



RESEARCH CENTER
Nancy - Grand Est

FIELD

Activity Report 2016

Section Dissemination

Edition: 2017-08-25

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CAMUS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

Cédric Bastoul has been part of the program committee of IMPACT 2016 (International Workshop on Polyhedral Compilation Techniques), held in conjunction with the international conference HiPEAC 2016.

Philippe Clauss and Cédric Bastoul have been part of the program committee of IMPACT 2017 (International Workshop on Polyhedral Compilation Techniques), held in conjunction with the international conference HiPEAC 2017.

Alain Ketterlin has been part of the program committee of CGO 2016 (International Symposium on Code Generation and Optimization, <http://cgo.org/cgo2016>).

Cédric Bastoul and Vincent Loechner have been part of the program committee of both HIP3ES 2016 and HIP3ES 2017 (International Workshop on High Performance Energy Efficient Embedded Systems), held in conjunction with the international conference HiPEAC 2016 (resp. HiPEAC 2017).

Cédric Bastoul has been part of the program committee of PARMA+DITAM 2016 and PARMA+DITAM 2017 (Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures + Workshop on Design Tools and Architectures for Multicore Embedded Computing Platforms), held in conjunction with HiPEAC 2016 (resp. HiPEAC 2017).

Cédric Bastoul has been part of the program committee of the international conference on Compiler Construction 2017 (CC'2017).

10.1.1.2. Reviewer

Philippe Clauss has been reviewer for the following conferences and workshops: IMPACT 2017 (International Workshop on Polyhedral Compilation Techniques), CC 2017 (International Conference on Compiler Construction).

Cédric Bastoul has been reviewer for the following international conferences and workshops: CC 2017 (International Conference on Compiler Construction), PARMA 2016 and 2017 (International Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures), IMPACT 2016 and 2017 (International Workshop on Polyhedral Compilation Techniques), HIP3ES 2016 and 2017 (International Workshop on High Performance Energy Efficient Embedded Systems).

Vincent Loechner has been reviewer for CC 2017 (International Conference on Compiler Construction), HIP3ES 2016 and 2017 (International Workshop on High Performance Energy Efficient Embedded Systems).

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Since October 2001, J. Gustedt is Editor-in-Chief of the journal *Discrete Mathematics and Theoretical Computer Science* (DMTCS).

10.1.2.2. Reviewer - Reviewing Activities

Philippe Clauss has been reviewer for the following journals: ACM TACO (Transactions on Architecture and Code Optimization), Parallel Computing.

Cédric Bastoul has been reviewer for the *ACM Transactions on Parallel Computing International Journal* (TOPC).

Jens Gustedt has been reviewer for Theory of Computing Systems.

Vincent Loechner has been reviewer for *Computer Communications* (Elsevier).

10.1.3. Invited Talks

Philippe Clauss has been invited to present the framework Apollo at the Parallel Programming Laboratory of the University of Darmstadt, Germany, October the 28th.

Philippe Clauss has presented the framework Apollo at the COSI research group of the Colorado State University, Fort Collins, USA, July the 1st.

10.1.4. Scientific Expertise

Cédric Bastoul as been an expert for the French research ministry and the French finance ministry for the research tax credit programme.

Jens Gustedt served as expert for project evaluation for the Belgian FNRS, and as evaluator of the FEMTO-ST Lab, Besançon, for the French HCERES.

10.1.5. Standardization

Since Nov. 2014, Jens Gustedt is a member of the ISO working group SC22-WG14 for the standardization of the C programming language. He participates actively in the **defect report** processing, the planning of future versions of the standard, and publishes an ongoing document to track inconsistencies and improvements of the C threads interface.

