervised by Stefan Haar and L. Paulev   (LRI)

Juraj Kolc  k, , ENS Paris-Saclay since March 2017, on *Unfoldings and Abstract Interpretation for Parametric Biological Regulatory Networks*, co-supervised by Stefan Haar and L. Paulev   (LRI).

Adnane Saoud, Universit   Paris-Saclay since 2016, jointly supervised by Laurent Fribourg and Antoine Girard (Centrale-Supelec).

Engel Lefaucheux, ENS Paris-Saclay since 2015, *Controlling information in probabilistic systems*, jointly supervised by Nathalie Bertrand (SUMO team) and Serge Haddad

Yann Duplouy, IRT SystemX since 2015, *Application of formal methods to the development of embedded systems for autonomous vehicles*, supervised by B  atrice B  rard and Serge Haddad.

Robert Najvirt (TU Wien, Austrian FWF SIC project), realistic delay models with applications in high-speed and low-power circuits, co-supervised by Matthias F  gger and Andreas Steininger.

Martin Perner (TU Wien, Austrian FWF SIC project), clock generation on-chip and formalisms suitable to prove correct VLSI circuits, co-supervised by Matthias F  gger and Ulrich Schmid.

Juergen Maier (TU Wien, Austrian FWF SIC project), on realistic delay models with applications in high-speed and low-power circuits, with focus on noise and high-order models, co-supervised by Matthias F  gger and with Ulrich Schmid.

9.2.3. Juries

- Laurent Fribourg was a member of the Jury of Irini-Eleftheria Mens's PhD Thesis on "Learning regular languages over large alphabets", defended at University of Grenoble, October 2017.
- Stefan Haar was a reviewer of the thesis by Guillaume Madelaine on 'Simplifications Exactes et Structurelles de R  seaux de R  actions Biologiques', defended on February 28 at Lille University, France.
- Serge Haddad was:
 - reviewer in the jury of Bruno Karelovic on *Quantitative Analysis of Stochastic Systems – Priority Games and Populations of Markov Chains* on July 7 2017, University Paris 7
 - president of the jury of Nicolas David on *R  seaux de Petri    Param  tres Discrets* on October 20 University Nantes
 - reviewer in the jury of Thomas Geffroy on *Vers des outils efficaces pour la v  rification de syst  mes concurrents* on December 12 2017, University Bordeaux
- Claudine Picaronny was Member of the jury of Pierre Carlier's Thesis on 'Verification of Stochastic Timed Automata', on the 8th of december 2017, Mons, Belgium

PARSIFAL Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

D. Miller has been selected to be the LICS General Chair for three years starting in July 2018.

8.1.1.2. Member of the Organizing Committees

Lutz Straßburger was member of the organizing committee for the second FISP meeting in Paris

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

D. Miller was the Program Committee chair for the FSCD'17: Second International Conference on Formal Structures for Computation and Deduction, Oxford, 3-6 September.

D. Miller was on the Steering Committee for the FSCD series of International Conference on Formal Structures for Computation and Deduction.

D. Miller was a member of the jury for selecting the 2017 Ackermann Award (the EACSL award for outstanding doctoral dissertation in the field of Logic in Computer Science).

D. Miller was a member of the 2012, 2016, and 2017 Herbrand Award Committee of the Association for Automated Reasoning.

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

B. Accattoli was one of the two Program Committee chairs of the 6th International Workshop on Confluence (IWC 2017).

K. Chaudhuri as a co-chair of the Program Committee for the workshop on Structures and Deduction, co-located with FSCD.

8.1.2.2. Member of the Conference Program Committees

D. Miller was on the Program Committee of the following international conferences.

- 26th International Conference on Automated Deduction, Gothenburg, Sweden, 6-11 August.

B. Accattoli was on the Program Committee of the following international workshops.

- LOLA 2017: Syntax and Semantics of Low-Level Languages, Reykjavik, Iceland, 19 June.
- WPTE 2017: 4th Workshop on Rewriting Techniques for Program Transformations and Evaluation, Oxford, UK, 8 September.
- DICE-FOPARA 2017: 8th Workshop on Developments in Implicit Computational complExity and 5th Workshop on Foundational and Practical Aspects of Resource Analysis, Uppsala, Sweden, 22–23 April.

S. Graham-Lengrand was on the Program Committee of the following international workshops.

- AFM 2017: Automated Formal Methods, Menlo Park, USA, 19 May.
- PxTP 2017: 5th Workshop on Proof eXchange for Theorem Proving, Brasilia, Brazil, 4 September.

K. Chaudhuri was on the Program Committee of the following international workshops.

- LFMT 2017: Logical Frameworks and Meta-languages: Theory and Practice, Oxford, U.K.
- LSFA 2017: Logical and Semantic Frameworks with Applications, Brasilia, Brazil

G. Scherer was on the Program Committee of the following international conference.

- Trends in Functional Programming, University of Kent at Canterbury, UK, 19-21 June.

8.1.2.3. Reviewer

- Lutz Straßburger reviewed submissions for the following conferences: LICS 2017, LPAR-21, FoSSaCS 2018, LFCS 2018
- B. Accattoli was a reviewer for the international conferences LICS 2017 (twice) and FSCD 2017.
- F. Lamarche was reviewer for CSL 2017.
- S. Graham-Lengrand was a reviewer for the international conferences LICS 2017 (three times), CADE 2017, AFM 2017, CSL 2017, TYPES 2017, PxTP 2017, FOSSACS 2018.
- G. Scherer reviewed submissions for the following conferences: JFLA 2018, FoSSaCS 2018, as well as for the PriSC 2018 (Principle of Secure Compilation) workshop.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

D. Miller is on the editorial board of the following journals: ACM Transactions on Computational Logic, Journal of Automated Reasoning (Springer), and Journal of Applied Logic (Elsevier).

K. Chaudhuri served as a guest editor for a special issue of Mathematical Structures of Computer Science devoted to Logical Frameworks.

8.1.3.2. Reviewer - Reviewing Activities

- Lutz Straßburger did reviewing work for the following journals: Journal of Applied Logic (JAL), Studia Logica, Mathematical Structures in Computer Science (MSCS), Logical Methods in Computer Science (LMCS), Journal of Logic and Computation (JLC), Journal of Automated Reasoning (JAR).
- B. Accattoli was a reviewer for the international journals Transactions on Computational Logic (TOCL, ACM), Mathematical Structures in Computer Science (MSCS, Cambridge University Press), Logical Methods in Computer Science (LMCS), Journal of Automated Reasoning (JAR, Springer), Annals of Pure and Applied Logic (APAL, Elsevier).
- S. Graham-Lengrand was a reviewer for the following international journals: Theory of Computing Systems (TOCS), Annals of Pure and Applied Logic (APAL), Mathematical Structures in Computer Science (MSCS), Logical Methods in Computer Science (LMCS), Journal of Automated Reasoning (JAR), Bulletin of Symbolic Logic (BSL).
- G. Scherer was a reviewer for the international journal Mathematical Structures in Computer Science (MSCS).

8.1.4. Invited Talks

- D. Miller gave invited talks at the following two regularly held international meetings.
 - LAP 2017: Sixth Conference on Logic and Applications, 18-22 September 2018, Dubrovnik, Croatia.
 - PADL 2017: Nineteenth International Symposium on Practical Aspects of Declarative Languages, 16-17 January 2017, Paris.
- Lutz Straßburger gave an invited talk at the 4th International Workshop on Structures and Deduction (SD 2017), affiliated with FSCD'17.
- B. Accattoli gave an invited talk at LSFA 2017, the 12th Workshop on Logical and Semantic Frameworks with Applications, Brasilia, Brazil, 23-24 September.
- S. Graham-Lengrand gave an invited talk at CSLI 2017, the 6th CSLI Workshop on Logic, Rationality & Intelligent Interaction, University of Stanford, Palo Alto, USA, 3-4 June.

8.1.5. Research Administration

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

F. Lamarche was “responsable de centre” Saclay – Ile de France for Raweb.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: D. Miller, “*MPRI 2-1: Logique linéaire et paradigmes logiques du calcul*”, 12 hours, M2, Master Parisien de Recherche en Informatique, France.

Lutz Straßburger gave a course on “Efficient Proof Systems for Modal Logics” at ESSLLI 2017 (joint with Roman Kuznets, TU Wien)

Master: B. Accattoli, “*MPRI 2-1: Logique linéaire et paradigmes logiques du calcul*”, 9 hours, M2, Master Parisien de Recherche en Informatique, France.

B. Accattoli taught the mini-course *the complexity of β -reduction*, 3 hours, at the International School on Rewriting 2017, Eindhoven, The Netherlands, 3-7 July.

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.

Licence: K. Chaudhuri, “*INF431: Concurrence*” and “*INF441: Programmation avancée*”, 80 hours eq. TD, L2, Ecole polytechnique, France.

8.2.2. Supervision

PhD in progress: Sonia Marin, 1 Nov 2014, supervised by L. Straßburger and D. Miller

PhD in progress: Roberto Blanco, Ulysse Gérard, and Matteo Manighetti, supervised by D. Miller

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

8.2.3. Juries

D. Miller was a reporter for the habilitation of Olivier Hermant, 20 April 2017.

SPECFUN Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Alin Bostan is part of the Scientific advisory board of the conference series *Effective Methods in Algebraic Geometry* (MEGA).
- 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 of the steering committee of the *International Symposium on Symbolic and Algebraic Computation* (ISSAC, 3-year term, 2016–2018).
- Assia Mahboubi has served on the scientific committee of the Journées Scientifiques Inria and of the EUTypes summer school.

8.1.1.2. Member of the Organizing Committees

- Georges Gonthier was co-chair or the organising committee of the Big Proof thematic program held at the Newton Institute (Cambridge, UK) in June-August 2017.
- Assia Mahboubi has organized the TTT workshop, satellite of the POPL'17 conference.

8.1.1.3. Other

The team organizes a regular seminar⁰, with roughly 15–20 talks a year. The topics reflect the team's interests: computer algebra, combinatorics, number theory, formal proofs, and related domains.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

- Assia Mahboubi has served as member of the conference program committees of the international conferences CPP 17, CADE 17, ITP 17, and on the program committee of the international workshops TYPES 17, TyDe 17, HoTT/UF 17.

8.1.2.2. Reviewer

- Alin Bostan has served as reviewer for the selection of the international conferences ISSAC 2017 and MEGA 2017.
- Frédéric Chyzak has served as reviewer for the selection of the international conference ISSAC 2017.
- Assia Mahboubi has served as external reviewer for the international conference LICS 17.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Georges Gonthier is on the editorial board of the Journal of Formalized Reasoning.

8.1.3.2. Reviewer - Reviewing Activities

- Alin Bostan has served as a reviewer for the journals: *Journal of Symbolic Computation; Linear Algebra and its Applications; Journal of Algebra and its Applications; Journal of Complexity; Advances in Applied Mathematics; Journal of Combinatorial Theory, Series A*.

⁰<https://specfun.inria.fr/seminar/>

- Assia Mahboubi has served as reviewer for the journals: *Annals of Mathematics and Artificial Intelligence*; *Journal of Automated Reasoning*.

8.1.4. Invited Talks

- Alin Bostan has been invited to give a series of three lectures at the *JNCF – Journées Nationales de Calcul Formel* (CIRM, Luminy, France), January 16–18, 2017, <http://jncf2017.lip6.fr>.
- Alin Bostan has been invited to give a talk at the workshop *EDATE – Equations différentielles : aspects théoriques et effectifs*, Grenoble, March 13–15, 2017, <http://edate2017.sciencesconf.org/>.
- Alin Bostan has been invited to give a talk at the workshop *ANT – Automata in Number Theory*, île de Porquerolles, May 30—June 2, 2017, <http://indico.math.cnrs.fr/event/2347/>.
- Alin Bostan has been invited to give a talk at the workshop *Lattice walks at the Interface of Algebra, Analysis and Combinatorics*, BIRS, Banff, Canada, September 17—22, 2017, <http://www.birs.ca/events/2017/5-day-workshops/17w5090>.
- Alin Bostan has been invited to give a series of introductory lectures at the *Workshop on Computer Algebra in Combinatorics*, Erwin Schrödinger Institut (ESI), Vienna, Austria, November 13–17, 2017, <http://www.mat.univie.ac.at/~kratt/esi4/workshop2.html>.
- Frédéric Chyzak has been invited to give a talk at the *Second International Conference “Computer Algebra in Moscow”*, Plekhanov Russian University of Economics, Moscow, Russia, October 30 to November 30, 2017, <http://www.ccas.ru/ca/conference>.
- Frédéric Chyzak has been invited to give a talk at the *Workshop on Computer Algebra in Combinatorics*, Erwin Schrödinger Institut (ESI), Vienna, Austria, November 13–17, 2017, <http://www.mat.univie.ac.at/~kratt/esi4/workshop2.html>.
- Georges Gonthier gave an invited talk at the Special Session on Computer-Aided Proofs of the *Association for Symbolic Logic 2017 North American Meeting*, Boise, Idaho, USA, March 20–23, 2017.
- Georges Gonthier gave an invited talk at the *Second Conference on Artificial Intelligence and Theorem Proving (AITP’17)*, Obergürgl, Austria, March 26–30, 2017.
- Georges Gonthier gave a talk at the *ERCIM Workshop on Blockchains*, Paris, May 23, 2017.
- Georges Gonthier gave an invited talk at the Workshop *Computer-aided Mathematical Proof*, part of the Big Proof Program, Isaac Newton Institute, Cambridge, U.K.
- Pierre Lairez gave an invited talk at *Effective Methods in Algebraic Geometry (MEGGA 2017)*, Nice.
- Pierre Lairez gave an invited talk at the *Conference on Foundations of Computational Mathematics (FoCM 2017)*, Barcelona, Spain.
- Assia Mahboubi has been invited to give a talk at the General Mathematics Colloquium of the VU Amsterdam, The Netherlands.
- Assia Mahboubi has been invited to give a talk at the Workshop *Computer-aided Mathematical Proof*, part of the Big Proof Program, Isaac Newton Institute, Cambridge, U.K.

8.1.5. Leadership within the Scientific Community

- Assia Mahboubi leads the working group *Type theory based tools* inside the EUTYPES COST project. She is also a member of the management committee for France for this project and a member of its core management group.

8.1.6. Research Administration

- Georges Gonthier serves on the Conseil de l’École Doctorale de Mathématiques Hadamard.
- Assia Mahboubi has been a member of the *Commission Scientifique* of Inria Saclay — Île-de-France, until September 2017.

8.2. Teaching - Supervision - Juries

- Alin Bostan has served as a jury member of the French Agrégation de Mathématiques – épreuve de modélisation, option C.

8.2.1. Teaching

Licence:

Thomas Sibut-Pinote, *Les bases de la programmation et de l'algorithmique*, 32h, L3, École polytechnique, France.

Thomas Sibut-Pinote, *Les principes des langages de programmation*, 32h, 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*, 18h, M1, École polytechnique, France.

Assia Mahboubi, *Algorithmes d'élimination des quantificateurs*, 3h, M2, Université Rennes 1, France.

8.2.2. Supervision

HdR : Alin Bostan, *Computer algebra for lattice path combinatorics* [1], Université Paris 13, December 15, 2017.

PhD : Thomas Sibut-Pinote, *Investigations en Mathématiques Assistées par Ordinateur: Expérimentation, Calcul et Certification*, Université Paris-Saclay, December 4, 2017.

8.2.3. Juries

- Frédéric Chyzak has served as an examiner in the PhD jury of Cyril Hugounenq *Volcans et calcul d'isogénies*, Université de Versailles – Saint-Quentin-en-Yvelines, September 25, 2017.
- Frédéric Chyzak has been a member of the hiring jury at Inria (Concours CR 2017).
- Georges Gonthier served on the Habilitation à diriger des Recherches of Paul-André Melliès *Une étude micrologique de la négation*, Université Paris Diderot, November 20, 2017.
- Assia Mahboubi has been a member of the hiring jury at Inria (Concours CR 2017).
- Assia Mahboubi has served as an examiner in the PhD jury of Evmorfia-Iro Bartzia *Une formalisation des courbes elliptiques pour la cryptographie*, Université Paris-Saclay, February 15, 2017.
- Assia Mahboubi has served as an examiner in the PhD jury of Étienne Miquey *Réalisabilité classique et effets de bord*, Université Paris Diderot, November 17, 2017.
- Assia Mahboubi has been a member of the hiring jury of a Maître de conférence position at Université Paris Diderot.

8.3. Popularization

- Assia Mahboubi has written an article for the MathExpress journal, at the occasion of the *salon Culture & Jeux Mathématiques*. See the Maths Language express volume at <http://www.cijm.org/acceuil/productions-cijm/90-maths-express>.

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, vice-president of the 28th “Journées Francophones des Langages Applicatifs” (JFLA 2017)

S. Boldo, president of the 29th “Journées Francophones des Langages Applicatifs” (JFLA 2018)

J.-C. Filiâtre, scientific chair and co-organizer of EJCP (École Jeunes Chercheurs en Programmation du GDR GPL) at Toulouse on June 26–30, 2017. <http://ejcp2017.enseeih.fr/>

10.1.1.2. Member of the Organizing Committees

S. Conchon, local chair for the 44th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL 2017), held in Paris, France in January 2017. <http://conf.researchr.org/home/POPL-2017>.

C. Marché, co-organizer of the first joint Frama-C/SPARK day (May, Paris, <http://frama-c.com/FCSD17.html>), in the context of the Open Source Innovation Spring (<http://www.open-source-innovation-spring.org/>).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

A. Paskevich, program chair of the 9th Working Conference on Verified Software: Theories, Tools, and Experiments (VSTTE 2017), in collaboration with Thomas Wies (NYU) [35].

S. Boldo, program chair of the 10th International Workshop on Numerical Software Verification (NSV 2017) in collaboration with Alessandro Abate (Oxford) [33].

S. Boldo, program vice-chair of the 28th “Journées Francophones des Langages Applicatifs” (JFLA 2017) [34].

S. Boldo, program chair of the 29th “Journées Francophones des Langages Applicatifs” (JFLA 2018).

10.1.2.2. Member of the Conference Program Committees

S. Boldo, PC of the 24th IEEE Symposium on Computer Arithmetic (ARITH 2017)

S. Boldo, PC of the 25th IEEE Symposium on Computer Arithmetic (ARITH 2018)

S. Boldo, PC of the 6th ACM SIGPLAN Conference on Certified Programs and Proofs (CPP 2017)

S. Boldo, PC of the 7th ACM SIGPLAN Conference on Certified Programs and Proofs (CPP 2018)

S. Boldo, PC of the 8th International Conference on Interactive Theorem Proving (ITP 2017)

S. Boldo, PC of the Tenth NASA Formal Methods Symposium (NFM 2018)

G. Melquiond, PC of the 3rd International Workshop on Coq for Programming Languages (CoqPL 2017).

G. Melquiond, PC of the 1st ACM SIGPLAN Workshop on Machine Learning and Programming Languages (MAPL 2017).

G. Melquiond, PC of the 10th International Workshop on Numerical Software Verification (NSV 2017).

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*.

S. Boldo, member of the editorial board of Binaire <http://binaire.blog.lemonde.fr>, the blog of the French Computer Science Society.

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

S. Boldo gave a talk at EDF in Palaiseau on April 20th

S. Boldo gave a talk at the ModeliScale IPL in Paris on July 4th

S. Boldo gave a talk to teachers in Luminy on May 4th

S. Boldo gave a talk at the université de Saint-Denis de la Réunion on December 8th

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).

10.1.6. Scientific Expertise

C. Marché, 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, in charge of examining proposals for creation of new Inria project-teams.

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 a hiring committee for an associate professor position in computer science at Université Joseph Fourier, Grenoble, France.

S. Boldo, member of the 2017 committee for the Gilles Kahn PhD award of the French Computer Science Society.

10.1.7. Research Administration

G. Melquiond, member of the committee for the monitoring of PhD students (“commission de suivi doctoral”).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master Parisien de Recherche en Informatique (MPRI) <https://wikimpri.dptinfo.ens-cachan.fr/doku.php>: “Proofs of Programs” <http://www.lri.fr/~marche/MPRI-2-36-1/> (M2), C. Marché (12h), A. Charguéraud (12h), Université Paris-Diderot, France.

Master: Fondements de l’informatique et ingénierie du logiciel (FIIL) https://www.lri.fr/~conchon/parcours_fiil/: “Software Model Checking” (M2), S. Conchon (9h), “Programmation C++11 avancée” (M2), G. Melquiond (16h), “Vérification déductive de programmes” (M2), A. Paskevich (10.5h), Université Paris-Sud, France.

DUT (Diplôme Universitaire de Technologie): M1101 “Introduction aux systèmes informatiques”, A. Paskevich (36h), M3101 “Principes des systèmes d’exploitation”, A. Paskevich (58.5h), IUT d’Orsay, Université Paris-Sud, France.

Licence: “Langages de programmation et compilation” (L3), J.-C. Filliâtre (26h), École Normale Supérieure, France.

Licence: “INF411: Les bases de l’algorithme et de la programmation” (L3), J.-C. Filliâtre (16h), École Polytechnique, France.

Master: “INF564: Compilation” (M1), J.-C. Filliâtre (18h), École Polytechnique, France.

Licence: “Programmation fonctionnelle avancée” (L3), S. Conchon (45h), Université Paris-Sud, France.

Licence: “Introduction à la programmation fonctionnelle” (L2), S. Conchon (25h), Université Paris-Sud, France.

10.2.2. Internships

R. Rieu-Helft (ENS, Paris) was a pre-PhD student doing an internship under supervision of C. Marché and G. Melquiond. He worked on the design and the formal verification of a library for unbounded integer arithmetic [23]. He implemented in Why3 a mechanism for extracting code to the C language, in order to obtain a certified code that runs very efficiently [30].

D. Gallois-Wong was a Master-2 intern for 4 months under the supervision of S. Boldo. She began the formalization in Coq of numerical filters.

V. Tourneur was a Master-1 intern for 4 months under the supervision of S. Boldo. He developed and proved a new algorithm for computing the average of two floating-point numbers when the radix is 10.

10.2.3. Supervision

PhD in progress: M. Clochard, “Méthodes et outils pour la spécification et la preuve de propriétés difficiles de programmes séquentiels”, since Oct. 2013, supervised by C. Marché and A. Paskevich.

PhD in progress: D. Declerck, “Vérification par des techniques de test et model checking de programmes C11”, since Sep. 2014, supervised by F. Zaïdi (LRI) and S. Conchon.

PhD in progress: M. Roux, “Model Checking de systèmes paramétrés et temporisés”, since Sep. 2015, supervised by Sylvain Conchon.