This work on the C programming language also gave rise to the proposal of a language extension, **Modular C**. It has been used for the implementation of an efficient toolbox for *higher order automatic differentiation*, *arbofast*, see [18] and [19], which has been presented at the quadrennial conference of the domain, AD2016.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Philippe Clauss, Architecture des ordinateurs, 45h, Université de Strasbourg, France

Licence : Philippe Clauss, Systèmes d'exploitation, 40h, Université de Strasbourg, France

Master : Philippe Clauss, Compilation, 78h, Université de Strasbourg, France

Master : Philippe Clauss, Système et programmation temps-réel, 25h, Université de Strasbourg, France

Master : Philippe Clauss, Compilation avancée, 30h, Université de Strasbourg, France

Licence : Éric Violard, Programmation Fonctionnelle (licence informatique), 64h eq. TD, L2, Université de Strasbourg, France

Licence : Éric Violard, Architecture des Ordinateurs (licence informatique), 54h eq. TD, L2, Université de Strasbourg, France

Licence : Éric Violard, Logique et Programmation Logique (licence informatique), 34h eq. TD, L2, Université de Strasbourg, France

Licence : Éric Violard, Algorithmique et Structures de Données (licence mathématique), 39h eq. TD, L3, Université de Strasbourg, France

Licence : Éric Violard, Modèles de Calcul (licence informatique), 29h eq. TD, L1, Université de Strasbourg, France

Licence : Vincent Loechner, Systèmes d'exploitation, 51h, L2, Université de Strasbourg, France

Master : Vincent Loechner, parallélisme, 14h, M1, Université de Strasbourg, France

Master : Vincent Loechner, calcul parallèle, 32h, M1, Université de Strasbourg, France

Master : Vincent Loechner, langages interprétés, 37h, M1, Université de Strasbourg, France

Master : Vincent Loechner, OS embarqués, 31h, M2, Université de Strasbourg, France
 Telecom Physique Strasbourg : Vincent Loechner, calcul parallèle, 20h, M2, Université de Strasbourg, France
 Licence : Alain Ketterlin, Systèmes d'exploitation, 20h, Université de Strasbourg, France
 Licence : Alain Ketterlin, Systèmes Concurrents, 24h, Université de Strasbourg, France
 Licence : Alain Ketterlin, Réseaux et protocoles, 42h, Université de Strasbourg, France
 Master : Alain Ketterlin, Compilation, 26h, Université de Strasbourg, France
 Licence : Cédric Bastoul, Architecture, 68h, L1 (IUT), Université de Strasbourg, France
 Licence : Cédric Bastoul, Operating Systems, 16h, L2, Université de Strasbourg, France
 Licence : Cédric Bastoul, Concurrent Systems, 19h, L3, Université de Strasbourg, France
 Master : Cédric Bastoul, Compiler Design, 48h, M1, Université de Strasbourg, France
 Master : Cédric Bastoul, Parallelism, 16h, M1, Université de Strasbourg, France
 Master : Cédric Bastoul, Introduction to Research, 7h, L3+M1, Université de Strasbourg, France
 2nd year engineering school: Jens Gustedt, programmation avancée, 20h, ENSIIE Strasbourg, France
 Licence : Jens Gustedt, systèmes concurrents, 20h, Université de Strasbourg, France

10.2.2. Supervision

PhD: Tomasz Buchert, Madynes team, *Orchestration of experiments on distributed systems*, since Oct 2011, defended on Jan 6 2016, Jens Gustedt & Lucas Nussbaum.

PhD: Juan Manuel Martinez Caamaño, *Fast and Flexible Compilation Techniques for Effective Speculative Polyhedral Parallelization*, September 29th 2016, Philippe Clauss and Philippe Helluy (IRMA lab., University of Strasbourg)

PhD: Michel Massaro, *Méthodes numériques pour les plasmas sur architectures multicœurs*, December 16th 2016, Philippe Helluy and Vincent Loechner

PhD: Lénaïc Bagnères, *Adaptation automatique et semi-automatique des optimisations de programmes*, September 30th, Christine Eisenbeis and Cédric Bastoul

PhD: Olexander Zinenko, *Interactive Program Restructuring*, November 25th 2016, Stéphane Huot and Cédric Bastoul

PhD in progress: Yann Barsamian, *Optimization and parallelization of particle and semi-Lagrangian methods for multi species plasma simulations*, since Oct 2014, Éric Violard

PhD in progress: Mariem Saied, *Ordered Read-Write Locks for Multicores and Accelerators*, since Nov 2013, Jens Gustedt & Gilles Muller.