PhD in progress: M. Pereira, “A Verified Graph Library. Tools and techniques for the verification of modular higher-order programs, with extraction”, since May 2015, supervised by J.-C. Filliâtre.

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. Cuoc (TrustIn-Soft).

PhD in progress: D. Gallois-Wong, “Vérification formelle et filtres numériques”, since Oct. 2017, supervised by S. Boldo and T. Hilaire.

10.2.4. Juries

C. Marché: reviewer of the habilitation thesis of R. Bubel, “Deductive Verification: From Theory to Practice”, Technische Universität Darmstadt, Germany, November 2017.

S. Boldo: reviewer and member of the PhD defense of A. Plet, École Normale Supérieure de Lyon, Lyon, France, July 2017.

S. Boldo: reviewer and member of the PhD defense of F. Maurica, Université de la Réunion, Saint-Denis, France, December 2017.

S. Boldo: president of the PhD defense of T. Sibut-Pinote, Université Paris-Saclay, Palaiseau, France, December 2017.

10.3. Popularization

S. Boldo, scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria.

S. Boldo gave a talk at the Inria Saclay about how to popularize programming.

During the “Fête de la science” on October 13th, S. Boldo demonstrated unplugged computer science to teenagers and F. Faïssole run a stand about an introduction to programming with robots. S. Boldo also did this activity to kids from 7 to 17 at the Massy opera on November, 17th.

S. Boldo gave a talk during at a *Girls can code* weekend on August 23rd in Paris.

S. Boldo went to the Arpajon high-school for presenting Women in Science on December 19th.

S. Boldo gave a popularization talk to the administrative staff of Inria at Rocquencourt for the Inria birthday on November 16th.

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 2017.

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”.

10.1.2.2. Reviewer - Reviewing Activities

Reviews in 2017 for major journals in the field: Applied Mathematics and Optimization, Automatica, Int. J. of Control, Inverse problems, J. Convex Analysis, J. Diff. Equations, J. of Optimization Theory and Applications, Optimization Set Valued and Variational Analysis, SIAM J. Optimization, SIAM J. Control and Optimization, several conference proceedings.

10.1.3. Invited Talks

- F. Bonnans: Forecasting and risk management for renewable energy, June 7-9, Paris; Numoc, June 19-23, Roma; NHOC2017, July 3-5, Porto; Optimal Control of Partial Differential Equations, Sept, Castro Urdiales.

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*, 24h, M2, Ecole Polytechnique and U. Paris 6, France.

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

F. Bonnans: *Stochastic optimization*, 15h, M2, Optimization master (U. Paris-Saclay), France.

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

10.2.2. Supervision

PhD in progress : Cédric Rommel, Data exploration for the optimization of aircraft trajectories. Started November 2015 (CIFRE fellowship with Safety Line), F. Bonnans and P. Martinon.

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

10.3. Popularization

The collaboration with startup Safety Line was presented at events “Vivatech” (17/06/2017, <https://vivatechnology.com/>) and “Rencontre Inria Industrie” (17/10/2017) in Paris.

DEFI Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. *Scientific Events Organisation*

9.1.1.1. *Member of the Organizing Committees*

- G. Allaire is a member of the "comité national" CNRS, section 41 (mathematics). He is a member of the board of the Gaspard Monge program on optimization (PGMO) at the Jacques Hadamard Mathematical Foundation. He 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).
- L. Chesnel co-organized the Journée de rentrée (2017) of the Centre de Mathématiques Appliquées of École Polytechnique
- L. Chesnel co-organized the seminar of the Centre de Mathématiques Appliquées of École Polytechnique and the joint seminar of the Inria teams Defi-M3DISIM-Poems.
- H. Haddar Co-organized of the third Franco-German Summer School "Inverse Problems and Imaging", University of Bremen, September 18-22, 2017
- DEFI was a sponsor of the conference "Waves diffracted by Patrick Joly", Paris, 2017.
- J.R. Li is organizer of Ecole d'ete d'excellence for Chinese Master's students funded by French Embassy in China, 2017.
- J.R. Li is member of Organizing Committee of SIAM Conference on Computational Science and Engineering, 2017

9.1.2. *Scientific Events Selection*

9.1.2.1. *Member of the Conference Program Committees*

- J.R. Li is member of the SIAM Committee on Programs and Conferences 2017-2019
- J.R. Li is responsible for the Ecole Polytechnique part of the French-Vietnam Master Program in Applied Mathematics, 2017
- J.R. Li is reviewer for Millennium Science Initiative, a program of the Government of Chile, 2017.
- H. Haddar is member of the scientific committees of the conferences series TAMTAM, Picof and Waves

9.1.3. *Journal*

9.1.3.1. *Member of the Editorial Boards*

- G. Allaire is member of the editorial board 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'Università di Ferrara,
 - OGST (Oil and Gas Science and Technology),
 - Journal de l'Ecole Polytechnique - Mathématiques,
 - Journal of Optimization Theory and Applications.

- H. Haddar is
 - member the editorial advisory board of Inverse Problems
 - Associate Editor of the SIAM Journal on Scientific Computing
 - Guest editor of Computers and Mathematics with Applications for a special issue on "Numerical Methods for PDEs and Inverse Problems"

9.1.3.2. Reviewer - Reviewing Activities

The members of the team reviewed numerous papers for numerous international journals. Too many to make a list.

9.1.4. Invited Talks

- G. Allaire
 - "GAMM-Seminar on Microstructures", Dortmund (January 2017).
 - Workshop on "Shape, Images and Optimization", Münster (March 2017).
 - Interaction of Applied Mathematics and Mechanics Conference, IAMMC2017, Paris (May 2017).
 - Congrès CSMA, Giens (May 2017).
 - New trends in shape optimization, Vosges (May 2017).
 - WCSMO, Braunschweig (June 2017).
 - CEDYA, Cartagena (June 2017).
 - Waves diffracted by Patrick Joly, Gif-sur-Yvette (August 2017).
 - SIM-AM ECCOMAS conference, München (October 2017).
- L. Chesnel
 - Worshop Inverse plasmonic problems-Neumann Poincaré operator, Université de Grenoble-Alpes, November 2017.
 - Séminaire EDP, modélisation et calcul scientifique, UMPA, ENS Lyon, November 2017.
 - Séminaire EDP, analyse et applications, Université de Lorraine, Metz, November 2017.
 - Séminaire EDP/Physique mathématique, Université de Bordeaux, September 2017.
 - Waves diffracted by Patrick Joly, Gif-sur-Yvette, August 2017.
- H. Haddar
 - TamTam'17, Hammamet, Tunisia, May 2017, Minisymposium, Inverse and imaging problems for PDE with applications
 - Oberwolfach Workshop Computational Inverse Problems for Partial Differential Equations, Oberwolfach, May 2017.
 - Workshop on the occasion of the 75th birthday of Rainer Kress, Goettingen, May 2017
 - Applied Inverse Problems, Hangzhou, May 2017
 - * Minisymposium on Inverse Spectral Problems
 - * Minisymposium on Stability and reconstruction in inverse problems and their applications
 - * Minisymposium on Recent Developments on Computation of Transmission Eigenvalues with Applications
 - Workshop on nonlinear analysis : Recent advances and new trends, Monastir, July 2017
 - Quantitative Tomographic Imaging : Radon meets Bell and Maxwell, RICAM, Linz, July 2017
 - Waves diffracted by Patrick Joly, Gif-sur-Yvette, August 2017.

- Colloquium of the mathematical department, Mainz University, October 2017.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master : Grégoire Allaire, Approximation Numérique et Optimisation, for students in the second year of Ecole Polytechnique curriculum: 8 lessons of 1h30.
- Master : Houssem Haddar, Approximation Numérique et Optimisation, for students in the second year of Ecole Polytechnique curriculum: 8 TDs of 4h.
- Master : Houssem Haddar, Variational analysis of partial differential equations, for students in the second year of Ecole Polytechnique curriculum: 8 TDs of 4h.
- Master : Lucas Chesnel, “Variational analysis for partial differential equations”, 16 equivalent TD hours, second year (2A), École Polytechnique, Palaiseau, France
- Master : Lucas Chesnel, “Numerical approximation and optimisation”, 14 equivalent TD hours, second year (2A), École Polytechnique, Palaiseau, France
- Master : Lucas Chesnel, “Elementary tools of analysis for partial differential equations”, 25 equivalent TD hours, L3, Ensta ParisTech, Palaiseau, France
- 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, Mathematical and numerical foundations of modeling and simulation using partial differential equations. French-Vietnam Master Program in Applied Mathematics.
- Doctorat : Houssem Haddar, Lecturer at the Summer School on Quantitative Tomographic Imaging : Radon meets Bell and Maxwell. (2x1h30) July 10-14, RICAM, Linz, 2017.

9.2.2. Supervision

- Ph.D. : M. Lakhhal, Méthodes d'inversion pour la reconstruction de mines enfouies à partir de mesures d'antennes radar, June 2017, H. Haddar
- Ph.D. : T.P. Nguyen, Direct and inverse solvers for scattering problems from locally perturbed infinite periodic layers, January 2017, H. Haddar
- Ph.D. : K. Van Nguyen, Modeling, simulation and experimental verification of water diffusion in neuronal network of the Aplysia ganglia, March 2017, J.-R. Li and L. Ciobanu
- Ph.D. in progress: B. Charfi, Identification of the singular support of a GIBC, 2014, H. Haddar and S. Chaabane
- PhD in progress : A. Talpaert, the direct numerical simulation of vapor bubbles at low Mach number with adaptative mesh refinement, 2013, G. Allaire and S. Dellacherie
- PhD in progress : A. Bissuel, linearized Navier Stokes equations for optimization, floating and aeroacoustic, 2014, G. Allaire
- PhD in progress : P. Geoffroy on topology optimization by the homogenization method in the context of additive manufacturing (Safran Tech, to be defended in 2019), G. Allaire.
- PhD 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
- PhD in progress : M. Boissier sur l'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.
- PhD in progress : L. Rakotondrainibe sur l'optimisation des liaisons entre pièces dans les systèmes mécaniques (to be defended in 2020), G. Allaire.

- PhD in progress : F. Feppon sur l'optimisation topologique de systèmes couplés fluide-solide-thermique (Safran, to be defended in 2020), G. Allaire and Ch. Dapogny.
- PhD in progress : Q. Feng sur les éléments finis multi-échelles pour Navier Stokes incompressible en milieu encombré (CEA, to be defended in 2019), G. Allaire and A. Cartalade.
- PhD in progress : K. Napal, Transmission eigenvalues and non destructive testing of concrete like materials , 2016, L. Chesnel H. Haddar and L. Audibert
- PhD in progress : M. Kchaou, Higher order homogenization tensors for DMRI modeling, 2016, H. Haddar, J.R Li and M. Moakher
- PhD in progress : H. Girardon, Non destructive testing of PWR tubes using eddy current rotating coils, 2017, 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. Rahiou.

DISCO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Frederic Mazenc has organized with Pablo Monzon, Alvaro Castaneda and Gonzalo Robledo the "Workshop and Spring School on Stability and Dichotomies on Differential and Delay Equations" of the Universidad de Chile, Facultad de Ciencias, October 17-26, 2017.

10.1.2. Scientific Events Selection

- Frederic Mazenc and Ali Zemouche were Associate Editor for the conferences 2018 American Control Conference, Milwaukee, USA, and the 56th IEEE Conference on Decision and Control, Melbourne, USA, (2017).
- Frederic Mazenc was Associate Editor for the European Control Conference, Limassol, Cyprus (2018).
- Ali Zemouche has co-organized three invited sessions in international conferences (*IEEE-ACC 2018, Workshop on Advanced Control and Diagnosis, ACD 2017, International Conference on Systems and Control, ICSC 2017*).

10.1.2.1. Chair of Conference Program Committees

- Ali Zemouche was an invited session chair of the "14th International Workshop on Advanced Control and Diagnosis, ACD 2017", which was held at Politehnica University of Bucharest, Romania, from 16 to 17 November 2017.
- International Society of Difference Equations (ISDE) Board of Directors has favorably voted for the proposal submitted by Sorin Olaru to organize the International Conference on Difference Equations and Applications (ICDEA) in 2021 in Paris Saclay.
- Guillaume Sandou is a member of the Program Committee of the IEEE Symposium on Computational Intelligence in Production and Logistics Systems, 2017, Hawaii, USA

10.1.2.2. Member of the Conference Program Committees

- Catherine Bonnet was a member of the *Comité International Scientifique* de MADEV17, Rabat, Morocco.
- Frederic Mazenc is member (Associate Editor) of the *Control Editorial Board - IEEE - CSS*.
- Ali Zemouche is member (Associate Editor) of the *Control Editorial Board - IEEE - CSS*.
- Ali Zemouche was involved in the Technical Program Committee and International Program Committee of the following international conferences:
 - IEEE American Control Conference, ACC 2017;
 - Workshop on Advanced Control and Diagnosis, ACD 2017;
 - International Conference on Systems and Control, ICSC 2017;
 - Australian and New Zealand Control Conference, ANZCC 2017;
 - International Conference on Electrical Engineering and Control Applications, ICEECA 2017.

10.1.2.3. 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.

10.1.3. Journal

10.1.3.1. 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:

- IMA Journal of Mathematical Control and Information;
- IEEE CSS-Letters.

Ali Zemouche is member of the editorial boards (Associate Editor) of the following journals:

- SIAM Journal on Control and Optimization;
- European Journal of Control;
- Cogent Engineering.
- Managing Guest Editor for a **Special Issue** in European Journal of Control
 - Title: Advanced Control and Observers for Complex Systems via LMIs
 - Organizers: Ali Zemouche et al.
 - url: <https://www.journals.elsevier.com/european-journal-of-control/call-for-papers/special-issue-on-advanced-control-and-observer-design-for-no>

10.1.3.2. 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.

10.1.4. Invited Talks

Stefanella Boatto gave a talk entitled '*Modeling epidemics dynamics due to Aedes mosquitoes : the example of Rio de Janeiro and how to approximate an epidemic attractor*', Université de Bordeaux, 22 Dec 2017, a talk entitled '*The N-body problem on surfaces, Maxwell laws and the axioms of Mechanics*', Fluid mechanics seminar, Dept. Mechanical Engineering , Universitat Rovira i Virgili, Tarragona, Spain, 30 June 2017, a talk entitled '*SIR-Network model : epidemics dynamics in a city & climate variations*', Seminar of Analysis and Differential Equations, Dept. of Mathematics, University of Lisbon, Portugal, 20 June 2018, a talk entitled '*The N-body problem on surfaces, Maxwell laws and the axioms of Mechanics*', IA Seminar, Physics Dept., Universirstry of Lisbon, Portugal 22 June 2017, Vortex Dynamics Group, a talk entitled "*N-body on surfaces of revolution: the rôle played by curvature and topology*", School of Mathematics and Statistics, University of St. Andrews, UK, February 2017.

Catherine Bonnet and Frédéric Mazenc gave a talk entitled '*Modeling and Analysis of Cell Dynamics in Acute Myeloid Leukemia*', Institute of Disease Modeling, Seattle, USA, 30 May 2017.

Ali Zemouche gave a talk entitled '*Nonlinear observer design for Lipschitz systems*', University of Toulon (IUT de Toulon, France).

Ali Zemouche gave a talk entitled '*Observer-based stabilization of uncertain nonlinear systems via LMIs*', Deakin University (Geelong, Australia).

Frédéric Mazenc gave a talk entitled *Model reduction and predictor control*, the Departamento de Ingenieria de Control y Robotico of the Universidad Nacional Autonoma de Mexico, Mexico-city, August 2017.

Frédéric Mazenc gave several talks and lectures to the "Workshop and Spring School on Stability and Dichotomies on Differential and Delay Equations" of the Universidad de Chile, Facultad de Ciencias, Santiago de Chile, October 17-26, 2017.

Frédéric Mazenc was one of the speakers of the tutorial session entitled "Tutorial on time-delay and sampled-data systems" organized by Alexandre Seuret and Emilia Fridman in the IFAC World Congress of Toulouse, 9-14 July 2017. The title of his talk was *Model reduction and predictor control*.

10.1.5. Leadership within the Scientific Community

Catherine Bonnet is a member of the IFAC Technical Committees *Distributed Parameter Systems* and *Biological and Medical Systems*. She is a member of the SIAG/CST (SIAM Activity group Control System Theory) steering committee (2015-2017) and a member of the management committee of the COST Action FRACTAL (2016-2020).

Sorin Olaru is a member of the IFAC Technical Committees *Robust Control* and the IFAC CSS TC on *hybrid systems*.

Ali Zemouche is member of the IFAC Technical Committee *Non-Linear Control Systems*.

10.1.6. 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 a, 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 a, expert for the Romanian National Council for Development and Innovation (Romania). His mission consists in evaluating research projects funded by the this institution.

10.1.7. 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).

In 2017, Frédéric Mazenc was president of the commission scientifique du CRI Saclay-Ile-de-France. In 2017, Frédéric Mazenc was member of the Bureau du Comité des Projets 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/>

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

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

Licence : Walid Djema, Computer Architecture and Assembly Programming, 40h, L1, University Paris-Saclay

Licence : Walid Djema, Computer Sciences project, 24h, L1, University Paris-Saclay

Master : Dina Irofti, Industrial IT services, Java, Networks, 64h, M1 and M2 University Paris-Sud

Master : Dina Irofti, Control Theory, Mathematics and Numericam Analysis, M1, 54h, ESIEE

Doctorat : Frederic Mazenc, introduction to the ordinary differential equations, Lypunov design, control and observation of nonlinear dynamical systems, 21h, PhD, International Graduate School on Control of the EECI, CentraleSupelec

Doctorat : Frederic Mazenc, Stability and Dichotomies on Differential and Delay Equations, 3 h, PhD, Universidad de Chile, Facultad de Ciencias

Licence : Sorin Olaru, Automatic Control, 8h , M1, SUPELEC, France

Licence : Sorin Olaru, Signals and systems, 8h , L3, SUPELEC, France

Licence : Sorin Olaru, Embedded systems, 8h , M1, Centrale Paris, France

Licence : Sorin Olaru, Numerical methods and Optimization, 24h, niveau M1, SUPELEC, France

Licence : Sorin Olaru, Hybrid systems, 16h, M2, SUPELEC, France
 Licence : Guillaume Sandou, Signals and Systems, 87h, L3, CentraleSupélec
 Licence : Guillaume Sandou, Mathematics and programming, 18h, L3, CentraleSupélec
 Master : Guillaume Sandou, Automatic Control, 8h, M1, CentraleSupélec
 Master : Guillaume Sandou, Numerical methods and optimization, 28h, M1 and M2, CentraleSupélec
 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
 DUT : Ali Zemouche, Java Programming, 24 HTD, 2^{ème} année DUT (Bac + 2), University of Lorraine, France

10.2.2. Supervision

PhD in progress : Saeed Ahmed, Bilkent University, Stability analysis and control of switched systems with time-delay. Supervisor : Hitay Ozbay. Co-supervisor : 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 : Caetano Cardeliquio, Stability and stabilization of (possibly fractional) systems with delays. French Supervisor : Catherine Bonnet, Brazilian Supervisor : André Fioravanti.

PhD : Walid Djema, Understanding Cell Dynamics in Cancer from Control and Mathematical biology Standpoints - Particular Insights in the Modeling and Analysis Aspects in Hematopoietic Systems and Leukemia, Université Paris-Saclay, 21 November 2017. Supervisor : Catherine Bonnet. Co-supervisors : Jean Clairambault and Frédéric Mazenc.

PhD : Dina Irofti, Delay effects: a journey from multi-agent systems to genetic networks, Université Paris-Saclay, 18 July 2017. Supervisor : Silviu Niculescu. Co-supervisor : Islam Boussaada.

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

PhD in progress : 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.

PhD in progress : Juliette Pochet, Analyse de performance et de résilience d'une ligne de type RER équipée d'un automatisme CBTC. Analysis of the performance of a RER line with CBTC trains. Supervisor: Guillaume Sandou.

PhD in progress : Jean Mercat, Modèle predictif des objets d'une scène routière ; 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.

10.2.3. Juries

Catherine Bonnet was a member of several recruiting committees: Junior Researcher competition in Inria Grenoble - Rhône-Alpes and Bordeaux - Sud-Ouest and Professor competition at Université de Nancy.

Catherine Bonnet was the President of the PhD Defense juries of Yacine Boukal '*Observation et commande des systèmes dynamiques d'ordre non entier*', 16 October 2017, Université de Nancy and of Jin Chi '*Stability analysis of systems with delay-dependant coefficients*', L2S, CentraleSupelec, 21 November 2017.

Sorin Olaru was a reviewer for the PhD thesis of JULIAN BARREIRO GOMEZ at Universiy of Catalunya in Barcelona.

Sorin Olaru was a reviewer of the HDR thesis of Christophe Louembet.

Guillaume Sandou was a reviewer of Khaleb Laib PhD, Analyse hierarchisée de la robustesse des systèmes incertains de grande dimension.

Guillaume Sandou was a reviewer of Damien Casetta PhD, Modèle d'aide à la conduite de réseaux de froid.

Frederic Mazenc was a reviewer of the PhD thesis of Mohamed Maghenem, '*Commande en formation de véhicules autonomes*' 05 July 2017, L2S, Centralesupelec.

Frederic Mazenc was a reviewer of the PhD thesis of Luis Borja Rosales, '*Stabilization of a class of nonlinear systems with passivity properties*', 06 July 2017, L2S, Centralesupelec.

Frederic Mazenc was a reviewer of the PhD thesis of first half of the Phd ("suivi mi-parcours") of Mohamed Kahelras, '*Observation Problem for Different Classes of Nonlinear Delayed Systems*', 9 October 2017, L2S, Centralesupelec.

10.3. Popularization

Catherine Bonnet gave a talk in the *Promenades Mathématiques* series of the event *Femmes en maths : une équation lumineuse* for female high school students, IHP, Paris, 19 december 2017. She met several groups of female high school students at the event *Femmes en maths : une équation lumineuse* IHP, Paris, january 2017. She met several groups of high school students at the event *Forum des métiers* in Lycée Hoche, Versailles, February 2017.

GAMMA3 Project-Team (section vide)

GECO Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Ugo Boscain was organizer of the conference “Mathematical Control Theory, with a special session in honor of Gianna Stefani”, Porquerolles, 27–30 June.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- Ugo Boscain is Associate Editor of SIAM Journal of Control and Optimization
- Ugo Boscain is Managing Editor of Journal of Dynamical and Control Systems
- Mario Sigalotti is Associate Editor of Journal of Dynamical and Control Systems
- Mario Sigalotti is Associate Editor of ESAIM Control, Optimisation and Calculus of Variations
- Ugo Boscain is Associate Editor of Mathematical Control and Related Fields
- Ugo Boscain is Associate editor of Analysis and Geometry in Metric Spaces

9.1.3. Invited Talks

- Mario Sigalotti gave an invited talk at the conference “Mathematical Control Theory, with a special session in honor of Gianna Stefani”, Porquerolles, France, June 2017.
- Mario Sigalotti gave an invited talk at groupe de travail “Contrôle”, Laboratoire Jacques-Louis Lions, Paris, France, January 2017.