PhD in progress: Daniel Salas, *Integration of the ORWL model into parallel applications for medical research*, since Mar 2015, Jens Gustedt & Isabelle Perseil.

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

PhD in progress: Harenome Ranaivoarivony-Razanajato, *Hierarchical Optimization and Parallelization*, September 2016, Vincent Loechner and Philippe Clauss

PhD in progress: Maxime Schmitt, *Automatic Generation of Adaptive Codes*, September 2016, Cédric Bastoul and Philippe Helluy

PhD in progress: Paul Godard, *Parallelization and Scalability of an Image Processing Pipeline for Professional Printing*, September 2016, Vincent Loechner and Cédric Bastoul

10.2.3. Juries

Philippe Claus participated to the following PhD committees in 2016:

Date	Candidate	Place	Role
Jun. 30	Guillaume Iooss	Colorado State Univ., USA	Reviewer
Oct. 28	Zhen Li	Univ. Darmstadt, Germany	Reviewer
Sept. 29	Juan Manuel Martinez Caamaño	Univ. Strasbourg	Advisor
Dec. 14	Julien Pagès	Univ. Montpellier	Reviewer

Cédric Bastoul participated to the following PhD committees in 2016:

Date	Candidate	Place	Role
June 22	Abdul Memon	Paris-Saclay University	Reviewer
September 30	Lénaïc Bagnères	Paris-Saclay University	Advisor
November 18	Albert Saa	Universitat Autònoma de Barcelona	Reviewer
November 25	Oleksandr Zinenko	Paris-Saclay University	Advisor
November 30	Pierre Guillou	Paris Sciences et Lettres Research University	Reviewer

Vincent Loechner participated to the following PhD committees in 2016:

Date	Candidate	Place	Role
May 10	Arjun Suresh	Univ. Rennes 1	Examiner
December 16	Michel Massaro	Univ. Strasbourg	Co-advisor

Vincent Loechner was the president of the recruiting jury (*comité de sélection*) for an assistant professor position at the Department of Mathematics and Computer Science of the University of Strasbourg, during Spring 2016.

10.3. Popularization

Jens Gustedt is regularly blogging about efficient programming, in particular about the **C programming language**. He also is an active member of the **stackoverflow community** a technical Q&A site for programming and related subjects. A first complete online version of his book *Modern C*, to appear in 2017, has been accessed more than 10000 times on a single day.

CARAMBA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. Member of the Organizing Committees

- Together with Anne-Lise Charbonnier (Inria Nancy – Grand Est), the Caramba team is organizing the “Journées Codage et Cryptographie 2017”, whose objective is to regroup the French speaking community working on error-correcting codes and on cryptography. It is affiliated with the “Groupe de travail C2” of the GDR-IM.

10.1.2. Scientific Events Selection

10.1.2.1. Member of steering committees

- Pierrick Gaudry is a member of the steering committee of the Workshop on Elliptic Curve Cryptography (ECC).

10.1.2.2. Member of the Conference Program Committees

- Emmanuel Thomé was a member of the program committee of the 35th Annual International Conference on the Theory and Applications of Cryptographic Techniques (Eurocrypt 2016).
- Marine Minier was a member of the Program Committee of the conference MyCrypt 2016.
- Pierrick Gaudry was a member of the Program Committee of the conference Selected Areas in Cryptography SAC 2016 and of EUROCRYPT 2017.
- Paul Zimmermann was a member of the Program Committee of the International Workshop on the Arithmetic of Finite Fields (WAIFI 2016).

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Pierrick Gaudry is a member of the editorial board of the journal *Applicable Algebra in Engineering, Communication and Computing*.

10.1.3.2. Reviewer - Reviewing Activities

Members of the project-team did share in reviewing submissions to renowned conferences and journals. Actual publications venues are not disclosed for anonymity reasons.

10.1.4. Invited Talks

- Emmanuel Thomé was invited as a Distinguished Lecturer for the Computer and Information Security Seminar at the University of Pennsylvania in November 2016.
- Pierrick Gaudry was invited speaker at the YACC 2016 conference in Porquerolles, at the workshop “Mathematical Structures for Cryptography” in Leiden (Netherlands), and at the “Journées Aléa 2016” in Marseille.

10.1.5. Other committees

- Jérémie Detrey is chairing the *Commission des Utilisateurs des Moyens Informatiques* (CUMI) of the Inria Nancy – Grand Est research center.
- Emmanuel Thomé is a member of
 - the management committee for the research project “CPER Cyberentreprises” (co-chair).

- the *Comité Local Hygiène, Sécurité, et Conditions de Travail* of the Inria Nancy – Grand Est research center.
- Pierrick Gaudry is vice-head of the *Commission de mention Informatique* of the *École doctorale IAEM* of the University of Lorraine;
- Pierre-Jean Spaenlehauer is a member of the *Commission développement technologique* (CDT) of the Inria Nancy – Grand Est research center.
- Paul Zimmermann is member of the Scientific Committee of the *EXPLOR Mésocentre*, and was member until August of the Inria Evaluation Board and the *CoSI (Commission Scientifique)*.

10.1.6. Research Administration

- Laurent Grémy is a member of the *Conseil de laboratoire* of the Loria.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Jérémie Detrey, *Sécurité des systèmes d'information*, 6 hours (practical sessions), M2 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Master: Pierre-Jean Spaenlehauer, *Introduction à la cryptographie*, 18h eq. TD, M1 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Master: Pierre-Jean Spaenlehauer, *Introduction à la sécurité des systèmes et à la cryptographie*, 32h eq. TD, M2 Mathématiques IMOI, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Master: Emmanuel Thomé, *Introduction to Cryptography*, 12 hours (lectures), M1, Télécom Nancy, Villers-lès-Nancy, France.

Master: Emmanuel Thomé, *Cryptography and Security*, 20 hours (lectures + exercices), M2, Télécom Nancy and École des Mines de Nancy, France.

Licence: Jérémie Detrey, *Méthodologie*, 24 hours (practical sessions), L1, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Licence: Jérémie Detrey, *Sécurité des applications Web*, 2 hours (lecture), L1, Université de Lorraine, IUT Charlemagne, Nancy, France.

Jérémy Detrey, *Introduction à la sécurité et à la cryptographie*, 10 hours (lectures) + 10 hours (tutorial sessions) + 10 hours (practical sessions), L3, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-les-Nancy, France.

Licence: Pierrick Gaudry, *Méthodologie*, 48 hours (practical sessions), L1, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

10.2.2. Supervision

Internship: Nicolas Levy, *Algorithmes de factorisation d'entiers basés sur la structure des corps quadratiques réels*, L3 ÉNS Lyon, June-July, Pierre-Jean Spaenlehauer.

Internship: Joshua Peigner, *Factorisation d'idéaux pour l'implantation du crible algébrique*, ÉNS Rennes, June-July, Emmanuel Thomé.

Internship: Robin Fedele, *Consolidation de la couche Python de CADO-NFS*, Univ. Lorraine, May-June, Paul Zimmermann.

Internship: Élise Tasso, *Étude comparative de divers algorithmes de friabilisation*, Mines Nancy, October-June (1 day each week), Pierrick Gaudry.

Ph.D. in progress: Simon Abelard, *Comptage de points de courbes algébriques sur les corps finis et interactions avec les systèmes polynomiaux*, Univ. Lorraine; since Sep. 2015, Pierrick Gaudry & Pierre-Jean Spaenlehauer.

Ph.D. in progress: Svyatoslav Covanov, *Algorithmes de multiplication : complexité bilinéaire et méthodes asymptotiquement rapides*, since Sep. 2014, Jérémie Detrey et Emmanuel Thomé.

Ph.D. in progress: Laurent Grémy, *Analyse et optimisation d'algorithmes de cribles arithmétiques*, since Oct. 2013, Pierrick Gaudry & Marion Videau.

Ph.D. defended: Hugo Labrande, *Explicit computation of the Abel-Jacobi map and its inverse* [1], defended on November 14th, 2016.