9.1.4. Research Administration

- Mario Sigalotti is member of the IFAC technical committee “Distributed Parameter Systems”.
- Mario Sigalotti was member of the steering committee of the *Institut pour le Contrôle et la Décision* of the Idex Paris-Saclay up to June 2017.

9.2. Teaching - Supervision - Juries

9.2.1. Supervision

- PhD in progress: Ludovic Sacchelli, “Sub-Riemannian geometry, hypoelliptic operators, geometry of vision”, started in September 2015, supervisors: Ugo Boscain, Mario Sigalotti.
- PhD in progress: Nicolas Augier, “Contrôle adiabatique des systèmes quantiques”, started in September 2016, supervisors: Ugo Boscain, Mario Sigalotti.
- PhD in progress: Mathieu Kohli, “Volume and curvature in sub-Riemannian geometry”, started in September 2016, supervisors: Davide Barilari, Ugo Boscain.
- PhD in progress: Jakub Orłowski, “Modeling and steering brain oscillations based on in vivo optogenetics data”, started in September 2016, supervisors: Antoine Chaillet, Alain Destexhe, and Mario Sigalotti.

POEMS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Advisory and management activities

- P. Joly is a member of the scientific committee of CEA-DAM.
- E. Lunéville is the Head of UMA (Unité de Mathématiques Appliquées) at ENSTA ParisTech.

10.1.2. Scientific events organisation end selection

- E. Bécache, A. S. Bonnet-Ben Dhia, M. Bonnet, S. Fliss, C. Hazard, P. Joly and E. Lunéville were members of the scientific committee for the 13rd international conference on mathematical and numerical aspects of wave propagation (WAVES 2017), which took place in Minneapolis in May 2017.
- A. Modave co-organized with B. Thierry (CNRS/UPMC) a Young Researchers' Meeting on "Solving Large-Scale Time-Harmonic Wave Problems", which took place at UPMC on November, 2017. There were 8 talks, 2 tutorials and 20 participants, including young researchers from the Inria teams Magique3D, HiePACS and Alpines. The meeting was funded in part by the SMAI through a BOUM project.

10.1.3. Journal

- A. S. Bonnet-Ben Dhia is associate editor of SINUM (SIAM Journal of Numerical Analysis) and SIAP (SIAM Journal of Applied Mathematics).
- M. Bonnet is associate editor of Engineering Analysis with Boundary Elements
- M. Bonnet is in the editorial board of Inverse Problems.
- M. Bonnet is in the editorial board of Computational Mechanics.
- M. Bonnet is in the editorial board of Journal of Optimization Theory and Application.
- P. Ciarlet is an editor of CAMWA (Computers & Mathematics with Applications).
- P. Ciarlet is an editor of ESAIM:M2AN (Mathematical Modeling and Numerical Analysis).
- P. Joly is an editor of ESAIM:M2AN (Mathematical Modeling and Numerical Analysis).
- P. Joly is a member of the editorial board of AAMM (Advances in Applied Mathematics and Mechanics).
- P. Joly is a member of the Book Series Scientific Computing of Springer Verlag.
- The team members regularly review papers for many international journals.

10.2. Teaching - Supervision

10.2.1. Teaching

Eliane Bécache

- *Méthode des éléments finis*, ENSTA ParisTech (2nd year)
- *Compléments sur la méthode des éléments finis*, ENSTA ParisTech, (2nd year)
- *Fonctions d'une variable complexe*, ENSTA ParisTech (1st year)
- *Résolution des problèmes de diffraction par équations intégrales*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Marc Bonnet

- *Problèmes inverses*, Master MS2SC (Centrale Paris and ENS Cachan)
- *Méthodes intégrales*, Master TACS (ENS Cachan)
- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA Paris-Tech (1st year)

Anne-Sophie Bonnet-Ben Dhia

- *Fonctions d'une variable complexe*, ENSTA ParisTech (1st year)
- *Propagation dans les guides d'ondes*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)
- *Non Destructive Testing*, Master "Acoustics" (M2)
- *Théorie spectrale des opérateurs autoadjoints et applications aux guides optiques*, ENSTA ParisTech (2nd year)

Laurent Bourgeois

- *Outils élémentaires pour l'analyse des équations aux dérivées partielles*, ENSTA Paris-Tech (1st year)
- *Fonction d'une variable complexe*, ENSTA ParisTech (1st year)

Stéphanie Chaillat

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Fonctions d'une variable complexe*, ENSTA ParisTech (1st year)
- *Equations intégrales et multipôles rapides*, Ecole doctorale MODES (Univ. Paris Est, Marne la Vallée)
- *Résolution des problèmes de diffraction par équations intégrales*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Colin Chambeyron

- *Analyse réelle: optimisation libre et sous contraintes*, Dauphine University (1st year)
- *Outils mathématiques*, Dauphine University (1st year)
- *Algèbre linéaire*, Dauphine University (2nd year)

Patrick Ciarlet

- Advanced Finite Element Methods, ENSTA ParisTech (2nd year)
- Parallel Scientific Computing, ENSTA ParisTech (3rd year), and Master "Analysis, Modelling, Simulation" (M2)
- Mathematical Models and their Discretisation in Electromagnetism, ENSTA ParisTech (3rd year), and Master "Analysis, Modelling, Simulation" (M2)
- Deputy Head of the Master's Program Analysis, Modelling, Simulation, Paris-Saclay University

Sonia Fliss

- *Méthode des éléments finis*, ENSTA ParisTech (2nd year)
- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA ParisTech (1st year).
- *Propagation des ondes dans les milieux périodiques*, ENSTA ParisTech (3rd year) and Master "Analysing, Modeling and Simulation" (M2)
- *Homogénéisation périodique*, Masters ANEDP, M4S et AMS "Analysing, Modeling and Simulation" (M2)

Christophe Hazard

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Théorie spectrale des opérateurs autoadjoints et applications aux guides optiques*, ENSTA ParisTech (2nd year)

Patrick Joly

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Propagation des ondes dans les milieux périodiques*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Nicolas Kielbasiewicz

- *Programmation scientifique et simulation numérique*, ENSTA ParisTech (2nd year)
- *Parallélisme et calcul réparti*, ENSTA ParisTech (Master 2)

Marc Lenoir

- *Fonctions d'une variable complexe*, ENSTA ParisTech (2nd year)
- *Équations intégrales*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)
- *Méthodes asymptotiques hautes fréquences pour les équations d'ondes - course notes*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Eric Lunéville

- *Introduction au Calcul Scientifique*, ENSTA ParisTech (2nd year).
- *Programmation scientifique et simulation numérique*, ENSTA ParisTech (2nd year).
- *Propagation dans les guides d'ondes*, ENSTA ParisTech (3rd year) and Master "Modeling and Simulation" (M2)

Jean-François Mercier

- *Outils élémentaires d'analyse pour les équations aux dérivées partielles*, ENSTA ParisTech (1st year)
- *Fonctions d'une variable complexe*, ENSTA ParisTech, ENSTA ParisTech (1st year)
- *Théorie spectrale des opérateurs autoadjoints et application aux guides optiques*, ENSTA ParisTech (2nd year)

Axel Modave

- *Finite Element Methods*, ENSTA ParisTech (2nd year)
- *High Performance Scientific Computing*, ENSTA ParisTech (2nd year)
- *Parallel Scientific Computing*, ENSTA ParisTech (3rd year), and Master "Analysis, Modelling, Simulation" (M2)
- *Mathematical Models and their Discretisation in Electromagnetism*, ENSTA ParisTech (3rd year), and Master "Analysis, Modelling, Simulation" (M2)

10.2.2. Supervision

PhD: Luca Desiderio, "H-matrix based Solvers for 3D Elastodynamic Boundary Integral Equations", January 2017, Stéphanie Chaillat and Patrick Ciarlet

PhD: Laure Pesudo , "Modélisation de la réponse ultrasonore de défauts de type fissure par méthode BEM et couplage à un modèle de propagation - Application à la simulation des contrôle non destructifs", October 2017, Marc Bonnet

PhD in progress : Zouhair Adnani , "Modélisation numérique tridimensionnelle des effets de site en interaction sol-structure par une méthode adaptée aux problèmes sismiques de très grande taille", October 2014, Marc Bonnet and Stéphanie Chaillat

PhD in progress : Antoine Bensalah, "Une approche nouvelle de la modélisation mathématique et numérique en aéroacoustique par les équations de Goldstein et applications en aéronautique", October 2014, Patrick Joly and Jean-François Mercier

PhD in progress : 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 : Léandre Giret, "Development of a domain decomposition method on non-conforming meshes: application to the modeling of a Reactivity-Initiated Accident (RIA) in a Pressurized Water Reactor (PWR)", October 2014, Patrick Ciarlet

PhD in progress : Sandrine Paolantoni, "Analyse spectrale et simulation numérique de la diffraction électromagnétique par des métamatériaux", October 2016, Christophe Hazard and Boris Gralak

PhD in progress : Arnaud Recoquillay, "Identification de défauts dans un guide d'ondes en régime temporel", October 2014, Laurent Bourgeois

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 : Hajar 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 : 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

RANDOPT Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- A. Auger, program chair of the PPSN 2018 conference Coimbra, Portugal

9.1.1.2. Member of the Organizing Committees

- Anne Auger, Dimo Brockhoff, Nikolaus Hansen, and Dejan Tušar, co-organizer of the ACM-GECCO-2017 workshop on Black Box Optimization Benchmarking, together with Tea Tušar
- 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

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- Anne Auger: theory track chair for the ACM-GECCO conference 2018, Kyoto, Japan
- Nikolaus Hansen: co-track chair at ACM-GECCO-2018 for the “Evolutionary Numerical Optimization” track, Kyoto, Japan
- Nikolaus Hansen: co-track chair at ACM-GECCO-2017 for the “Evolutionary Numerical Optimization” track, Berlin, Germany

9.1.2.2. Member of the Conference Program Committees or Reviewer

- Dimo Brockhoff reviewed for ACM-GECCO
- Anne Auger is reviewer for ACM-GECCO, ACM-FOGA , NIPS, ICML

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Anne Auger and Nikolaus Hansen, members of the editorial board of the Evolutionary Computation Journal
- Dimo Brockhoff, co-guest editor of a special issue on Evolutionary Multiobjective Optimization in the Computers & Operations Research journal (issue 79), together with Joshua Knowles, Boris Naujoks, and Karthik Sindhya

9.1.3.2. Reviewer - Reviewing Activities

- Dimo Brockhoff reviewed in 2017 for IEEE Transactions on Evolutionary Computation, the Evolutionary Computation Journal, Natural Computing, PLoS One, Algorithmica, and Optimal Control, Applications and Methods
- Anne Auger reviewed in 2017 for IEEE Transactions on Evolutionary Computation, the Evolutionary Computation Journal, Algorithmica, SIAM Journal on Optimization

9.1.4. Invited Talks and Tutorials

- Dimo Brockhoff: invited tutorial on benchmarking (multiobjective) optimizers at the Symposium on Search-based Software Engineering (SSBSE’2017) in September 2017 in Paderborn, Germany
- Dimo Brockhoff: two invited talks (one on Evolutionary Multiobjective Optimization, one on Benchmarking) at the Mascot-Num conference in March 2017 in Paris, France

- Anne Auger and Nikolaus Hansen, tutorial on *Introduction to randomized continuous optimization* at the ACM-GECCO conference, Berlin, Germany
- Dimo Brockhoff: introductory tutorial on Evolutionary Multiobjective Optimization at the ACM-GECCO conference, Berlin, Germany
- Nikolaus Hansen: tutorial “A Practical Guide to Benchmarking and Experimentation” at the ACM-GECCO conference, Berlin, Germany
- Nikolaus Hansen: tutorial “CMA-ES and Advanced Adaptation Mechanisms” at the ACM-GECCO conference, Berlin, Germany, together with Youhei Akimoto

9.1.5. Leadership within the Scientific Community

- Since 2011, Anne Auger **Elected** member of the **ACM-SIGEVO executive board**, re-elected in 2017.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Dimo Brockhoff, “Introduction to Optimization”, 31.5h ETD, M2, Université Paris-Sud, France

Master: Anne Auger and Dimo Brockhoff, “Advanced Optimization”, 31.5h ETD, M2, Université Paris-Sud, France

Master: Anne Auger, “Derivative-free Optimization”, Paris-Saclay, Optimization Master

Master: Anne Auger : Anne Auger (Introduction to Machine Learning, Advanced Machine Learning), Ecole Polytechnique, c.a. 50h

Summer school: Anne Auger and Dimo Brockhoff, July 3-7, 2017. CEA-EDF-Inria **summer school** on *Design and optimization under uncertainty of large-scale numerical models*. Course on *Introduction to Randomized Black-Box Numerical Optimization and CMA-ES*, Paris.

9.2.2. Supervision

PhD in progress: Cheikh Touré, topic: multiobjective optimization, started in October 2017, supervised by Anne Auger and Dimo Brockhoff

PhD in progress: Konstantinos Varelas, topic: constrained and expensive optimization, started in December 2017, supervised by Anne Auger and Dimo Brockhoff

9.2.3. Juries

- A. Auger in the PhD jury of Paul Feliot (defense July 2017)

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 organized (with Guillaume Charpiat) the Workshop Statistics/Learning at Paris-Saclay (2nd edition), at IHES (Bures-sur-Yvette).

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 Perugia, Italy.
- Sylvain Arlot is one of the co-organizers of the Junior Conference on Data Science and Engineering at Paris-Saclay (2nd edition in 2017).
- Jean-Michel Poggi was president of the Scientific Program Committee, ENBIS 2017, Naples, 10-14 June 2017.
- Jean-Michel Poggi was member of the Conference Scientific Board of IES 2017, Naples, Italy, 6-8 September 2017.

9.1.2. Journal

9.1.2.1. 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*.

9.1.2.2. Reviewer - Reviewing Activities

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

9.1.3. Invited Talks

The members of the team have given many invited talks on their research in the course of 2016.

9.1.4. Leadership within the Scientific Community

Jean-Michel Poggi is:

- Vice-President ENBIS (European Network for Business and Industrial Statistics), 2015-18
- Vice-President FENStatS (Federation of European National Statistical Societies) since 2012
- Council Member of the ISI (2015-19)
- Member of the Board of Directors of the ERS of IASC (since 2014)

9.1.5. Scientific Expertise

Jean-Michel Poggi is member of the EMS Committee for Applied Mathematics (since 2014).

9.1.6. Research Administration

Jean-Michel Poggi is the 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: Valérie Robert, 2013, Gilles Celeux and Christine Keribin. Defended in June 2017

PhD : Yann Vasseur, 2013, Gilles Celeux and Marie-Laure Martin-Magniette (URGV). Defended in December 2017

PhD in progress: Neska El Haouij, 2014, Jean-Michel Poggi and Meriem Jaïdane, Raja Ghozi (ENIT Tunisie) and Sylvie Sevestre-Ghalila (CEA LinkLab), Thesis ENITUPS

PhD in progress: Florence Ducros, 2015, Gilles Celeux and Patrick Pamphile

PhD in progress: Claire Brécheteau, 2015, Pascal Massart

PhD in progress: Hedi Hadiji, 2017, Pascal Massart

PhD in progress: Eddie Aamari, 2015, Pascal Massart and Frédéric Chazal

PhD: Damien Garreau, 2013, Sylvain Arlot and Gérard Biau (UPMPC). Defended in October 2017

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

Masters internship: Thomas Prochwicz. Christine Keribin conducted a preliminary study on expert aggregation by supervising this three month internship.

9.2.3. Juries

S. Arlot was a member of the Ph.D. jury of Jilai Mei (Université Paris-Sud).

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 2017 and 2018
- Isabelle Guyon, General Chair, NIPS 2017
- Flora Jay, Junior Conference on Data Science and Engineering Paris-Saclay (JDSE 2017)
- Paola Tubaro, Recent Ethical Challenges in Social Network Analysis (RECSNA 2017)

10.1.1.2. Member of the Organizing Committees

- Cecile Germain, co-organizer of DataScience@HEP 2017; Hammers and Nails Weizmann Workshop.
- Isabelle Guyon, co-organizer BayLearn, NIPS workshops Challenges in Machine Learning, AutoML workshop at ICML, LAP challenge workshops (ICCV, ICPR).
- Marc Schoenauer, Steering Committee, Parallel Problem Solving from Nature (PPSN); Steering Committee, Learning and Intelligent OptimizatioN (LION).
- Michèle Sebag, President of Steering Committee, Eur. Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD).

10.1.1.3. Member of Conference Program Committees

All TAO members are members of the Program Committees of the main conferences in the fields of Machine Learning, Evolutionary Computation, and Information Processing.

10.1.1.4. Reviewer

All TAO member review papers for the most prestigious conferences in the fields of Machine Learning and Evolutionary Computation.

10.1.2. Journal

10.1.2.1. 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, member of 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.

10.1.2.2. Reviewer - Reviewing Activities

All members of the team reviewed numerous articles for the most prestigious journals in the fields of Machine Learning and Evolutionary Computation.

10.1.3. Invited Talks

- Philippe Caillou, 7 march 2017, *Simulation analysis with charts in GAMA*, Gama Training session, TU Delft, Delft.
- Guillaume Charpiat, 9 May 2017, *Introduction to Neural Networks*, Mathematical coffees, Huawei.
- Guillaume Charpiat, 30 November 2017, *Apprentissage profond pour la segmentation d'images satellite haute résolution*, Workshop Deep Learning - Télédétection - Temps, Issy-les-Moulineaux.
- Aurélien Decelle, 24 March 2017, *Ising inverse problem : recovering the topology of the network*, International workshop on numerical methods and simulations for materials design and strongly correlated quantum matters
- Isabelle Guyon, 19 Jan 2017, *Causal graph reconstruction*, ENS Ulm, Paris.
- Flora Jay, 7 April 2017, *Reconstructing past history from whole-genomes: an ABC approach handling recombining data*, European Mathematical Genetics Meeting, Estonia.
- Cécile Germain, 9 May 2017, *Review on Anomaly/Outlier detection*, DataScience@HEP, Fermilab.
- Marc Schoenauer, 23 Feb. 2017, *Adaptation and self-adaptation in Evolutionary Computation and in scientific careers*, School of Computer Science, University of Adelaide; 7 Sep. 2017, *l'Intelligence Artificielle dans le domaine scientifique*, Open Laboratories, IMRA, Sophia Antipolis; 21 Sep. 2017, *Getting hints from random walks in Optimization and Deep Learning*, CSAIL Seminar, MIT, Boston; 31 Oct. 2017, *Adaptation in Artificial Systems: lessons from Evolution Strategies applied to Deep Learning*, XIII Brazilian Congress on Computational Intelligence, Rio de Janeiro.
- Michèle Sebag, July 2017, *AI without hot air / Le vent de l'IA*, Académie des Technologies; July 2017, *IA et Intelligence Service*, DGA Ecole Militaire; Sept. 2017, *Causal Generative Neural Networks*, Lorentz center, Leiden; Sept. 2017, *Stochastic Gradient Descent: Going as fast as possible but not faster*; Sept. 2017, *AutoML@ECMLPKDD*, Skopje; Sept. 2017, *Algorithm Recommender System*, keynote speech JST CREST Program on Big Data Applications, Tokyo.
- Paola Tubaro, 11 May 2017, *Mapping the collaborative economy: social networks, status and norms*, RITM Seminar, Université Paris Sud, Sceaux.

10.1.4. 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), re-elected July 2017 (2-years term).
- Marc Schoenauer, founding President 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

10.1.5. Scientific Expertise

- Cécile Germain, evaluator for the H2020-ICT-2017-1 Big Data PPP call.
- Marc Schoenauer, mission Villani pour l'Intelligence Artificielle

10.1.6. Research Administration

- Cécile Germain, University officer for scientific computing; deputy head of the computer science department, in charge of research; member of the scientific council of faculty of Science (UPsud) and of its board; 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, co-chair (with Sylvain Arlot) of the *Maths-STIC* program of the Labex of Mathematics Hadamard (LMH).
- Michèle 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.

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, 28h, L2, Univ. Paris-Sud.

Licence : Aurélien Decelle, Machine Learning and Artificial Life, 55h, 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 and Polytech : Cécile Germain, Computer Architecture

Licence : Isabelle Guyon, Project: Creation of mini-challenges, M2, Univ. Paris-Sud.

Master : Guillaume Charpiat and Corentin Tallec, Advanced Machine Learning, 34h, M2 Recherche, Centrale-Supélec.

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: Resolution of mini-challenges (created by M2 students), L2, Univ. Paris-Sud.

Master : Yann Ollivier, Deep learning, 4h, M2 Recherche, Telecom/Polytech.

Master : Michèle Sebag, Machine Learning, 12h; Deep Learning, 6h; Reinforcement Learning, 6h; M2 Recherche, U. Paris-sud.

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: Vincent Berthier, *Studies on stochastic optimisation and applications to the real world*, Univ. Paris-Saclay, 29/9/2017, Olivier Teytaud.

PhD: Nacim BELKHIR, *On-line parameter tuning*, Univ. Paris-Saclay, 30/11/2017, Marc Schoenauer and Johann Dréo (Thalès), CIFRE Thalès.

PhD: Pierre-Yves MASSÉ, *Gradient Methods for Statistical Learning*, Univ. Paris-Saclay, 15/12/2017, Yann Ollivier

PhD: Emmanuel MAGGIORI, *Large-Scale Remote Sensing Image Classification*, 22/06/2017, Univ. Nice-Sophia-Antipolis, Yuliya Tarabalka, Pierre Alliez and Guillaume Charpiat

PhD: Yasaman SARABI, *Network Analysis of Private Water Companies, Challenges Collaboration and Competition*, 15/12/2017, Paola Tubaro (at the University of Greenwich, London, UK).

PhD in progress: Mehdi CHERTI *Learning to discover: supervised discrimination and unsupervised representation learning with applications in particle physics*. 01/10/2014, Balazs Kegl.

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 Marc Schoenauer

PhD in progress: Guillaume DOQUET, *ML Algorithm Selection and Domain Adaptation*, 1/09/2015, Michèle Sebag

PhD in progress: Victor ESTRADE *Robust domain-adversarial learning, with applications to High Energy Physics*, 01/10/2016, Cécile Germain and Isabelle Guyon.