10.2.3. Juries

Marine Minier: reviewer of the PhD *Implantation sécurisée de protocoles cryptographiques basés sur les codes correcteurs d'erreurs* by Tania Richmond defended at Univ. Jean Monnet Saint-Etienne, October 24th, 2016.

Pierrick Gaudry: reviewer of the PhD *Computational Aspects of Jacobians of Hyperelliptic Curves* by Alina Dudeanu defended at EPFL, Switzerland; member of the jury for the PhD of Florent Ulpat Rovetta (Marseille) and of Hugo Labrande (Nancy).

Emmanuel Thomé: reviewer (and president of jury) of the Habilitation Thesis *Contributions à la Résolution Algébrique et Applications en Cryptologie* by Guénaël Renault, defended at University Pierre et Marie Curie, December 8th, 2016.

Emmanuel Thomé: jury member (advisor) for the PhD of Hugo Labrande (see above).

10.3. Popularization

- Laurent Grémy and Pierre-Jean Spaenlehauer have animated a stand in the “Village des Sciences du Loria” in March 2016.
- Laurent Grémy and Pierre-Jean Spaenlehauer have animated a stand during the celebration of the Loria’s 40 years anniversary in June 2016.
- Pierrick Gaudry organized and participated to a debate fed by excerpts from movies on the topic of cryptography and privacy in October 2016.

CARTE Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Nazim Fatès was a co-organiser of ACA'16 (Fourth International Workshop on Asynchronous Cellular Automata and Asynchronous Discrete Models), a workshop which was held during the ACRI 2016 conference, Fez (Morocco), September 8, 2016.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

- Nazim Fatès was member of the Program Committees of ANTS'16 (10th International Conference on Swarm Intelligence), AUTOMATA'16 (22nd International Workshop on Cellular Automata and Discrete Complex Systems) and ACRI'16 (12th International conference on Cellular Automata for Research and Industry).
- Emmanuel Hainry was member of the Program Committee of Developments in Implicit Computational Complexity (DICE) 2016.
- Mathieu Hoyrup was member of the Program Committee of Computability and Complexity in Analysis (CCA) 2016.
- Romain Péchoux was member of the Program Committee of Ressource Aware Computation (RAC) 2016.
- Simon Perdrix was member of the Program Committees of QPL'16 Quantum Physics and Logic, and IQFA'16 7th IQFA's Colloquium.

8.1.2.2. Reviewer

- Emmanuel Hainry reviewed articles for DICE and ICALP.
- Mathieu Hoyrup reviewed articles for ICALP and STACS.
- Emmanuel Jeandel reviewed articles for STACS and MFCS.
- Romain Péchoux reviewed articles for FOSSACS, ISMVL, RAC, LFA and STACS

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- Nazim Fatès is a member of the editorial board of the *Journal of cellular automata*.
- Emmanuel Jeandel is member of the editorial board of RAIRO-ITA

8.1.3.2. Reviewer - Reviewing Activities

- Nazim Fatès reviewed articles for *Natural Computing*, the *Journal of statistical physics*, *Advanced in Complex systems*, the *Journal of cellular automata*.
- Emmanuel Hainry reviewed an article for *Applicable Analysis and Discrete Mathematics*.
- Mathieu Hoyrup reviewed articles for *Bulletin of Symbolic Logic*, *Memoirs of the American Mathematical Society*, *Transactions of the American Mathematical Society*.
- Emmanuel Jeandel reviewed articles for *Advances in Mathematics*, *Journal of Discrete Algorithms and Ergodic Theory and Dynamical Systems*.
- Romain Péchoux reviewed articles for *AMS Mathematical Review*, *Information & Computation*.

- Simon Perdrix reviewed articles for Quantum Information and Computation.

8.1.4. Invited Talks

- Mathieu Hoyrup was invited to give a talk in the special session “Constructive and computable analysis” of the conference Computability in Europe (CiE) in Paris, June 2016.
- Emmanuel Jeandel gave a talk for the national days of GDR-IM.

8.1.5. Leadership within the Scientific Community

- Nazim Fatès is the vice-chair of the IFIP working group 1.05 on Cellular Automata and Discrete Complex Systems.
- Simon Perdrix co-organised the quantum software workshop during the one-day event on quantum Technologies at the french Ministry of Research (July 5, 2016).