PhD in progress: François GONARD, *Automatic optimization algorithm selection and configuration*, 1/10/2014, Marc Schoenauer and Michèle Sebag, thèse IRT SystemX.

PhD in progress : 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*, 01/09/2014, (with M. Ugur and S. Gorgoni, at the University of Greenwich, London, UK).

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: Thomas SCHMITT, *A Collaborative Filtering Approach to Matching Job Openings and Job Seekers*, 1/11/2014, Philippe Caillou and Michèle Sebag and Jean-Pierre Nadal (EHESS)

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: Pierre WOLINSKI, *Learning the Architecture of Neural Networks*, 1/9/2016, Guillaume Charpiat and Yann Ollivier

PhD in progress: Victor BERGER, *Variational Anytime Simulator*, 1/10/2017, Michèle Sebag and Marc Schoenauer

PhD in progress: Giancarlo FISSORE, *Statistical physics analysis of generative models*, 1/10/2017, Aurélien Decelle and Cyril Furtlechner

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 réseaux de neurones profonds*, 1/10/2017, Isabelle Guyon

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: Aris TRITAS, *Modélisation causale des relations entre alimentation et santé*, 1/10/2017, Michèle Sebag and Philippe Caillou

10.2.3. Juries

Guillaume Charpiat, jury of the 2017 Gilles Kahn PhD prize (SIF); jury of a MdC hiring committee at Univ. Paris-Sud.

Cecile Germain, jury of the Telecom PhD prize; half-way jury of Jacob Montiel (Telecom)

Isabelle Guyon, PhD jury Mathieu Bouyrie (Univ. Paris-Saclay, 11/1/2017) HDR jury Alexandre Gramfort (Univ. Paris-Saclay, 6/11/2017)

Flora Jay, half-way juries of Bérénice Alard (MNHN), Arnaud Becheler (EGCE), Cyriel Paris (INRA Toulouse)

Marc Schoenauer, PhD jury of Mathieu Carriere (Univ. Paris-Saclay, 21/11/2017), Elvis Dohmatob (Univ. Paris-Saclay, 29/9/2017) ; PhD committee and half-way jury of Arthur Mensch (Univ. Paris-Saclay, 3/7/2017), Julio Navarro Lara (Univ. Strasbourg, 25/7/2017), Jean Marçais (Univ. Rennes, 10/2017).

Michèle Sebag, Research Quality Assessment Panel for the Department of Computer Science, U. Copenhagen; Hiring Jury, Professor U. Nice Cote d'Azur; Hiring Jury, Professor U. Dortmund, Germany; Hiring Jury, MdC UPSud; Reviewer PhD Audrey Durand, U. Laval Québec; Reviewer PhD Antonio Vergari, U. Bari, Italie; Jury Member: Gisselbrecht, UPMC; Renyu Xury, UPSud.

10.3. Popularization

Philippe Caillou, talk on quality of life at work, AFRAFE association for ethic management, Paris, 28/11/2017

Isabelle Guyon: press release at NIPS conference (5/12/2015); interview l'Usine Nouvelle (12/12/2017).

Michèle Sebag: interview France 2; interview l'Usine Nouvelle; 2 articles The Conversation France.

Paola Tubaro: interview Pourquoi Docteur (online health magazine, 01/01/2017); article in Journal du CNRS (02/02/2017); op-ed Libération (02/02/2017); interview Le Devoir (daily newspaper, Canada, 29/04/2017); interview Les Echos (19/09/2017); interview Le Monde (09/11/2017); 1 article OuiShare magazine (13/07/2017); 1 article The Conversation France (French version 02/11/2017, English version 11/12/2017); round table on Open data at "Science and You" conference, Montréal (05/05/2017); round table "Cuisine and Performance" at Centre Pompidou, Paris (18/11/2017).

TROPICAL 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 and Operations Research, a corporate sponsorship program, operated by Fondation Mathématique Jacques Hadamard, supported by EDF, Orange and Thales, see <https://www.fondation-hadamard.fr/fr/pgmo/>

10.1.1.2. Member of the Organizing Committees

- S. Gaubert co-organizes the “Séminaire Parisien d’Optimisation”.

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 13-14, 2017. <https://www.fondation-hadamard.fr/fr/pgmo/pgmodays>

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

- S. Gaubert
 - Noncommutative geometry: number theory, celebration of Alain Connes’ 70th birthday, Shanghai, March 23 - April 7, 2017. Tropical modules, zero-sum games and non-archimedean optimization.
 - Mathematical morphology and its applications to image and signal processing Fontainebleau, Fontainebleau, May 15 – May 17, 2017. Tropical and non-linear Perron-Frobenius methods for optimal control and zero-sum games

10.1.5. Research Administration

- M. Akian :
 - Member of the “comité de liaison SMAI-MODE” since June 2015.
 - Member of the laboratory council of CMAP.
- S. Gaubert :
 - 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.
- V. Boeuf
 - Petite classe du cours de tronc commun de 1ere année "Introduction à l'optimisation" de l'École des ponts (ENPC), niveau L3.
- 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 max-plus pour le contrôle optimal et les jeux” of “Parcours Optimisation, Jeux et Dynamique” (ODJ) 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 [63].
- M. Skomra
 - TD de mathématiques à l'UPMC.
- N. Stott
 - Cours et TD “Introduction à la programmation graphique en C++”, option MAREVA et semaine Athens à l'ENSMP (École des Mines de Paris), niveau M1.

10.2.2. Supervision

- PhD in progress : Eric Fodjo, registered at École Polytechnique, since October 2013, thesis supervisor: Marianne Akian.
- PhD : Nikolas Stott, registered at École Polytechnique, since October 2014, thesis supervisor: Stéphane Gaubert, cosupervision: Xavier Allamigeon, Éric Goubault, Sylvie Putot, defended on 23 Nov 2017.
- PhD : Vianney Boeuf, registered at École Polytechnique, since October 2014, thesis supervisor: Stéphane Gaubert, cosupervision: Stéphane Raclot (BSPP), Marianne Akian, Xavier Allamigeon, defended on 18 Dec 2017.
- PhD in progress : Mateusz Skomra, registered at Univ. Paris Saclay since October 2015, thesis supervisor: Stéphane Gaubert, cosupervision: Xavier Allamigeon.

- PhD in progress : Jean-Bernard Eytard, registered at Univ. Paris Saclay since October 2015, thesis supervisor: Stéphane Gaubert, cosupervision: Marianne Akian, Mustapha Bouhtou.
- 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.

10.2.3. Juries

- X. Allamigeon
 - Jury of the PhD thesis of N. Stott (Ecole Polytechnique, examiner, November 2017).
 - Jury of the PhD thesis of V. Bœuf (Ecole Polytechnique, examiner, December 2017).
- S. Gaubert
 - Member of hiring committee (Professor position) at Paris 6 University.
 - Jury of the PhD thesis of A. Sagnier (Paris 7, examiner, 2017).
 - Jury of the PhD thesis of G. Loho (TU-Berlin, reviewer, 2017).
 - Jury of the PhD thesis of R. Hess (LAAS, 2017).
 - Jury of the PhD thesis of N. Stott (Ecole Polytechnique, examiner, November 2017).
 - Jury of the PhD thesis of V. Bœuf (Ecole Polytechnique, examiner, December 2017).

10.3. Conferences, Seminars

- M. Akian
 - Workshop "Numerical methods for optimal control problems: algorithms, analysis and applications" at INDAM, Roma, Italy, June, 19-23, 2017. Title of the talk: "Probabilistic max-plus schemes for solving Hamilton–Jacobi–Bellman equations".
 - Atelier "Jeux dynamiques à somme nulle: temps discret, temps continu", Fréjus, from 17 to 19 oct 2017. Title of the talk: "Érgodicité des jeux à somme nulle".
- X. Allamigeon
 - "Tropical Mathematics and its Applications" seminar, Warwick University, February 15, 2017. Title of the talk: "Tropicalization of spectrahedra".
 - "Optimisation and Numerical Analysis" seminar, Birmingham University, February 16, 2017. Title of the talk: "Log-barrier interior-point methods are not strongly polynomial".
 - "Computing in Tropical Geometry" workshop, Zuse Institut Berlin, May 11-12, 2017. Title of the talk: "Tropical linear optimization".
 - 8th International Conference on Interactive Theorem Proving, Brasília, September 26-29, 2017. Title of the talk: "A Formalization of Convex Polyhedra based on the Simplex Method".
 - "Computations and Proofs" SpecFun seminar, Saclay, October 16, 2017. Title of the talk: "Log-barrier interior-point methods are not strongly polynomial".
- V. Bœuf
 - INFORMS APS 2017, Applied Probability Society Conference. Chicago, IL, USA, July 10-12, 2017. "An Asymptotic Analysis of Blocking in a Finite Capacity Network with Two Levels."
- J.B. Eytard
 - Congrès annuel de la société française de Recherche Opérationnelle (ROADEF), Feb. 22-24, 2017, Metz. Title of the talk: "Une approche tropicale de la programmation bi-niveau".

- 15th International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WIOPT) , May. 15-17, 2017, Paris. Title of the talk: "A bilevel optimization model for load balancing in mobile networks through price incentives".
- Séminaire des doctorants du CMAP, Jun. 23, Palaiseau. Title of the talk: "A tropical approach to bilevel programming applied to a price incentives model in mobile data networks".
- SIAM Applied Algebraic Geometry (SIAMAG), Jul. 31 - Aug. 4, Atlanta. Title of the talk: "A tropical approach to bilevel programming: application to a price incentives model in mobile data networks".
- PGMO Days, Nov. 13-14, 2016, Palaiseau. Title of the talk: "Price incentives in mobile data networks: bilevel programming, competitive equilibria and discrete convexity".
- S. Gaubert
 - STACS, Hannover, March 2017, The operator approach to entropy games.
 - Noncommutative geometry: number theory, celebration of Alain Connes' 70th birthday, Shanghai, March 23 - April 7, 2017. Tropical modules, zero-sum games and non-archimedean optimization.
 - Mathematical morphology and its applications to image and signal processing Fontainebleau, Fontainebleau, May 15 – May 17, 2017. Tropical and non-linear Perron-Frobenius methods for optimal control and zero-sum games
 - INDAM Workshop, Roma, June 19–23, 2017. Noncommutative aspects of dynamic programming.
 - Stony Brook Game Theory Conference, July 17-21, 2017. Nonarchimedean convexity and stochastic mean payoff games.
 - OR Berlin, Sep. 5-8, 2017. Tropical spectrahedra and stochastic mean payoff games.
 - Control and Optimization Conference On the occasion of Frédéric Bonnans 60th birthday, EDF Labs Saclay, 15-17 Nov, 2017. Dynamic programming over noncommutative spaces
- D. Jones
 - Tropical Mathematics & its Applications, Birmingham, Nov 15 2017."A discrete geometry model of fire propagation in urban areas".
- M. Skomra
 - Séminaire de Géométrie Tropicale, UPMC, Paris, April 26, 2017. Title of the talk: "Tropical spectrahedra".
 - Computing in Tropical Geometry, Zuse Institute Berlin, May 11–12, 2017. Title of the talk: "Tropical spectrahedra".
 - SIAM Conference on Optimization, Vancouver, May 22–25, 2017. Title of the talk: "Solving Generic Nonarchimedean Semidefinite Programs using Stochastic Game Algorithms".
 - International Conference on Effective Methods in Algebraic Geometry (MEGA), Nice, June 12–16, 2017. Title of the talk: "The tropical analogue of the Helton–Nie conjecture is true".
 - SIAM Conference on Applied Algebraic Geometry, Atlanta, GA, Jul. 31 – Aug. 04, 2017. Title of the talk: "Tropical spectrahedra".
- C. Walsh
 - Workshop “Compactifications of buildings and symmetric spaces”, Heidelberg, May 16–17, 2017. Title of the talk: “The horofunction compactification of symmetric cones”.
 - Workshop “Order Structures, Jordan Algebras, and Geometry”, Leiden, May 29–June 2, 2017. Title of the talk: “Antitone maps and Euclidean Jordan algebras”.
 - Seminar, Ecole Polytechnique, Palaiseau, June 7, 2017. Title of the talk: “Approximability of convex bodies and volume growth in Hilbert geometries”.
 - Conference “Géométrie métrique, géométrie de Finsler”, Marseille, June 26–29, 2017. Title of the talk: “Approximability of convex bodies and volume growth in Hilbert geometries”.

AMIBIO Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. General Chair, Scientific Chair

- RECOMB'18: Y. Ponty, M. Regnier (co-chair)

7.1.2. Scientific Events Selection

7.1.2.1. Member of the Conference Program Committees

- RECOMB'17: Y. Ponty, M. Regnier
- ISMB/ECCB'17: Y. Ponty
- ACM/BCB'17: A. Héliou
- MCCMB'17: M. Régner
- BiCoB'17: Y. Ponty

7.1.2.2. Reviewer

- CPM'17: Y. Ponty

7.1.3. Journal

7.1.3.1. Member of the Editorial Boards

M. Régner is an editor of PeerJ Computer Science.

7.1.3.2. Reviewer - Reviewing Activities

M. Régner and Y. Ponty reviewed manuscripts for a large selection of journals in Mathematics, Computer Science and Bioinformatics: Discrete Mathematics and Theoretical Computer Science, Theoretical Computer Science, Bioinformatics, BMC Bioinformatics, Journal of Mathematical Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Journal of Discrete Algorithms, Algorithms for Molecular Biology, PLOS One, Journal of Theoretical Biology, RNA, Nucleic Acids Research...

7.1.4. Leadership within the Scientific Community

Y. Ponty is *animateur* of the *Macromolecular structure and interactions* axis of the CNRS GDR BIM (BioInformatique Moléculaire). With F. Cazals (ABS, Inria Sophia-Antipolis), he co-created in Oct. 2017 and currently heads the MASIM (Méthodes Algorithmiques pour les Structures et Interactions des Macromolécules) workgroup of BIM;

M. Régner is a member of DIGITEO program Committee and SDV working group in Saclay area.

7.1.5. Scientific Expertise

Y. Ponty reviewed grants for the OPUS program of the NCN agency (Poland), the Bioinformatics and Theoretical Biology programm of the DFG (Germany). He acted as an external reviewer and external assessor for an assistant professor position at the Faculty of Science of the University of South Denmark. He also refereed for a postdoc call by the French Charmmat LabEx of Univ. Paris-Saclay.

7.1.6. Research Administration

M. Regnier is the current head of the Computer Science department (LIX) of Ecole Polytechnique.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

7.2.1.1. Initial training in engineering at Ecole Polytechnique.

At the undergraduate level, AMIBio is essentially involved in Computer Science courses at Ecole Polytechnique, mainly in programming languages and Big Data processing (high-performance computing and machine learning). Notably, we are involved in the *parcours d'Approfondissement en Bioinformatique* at École Polytechnique.

7.2.1.2. Graduate-level programs and courses.

Our project is also very much involved in the AMI2B (*Analyse, Modélisation et Ingénierie de l'Information Biologique et Médicale*, formerly named BIBS – *Bioinformatique et Biostatistique*) Master program at Université Paris-Sud/École Polytechnique. Most AMIBio permanent members teach recurrent courses in AMI2B, and M. Regnier is in charge of the program at the M1 and M2 levels for Ecole Polytechnique.

Beyond the *plateau de Saclay*, AMIBio members participate in the BIM master program at UPMC, and regularly deliver PhD-level lectures in Summer/Winter schools.

Bachelor (Licence & Ecole Ingénieur)

- P. Chassagnet, INF*, 100h, L2/L3, Ecole Polytechnique, France
- Al. Héliou, INF*, 40h, L3, Ecole Polytechnique, France

Master

- P. Chassagnet, INF*/Modal Bioinfo, 90h, M1/M2, Ecole Polytechnique, France
- Al. Héliou, INF*, 7h, M1 AMI2B, Univ. Paris-Saclay, France
- Am. Héliou, INF*, 44h, M1 AMI2B, Univ. Paris-Saclay, France
- Y. Ponty, Bioinfo ARN, 12h AMI2B, M2, Univ. Paris-Saclay, France
- Y. Ponty, Bioinfo ARN, 12h BIM, M2, UPMC, France
- M. Regnier, Algo/Combinatoire, 12h AMI2B, M2, Univ. Paris-Saclay, France
- J.-M. Steyaert, Algo/Combinatoire, 12h AMI2B, M2, Univ. Paris-Saclay, France
- J.-M. Steyaert, Bioinformatics INF/BIO 588, 20h Majeure BioInfo, M1, Ecole Polytechnique, France

Doctorat

- Y. Ponty, Design ARN, 3h BIM, PhD, Univ. Tehran, Iran

7.2.2. Supervision

PhD :

Wei Wang, *Practical structure-sequence alignment of pseudoknotted RNAs*, Univ. Paris-Saclay, December 2017, Y. Ponty, A. Denise

Alice Héliou, *Analyse des séquences génomiques : Identification des ARNs circulaires et calcul de l'information négative*, Univ. Paris-Saclay, July 2017, M. Regnier

Amélie Héliou, *Théorie des jeux et échantillonnage de conformations pour l'amarrage macromoléculaire multi-corps et multi-échelle*, Univ. Paris-Saclay, August 2017, J. Cohen

PhD in progress

Afaf Saaidi, *Differential analysis of RNA SHAPE probing data*, Ecole Polytechnique, Encadrants: Yann Ponty and Mireille Régner.

Antoine Soulé, *Evolutionary study of RNA-RNA interactions in yeast*, Ecole Polytechnique, Encadrants: Jean-Marc Steyaert and J. Waldispühl (U. McGill, Canada);

Jorgelindo Moreira da Veiga, *Caractérisation dynamique et optimisation des flux métaboliques*, Ecole Polytechnique, Encadrants: L. Schwartz (AP-HP)Sabine Peres (U. Paris-Sud)

Juraj Michalik, *Non-redundant sampling for the study of RNA kinetics*, Inria Saclay, Encadrants: Y. Ponty and H. Touzet (Cristal, Univ. Lille I);

Pauline Pommeret, *Étude de l'impact phénotypique de variants génétiques altérant la structure secondaire des ARNs chez le bovin : Méthodes algorithmiques et validations expérimentales*, INRA Jouy & Ecole Polytechnique, Encadrants: Y. Ponty and D. Rocha (INRA Jouy);

Ha Thi Ngoc Nguyen, *New computational strategies for analyzing the diversity of transcriptome sequence and structure, and their relationship to disease*, I2BC (Univ. Paris-Sud) & Ecole Polytechnique, Encadrants: Y. Ponty and D. Gautheret (Univ. Paris-Sud);

7.2.3. Juries

Y. Ponty participated in a hiring committee for an associate professor position in Discrete Mathematics at the University of Southern Denmark;

Y. Ponty acted as an external opponent for the PhD defence of X. Pan at the University of Copenhagen;

7.3. Popularization

May 2017 Participation to the CURIOSITAS art & science festival organized by univ. Paris-Saclay on the CNRS campus (Gif-sur-Yvette, France);

March 2017 Outreach presentation by AMIBio on RNA folding and combinatorial design for a class of high school students (Montmorency, France);

GALEN Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

E. Chouzenoux (co-organizer). Organization of the special session “Interactions entre méthodes d’optimisation et algorithmes de simulation stochastique” in the conference GRETSI 2017, Juan-les-Pins, 5-8 sep. 2017.

E. Chouzenoux and J.C. Pesquet. Organization of the special session “Advanced optimization methods for solving inverse problems at a large scale” in the International Biomedical and Astronomical Signal Processing Frontiers workshop (BASP 2017), Villars-sur-Ollon, Suisse, 29 jan.- 3 feb. 2017.

E. Belilovsky. Co-Organizer of Learning with Limited Labeled Data Workshop, in conjunction with Conference on Neural Information Processing Systems (NIPS).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

E. Chouzenoux. Member of the technical committee “Signal Processing Theory and Methods” of the IEEE Signal Processing Society.

F. Malliaros. Member of the program committee at: International Conference on World Wide Web (WWW), Conference on Artificial Intelligence (AAAI), International Joint Conference on Artificial Intelligence (IJCAI).

10.1.2.2. 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).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Zacharaki, Evangelia I.: Medical Physics (guest editor), International Journal of Radiology, Dataset Papers in Science (Radiology), International Journal of Biostatistics & Computational Biology

10.1.3.2. Reviewer - Reviewing Activities

E. I. Zacharaki: IEEE Trans. on Medical Imaging (T-MI), Medical Image Analysis (MedIA), Trans. on Biomedical Engineering, Neuroimage, Artificial Intelligence in Medicine, Expert Systems with Applications, Bioinformatics, European Radiology

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

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.

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

10.1.4. Invited Talks

J.-C. Pesquet:

Villars sur Oulan (International Biomedical and Astronomical Signal Processing Frontiers workshop, Feb. 2017)

Taras Shevchenko National University of Kiev (Feb. 2017)

Politecnico di Milano (Apr. 2017)

Gdansk University (Mar. 2017)

Juans-les-Pins (Colloque GRETSI, Sep. 2017)

Polytechnic University of Warsaw (Oct. 2017)

Université Libre de Bruxelles (Nov. 2017)

E. Chouzenoux:

Invited seminar, LCS, Saclay, 8 décembre 2017.

Invited seminar, IFPEN, Rueil Malmaison, 6 décembre 2017.

Invited seminar, S3, CentraleSupélec, 24 novembre 2017.

Invited seminar, IIIT Delhi, 8 novembre 2017.

Journées annuelles 2017 des GdR MOA et MIA, Talence, 18 octobre 2017.

Journées Franco-Chiliennes d'Optimisation, Toulouse, 6 juillet 2017

Ecole d'été "Structured Regularization for High-Dimensional Data Analysis", IHP, 21 juin 2017.

Invited seminar, Université de Modène, 3 avril 2017.

Journée GDR ISIS, Inversion et problèmes multi-*, IAP, Paris, 20 mars 2017.

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. Foundations of Distributed and Large Scale Computing, 26h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC Business School, FR

Master: Zacharaki, Evangelia I. Foundations in Machine Learning, 36, M2 DataScience, CentraleSupélec , FR

Master: Malliaros, Fragkiskos. Machine Learning, 30h, M.Sc. in Data Sciences and Business Analytics, CentraleSupélec and ESSEC Business School, FR

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

10.2.2. Supervision

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

PhD in progress : Siddhartha Chandra, Deep Structured Prediction for Dense Labeling Tasks in Computer Vision, 2014-2018, Iasonas Kokkinos

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: Arthur Marmin, Rational models optimized exactly for chemical processes improvement, supervised by Marc Castella (Telecom ParisTech) and J.-C. Pesquet

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

PhD in progress : Evgenios Kornaropoulos, Diffusion Coefficient: a novel computer aided biomarker, 2013-2017, N. Paragios

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

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, N. Paragios

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

PhD in progress: Abdulkadir Celikkanat, Representation learning methods on graphs, 2017-2020, N. Paragios and F. Malliaros

10.2.3. Juries

The faculty members of the team (N. Paragios, J.-C. Pesquet, E. Chouzenoux and F. Malliaros) participated to numerous PhD Thesis Committees, HDR Committees and served as Grant Reviewers.