8.1.6. Scientific Expertise

- Emmanuel Jeandel reviewed projects for Agence Nationale de la Recherche

8.1.7. Research Administration

Isabelle Gnaedig is:

- vice-leader of the team CARTE,
- member of the scientific mediation committee at Inria Nancy Grand-Est.

Emmanuel Hainry is:

- member of the CNU (Conseil National des Universités), Section 27.
- organizer of the CARTE Seminar.
- examiner for the admission exam of ENS and École Polytechnique.

Mathieu Hoyrup is:

- principal investigator of a PHC Imhotep with Walid Gomaa (Alexandria E-Just University).
- organizer of the Formal Methods Seminar at Loria.

Simon Perdrix:

- is responsible of GT IQ (groupe de travail Informatique quantique) at the CNRS GdR IM (groupe de recherche Informatique Mathématique).
- has been elected member and scientific secretary at CoNRS (Comité National de la Recherche Scientifique) section 6.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence:

- Isabelle Gnaedig
 - To the limits of the computable, 6 hours, Opening course-conference of the collegium "Lorraine INP", Nancy France
- Emmanuel Hainry
 - Systèmes d'exploitation, 30h, L1, IUT Nancy Brabois, Université de Lorraine, France
 - Algorithmique, 40h, L1, IUT Nancy Brabois, Université de Lorraine, France
 - Web dynamique, 60h, L1, IUT Nancy Brabois, Université de Lorraine, France
 - Bases de données, 30h, L1, IUT Nancy Brabois, Université de Lorraine, France

- Programmation objet, 12h, L2, IUT Nancy Braboi, Université de Lorraine, France
- Complexité, 30h, L2, IUT Nancy Brabois, Université de Lorraine, France
- Mathieu Hoyrup
 - Bases de la Programmation Orientée Objet, 20 HETD, L2, Université de Lorraine, France
 - Interfaces Graphiques, 10 HETD, L2, Université de Lorraine, France
- Emmanuel Jeandel
 - Algorithmics and Programming 1, 60h, L1 Maths-Info
 - Algorithmics and Programming 4, 30h, L3 Informatique
 - Modelling Using Graph Theory, 30h, L3 Informatique
 - Networking, 15h, L3 Informatique
 - Data Compression, 45h, L2 Informatique
- Romain Pécoux
 - Programmation orientée objet, 61,5h, L3 MIASHS
 - Programmation orientée objet, 53,5h, L2 MIASHS
 - Outils logiques pour l'informatique, 35h, L1 MIASHS
 - Bases de données, 40h, L3 Sciences de la Gestion
 - Algorithmic complexity, 30h, L3 MIAGE, IGA Casablanca, Morocco.

Master:

- Nazim Fatès
 - Systèmes complexes adaptatifs, 15h ETD, M2, UL, France.
 - Agents intelligents et collectifs, 22h ETD, M1, UL, France.
- Isabelle Gnaedig
 - Design of Safe Software, Coordination of the module, M2, Telecom-Nancy (Université de Lorraine), Nancy, France,
 - Rule-based Programming, 20 hours, M2, Telecom-Nancy (Université de Lorraine), Nancy, France.
- Emmanuel Hainry
 - Complexity and Complex Systems, 12h, M2, FST, Université de Lorraine, France
- Emmanuel Jeandel
 - Algorithmics and Complexity, 30h, M1 Informatique
 - Combinatorial Optimization, 36h, M1 Informatique
- Romain Pécoux
 - Mathematics for computer science, 30h, M1 SCA
 - Advanced Java, 52,5h, M1 MIAGE
 - Implicit Complexity, 15h, M2 Informatique
- Simon Perfrix
 - Pépites Algorithmiques, 6h, M1/M2 at Ecole des Mines de Nancy.

8.2.2. Supervision

- Emmanuel Jeandel and Simon Perdrrix supervised the Master Thesis of Renaud Vilmart on ZX-calculs, and the Master Thesis of Arinta Auza-Primandini on quantum circuits with memory.

- Emmanuel Jeandel and Simon Perdrix are advisors of Renaud Vilmart, PhD student (UL) since October 2016.
- Romain Péchoux is coadvisor of Pierre Mercuriali, PhD student, Université de Lorraine (50%, advisor: Miguel Couceiro, PR, Université de Lorraine).

8.2.3. *Juries*

- Mathieu Hoyrup participated in the jury of the PhD of Ludovic Patey, Université Paris Diderot, February 26.
- Emmanuel Jeandel reviewed the PhD thesis of Rodrigo Torres (Universidad de Concepción, Chile) in January, and participated in the PhD defense of Benoît Chappet de Vangel, Université de Lorraine, November 14th.

8.3. Popularization

Nazim Fatès contributed to the collective book *Lettres à Turing* (ed. Thierry Marchaisse, May 2016), which addresses the legacy of Turing in our Modern Times. He was invited to discuss this book and the question of artificial intelligence in three national radio programs:

- France Culture, La marche des sciences, “Cher alan Turing”, 1 hour, with Aurélie Luneau, 23 June 2016.
- RFI, Autour de la question, “Que devons-nous à Alan Turing?”, 1 hour, with Sophie Joubert, 24 June 2016.
- RFI, Autour de la question, “Jusqu’où ira l’intelligence artificielle?”, 1 hour, with Sophie Joubert, 7 October 2016.

Nazim Fatès participated to an open discussion (table ronde) on the theme of artificial intelligence (“Intelligence artificielle : quel monde prépare-t-elle ?”), invitation by the Cercle universitaire of Enghien-les-bains, on the 27th of Septembre in Enghien-les-bains. He was interviewed by Eric Chaverou, journalist at France Culture for his radio program of May 20, 2016, on the theme: “L’intelligence artificielle made in France”. This interview is available on the [website of the radio program](#) or directly via [soundcloud](#). He participated to a public debate on the theme “Jusqu’où ira l’intelligence artificielle ?” the Café des sciences et techniques, organised by the CNAM, in Épinal, 21 January 2016.

PESTO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

The CNIL (Commission Nationale Informatique et Liberté) has official recommendations in terms of electronic voting.⁰ These recommendations influence the design of e-voting systems that are deployed in France. However, some of the recommendations seem a bit outdated and dedicated to particular classes of systems. Even more importantly, the CNIL recommendations focus on vote privacy but do not say much about verifiability. Véronique Cortier, David Galindo, and Stéphane Glondu formulated new recommendations, submitted to the CNIL. They met some CNIL members to discuss how to integrate some of the propositions to the new version of the CNIL recommendations that should appear in 2017.

Moreover, Véronique Cortier was auditioned by the AFE (Assemblée des Français de l'étranger) on the security of electronic voting. She has also presented the Belenios protocol to the MENESR (Ministère de l'Éducation Nationale, de l'Enseignement Supérieur et de la Recherche) and to the Open Government Summit at the Sénat. Steve Kremer gave a talk on e-voting at the "Colloque Sécurité Informatique : mythes et réalité" organised by CNRS.

10.1.1. Scientific Events Selection

10.1.1.1. General Chair, Scientific Chair

- Véronique Cortier: HotSpot 2016, 4th Workshop on Hot Issues in Security Principles and Trust. Affiliated with ETAPS 2016.
- Steve Kremer: GRSRD 2016, Grande Region Security and Reliability Day, Nancy, March 2016 (co-chair with J. Pang, U. Luxembourg).

10.1.1.2. Program Committee Chair

- Véronique Cortier: HotSpot 2016, 4th Workshop on Hot Issues in Security Principles and Trust. Affiliated with ETAPS 2016.
- Michaël Rusinowitch: ACM International Workshop on Security And Privacy Analytics, New Orleans, LA, USA, March 11, 2016. (co-chair with Rakesh Verma, U. Houston).