Emilie Chouzenoux, Mihir Sahasrabudhe, Jean-Christophe Pesquet, Marie-Caroline Corbineau and Nikos Paragios were part of the jury committee for several end-of-course internship presentations in CentraleSupélec.

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

François Fages is co-organizer of the **CSBC** Workshop on Computational Systems Biology for Cancer, 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

- François Fages was member of the PC of
 - **CMSB'17** The 15th conference on Computational Methods for Systems Biology, September 27th to 29th 2017, Darmstadt, Germany.
 - **FroCos'17** The 11th International Symposium on Frontiers of Combining Systems, 25-29 September 2017, Brasilia, Brazil.

9.1.2.2. Reviewer

- François Fages reviewed one article for the 15th Int. Computer Science Symposium in Russia CSR 2017.

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 one article for *Nature Scientific Reports*.
- François Fages reviewed articles for *Bioinformatics*, *ACM Transactions on Modeling and Computer Simulation*, *Fundamenta Informaticae*, *Computers and Industrial Engineering*
- Sylvain Soliman reviewed articles for *Briefings in Bioinformatics*, *PNAS*, *Transactions on Computational Biology and Bioinformatics*

9.1.4. Invited Talks

- Virgile Andréani gave a poster presentation at the Spring school on Computational Systems Biology (CompSysBio 2017), Aussois, March 19-25 2017
- Gregory Batt gave invited talks at
 - Computational biology seminar of Curie Institute, “Predicting long-term effects of repeated apoptosis-inducing drug treatments: coupling signal transduction pathways with stochastic protein turnover models”, Paris, Jan 19 2017.
 - 6th Annual Consortium Meeting of Revive LabEx, “Multi-scale modeling of TRAIL-induced apoptosis: from protein level fluctuations to drug resistance in multicellular spheroids”, Montvillargenne, Jan 24 2017.
 - ENS/ESPCI joint Biophysics seminar, “Balancing a genetic toggle switch by real-time control or periodic stimulations”, Paris, Feb 10 2017.
 - BioNetVisA 2017 workshop “From biological network reconstruction to data visualization and analysis in molecular biology and medicine”, “A multi-scale model for investigating TRAIL resistance in multi-cellular tumor spheroids”, Basel, Sept 12 2017.
 - Workshop on Control of Cellular and Molecular Systems, “Balancing a genetic toggle switch by real-time control or periodic stimulations”, Mathematical Biosciences Institute, Ohio State University.
 - Second Symposium du Réseau de Biologie des Systèmes de Sorbonne Université, “Balancing a genetic toggle switch by real-time control or periodic stimulations”, Paris, Dec 1 2017.
- François Fages gave invited talks at
 - National Taiwan University, Dept. Electrical Engineering, “Strong Turing Completeness of Continuous Chemical Reaction Networks and Compilation of Mixed Analog-Digital Programs”, Tapei, Taiwan, 9 Nov 2017.
 - Centre de Recherche Interdisciplinaire, CRI Paris, “Living with Algorithms and Algorithms of the Living”, Paris, 29 June 2017.
 - GT BIOSS-preGDR IA, keynote talk “In Quest of the Software of the Living: Successes and Difficulties of the Program Verification Paradigm in Cell Biology”, Gif sur Yvette, 22 June 2017.
 - Dynamic Days Europe, “Quantitative Modelling of the Circadian Clock and Cell Cycle Coupling: Prediction of RevErb- alpha Up-Regulation during Mitosis in Mouse Embryonic Fibroblasts – Temporal Logic Constraints and Parameter Search in BIOCHAM”, Szeged, Hungary, 7 June 2017.
 - “Turing Completeness of Biochemical Reactions over a finite set of molecules under the Differential Semantics and Compilation of Mixed Analog-Digital Programs”, French Embassy in Berlin, Germany, 1 June 2017.
 - GT BIOSS “Turing Completeness of Biochemical Reactions under the Continuous Semantics and Compilation of Mixed Digital-Analog Programs”, Montpellier, 13 March 2017.
 - Lab Sys2diag “Biochemical Compiler and Mixed Analog-Digital Algorithms in the Cell”, Montpellier, 9 March 2017.
- Jean-Baptiste Lugagne gave invited talks at
 - Khammash lab seminar, “Balancing a genetic toggle switch by real-time feedback control and periodic forcing”, ETHZ, Zurich, March 2017
 - Seminar of SynthSys Centre for Synthetic and Systems Biology, “Balancing a genetic toggle switch by real-time feedback control and periodic forcing”, University of Edinburgh, June 08 2017

- International Workshop on Control Engineering and Synthetic Biology, ‘Balancing a genetic toggle switch by real-time feedback control and periodic forcing’ (poster presentation), Royal Academy of Engineering, London, July 17 2017
- Seminar of Theory of Living Matter Group, “Balancing a genetic toggle switch by real-time feedback control and periodic forcing”, University of Cambridge, July 19 2017
- Jakob Ruess gave invited talks at
 - Working days of GT BIOSS “Control of bio-digital systems in single cells”, March 13 2017
 - Conference of GdR Biologie Synthétique et Systémique (BioSynSys) “Control of bio-digital systems in single cells”, La Grande Motte, Oct 10 2017

9.1.5. Leadership within the Scientific Community

- Grégoire Batt is a member of
 - the IEEE/CSS Technical Committee on Systems Biology,
 - the scientific board of the GDR de Biologie de Synthèse et des Systèmes
 - the GDR de Bioinformatique Moléculaire, in charge of the axis on Biological network modelling, systems biology and synthetic biology
 - co-animator of the French working group on Symbolic Systems Biology GT BIOSS
 - the scientific committee of the Spring school on Computational Systems Biology (Comp-SysBio 2017)
- François Fages is a member of
 - the Steering Committee of the **International Conference on Computational Methods for Systems Biology** since 2008,
 - the Scientific Council of the **Doctorate School “Frontières Du Vivant”** at **Center for Research and Interdisciplinarity**, Universities Paris Descartes and Paris Diderot, since 2010,
 - The Scientific Committee of the Summer School **Ecole Thématique Modélisation Formelle des Réseaux de Régulation Biologique** since 2010.

9.1.6. Scientific Expertise

- Grégoire Batt
 - has been in charge of the definition of the 16th challenge of the 2018-2022 Inria strategic plan on predictive systems biology
 - has been a member of the INRA selection committee for hiring permanent junior researchers (CR2)
 - has evaluated the PhD thesis of Lorena Postiglioni and Giansimone Perrino (Diego di Bernardo, Tigem, Italy; Thesis evaluation report)
 - has been a member of thesis advisory committee meetings for Arnaud Bonnaffoux (Olivier Gandrillon ENS Lyon/Cosmo Company), Raphael Goujet (Ariel Lindner, CRI, Paris), Adele Kerjouan (Olivier Destaing, IAB, Grenoble), and Mathilde Koch (Jean-Loup Faulon, INRA, Jouy en Josas)
- François Fages
 - is a member of the jury for the **Prix de thèse Gilles Kahn** of the **Société Informatique de France**, since 2015,
 - reviewed one Research Fellowship application for the Royal Commission for the Exhibition of 1851

9.1.7. Research Administration

- François Fages is member of the “Bureau du Comité des Projets” of 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: 48h) and Jakob Ruess (24h), *Computational Biology*, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master/PhD: Grégory Batt (co-coordinator 80h, teacher 8h) and Jakob Ruess (8h), *Modeling and engineering of biological systems*, M2/PhD, Institut de Technologie et d’Innovation de Paris Sciences et Lettres (PSL-ITI), Paris.

Master/PhD: Gregory Batt (Scientific committee and teacher 6h), Spring school on Computational Systems Biology (CompSysBio 2017), Aussois, March 19-25 2017

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

Master: Chiara Fracassi (20h), *Experimental Methods in Biophysics*, M1, Master Approches Interdisciplinaires du Vivant (AIV).

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

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

E-learning

Online [BIOCHAM tutorial notebook](#) by F. Fages and S. Soliman, presented at [CMSB 2017](#), Darmstadt, Germany.

9.2.2. Supervision

Grégory Batt is currently supervising the Ph.D. theses of

- Virgile Andreani (ED STIC, ENS)
- Sebastian Sosa Carrillo (ED FdV, Inria)
- Chetan Aditya (ED FdV, Inria)

9.2.3. Juries

- Ph.D.: Stefano Casagranda (Inria Sophia Antipolis), *G. Batt*, June 30 2017.
- HDR: Russ Harmer, Ecole Normale Supérieure de Lyon, *F. Fages, reviewer*, May 22 2017.
- Ph.D.: Guillaume Madelaine, University of Lille, *F. Fages, reviewer*, Feb. 28 2017.
- Ph.D.: Danhua Peng, University of Rostock, Germany, *F. Fages, reviewer*, Feb. 3 2017.
- Ph.D.: Ferdinanda Camporesi, University PSL, ENS Paris, *F. Fages*, Jan 23 2017.

9.3. Popularization

We participated in seminars for general audiences.

- G. Batt, “*La cybergénétique: piloter des cellules par ordinateur*”, 50 ans d’Inria au Siège, Rocquencourt, Nov 16 2017.
- F. Fages, “*Living with algorithms and algorithms of the living*”, Workshop [Shaping Major Transitions in the Digital World](#). Interdisciplinary Research Center, CRI, Paris, 28-30 June 2017.
- J. Ruess, “*Automating scientific discovery in single cells*”, Unithé ou café, Inria Saclay - Ile de France, Apr 21 2017

Our publications also raised the attention of specialized and non-specialized media. One can mention

- “Piloter le comportement de cellules biologiques par ordinateur, c'est possible” in Science et Avenir
- “Forscher verbinden und kontrollieren Bakterien mit einem Computer”, in Wiener Zeitung
- “Forscher steuern Bakterien durch Verbindung mit Computer” in der Standard
- “Forscher verbinden und kontrollieren Bakterien mit einem Computer ” and “Virtuelle Realität für Bakterien” in Austria Presse Agentur (APA)
- “Ils parviennent à contrôler des cellules biologiques par ordinateur” in SciencePost
- “Computerized biology, or how to control a population of cells with a computer” and “Virtual reality for bacteria” in Phys.org
- “Computerized biology, or how to control a population of cells with a computer” in EurekAlert.org
- “Scientists Learn to Control Bacteria by Connecting Them to Computers” in Scicasts.com
- “Virtuelle Realität für Bakterien” in Innovations-report.de
- “Virtuelle Realität für Bakterien” in Informationsdienst Wissenschaft

M3DISIM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

M. Genet, Session chair on Biomechanics at CSMA2017

M. Genet, Session chair on Software and Algorithms at FEniCS-2017

10.1.1.2. Member of the Organizing Committees

D. Chapelle, Member of the Paris-Saclay Biomechanical Seminar organizing committee

M. Genet, Member of the CSMA-2017 organizing committee

P. Le Tallec, Vice-president of the CSMA2017 (bi-annual national conference on computational structural mechanics) organizing committee

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. Member of the Conference Program Committees

D. Chapelle, Member of the Conference Program Committee of FIMH 2017

M. Genet, Member of the Conference Program Committee of CSMA-2017

P. Le Tallec, Member of the Conference Program Committee of CSMA-2017

10.1.2.2. Reviewer

D. Chapelle, reviewer for FIMH 2017

M. Genet, reviewer for CSMA-2017

P. Le Tallec, reviewer for CSMA-2017

10.1.3. Journal

10.1.3.1. Member of the 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 "Journal of the Mechanical Behavior of Biomedical Materials" and "Soft Matter journal"

R. Chabiniok, reviewer for "Journal of Computer Methods and Programs in Biomedicine", "Computers and Structures" and "Journal of Cardiovascular Translational Research"

D. Chapelle, reviewer for "Biomechanics and Modeling in Mechanobiology", "Computer Methods in Applied Mechanics and Engineering", "Computers & Structures"

M. Genet, reviewer for "Acta Biomaterialia"

S. Imperiale, reviewer for "Journal of Computers and mathematics with application", "Journal of Numerical Methods for Partial Differential Equations" "Journal of Methods and Algorithms for Scientific Computing section", "Journal of Geophysics" and "Journal of Computational Physics"

P. Moireau, reviewer for "ANR" and "Bulletin of Mathematical Biology"

10.1.4. Invited Talks

- D. Chapelle, invited seminars at Centrale-Supelec (Jan. 19th) and WIAS Berlin (Sept. 18th)
 P. Moireau, “A discrete-time optimal filtering approach for nonlinear systems as a stable discretization of the Mortensen observer”, Workshop on Optimal Control of Dynamical Systems

10.1.5. Leadership within the Scientific Community

- J.-M. Allain, Member of Society of Experimental Mechanics and of Biophysical Society
 J.-M. Allain, Member of the Academic Council of Université Paris-Saclay, France
 D. Chapelle, Head of Science of Inria Saclay-Ile-de-France, and member of the Inria Evaluation Committee
 D. Chapelle, Member of the board of directors of the VPH Institute, and of the Avicenna Alliance
 D. Chapelle, Member of the steering committee of the BioMedical Engineering Institute coordinated by Ecole Polytechnique
 A. Le Gall, Chair of youth committee of SFAR (French Society of Anesthesia and Reanimation)
 P. Le Tallec, Director of the 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)
 S. Imperiale, Consultant for CEA (The French Alternative Energies and Atomic Energy Commission)
 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, Responsibility of the teaching experimental center (mechanics), at École Polytechnique
 J.-M. Allain, Scientific Advisory Board, chair BioMecAM at ENSAM
 J.-M. Allain, Responsible of the “Mechanics and Material for the bio” at the Fédération Francilienne de Mécanique
 D. Chapelle, Head of Science of Inria Saclay-Ile-de-France, and member of the Inria Evaluation Committee
 P. Le Tallec, Director of the LMS (Solid Mechanics Laboratory) Ecole Polytechnique
 P. Le Tallec, in charge of 3rd year program in Mechanics and Energy at Ecole Polytechnique
 P. Le Tallec, in charge of the André Citroën Chair
 P. Le Tallec, in charge of the Mechanics department at University Paris Saclay
 P. Le Tallec, President of the academic senate of the Ecole Polytechnique

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Bachelor: J.-M. Allain, “Introduction projects to physics”, 15h, (L1), École Polytechnique, France

- Bachelor: F. Caforio, "PEIP1 S2 M2 – Mathematical analysis in two and three dimensions, linear algebra in Rⁿ", 22h, (L1), Polytech Paris-Sud, France
- Bachelor: F. Caforio, "Math 255 – Differential calculus for physics (mathematical analysis in two and three dimensions)", 42h, (L2), Université Paris-Sud, France
- Bachelor: M. Genet, "MEC435 – Modélisation et Simulation en Mécanique Industrielle", 32h, (L3), École Polytechnique, France
- Bachelor: M. Genet, "MEC430 – Mécanique des Milieux Continus I", 32h, (L3), École Polytechnique, France
- Bachelor: M. Genet, "MEC431 – Mécanique des Milieux Continus II", 32h, (L3), École Polytechnique, France
- Bachelor: S. Imperiale, "MA102 – Analyse pour les EDP", 24h, (L3), ENSTA ParisTech, France
- Bachelor: S. Imperiale, "MA104 – Analyse complexe", 12h, (L3), ENSTA ParisTech, France
- Bachelor: F. Kimmig, "Mathematical methods for physics", 32h, (L1) level, École Polytechnique, France
- Bachelor: F. Kimmig, "Introduction projects to physics", 6h, (L1), École Polytechnique, 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 411 – Approximation numérique et optimisation", 32 h, (L3), Ecole Polytechnique, France
- Master: P. Moireau, "MA103 – Introduction aux EDP et à la méthode des différences finies", 14h, (L3), ENSTA ParisTech, France
- Bachelor: F. Wijanto, "Modeling and simulation in industrial mechanics" 32 h, (L3), École Polytechnique, France
- Master: J.-M. Allain, "computational fluid dynamics", 36h, (M1), Ecole Polytechnique, France
- Master: J.-M. Allain, "Cellular Motility", 32h, (M2), Ecole Polytechnique, France
- Master: D. Chapelle: "Biomechanical Modeling of Active Tissues", 33h, (M2), Université Paris-Saclay, France
- Master: S. Imperiale, "MA2610 Calcul Scientifique – Mécanique des solides", 6h, (M1), Centrale/Supelec, France
- Master: S. Imperiale, "Simnum – Programmation C++", 18h, (M1), ENSTA ParisTech, France
- Master: P. Le Tallec, "M4S – Numerical methods in non linear mechanics", 27h, (M2), École Polytechnique, France
- Master: P. Le Tallec, "Nuclear Energy on Continuum Mechanics", 15h, (M2), INSTN, France
- Master: P. Moireau, "MAP-Ann1 – La méthode des éléments finis", 21h, (M1), ENSTA ParisTech, 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", 24h, (M2), UPMC, France

10.2.2. Supervision

PhD: Aurora Armiento, "Inverse problems and data assimilation methods applied to protein de-polymerisation", supervisors: M. Doumic and P. Moireau, Paris-Descartes University, defended Jan. 13th

PhD in progress: Ustim Khristenko, “Méthodes mathématiques et numériques pour la modélisation et le calcul des états établis cycliques en mécanique non-linéaire”, started Oct. 2014, supervised: P. Le Tallec

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

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

PhD in progress: Arthur Le Gall, “Application of biomechanical heart modeling in hemodynamic monitoring of increased risk patients during anesthesia using clinical data”, started Nov. 2016, supervisors: D. Chapelle, E. Gayat (UP7 Paris Diderot) and R. Chabiniok

PhD in progress: Ezgi Berberoglu, “Image-guided Computational Cardiac Mechanics”, started: Jan. 2016 supervisors: Martin Genet and Sebastian Kozerke (ETH, Zurich, Switzerland)

PhD in progress: Cécile Patte, “Modélisation poro-mécanique multi-échelle du poumon, de la respiration au remodelage chronique associé à la fibrose pulmonaire”, started: Nov. 2017, supervisors: M. Genet and D. Chapelle

PhD in progress: Marija Gusseva, “Cardiac Biomechanical Modeling of Chronic Right Ventricular Loading”, started Dec. 2017, supervised: R. Chabiniok, D. Chapelle, T. Hussain (UTSW Medical Center Dallas)

10.2.3. Juries

D. Chapelle, Habilitation Jury of Marcela Szopos, Strasbourg University, President, Dec. 1st

P. Moireau, PhD Jury of Aurora Armiento, Paris-Descartes University, PhD Advisor, Jan. 13th

P. Moireau, PhD Jury of Chloé Audebert, Paris-6 University, Reviewer, Febr. 24th

P. Moireau, PhD Jury of Pauline Bernard, Paris-6 University, President, Nov. 20th

P. Moireau, PhD Jury of Roch Mollero, University of Nice-Sophia Antipolis, Dec. 19th

10.3. Popularization

J.-M. Allain, Jeudi de la Recherche de l’X: popularisation talk on research with medical application. June 2017

J.-M. Allain, 3 articles in popularisation journals (quotidien du médecin, le concours médical, biotech.info) by journalists

D. Chapelle, interview for “Usine Nouvelle”, Dec. 12th

A. Laurin, Inria Saclay inauguration demo and associated news article in “Le Parisien”, Jan. 2017

P. Moireau, Créteil district “Olympiades de Mathématiques” award ceremony, May 2017

R. Chabiniok, Review paper promoting Cardiovascular MRI particularly of congenital heart diseases for Czech and Slovak physicians [17]

A. Laurin, P. Moireau, D. Chapelle, demo at 50 ans de l’Inria, Nov. 7th and 8th

PARIETAL 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

10.1.1.1.1. Gaël Varoquaux

MICCAI, NIPS, IPMI, ICML, CCN

10.1.1.1.2. Bertrand Thirion

NIPS, IPMI, OHBM, PRNI

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Gaël Varoquaux, Editor, Neuroimage
- Alexandre Gramfort, Editor, Frontiers in Brain Imaging Methods, Journal of Machine Learning Research (JMLR)
- Bertrand Thirion, Editor, Frontiers in Brain Imaging Methods

10.1.2.2. Reviewer - Reviewing Activities

10.1.2.2.1. Gaël Varoquaux

Nature Methods, JMLR, PLOS Comp Bio, NeuroImage, IEEE TBME, Annals of Applied Statistics, Biological Psychiatry, MedIA

10.1.2.2.2. Alexandre Gramfort

JMLR, PLOS Comp Bio, NeuroImage, IEEE TBME, IEEE TMI, IEEE TSP, MedIA, Brain Topography, NIPS, ICML, ICLR.

10.1.2.2.3. Philippe Ciuciu

PLOS One, NeuroImage, HBM, IEEE TMI, IEEE TSP, IEEE SP letters, MedIA, J of Neuroscience, JCBFM, ISBI, ICASSP, EUSIPCO.

10.1.2.2.4. Denis Engemann

PLOS Biology, PLOS Computational Biology, Nature Scientific Reports, Neuroimage, Neuroimage Clinical, Human Brain Mapping, Journal of Machine Learning Research, Brain Topography, Brain Connectivity, Journal of Alzheimer's Disease, PLOS ONE, Frontiers in Neuroscience, Psychiatry and Clinical Neurosciences, Sensors

10.1.2.2.5. Bertrand Thirion

Nature communications, Neuroimage, Medical Image Analysis, IEEE TMI, PNAS, PLOS Comp Bio.

10.1.3. Invited Talks

- Gaël Varoquaux, Keynote, BDEC Workshop 2017, Wuxi, China
- Gaël Varoquaux, Keynote, scipy 2017, Austin TX
- Gaël Varoquaux, Keynote, Swiss Python summit 2017, Zurich, Switzerland
- Gaël Varoquaux, Keynote, NIPS learning with limited labels workshop, Long Beach, CA
- Philippe Ciuciu, Seminar in the neuroscience Department, NYU, School of Medicine, May 2017, NYC.
- Philippe Ciuciu, Laufer Center Seminar Series, May 2017, Stony Brook Univ, NY.
- Philippe Ciuciu, Dedale workshop on Dictionary learning on manifolds, Sep. 2017, Nice, France
- Philippe Ciuciu, Colloquium at Perform centre, Dec 2017, Montreal, Canada
- Philippe Ciuciu, Seminar at Ecole Polytechnique Montreal, Dec 2017, Montreal, Canada
- Alexandre Gramfort, 2017 EU-US Frontiers of Engineering Symposium, UC Davis, CA
- Alexandre Gramfort, Computational Challenges in Image Processing, Turing Institute, Cambridge Univ., UK
- Alexandre Gramfort, Machine learning for functional brain imaging Symposium and Workshop, Karolinska Institute, Sweden
- Denis A. Engemann, Lessons learned from high-dimensional statistics and M/EEG: From automated preprocessing to detection of consciousness, University of Naples, Italy, March 2017
- Denis A. Engemann, Learning from Oscillations – New Vistas for Translational Neuroimaging, MIT, Cambridge MA, April 2017
- Denis A. Engemann, Building better biomarkers using M/EEG and statistical learning, Eespo University, Finland, June 2017
- Bertrand Thirion, ARSEP, February 2017, Paris
- Bertrand Thirion, AI for Medical Imaging symposium, June 2017, Paris
- Bertrand Thirion, Causality and big data workshop, October 2017, Saclay
- Bertrand Thirion, Machine learning workshop, Telcom Paris Sud, October 2017, Evry
- Bertrand Thirion, Icube seminary, Strasburg, July 2017
- Bertrand Thirion, Laboratoire de Mathématiques d'Orsay, December 2017

10.1.4. Scientific Expertise

- Philippe Ciuciu, Member of the "ANR evaluation committee (CES 45) in Mathématique, informatique, automatique, traitement du signal"
- Philippe Ciuciu, Member of the IEEE BISP committe for the international symposium in biomedical imaging
- Philippe Ciuciu, Member of the Biomedical Imaging & Signal Analytics special area team (SAT) in Eurasip
- Bertrand Thirion, Member of the prospective group of ITMO Neurosciences

10.1.5. Research Administration

- Gaël Varoquaux, Member of the Inria Saclay CDT, "Comission de développement technologique"
- Gaël Varoquaux, Member of the Inria Saclay CSD, "Comission de suivi doctoral"
- Gaël Varoquaux, Member of the Inria Saclay cluster committee
- Alexandre Gramfort, Member of the "comité de pilotage" DataIA
- Alexandre Gramfort, Member of the "comité de pilotage" DIM RFSI
- Philippe Ciuciu, Member of the "Inria Saclay scientific committee"

- Philippe Ciuciu, Member of the CEA/DRF Impulsion evaluation committee
- Philippe Ciuciu, Member of the "jury du prix de thèse de la société EEA et du GDR ISIS"
- Bertrand Thirion, Deputy scientific director 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.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

10.2.1.1. Gaël Varoquaux

Master : Machine learning with scikit-learn, 2 heures équivalent TD, M1, ENSAE, France

Master : Brain functional connectivity, 8 heures équivalent TD, M2, Télécom Paris Tech, France

Doctorat : Machine learning for brain imaging with nilearn, 16 heures équivalent TD, Université de Montréal, Canada

Doctorat : Ecole d'hiver, Computational Brain Connectivity Mapping, Juan-Les-Pins, 1h30

Doctorat : Ecole d'hiver, Computational Brain Connectivity Mapping, 1h30, Juan-Les-Pins

Doctorat : Machine learning for brain imaging, 1h00, IPAM, UCLA, Los Angeles, USA

Doctorat : Scipy: numerical algorithms in Python, 1h30, Euroscipy 2017, Erlangen, Germany

Doctorat : Estimation of brain functional connectomes, 30mn, OHBM 2017, Vancouver, Canada

Doctorat : Software engineering for reproducible science, Open science summer school 2017, EPFL, Lausanne, Switzerland

10.2.1.2. Philippe Ciuciu

Master 2 : "Functional MRI: From data acquisition to analysis", 3h, Univ. Paris V René Descartes & Télécom-Paristech, Master of Biomedical Engineering

Master 2 : "fMRI data analysis", 3h, Univ. Paris-Saclay, Master of medical Physics

10.2.1.3. Alexandre Gramfort

Master 2 : "Functional Brain Imaging with EEG and MEG", 6h, Univ. Paris V René Descartes & Télécom-Paristech, Master of Biomedical Engineering

Master 2 : "Optimization for Data Science", 20h, Univ. Paris-Saclay, Master of Mathematics / Data Science

Master 2 : "Data Camp", 18h, Univ. Paris-Saclay, Master of Mathematics / Data Science

Ecole d'hiver, Computational Brain Connectivity Mapping, Juan-Les-Pins, 1h30

Scikit-learn tutorial, Scipy Conf., Austin, USA, 6h

MNE tutorial, Univ. Libre de Bruxelles, Belgique, 6h

10.2.1.4. Denis A. Engemann

MNE-Python workshop, University of Bari, June 2017, 14h

10.2.1.5. Bertrand Thirion

Master : Functional Neuroimaging and brain-computer interfaces, 12h, MVA, ENS Paris-Saclay, France

Doctorat : OHBM course 2017, Pattern Recognition for brain Imaging, Vancouver, Canada

Master: Resting-State Functional Magnetic Resonance Imaging, 3h, Paris V, France.

10.2.2. Supervision

PhD in progress : Patricio Cerdá, Statistical methods for analysis across datasets, started 01/09/2016, supervisors: Balazs Kegl (CNRS, LAL), Gaël Varoquaux

PhD in progress : Jérôme Dockès, Mining text and brain activity to learning the semantics of cognitive science, started 01/09/2016, supervisors: Fabian Suchanek (Télécom ParisTech), Gaël Varoquaux

PhD in progress : Arthur Mensch, Learning representations of fMRI, started 01/09/2015, supervisors: Bertrand Thirion, Gaël Varoquaux, Julien Mairal (Inria Grenoble)

PhD: Elvis Dohmatob, Amélioration de connectivité fonctionnelle par utilisation de modèles déformables dans l'estimation de décompositions spatiales des images de cerveau, defended sept 2017, supervisors Bertrand Thirion, Gaël Varoquaux

10.2.2.1. Philippe Ciuciu

PhD in progress: Carole Lazarus (3rd year, Director)

PhD in progress: Loubna El Gueddari (2nd year, Director)

PhD in progress: Hamza Cherkaoui (1st year, Director)

PhD in progress: Sylvain Lannuzel (1st year, co-director)

10.2.2.2. Alexandre Gramfort

PhD defended: Albert Thomas

PhD defended: Romain Laby

PhD in progress: Yousra Bekhti

PhD in progress: Mainak Jas

PhD in progress: Tom Dupré La Tour

PhD in progress: Stanislas Chambon

PhD in progress: Pierre Ablin

PhD in progress: Mathurin Massias

PhD in progress: Hicham Janati

10.2.2.3. Denis A. Engemann

PhD in progress: Mainak Jas (co-supervision on 1 main project)

PhD in progress: Sami aboud (co-supervision on 1 main project)

PhD in progress: Kamalakar Reddy (co-supervision)

10.2.2.4. Bertrand Thirion

PhD defended: Elvis Dohmatob (co-supervision with G.Varoquaux)

PhD in progress: Arthur Mensch (co-supervision with G. Varoquaux and J. Mairal)

PhD in progress: Jérôme Dockès (co-supervision with G. Varoquaux and F. Suchanek)

PhD in progress: Kamalakar Reddy (co-supervision with G.Varoquaux and D. Engemann)

PhD in progress: Jérôme-Alexis Chevalier (co-supervision with J.Salmon)

10.2.3. Juries

10.2.3.1. Philippe Ciuciu

12/15: Reviewer of Lucie Thiebaut-Lonjaret PhD Thesis, Univ. Aix-Marseille, France.

04/23: Reviewer of Yosra Marnissi PhD Thesis, Univ. Paris-Est, France.

10.2.3.2. Gaël Varoquaux

external reviewer, PhD defence of Christian Dansereau, Université de Montréal.

10.2.3.3. Alexandre Gramfort

- 12/19: Examiner of Thomas Moreau, Univ. Paris Saclay / ENS Paris-Saclay
12/13: Reviewer of Etienne Combrisson PhD Thesis, Univ. Lyon 1, France.
11/10: Reviewer of Lankinen Kaisu PhD Thesis, Univ. Aalto, Finland.
04/26: Reviewer of Seyed Mostafa Kia PhD Thesis, Trento FBK Univ., Italy.

10.2.3.4. Bertrand Thirion

- 18/01: Reviewer of Jonathan Vacher PhD thesis, Univ. Paris VI
30/05: Examiner of Brahim Bougacha PhD thesis, University Nice

10.3. Popularization**10.3.1. Gaël Varoquaux**

- Présentation "Démocratisation de l'IA", Station F, (Dec 2017).
Présentation sur les logiciels libres de machine learning aux journées annuelles du groupe de travail sur les logiciels libres (Oct 2017)
Présentation sur scikit-learn au "Paris ML meetup" (Dec 2017)
Présentation sur scikit-learn au "Paris Pydata meetup" (Mars 2017)

10.3.2. Alexandre Gramfort

- Présentation sur "L'intelligence artificielle au service de la société" à l'UNESCO dans le cadre des journées des ingénieurs et scientifiques de France (IESF) (Oct 2017). ⁰.
Présentation sur l'Intelligence Artificielle au conseil d'administration de l'Institut National du Cancer (INCA) (Nov 2017).

⁰http://home.iesf.fr/752_p_49913/l-intelligence-artificielle.html

XPOP Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

Julie Josse and Eric Moulines were members of the Organizing Committee of the *First Data Science Summer School* at École Polytechnique (August 28th - September 1st).

Marc Lavielle was member of the Organizing Committee of the meeting *Tres días al azar* en Cartagena, Colombia (December 14 - 16).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Julie Josse was member of the Program Committee of the *useR!2017 meeting* in Bruxelles (June, 3-7).

10.1.3. Scientific Expertise

Marc Lavielle is member of the Scientific Committee of the High Council for Biotechnologies.

10.1.4. Research administration

Marc Lavielle is member of the Scientific Programming Committee (CPS) of the Institute Henri Poincaré (IHP).

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

Marc Lavielle developed 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 participated in the jury of the "Speed data scientist" competition organized by Animath and the Société Générale. The students worked on anomaly detection: they have to identify the days of malfunctioning of the web application. They had to figure out how to anticipate breakdowns.

Julie Josse presented "How to manage missing data in R" at the meetup Rladies Paris. This meeting was associated with the Rforwards initiative, which aims to develop women's participation in the R community.

Marc Lavielle participated to the *Jeudis de la recherche de l'X* on June 29th dedicated to "Health challenge: tools for tomorrow's medicine".

INFINE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

1. **Aline C. Viana** was scientific chair of Algotel 2017.
2. **Emmanuel Baccelli** was chair of the RIOT Summit 2017.

9.1.1.2. Member of the Organizing Committees

1. **Aline C. Viana** is Publicity Chair of: IEEE PICOM 2018; IEEE MiSeNet 2018 jointly with IEEE Infocom 2018; DCOSS 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

1. **Aline C. Viana** was scientific chair of Algotel 2017.

9.1.2.2. Member of the Conference Program Committees

1. **Aline C. Viana** is/was TPC member of: Altogel 2018; IFIP NTMS 2018 New Technolog; WCU 2017 jointly with SBRC 2017; IEEE AINA-2017.

9.1.2.3. Reviewer

1. **Cedric Adjih** was reviewer for PEMWN 2017, IEEE PIMRC 2017 Workshop WS-07, WINCOM 2017, WCNC 2018.
2. **Emmanuel Baccelli** was reviewer for ACM ICN 2017 (Poster/Demo), PEMWN 2017.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

1. **Aline C. Viana** is Associate Editor of ACM SIGCOMM Computer Communication Review (ACM CCR), since May 2014; Editorial Board member of Wireless Communications and Mobile Computing Open Access Journal of John Wiley&Sons and Hindawi since 2016.

9.1.3.2. Reviewer - Reviewing Activities

1. **Aline C. Viana** reviewed papers for ACM SIGCOMM CCR Journal, elsevier Pervasive and Mobile Computing Journal and Computer Communication Elsevier Journal.

9.1.3.3. Reviewer

1. **Cedric Adjih** was reviewer for Future Generation Computer Systems, and IEEE Transactions on Communications.
2. **Emmanuel Baccelli** was reviewer for ACM Transactions on Networking (TON), Elsevier Future Generation Computer Systems.

9.1.4. Standardization

1. **Emmanuel Baccelli and Cedric Adjih** have participated at several working groups at IETF (March, July and November 2017)
2. **Emmanuel Baccelli and Cedric Adjih** have participated at the IETF hackathons (July and November 2017)

9.1.5. Invited Talks

1. **Aline C. Viana** was invited to give a talk at (1) University of Coimbra, Portugal in December 2016; (2) University of Porto, Portugal in December 2016; (3) EBSIS Summer School in Timmendorfer Strand, Germany in July 2017; (4) University of Edinburgh, UK in February 2017, (5) Spring School on Networks (SSN) 2017 at ChileCON Conference, Pucon, Chile in October 2017, all on "Toward a more Tactful Networking".
2. **Aline C. Viana** will be the keynote speaker of the CoUrb 2018 Workshop jointly organized with SBRC 2018, Brazil in May 2018.
3. **Laurent Massoulié** gave several invited talks at: Stochastic Networks Conference, UCSD; CIRM workshop on random matrices; Institut Henri Poincaré Nexus of Information and Computation Theories; LINCS scientific advisory board.
4. **Cedric Adjih** has presented in the [June seminar](#) of Digicosme GT task 2 Future Access Networks : "On Doing 5G with Old Low Cost Wireless Sensor Nodes (with RIOT, FIT IoT-LAB and one SDR device)". This presented work-in-progress experimenting of some 5G-related method(s) on low cost wireless sensor nodes, focusing on massive access (for machine-type communication), and describing one of the most readily experimental family of methods for random access known as "Coded Slotted Aloha", along with its already known features and performance evaluation aspects. Proof-of-concept experimentation was also described starting from the underlying hardware platform, FIT IoT-LAB (a large scale open testbed IoT Lab), and the underlying software platform, RIOT (an Operating System from the Internet of Things). Using additionally a software-defined receiver, it was shown how such 5G-like random access can be experimented on such typical 802.15.4-based devices. An analysis of preliminary results was provided, along with some lessons learned and some consequences on the design space of such methods.
5. **Cedric Adjih** has presented a tutorial at [ANTS 2017](#) in Bhubaneswar, Odisha, India, on the subject of "[IoT in Practice](#)": it presented a comparative study of embedded OS's such as RIOT, Contiki, ARM Mbed, Zephyr as well as implementation specificities of IoT protocol stacks e.g. RPL/6LoWPAN. Insight on how do hardware and software building blocks and transport level and application level protocols fit together was be provided. Addressed practical issues include the analysis of actual protocol performance (e.g. 802.15.4 or LoRa stacks) in experimental settings, and topics such as reasons for adopting open source approaches for IoT solutions. Presentation of experimental proof of concepts concluded the tutorial.
6. **Emmanuel Baccelli** gave an invited talk at CiscoX Symposium 2017, on the topic of "ICN for IoT: Energy Efficiency, Opportunities & Challenges"
7. **Emmanuel Baccelli** gave an invited talk at Bremen University in February, on the topic of "End-to-End Open Source IoT with RIOT".

9.1.6. 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** will be the new leader of Infine team due to the fact that Laurent Massoulié had to leave Inria Saclay to join the Inria & Microsoft Lab at Inria Paris.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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

Licence: Aline C. Viana, "Toward a more Tactful Networking", 2h TD, niveau L3, Federal University of Goias (UFG) and Federal University of Minas Gerais, Brazil

Licence: Aline C. Viana, "Opportunistic communication in disconnected mobile Ad Hoc networks", 6h TD, niveau L3, Telecom SudParis, France

Licence: Cédric Adjih, "Microcontrollers: from embedded systems to the Internet of Things", 3h TD, Niveau L3, Telecom SudParis, France

Licence: Laurent Massoulié, "Networks: distributed control and emerging phenomena", 18h TD, Niveau L3, Ecole Polytechnique, France

Master : Aline C. Viana, "Toward a more Tactful Networking", 2h TD, niveau M2, Federal University of Goias (UFG), Federal University of Minas Gerais, Brazil

Master : Aline C. Viana, "Toward a more Tactful Networking", 3h TD, niveau M2, Telecom SudParis, France

Master : Aline C. Viana, Master Project evaluation, 4h TD, niveau M2, Telecom SudParis, France

Doctorat : Aline C. Viana, "Toward a more Tactful Networking", 2h TD, Federal University of Goias (UFG) and Federal University of Minas Gerais, Brazil

9.2.2. Supervision

PhD: Guangshuo Chen, "Human habits investigation: From mobility reconstruction to mobile traffic prediction", Ecole Polytechnique, March 2018, Aline C. Viana.

PhD in progress: (1) Rafael Costa, "Inferring friends in the crowd in Device-to-Device communication", June 2016, Aline C. Viana and Leobino Sampaio (co-tutele); (2) Roni Shigetta, "Distributed channel allocation strategy based on human behavior", January 2014, Aline C. Viana and Mauro Fonseca (co-tutele).

PhD in progress: Loic Dauphin, "IoT Robotics", June 2016, Emmanuel Baccelli and Cédric Adjih co-supervision.

9.2.3. Juries

1. Aline Viana will be on the PhD jury as reviewer of: Florent Coriat, "Geolocalisation en situation de crise", UPMC ? Sorbonne Universités, France, may 2018.
2. Aline Viana was on the PhD jury as examiner of: (1) S. Eddine Belouanas, "Dessemination de contenus populaires et tolerants au delai dans les reseaux cellulaires", UPMC ? Sorbonne Universités, France, September 2017; (2) P. Salgueiro Santos, "Wireless Protocols and Channel Estimation for Data Gathering with Mobile Nodes", Univ. of Porto, Portugal, May 2017; (3) Amal Ellouzem, "Mobile Applications Offloading in Mobile Cloud Environment", Telecom ParisTech, France, March 2017.
3. Aline C. Viana was on the PhD jury as invited member of Tanel Razafimandimbry "Toward Internet of Heterogeneous Things: Wireless communication maintenance and efficient data sharing among devices", University Lille 1, Inria Lille, France, October 2017.
4. Aline C. Viana was on the PhD Qualification jury as examiner of T. Duc Ha, "Allocation de ressources et association utilisateur/cellule optimisees pour les reseaux C-RAN" (Univ. Paris Sud, 2017);
5. Aline C. Viana was on the Master jury of Bruno Farias Fausto "Um mecanismo de detecção e controle de congestionamento usando redes ad hoc veiculares sem infraestrutura", Federal Univ. of Rio de Janeiro State, Brazil, October 2017.
6. Laurent Massoulié was on the PhD jury as reviewer for the PhD theses of Anna Benhamou and Alaa Saade, and he presided the PhD thesis committee of Kevin Scaman.

9.3. Popularization

1. Aline C. Viana gave a scientific talk on "Le smartphone, votre 6e sens ?" and "The research career", December 2017, for college students visiting Inria Saclay
2. Cédric Adjih, Emmanuel Baccelli, Alexandre Abadie, Raul Fuentes participated to the "Inria-Industry Meetings" on 17 and 18 October 2017, with two demonstrations:

- RIOT, the friendly OS for the Internet of Things - it has shown the various functionalities from RIOT on hardware of the type sensor/actuator to demo a control loop via the cloud. RIOT was used to generate IoT data locally (via sensors), sending them to the cloud where this data is analyzed. This analysis will result in a physical action (via actuators). We highlighted two use-cases: building automation, and low-cost robotics
- End-to-end IoT with FIT IoT-LAB - this presented the use of FIT IoT-LAB for experimenting with IoT; in particular the end-to-end Over-the-air updates of RIOT.

AVIZ Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

- Jean-Daniel Fekete organized the Doctoral Colloquium (Doctoriales) for the Journées Visu 2017
- Tobias Isenberg was Posters co-chair for EuroVis 2017
- Pierre Dragicevic co-organized the CHI 2017 workshop on [Moving Transparent Statistics Forward @CHI 2017](#).
- Petra Isenberg was Posters co-chair for VIS 2017
- Emantha Dimara organized the workshop "DECISIVE 2017: Dealing with Cognitive Biases in Visualisations" at IEEE VIS'2017 (<http://decisive-workshop.dbvis.de/>).

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

- Jean-Daniel Fekete was a member of the program committee for IEEE VIS 2017.
- Jean-Daniel Fekete was a member of the test of time award committee for IEEE InfoVis 2017.
- Jean-Daniel Fekete was a member of the program committee for EuroVis 2017.
- Tobias Isenberg was a member of the program committee for ACM/Eurographics Expressive 2017.
- Tobias Isenberg was a member of the program committee for ACM SUI 2017.
- Tobias Isenberg was a member of the program committee for IEEE VISAP 2017.
- Tobias Isenberg was a member of the program committee for IEEE InfoVis 2017.
- Tobias Isenberg was a member of the program committee for EuroVis 2017, full & short papers.
- Tobias Isenberg was a member of the program committee for Eurographics 2017.
- Tobias Isenberg was a member of the program committee for SCCG 2017.
- Tobias Isenberg was a member of the program committee for IEEE 3DUI 2017.
- Pierre Dragicevic was a member of the program committee for IEEE VIS 2017.
- Pierre Dragicevic was a member of the program committee for IHM 2017.
- Pierre Dragicevic was a member of the program committee for the DECISIVE 2017 workshop.
- Petra Isenberg was a member of the program committee for IEEE InfoVis 2017.
- Petra Isenberg was a member of the program committee for EuroVA 2017.
- Petra Isenberg was a member of the short paper committee for EuroVis 2017.
- Petra Isenberg was a member of the program committee for IEEE PacificVis 2017.
- Tanja Blascheck was a member of the Program Committee – NIER and Tool Tracks for VISSOFT 2017.

8.1.2.2. Reviewer

- Jean-Daniel Fekete reviewed for CHI, EuroVis, InfoVis.
- Tobias Isenberg reviewed for InfoVis, SciVis, EuroVis, SIGGRAPH, Eurographics, CHI, VR, SCCG, 3DUI, ISS, Graphics Interface, PacificVis, Expressive, SUI, VISAP.
- Pierre Dragicevic reviewed for CHI, VIS, UIST, Interact, IHM.

- Petra Isenberg reviewed for EuroVA, EuroVis, Interact, PacificVis, InfoVis.
- Christoph Kinkeldey reviewed for ACM INWUT.
- Tanja Blascheck reviewed for EuroVis, PacificVis, VISSOFT (IEEE Working Conference on Software Visualization), VRST (ACM Symposium on Virtual Reality Software and Technology).
- Lonni Besançon reviewed for 3DUI, CHI, ICMI, IHM, ISS, OzCHI, VR, VRST.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Tobias Isenberg is member of the editorial board of Elsevier's Computers & Graphics journal.
- Pierre Dragicevic is member of the editorial board of the Human-centric Computing and Information Sciences (HCIS) journal.

8.1.3.2. Reviewer - Reviewing Activities

- Jean-Daniel Fekete reviewed for TVCG.
- Tobias Isenberg reviewed for TVCG.
- Pierre Dragicevic reviewed for TVCG.
- Petra Isenberg reviewed for TVCG, InfoVis Journal.
- Christoph Kinkeldey reviewed for TVCG, IEEE CG&A, IJGIS, ISPRS IJGI.
- Tanja Blascheck reviewed for JEMR (Journal of Eye Movement Research), Pattern Recognition Journal, TVCG.
- Lonni Besançon reviewed for IEEE Consumer Electronic.

8.1.4. Invited Talks

- Jean-Daniel Fekete: Seminar Dataviz : idée, méthode et perception Visualisation d'information : des principes au passage à l'échelle, INED, Paris, December 4, 2017
- Jean-Daniel Fekete: Keynote EA Artificial Evolution 2017, Progressive Data Analysis: a new computation paradigm for scalability in exploratory data analysis. October 25, 2017
- Jean-Daniel Fekete: Keynote ChinaVis 2017, Qingdao, China, Progressive Data Analysis: a new computation paradigm for scalability in exploratory data analysis , July 17, 2017
- Jean-Daniel Fekete: Invited Talk China-Germany Workshop, Qingdao, China, Visualization for the People, July 16, 2017
- Jean-Daniel Fekete: Keynote WSOM+ 2017, LORIA, Nancy, France, Visualization of Complex Networks, June 28th, 2017
- Jean-Daniel Fekete: Keynote VISIGRAPP 2017, Porto, Portugal, Understanding Complex Networks, Feb. 27, 2017
- Jean-Daniel Fekete: Invited Talk, Univ. of Konstanz and Univ. of Stuttgart, ProgressiVis: A New Language Paradigm for Scalability in Exploratory Analytics, Feb. 9, 2017
- Jean-Daniel Fekete: Keynote Speech, Univ. of Grenoble, Visualizing [Dense, Dynamic, Complex] Networks, Feb. 2, 2017
- Jean-Daniel Fekete: Open Data Conference, La Rochelle, Panel on Open Data and Visualization, Jan. 17, 2017
- Tobias Isenberg: Invited talk at TU Wien, Austria, December 22: "Interactive Navigation and Selection using Tactile and Tangible Inputs for 3D Data Exploration"
- Tobias Isenberg: Invited talk at Visualization research group, University of Bergen, Norway, April 7: "Abstraction in Non-Photorealistic Rendering and Illustrative Visualizations."
- Tobias Isenberg: Invited talk at Dept. of Computer Science, University of Bergen, Norway, April 6: "Tactile Navigation and Selection for 3D Data Exploration."

- Tobias Isenberg: Invited talk at Connecting The Dots/Intelligent Trackers (CTD/WIT 2017), Orsay, France, March 7: “Abstraction in Scientific Data Visualization: Application to Brain Connectivity and Structural Biology.”
- Pierre Dragicevic: “**Statistical Dances: Why No Statistical Analysis is Reliable and What To Do About It**”. Séminaires Recherche Reproductible, LIG, Grenoble. 22 June 2017.
- Petra Isenberg: “Evaluation in Visualization: A closer look at current practices, issues, and perspectives”. University of Stuttgart, Visualization Seminar Series
- Petra Isenberg: “Evaluation in Visualization: A closer look at current practices, issues, and perspectives”. Technical University of Vienna, Visualization Seminar Series
- Tanja Blascheck: “Evaluating Interactive Visualizations using Eye Tracking, Interaction Logs, and Think-Aloud Protocols”. Inria, Aviz, Saclay, France, 3 March 2017.
- Kuno Kurzhals and Tanja Blascheck: “Visual Analysis of Eye Tracking Data”. Popakademie, Mannheim, Germany, 3 July 2017.
- Tanja Blascheck: “Understanding Interactive Visualizations: Leveraging Eye Movements and Visual Analytics”. Hochschule Karlsruhe, Karlsruhe, Germany, 31 August 2017.
- Emantha Dimara: “The Attraction Effect in Information Visualization”. Invited talk at University of Athens, 28 September 2017.
- Emantha Dimara: “Biais cognitifs dans la visualisation d'information: implications pour l'évaluation”. Talk at Visu 2017.

8.1.5. Leadership within the Scientific Community

- Jean-Daniel Fekete is a member of the Steering Committee of EuroVis (Eurographics WG on Data Visualization).
- Jean-Daniel Fekete is a member of the Steering Committee of the IEEE Information Visualization Conference.
- Jean-Daniel Fekete is a member of the Eurographics Publication Board.
- Tobias Isenberg is a member of the Executive Committee of the Visualization and Computer Graphics Technical Committee of the IEEE Computer Society and serves 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)

8.1.6. Scientific Expertise

- Tobias Isenberg reviewed for NSERC.
- Pierre Dragicevic reviewed for NSERC.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- “Information Visualization” taught by Jean-Daniel Fekete at Polytechnique, Data Science, Saclay, France, Dec. 2017
- “Big Data Visual Analytics” seminar taught by Jean-Daniel Fekete at Centrale Supelec, Decision Support and Business of Intelligence, Nov. 28th, Saclay, France, 2017
- “Information Visualization and Visual Analytics” taught by Jean-Daniel Fekete at ISCD Summer School, Roscoff, France, August 2017
- “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
- “Introduction to Statistics” guest lecture by Pierre Dragicevic for the Visual Analytics Master Course at École Centrale, Paris.
- “Interactive Information Visualization” taught by Petra Isenberg at Université Paris Sud
- “Visual Analytics” taught by Petra Isenberg at CentraleSupelec

8.2.2. Supervision

- PhD: Evanthia Dimara, Information Visualization for Decision Making, Université Paris-Sud, 2014, Pierre Dragicevic and Anastasia Bezerianos. Defended on Nov 30.
- PhD: Lonni Besançon, An Interaction Continuum for Scientific Visualization, Université Paris-Sud, 2014, Tobias Isenberg. Defended on December 14.
- PhD: Paola Llerena Valdivia, Wavelet-based analysis of time-varying data on graphs, University of São Paulo - USP, 2017, Jean-Daniel Fekete, Luis Gustavo Nonato.
- PhD: Marc Barnabé, Multiscale reconstruction of microbial ecosystems using semi-supervised machine learning, Université Paris-Sud, 2017, Jean-Daniel Fekete, Evelyne Lutton, INRA.
- 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. Arnaud Prouzeau.
- Jean-Daniel Fekete: Member of the PhD committee of Dr. Antoine Lhuillier.
- Jean-Daniel Fekete: Member of the PhD committee of Dr. Alexandre Perrot.
- Jean-Daniel Fekete: Member of the PhD committee of Dr. Nicolas Médoc.
- Jean-Daniel Fekete: Member of the HdR committee of Dr. Jean-Philippe Cointet.
- Jean-Daniel Fekete: Member of the HdR committee of Dr. Gilles Bailly.
- Tobias Isenberg: Member of the PhD committee of Dr. Paul Issartel.
- Pierre Dragicevic: Hiring committee for tenure-track assistant Professor of Information Visualization, University of Copenhagen.
- Pierre Dragicevic: Member of the Commission Consultative de Spécialistes de l’Université Paris-Sud (CCSU).
- Pierre Dragicevic: Mid-term PhD evaluation committee of Michael Wessely.
- Pierre Dragicevic: Mid-term PhD evaluation committee of Abby Liu.
- Pierre Dragicevic: Reviewer for Ruqi He’s M2 internship.
- Petra Isenberg: Jury Inria Starting Research Positions

8.3. Popularization

- Jean-Daniel Fekete contributed to the DataVis section of the Terra Data exhibition at La Cité des Sciences, April 4th 2017 to January 7th 2018
- Jean-Daniel Fekete contributed to the exhibition on Jacques Bertin at EHESS Paris, November 14th to December 15th 2017
- Jean-Daniel Fekete and Charles Perin organized a workshop on data visualization for the "retrospective Jacques Bertin" at EHESS Paris on November 23-24 2017
- Pierre Dragicevic and Yvonne Jansen: the [Curated List of Physical Visualizations](#) is continuously being updated.
- Pierre Dragicevic and Jean-Daniel Fekete: Demo of [Zooids](#) at [Inria's 50th anniversary](#). 7 Nov 2017.
- Jean-Daniel Fekete and Pierre Dragicevic interviewed by France Culture (la méthode scientifique) on [Zooids](#). 21 Dec 2017.
- The [Zooids](#) video has been watched 12 million times, shared 65,000 times and liked 86,000 times [on Facebook](#).

CEDAR Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Chair of Conference Program Committees

Y. Diao has been the PC co-chair of IEEE International Conference of Data Engineering (ICDE) 2017.

I. Manolescu has been a track chair for the ACM SIGMOD (Special Interest Group on the Management of Data) 2017 conference.

9.1.1.2. Member of the Conference Program Committees

I. Manolescu has been member of the PC of the DASFAA Conference 2017, of the Semantic Big Data Workshop (SBD) and of the WebDB (Web and Databases) Workshops in conjunction with the SIGMOD Conference 2017.

M. Thomazo has been member of the PC of BDA 2017, and IJCAI 2017.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Y. Diao is the editor-in-chief of ACM SIGMOD Record.

I. Manolescu has been an Associate Editor for PVLDB (Proceedings of Very Large Databases) 2017.

9.1.2.2. Reviewer - Reviewing Activities

M. Thomazo has been a reviewer for JODS and TOCL.

9.1.3. Invited Talks

- Y. Diao gave a distinguished lecture at the Technische Universitaet Darmstadt, in November 2017.
- I. Manolescu gave a keynote talk at the DEXA Conference in August 2017 [23].
- I. Manolescu gave a keynote talk at the iiWAS Conference in December 2017 [24]

9.1.4. Leadership within the Scientific Community

Y. Diao is a member of the ACM SIGMOD Executive Committee, and also a member of the PVLDB Endowment.

I. Manolescu is a member of the PVLDB Endowment, of the ACM SIGMOD “Jim Gray” PhD Award Committee, and 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.

9.1.5. 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.

I. Manolescu is responsible of the “Massive Data Processing” axis of the Inria partnership with DGA (Direction Générale de l’Armement).

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, and organizes a data science research project of M1 (third-year) students at École Polytechnique.
- Master: I. Manolescu, Architectures for Massive Data Management, 12h, M2, Université Paris-Saclay.
- Master: I. Manolescu, Database Management Systems, 52h, M1, 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 in progress: Sejla Čebirić: “CloudSelect: Data Mobility Within, Across and Outside Clouds”, since September 2015, François Goasdoué Goasdoué and Ioana Manolescu.

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 in progress: 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)

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

Y. Diao has been a member of the PhD committee of Julien Pilourdault (defended in September 2017, at LIG, Grenoble). The thesis was titled “Scalable Algorithms for Monitoring Activity Traces”.

I. Manolescu has been a member of the PhD committee of Olivier Wang (defended in June 2017, at LIX), the thesis was titled “Adaptive Rule Models: Active Learning for Rule-Based Systems” and also of the PhD committee of Maria Rossi (defended in November 2017, at LIX). The thesis was titled “Graph Mining for Influence Maximization in Social Networks”.

I. Manolescu has been a reviewer and a member of the HDR committee of Vicent Leroy (defended in September 2017, at LIG, Grenoble). The thesis was titled “Data Analysis at Scale: Systems, Algorithms and Information”.

9.3. Popularization

- M. Buron, I. Manolescu, F. Raimundo and T. Merabti animated a booth at the “Fête de la Science 2017” at Inria Saclay, in October 2017.
- I. Manolescu published an article on computational fact-checking titled “La vérité, rien que la vérité” in the Binaire blog of Le Monde (<http://binaire.blog.lemonde.fr/2017/04/05/la-verite-rien-que-la-verite/>)
- I. Manolescu participated to a panel on Data Journalism at the Web2Day, a 3000-strong IT and digital conference in Nantes, in June 2017 (<https://web2day.co/en/speakers/ioana-manolescu/>)
- I. Manolescu gave a talk at the Inria Alumni Jam Session “ Fausses informations, post vérité : allons aux faits ! ”, presenting our current work on data management for data journalism (<http://www.inria-alumni.fr/evenement/session-inria-alumni-fausses-information-post-verite-allons-aux-faits-25-octobre-2017-cnam-paris/>)

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 CHI 2017, *Video-Previews* Chair: Carla Griggio
- ACM CHI 2018, *ACM Conference on Human Factors in Computing*, Web Co-Chair: Ignacio Avellino

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- ACM CHI 2017, *Late-Breaking Work* Co-Chair: Theophanis Tsandilas
- ACM/ISMIR 2018, *Music and Technology* Co-Chair: Wendy Mackay

9.1.2.2. Member of the Conference Program Committees

- ACM CHI 2018, *ACM CHI Conference on Human Factors in Computing Systems*: Michel Beaudouin-Lafon, Wendy Mackay, Theophanis Tsandilas
- ACM CHI 2017, *ACM CHI Conference on Human Factors in Computing Systems*: Michel Beaudouin-Lafon, Wendy Mackay
- ACM UIST 2017, *ACM Symposium on User Interface Software and Technology*: Michel Beaudouin-Lafon, Wendy Mackay
- IUI 2018, *ACM IUI Conference on Intelligent User Interfaces*: Wendy Mackay
- MOCO 2017, *International Conference on Movement and Computing*: Sarah Fdili Alaoui
- EuroVR 2017, *European Virtual Reality Conference*: Cédric Fleury
- ACM C&C 2017, *Creativity and Cognition*: Andrew Webb

9.1.2.3. Reviewer

- ACM CHI 2017-18, *ACM CHI Conference on Human Factors in Computing Systems*: Andrew Webb, Carla Griggio, Nolwenn Maudet, Wanyu Liu, Sarah Fdili Alaoui, Cédric Fleury, Theophanis Tsandilas, Michael Wessely, Ignacio Avellino
- ACM UIST 2017 *ACM Symposium on User Interface Software and Technology*: Andrew Webb, Marianela Ciolfi Felice, Theophanis Tsandilas, Michael Wessely, Wanyu Liu, Nolwenn Maudet, Sarah Fdili Alaoui, Cédric Fleury
- ACM DIS 2017, *ACM Conference on Designing Interactive Systems*: Nolwenn Maudet, Sarah Fdili Alaoui, Wendy Mackay
- ACM ISS 2017, *ACM International Conference on Interactive Surfaces and Spaces*: Ignacio Avellino, Philip Tchernavskij
- IEEE InfoVis 2017: Theophanis Tsandilas
- IEEE VR 2018, *Virtual Reality Conference*: Cédric Fleury
- IEEE 3DUI 2017, *Symposium on 3D User Interfaces*: Cédric Fleury
- GI 2017, *Graphics Interface Conference*: Theophanis Tsandilas
- Interaction 18: Carla Griggio, Germán Leiva
- ACM C&C 2017, *Creativity and Cognition*: Sarah Fdili Alaoui

- Mobile HCI '17 Late Breaking, *19th International Conference on Human-Computer Interaction with Mobile Devices and Services*: Germán Leiva, Philip Tchernavskij
- IHM 2017, *Conférence Francophone d'Interaction Homme-Machine*: Theophanis Tsandilas, Cédric Fleury
- Salon des Refusés 2017, workshop at <PROGRAMMING> 2017, *The International Conference on the Art, Science, and Engineering of Programming*: Philip Tchernavskij

9.1.3. Journal

9.1.3.1. Member of the 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-)
- JIPS, *Journal d'Interaction Personne-Système*, AFIHM: Michel Beaudouin-Lafon (2009-)

9.1.3.2. Reviewer - Reviewing Activities

- IJHCS, *International Journal of Human-Computer Studies*, Elsevier: Theophanis Tsandilas
- TVCG, *Transactions on Visualization and Computer Graphics*, IEEE: Cédric Fleury
- MTI, *Journal of Multimodal Technologies and Interaction*, MDPI: Sarah Fdili Alaoui
- JHT, *Journal Human Technology, special issue "the Human–Technology Choreographies: Body, movement, and space in expressive interactions"*, EBSCO Publishing: Sarah Fdili Alaoui
- JEP, *Journal of Experimental Psychology*: Michel Beaudouin-Lafon

9.1.4. Invited Talks

- Ecole Normale Supérieur de Lyon, Cultures numériques, éducation aux médias et à l'information, “Créer des Partenariats Humaine-Machine”, 09 January 2017: Wendy Mackay
- Lyon Culture Numériques Table Ronde, “Créer des Partenariats Humaine-Machine”, 11 January 2017: Wendy Mackay
- Invited conference, World Information Architecture Day (WIAD), Lyon, “Interfaces du futur : Unifier pour diversifier”, 18 février 2017: Michel Beaudouin-Lafon
- Invited seminar, CIRMMT (Montreal, Canada), “Crafting movement in Digital Art and Human Computer Interaction”, 22 March 2017: Sarah Fdili Alaoui
- Colloquium d’Informatique UPMC Sorbonne Universités, Paris, “Interfaces Homme-Machine : Unifier les principes pour diversifier l’interaction”, 28 February 2017: Michel Beaudouin-Lafon
- Inria 50 years, ERC 10 years, “ERC CREATIV : Créer des Partenariats Humain-Machine”, 13 March 2017: Wendy Mackay
- IFIP TC13 & TC14 Open symposium (Paris) *Crafting movement in Digital Art and Human Computer Interaction*, 22 March 2017: Sarah Fdili Alaoui
- Wellesley College (Wellesley, MA, USA), “Towards a Unified Theory of Interaction”, 20 April 2017: Wendy Mackay & Michel Beaudouin-Lafon
- Massachusetts Institute of Technology (Cambridge, MA, USA), “Towards a Unified Theory of Interaction”, 20 April 2017: Wendy Mackay
- 10Pines (Buenos Aires, Argentina), “Design and Development of Interactive Systems”, 20 April 2017: Germán Leiva

- 10Pines (Buenos Aires, Argentina), “*Designing cross-application instruments for supporting user appropriation*”, 20 April 2017: Carla Griggio
- Participatory Design Workshop, Olin College (Needham, MA, USA), “*Apps for Activists?*”, 21 April 2017: Wendy Mackay
- CITEP UBA (Buenos Aires, Argentina) “*Introduction to HCI*”, 25 April October 2017: Germán Leiva
- CITEP UBA (Buenos Aires, Argentina) “*Designing cross-application instruments for supporting user appropriation*”, 25 April October 2017: Carla Griggio
- Atelier Unibail-Rodamco, “*Créer des Partenariats Humain-Machine*”, 02 May 2017: Wendy Mackay
- CHI Stories, Invited Address, ACM CHI’17, “*Creating the First Interactive Video*”, 09 May 2017: Wendy Mackay
- Invited Address, University of British Columbia, “*Towards Unified Principles of Interaction*”, 09 May 2017: Wendy Mackay
- Dagstuhl Seminar, “*Computational Interactivity*”, 5 - 8 June 2017: Wanyu Liu (<http://www.dagstuhl.de/en/program/calendar/sempn/?semnr=17232>)
- Colloque 10 ans de l’ERC, Université Paris-Saclay, “ONE: Unified Principles of Interaction”, 9 June 2017: Michel Beaudouin-Lafon
- ERC CREATIVE Workshop, “*Towards a Unified Theory of Interaction*”, 13 June 2017: Wendy Mackay
- University of British Columbia (Canada), “*Towards Unified Principles of Interaction*”, 15 June 2017: Michel Beaudouin-Lafon
- Rencontres Jeunes Cherchers, Interaction Homme-Machine, “*Ethics and Experimental Protocols*”, 04 July 2017: Wendy Mackay
- Participatory Information Technology group, Aarhus University, “*Untangling Interactive Systems*”, 14 September 2017: Philip Tchernavskij
- Honoris Causa Invited Address, Aarhus University (Denmark), “*Human-Computer Partnerships*”, 14 September 2017: Wendy Mackay
- Aarhus University (Denmark), “*Towards Unified Principles of Interaction*”, 14 September 2017: Michel Beaudouin-Lafon
- Opening Keynote, 12th Biannual Conference of the Italian SIGCHI Chapter (CHItaly 17), “*Towards Unified Principles of Interaction*”, 19 September 2017: Michel Beaudouin-Lafon
- Journées sur la Dynamique Interactionnelle du Geste DIG, CNRS, *Applying Laban Movement Analysis to craft movement in Digital Art and Human Computer Interaction*, 22 septembre 2017: Sarah Fdili Alaoui
- Journée LTCI , “*Bayesian Information Gain for Multiscale Navigation*”, 10 October 2017: Wanyu Liu
- Les object communicants dans l’écologie des enfants de 0 à 12 ans, MENESR-EHESS, “*Entre les enfants et les ordinateurs: Human Computer Interaction*”, 11 October 2017: Wendy Mackay
- ETH Zurich and University of Zurich, “*Understanding and Designing Interaction from an Information-Theoretic Perspective*”, 24 November 2017: Wanyu Liu
- Inria 50 Years Celebration, Robotics panel, 8 November 2017: Wendy Mackay
- Remise des Prix Doctorants, “*Bayesian Information Gain for Multiscale Navigation*”, 30 November 2017: Wanyu Liu
- Colloque “Corps et Mobiles”, Sorbonne Nouvelle, *Radical Choreographic Object*, 4-5 December 2017: Sarah Fdili Alaoui

- Meeting on Global Research Network, Casa Paganini Infomuse, Genova, 2017: Sarah Fdili Alaoui

9.1.5. Scientific Expertise

- European Research Council, Panel member for Starting Grants: Michel Beaudouin-Lafon
- CNRS Mission pour l'Interdisciplinarité, Panel member for the call "Sciences Sociales et Cognitives des Comportements Collectifs": Michel Beaudouin-Lafon
- CNRS INS2I, member of "Cellule ERC": Michel Beaudouin-Lafon
- ACM "Policy Award" committee member: Michel Beaudouin-Lafon
- ACM SIGCHI "Lifetime Service Award" committee member: Wendy Mackay

9.1.6. Research Administration

- CNRS INS2I, "Conseil Scientifique de l'Institut": Michel Beaudouin-Lafon (member)
- Telecom ParisTech "Comité de la recherche": Michel Beaudouin-Lafon (member)
- IRCAM Scientific Committee: Michel Beaudouin-Lafon (member)
- "Institut de la Société Numérique", IDEX Laboratory of Université Paris-Saclay: Michel Beaudouin-Lafon (member of steering committee)
- Pôle Systematic, Working group on Information Systems: Michel Beaudouin-Lafon (member of steering committee)
- Département STIC, Université Paris-Saclay: Wendy Mackay (member)
- "Conseil de Laboratoire", LRI: Wendy Mackay, Cédric Fleury (members)
- "Conseil Scientifique", LRI: Michel Beaudouin-Lafon (member)
- COERLE "Comité Opérationnel d'Evaluation des Risques Légaux et Ethiques", Inria: Wendy Mackay
- CERNI "Comité d'Ethique pour les Recherches Non Interventionnelles", Université Paris-Sud: Wendy Mackay
- CCSU, "Commission Consultative de Spécialistes de l'Université", Université Paris-Sud: Michel Beaudouin-Lafon, Wendy Mackay (members)
- "Commission de Qualification pour Promotion et Changement, Professeur", Télécom Paris-Tech: Wendy Mackay (member)
- "Comité de sélection, Professeur", Université Paris-Sud: Wendy Mackay (member)
- "Comité de sélection, Maître de Conférences", Université Paris-Sud: Michel Beaudouin-Lafon (member)
- "Commission Locaux", LRI: Theophanis Tsandilas (member)
- "Commission Scientifique", Inria: Theophanis Tsanidlas (member), since March 2017
- "User board" of the European project Wholdance: Sarah Fdili Alaoui, since June 2017

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
- Polytech: Sarah Fdili Alaoui, *Graphisme et Visualisation*, 18h, "Apprentis" 5th year, Univ. Paris-Sud
- Polytech: Cédric Fleury, *Introduction à l'Informatique*, 71 hrs, 1st 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, *Réalité Virtuelle et Interaction*, 48 hrs, 5th year, Univ. Paris-Sud

9.2.2. Supervision

PhD students

- PhD: Ignacio Avellino, *Supporting Collaborative Practices Across Wall-Sized Displays with Video-Mediated Communication*, Université Paris-Saclay, 12 December 2017. Advisors: Michel Beaudouin-Lafon & Cédric Fleury
- PhD: Jessalyn Alvina, *Increasing The Expressive Power of Gesture-based Interaction on Mobile Devices*, Université Paris-Saclay, 13 December 2017. Advisor: Wendy Mackay
- PhD: Nolwenn Maudet, *Designing Design Tools*, Université Paris-Saclay, 11 December 2017. Advisors: Wendy Mackay & Michel Beaudouin-Lafon
- PhD in progress: Marianela Ciolfi Felice, *Substrates and Co-adaptive Instruments for Creativity*, September 2015. Advisors: Wendy Mackay & Sarah Fdili Alaoui
- PhD in progress: Carla Griggio, *Interactive Human-Machine Learning*, September 2015. Advisor: Wendy Mackay
- PhD in progress: Germán Leiva, *Interaction-driven Software Development*, September 2015. Advisor: Michel Beaudouin-Lafon
- PhD in progress: Wanyu Liu, *Modeling the speed-accuracy trade-off of pointing tasks using the tools of information theory*, October 2015. Advisors: Olivier Rioul (Institut Mines Telecom) & Michel Beaudouin-Lafon
- 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: Michael Wessely, *Sketching and Physical Prototyping for Creative Fabrication Design*, November 2015. Advisors: Theophanis Tsandilas & Wendy Mackay
- 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

Masters students

Jiali Liu, Telecom ParisTech, “Cross-Surface Interaction”: Michel Beaudouin-Lafon & Philip Tchernavskij

Linghua Lai, Univ. Paris-Saclay, “VideoBoard: Video for Interaction Design”: Wendy Mackay & Germán Leiva

Chengcheng Qu, Univ. Paris-Saclay, “Animated Emojis: Creating Dynamic Expressions with Expressive Keyboards”: Wendy Mackay & Jessalyn Alvina

Jean-Philippe Rivière, Univ. Toulouse, “MoveOn: Understanding and Supporting Dance Skill Acquisition through Multimodal Interactive Technology”: Wendy Mackay & Sarah Fdili Alaoui

9.2.3. Juries

PhD theses:

- Andrew Bluff, University of Technology Sydney (advisor: Andrew Johnston): Sarah Fdili Alaoui.
- Bart Potsma, LIMSI-CNRS, April 2017 (advisor: Brian Katz): Michel Beaudouin-Lafon, president.
- Samuel Delalez, Université Paris-Saclay, November 2017 (advisor: Christophe d’Alessandro): Wendy Mackay, president
- Maxime Guillon, LIG, November 2017 (advisor: Laurence Nigay): Michel Beaudouin-Lafon, reviewer.
- Hélène Unaninski, Université de Toulouse, December 2017 (advisor: Stéphane Conversy): Wendy Mackay, reviewer

Habilitations:

- Caroline Appert, LRI, juin 2017: Michel Beaudouin-Lafon, examiner.
- Gilles Bailly, ISIR, octobre 2017: Michel Beaudouin-Lafon, examiner.
- Jean-Julien Aucouturier, IRCAM, novembre 2017: Michel Beaudouin-Lafon, president.

9.3. Popularization

- Interviews on France Culture, LCI, TV5 Monde on the standardization of the AZERTY and BEPO keyboards, June-July 2017, Michel Beaudouin-Lafon
- ACM UIST 17 Demonstration, “*CommandBoard: Creating a General-Purpose Command Gesture Input Space for Soft Keyboard*”, Jessalyn Alvina, Carla Griggio, Xiaojun Bi, Wendy Mackay
- Interview à France Culture, 22 Février 2017 @ France Culture *Machines au croisement du design et du numérique*: Nolwenn Maudet
- Demonstration at CEA Digital Days: Data Intelligence, CEA List, “*StickyLines*”, March 2017, Marianela Ciolfi Felice & Wendy Mackay
- Demonstration at CEA Digital Days: Data Intelligence, CEA List, “*Expressive Keyboard*”, March 2017, Jessalyn Alvina & Wendy Mackay
- ACM SCF 2017 Poster Demonstration *Stretchis: Fabricating Highly Stretchable User Interfaces*: Michael Wessely
- Colloque l’Université Paris-Saclay fête les 10 ans de l’ERC, “*ONE - Unified Principles of Interaction*”, 9 June 2017: Michel Beaudouin-Lafon (presentation) and Philip Tchernavskij (poster)
- Presentation of the performance *Radical Choreographic Object*, April 2017 in Theatre de Villeneuve tolosane, September 2017 in Centre de développement Chorégraphique, October 2017 in Centre Bellegarde, November 2017 in Le 104 and December 2017 in Centre Bellegarde: Sarah Fdili Alaoui
- Presentation of the Performance *SKIN*, April 2017 in Scene 44 Pole Media, La friche de la belle, May 2017 in festival Curiositas, November 2017 in Attention Travaux, Culture en Essonne: Sarah Fdili Alaoui

- Scaling up for the Internet of Things, Workshop at Inria Silicon Valley, Berkeley, CA, USA: Wendy Mackay & Theophanis Tsandilas
- Intersections in Music, Movement, and Technology, 17–19 August 2017 *Workshop held at UC Berkeley*: John MacCallum (co-facilitator).
- Relational Listening, 8 July 2017 *Workshop presented at the Conference of Dance and Somatic Practices*: John MacCallum (co-facilitator).
- Relational Listening, 1–30 April 2017 *Workshop*: John MacCallum (co-facilitator).
- Relational Listening, 26 February 2017 *Workshop held at CLOUD/Danslab*: John MacCallum (co-facilitator).

ILDA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- EICS 2018, 10th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga (general co-chair)
- CHI 2017, 35th ACM SIGCHI Conference on Human Factors in Computing Systems: Caroline Appert (papers co-chair)

10.1.1.2. Member of the Organizing Committees

- VIS 2017, the IEEE Visualization Conference (SciVis, InfoVis, VAST): Anastasia Bezerianos (Communities co-chair)

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

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

10.1.2.2. Member of the Conference Program Committees

- CHI 2018, 36th ACM SIGCHI Conference on Human Factors in Computing Systems: Anastasia Bezerianos
- UIST 2017, 30th ACM User Interface Software and Technologies Symposium: Anastasia Bezerianos
- InfoVis 2017, the IEEE Visualization Conference (SciVis, InfoVis, VAST): Anastasia Bezerianos
- WWW 2018, 27th Web Conference, research track Web Content Analysis, Semantics, and Knowledge: Emmanuel Pietriga
- ISWC 2017, 16th International Semantic Web Conference: Emmanuel Pietriga
- EICS 2017, 9th ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga
- VOILA @ ISWC 2017, Visualizations and User Interfaces for Ontologies and Linked Data, workshop co-located with ISWC 2017: Emmanuel Pietriga
- Immersive Analytics @ InfoVis 2017: Exploring Future Interaction and Visualization Technologies for Data Analytics, workshop co-located with IEEE InfoVis 2017: Emmanuel Pietriga, Anastasia Bezerianos

10.1.2.3. Reviewer

- ACM CHI 2018, Conference on Human Factors in Computing Systems: Caroline Appert, Olivier Chapuis, Bruno Fruchard, Maria Jesus Lobo Gunther, Arnaud Prouzeau
- ACM UIST 2017, Symposium on User Interface Software and Technology: Caroline Appert, Olivier Chapuis
- ACM ISS 2017, International Conference on Interactive Surfaces and Spaces: Olivier Chapuis
- ACM TEI 2017, International Conference on Tangible, Embedded and Embodied Interaction: Caroline Appert, Bruno Fruchard (WiP), Vit Rusnak (WiP)

- ACM MobileHCI 2017 , International Conference on Human-Computer Interaction with Mobile Devices and Services: Caroline Appert
- GI 2017, Graphics Interface: Olivier Chapuis, Arnaud Prouzeau
- Graph Drawing 2017: Emmanuel Pietriga
- EuroVis EG/VGTC 2017, Conference on Data Visualization: Anastasia Bezerianos
- OzCHI 2017: Vit Rusnak
- IHM 2017, Conference of the Association Francophone d'Interaction Homme-Machine: Olivier Chapuis

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- ACM ToCHI, Transactions on Computer-Human Interaction: Caroline Appert

10.1.3.2. Reviewer - Reviewing Activities

- ACM ToCHI, Transactions on Computer-Human Interaction: Olivier Chapuis
- IEEE TVCG, Transactions on Visualization and Computer Graphics: Olivier Chapuis, Emmanuel Pietriga, Caroline Appert, Anastasia Bezerianos
- IEEE Pervasive Computing: Emmanuel Pietriga
- Future Generation Computer Systems: Vit Rusnak

10.1.4. Invited Talks

- Emmanuel Pietriga and Olivier Chapuis: Monitoring Air Quality in Korea's Metropolises on Ultra-High Resolution Wall-Sized Displays, Asia Data Week 2017, Jeju, South Korea, November 2017
- Caroline Appert: Reconnaître un pattern de points de contact sur une surface tactile – *Multi-Touch et Machine Learning*, Journée IHM-IA, Paris (UPMC), France, March 2017.
- Anastasia Bezerianos: Concepts of Information Visualization research, and ties to Data Management, DBTrento, University of Trento, Italy, November 2017.

10.1.5. Leadership within the Scientific Community

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

10.1.6. Scientific Expertise

- H2020, Leadership in Enabling and Industrial Technologies - Space RIA: Emmanuel Pietriga
- ANR, CES Vice chair - Interaction, Robotique: Caroline Appert

10.1.7. Research Administration

- 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

10.1.8. 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.

10.1.9. Hiring committees

- Univ. Paris-Sud hiring committee, Commission Consultative des Spécialistes de l'Université 27ème section (computer science), members: Caroline Appert.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Anastasia Bezerianos, Head of EIT masters M1 & M2 HCID, Univ. Paris-Sud
 Master: Anastasia Bezerianos, Head of M2 Interaction, Univ. Paris-Sud, Université Paris-Saclay
 Master: Anastasia Bezerianos, Programming of Interactive Systems – 21h CM, M1/M2 HCID + M2R Interaction, Univ. Paris-Sud
 Master: Anastasia Bezerianos, Mixed Reality and Tangible Interaction – 11h CM, M1/M2 HCID + M2R Interaction, Univ. Paris-Sud
 Master: Anastasia Bezerianos, Career Seminar, – 12h CM, M2 HCID + M2R Interaction, Univ. Paris-Sud
 Master: Anastasia Bezerianos, Design Project in HCI, – 21h CM, M1 HCID, Univ. Paris-Sud
 Master: Anastasia Bezerianos, HCI Project, – 21h CM, M2 HCID + M2 Interaction, Univ. Paris-Sud
 Master: Anastasia Bezerianos, Introduction to Java – 18h CM, M1/M2 HCID + M2R Interaction, Univ. Paris-Sud
 Master: Emmanuel Pietriga, Data Visualization, 24h CM, M2 Informatique Décisionnelle, Univ. Paris-Dauphine.
 Master: Caroline Appert, Evaluation of Interactive Systems, 21h CM, M2 Interaction Univ. Paris-Sud / M1-M2 HCID EIT Digital.
 Master: Caroline Appert, Advanced Evaluation of Interactive Systems, 21h CM, M2 Interaction Univ. Paris-Sud / M1-M2 HCID EIT Digital.
 Master: Arnaud Prouzeau, Programmation des interfaces interactives avancées, 27h, M1 Info Univ. Paris-Sud
 Licence: Maria Jesus Lobo Gunther, Algorithmique Informatique Graphique, 27h, L3 Univ. Paris-Sud
 Licence: Maria Jesus Lobo Gunther, Programmation des interfaces interactives avancées, 27h, L3 Univ. Paris-Sud
 Licence: Maria Jesus Lobo Gunther, Interaction Homme-Machine, 12h TP, L3 Polytech Paris Sud
 Licence: Arnaud Prouzeau, Interaction Homme-Machine, 12h TP, L3 Polytech Paris Sud
 Licence: Arnaud Prouzeau, Programmation Impérative Avancée en C++, 16.5h TP, L1 MPI, Université Paris-Sud
 Licence: Bruno Fruchard, Visualisation, 10h, Télécom Paristech.
 Licence: Bruno Fruchard, Interaction Homme-Machine, 16h, Télécom Paristech.
 Licence: Bruno Fruchard, Paradigmes de programmation, 12h, Télécom Paristech.
 Licence: Bruno Fruchard, Infrastructures et plateformes pour l'informatique répartie, 34h, Télécom Paristech.

10.2.2. Supervision

PhD : Maria Jesus Lobo Gunther, Interaction Techniques for Map Multiplexing, defended on December 5th, 2017. Advisors: Caroline Appert, Emmanuel Pietriga
 PhD : Rafael Morales Gonzalez, Surface Gestures for Advanced Graphical Interfaces: Which Gesture for What, defended on October 4th, 2017. Advisors: Caroline Appert, Gilles Bailly, Emmanuel Pietriga
 PhD : Arnaud Prouzeau, Collaboration around Wall-Displays in Time Critical and Command and Control Contexts, defended on December 15th, 2017. Advisors: Anastasia Bezerianos, Olivier Chapuis

PhD : Evanthia Dimara, Merging Interactive Visualization and Automated Analysis for Group Decision-Making Involving Large Datasets, defended on November 30th, 2017, Advisors: Pierre Dragicevic, Anastasia Bezerianos

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, Advisors: Eric Lecolinet, Olivier Chapuis

Master (M2): Dylan Lebout, Visualization of geolocated and temporal data on the Web , May - September 2017, Advisors: Caroline Appert, Emmanuel Pietriga

Master (M2): Reyhaneh Raissi, Multi-user Multi-selection on Tabletop, Mars - September 2017, Advisors: Anastasia Bezerianos, Olivier Chapuis

Master (M1): Eleonore Bartenlian, Tools for customizing tangible interfaces, May - July 2017, Advisors: Caroline Appert

10.2.3. Juries

HDR: Guillaume Touya (IGN/Université Paris-Est): Emmanuel Pietriga (examinateur)

PhD: Justin Mathew (Inria/Université Paris-Saclay): Emmanuel Pietriga (président du jury)

PhD: Lonni Besançon (Inria/Université Paris-Saclay): Emmanuel Pietriga (président du jury)

PhD: Hanaë Rateau (Inria/Université Lille 1): Caroline Appert (examinateur)

PhD: Maxime Guillon (Université Grenoble Alpes): Caroline Appert (examinateur)

PhD: Antoine Lhuillier (ENAC/Université Toulouse III): Caroline Appert (examinateur)

10.3. Popularization

- *Fête de la science*, Université Paris-Sud: Caroline Appert.
- *Science en Direct*, Cité de la Science: Maria Jesus Lobo Gunther.
- *Qu'est-ce qu'un chercheur en IHM ?*, to high-school students visiting Telecom ParisTech: Bruno Fruchard.

PETRUS 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

- Nicolas Anciaux: VLDB'18, SIGMOD'17, PAP'17, DATA'17
- Luc Bouganim: Associate Editor for VLDB'18, VLDB'17, BDA'17
- Philippe Pucheral: EDBT'17, DATA'17, MOBILITY'17
- Iulian Sandu Popa: APWeb-WAIM'17, DATA'17, IEEE MobileCloud'17

9.1.1.2. Reviewer

- Guillaume Scerri: CCS'17

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- Nicolas Anciaux: Associate Editor of the VLDB Journal

9.1.2.2. Reviewer - Reviewing Activities

- Iulian Sandu Popa: ACM Transactions on Spatial Algorithms and Systems, International Journal of Geo-Information, Journal of Intelligent Transportation Systems

9.1.3. Invited Talks

- Nicolas Anciaux: "A new Approach for the Secure Personal Cloud", Security Seminar, Loria, 23 Mar. 2017. <http://seminaire-securite.loria.fr/seances-passees.fr.html>

9.1.4. 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

Nicolas Anciaux: Member of the council of the doctoral college of the University Paris-Saclay since 2017

Nicolas Anciaux: Correspondent for Inria Saclay at ED STIC doctoral school of University Paris-Saclay since 2017

Nicolas Anciaux: Responsible for the 'Mission Jeunes Chercheurs' at Inria Saclay since 2017

9.2. Teaching - Supervision - Juries

9.2.1. 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), 72, UVSQ, France. Guillaume Scerri, Théorie des Langages (niveau L2), 36, UVSQ, France.

Master : Iulian Sandu Popa, Bases de données relationnelles (niveau M1), Gestion des données spatiotemporelles (niveau M2), Sécurité des bases de données (niveau M2), 96, UVSQ, France. Philippe Pucheral, responsible of the DataScale master, courses in M1 and M2 in databases and in security, introductory courses for jurists, UVSQ, France. Luc Bouganim, Bases de données relationnelles et XML (niveau M1 et M2), 20, 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.

Engineers school : Nicolas Anciaux, courses on Databases (module IN206, niveau M1), 21, and Advanced databases (module ASI13, niveau M2), 24, at ENSTA ParisTech. Nicolas Anciaux, Systèmes d'Information "privacy by design" (niveau M1), 15, at ENSIIE Evry, France. Luc Bouganim, Systèmes d'Information "privacy by design" (niveau M1), 38, ENSIIE Evry et INSA CVL, France. Luc Bouganim, Bases de données et sécurité (niveau M2), 20, Telecom ParisTech.

9.2.2. Supervision

PhD in progress : Paul Tran Van, Partage de documents sécurisé dans le Cloud Personnel, October 2014, Nicolas Anciaux and Philippe Pucheral

PhD in progress : Axel Michel, Secure Distributed Computations, October 2015, Benjamin Nguyen and Philippe Pucheral

PhD in progress : Julien Loudet, Personal Queries on Personal Clouds, July 2016, Luc Bouganim and Iulian Sandu Popa

PhD in progress : Riad Ladjel, Secure Distributed Computation for the Personal Cloud, October 2016, Nicolas Anciaux and Philippe Pucheral

PhD in progress : Dimitri Tsoulovos, Privacy-by-design Middleware for Urban-scale Mobile Crowd-sensing, April 2017, Nicolas Anciaux and Valérie Issarny (Inria Mimove)

9.2.3. Juries

Philippe Pucheral : reviewer of the PhD thesis of Yifan Li (CNAM Paris, 15/12/2017)

Nicolas Anciaux : Jury member of the PhD thesis of David Montoya (ENS Paris-Saclay, 6/3/2017)

Luc Bouganim : Reviewer of the HDR of Jalil Boukhobza (University of Bretagne Sud, 4/7/2017)

Luc Bouganim : Reviewer of the PhD of Levent Demir (University of Grenobles Alpes, 7/12/2017)

9.3. Popularization

MOOC "Défis technologiques des villes intelligentes participatives", du 6 Nov. 2017 au 31 Dec. 2017. Auteur(s): Nicolas Anciaux, Stéphane Grumbach, Valérie Issarny, Nathalie Mitton, Christine Morin, Animesh Pathak, Hervé Rivano. <http://www.sup-numerique.gouv.fr/cid94187/mooc-villes-intelligentes-defis-technologiques-et-societaux.html>

EIT Digital Professional School course "Technological challenges of participatory Smart Cities". Course for companies and cities. By Nicolas Anciaux, Stéphane Grumbach, Valérie Issarny, Nathalie Mitton, Christine Morin, Animesh Pathak, Hervé Rivano. <https://www.eitdigital.eu/newsroom/news/article/eit-digital-professional-school-launches-a-smart-cities-course-for-companies-and-cities/>

Nicolas Anciaux: interview pour le magazine La Recherche. Numéro de Juin 2017, dossier "Données personnelles: Notre vie privée est-elle en danger?", pp.81-86, par Vincent Glavieux et Denis Delbecq.

Rencontre Inria - Industrie, Les données et leurs applications, Conférence "Sécurité des données", Philippe Pucheral et Eric Léandri (fondateur et PDG de Qwant), 6 Juin 2017. <https://www.inria.fr/centre/paris/innovation/rii-les-donnees-17-18-octobre-2017/programme>

Rencontre Inria - Industrie, Les données et leurs applications, Démonstration du projet Domycile, Nicolas Anciaux, , 6 Juin 2017. <https://www.inria.fr/centre/paris/innovation/rii-les-donnees-17-18-octobre-2017/demos/domycile>

Rencontre Inria - Industrie, Les données et leurs applications, Démonstration du projet Domycile, Paul Tran Van, , 6 Juin 2017.

Round table: Accès aux données et aux compétences, Convention Systematic Paris-Région, Luc Bouganim, June 2017.

Demonstration: PlugDB and the Secure Mobile Laboratory, Turing building inauguration, Luc Bouganim, Iulian Sandu Popa, Riad Ladjel, February 2017.