10.1.1.3. Program Committee Member

- Véronique Cortier: LICS 2017, CCS 2016, Concur 2016, E-VoteID 2016, MFCS 2016, EuroS&P 2016.
- Steve Kremer : Voting 2017, Euro S&P 2017, FSTTCS 2016, ESORICS 2016, CSF 2016, Voting 2016, AsiaCCS 2016, ACISP 2016.
- Christophe Ringeissen: FroCoS 2017, UNIF 2017, WRLA 2016, UNIF 2016, IJCAR 2016.
- Michaël Rusinowitch: POST 2016, CRISIS 2016, STM 2016.
- Vincent Cheval: TMPA 2017

10.1.2. Journal

10.1.2.1. Editorial Board Member

- Véronique Cortier: Information & Computation, Journal of Computer Security, ACM Transactions on Information and System Security (TISSEC), Foundations and Trends (FnT) in Security and Privacy.

10.1.2.2. Scientific Committee Member

- Laurent Vigneron: Technique et Sciences Informatiques, Lavoisier.

10.1.3. Invited Talks

- Steve Kremer: 29th IEEE Computer Security Foundations Symposium (CSF'16).

10.1.4. Research Administration

Inria evaluation committee (Steve Kremer)

⁰<https://www.legifrance.gouv.fr/affichCnil.do?id=CNILTEXT000023174487>

Jury Junior Research Position Inria Rennes-Bretagne Atlantique (Steve Kremer)

Jury Senior Research Position (Steve Kremer)

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

Jury Professor at Université de Lorraine (Véronique Cortier)

Jury Assistant Professor at Université de Lorraine (Michaël Rusinowitch)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence:
 - Vincent Cheval, Introduction to Theoretical Computer Science (Logic, Languages, Automata), 69 hours (ETD), TELECOM Nancy.
 - Jannik Dreier, Introduction to Theoretical Computer Science (Logic, Languages, Automata), 146 hours (ETD), TELECOM Nancy.
- Master:
 - Véronique Cortier, Security of flows, 20 hours, M2 Computer Science, Telecom Nancy and Mines Nancy, France.
 - Abdessamad Imine, Security for XML Documents, 12 hours (ETD), M1, Lorraine University, France.
 - Steve Kremer, Security Theory, 24 hours (ETD), M2 Computer science, Lorraine University, France.
 - Christophe Ringeissen, Decision Procedures for Software Verification, 18 hours (ETD), M2 Computer science, Lorraine University, France.
 - Laurent Vigneron, Security of information systems, 22.5 hours (ETD), M2 Computer science, Lorraine University, France.
 - Laurent Vigneron, Security of information systems, 24 hours (ETD), M2 MIAGE – Distributed Information Systems, Lorraine University, France.
 - Laurent Vigneron, Security of information systems, 16 hours (ETD), M2 MIAGE – Audit and Design of Information Systems, Lorraine University, France.

10.2.2. Supervision

- HDR defended in 2016:
 - Abdessamad Imine, Data sharing in collaborative systems, defended on December 9.
- PhD defended in 2016:
 - Rémy Chrétien, Decision procedures of equivalence properties, started in October 2012, Véronique Cortier and Stéphanie Delaune
 - Huu Hiep Nguyen, Secure Collaboration in Mobile Social Networks, started in November 2013, Abdessamad Imine and Michaël Rusinowitch
- PhD discontinued in 2016:
 - Éric Le Morvan, Secure composition of cryptographic protocols, started in October 2013, discontinued in June 2016, Véronique Cortier
- PhD in progress:
 - Younes Abid, Privacy control for social networks, started in March 2015. Abdessamad Imine, Michaël Rusinowitch and Orpailleur co-advising.
 - Antoine Dallon, Decision procedures for equivalence properties, started in November 2015, Véronique Cortier and Stéphanie Delaune

Alicia Filipiak, Design and validation of security services for mobile platforms: smartphones and tablets, started in March 2015, Véronique Cortier

JosephALLEMAND, Type systems for equivalence properties, started in September 2016, Véronique Cortier

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

10.2.3. Juries

Reviewer for Yang Zhang PhD, Luxembourg (Michaël Rusinowitch)

Examiner for Stefania Dumbrova, Paris-Sud (Michaël Rusinowitch)

Examiner for Jiri Marsik, LORIA (Laurent Vigneron)

Examiner for Robin David, CEA (Steve Kremer)

10.3. Popularization

- Vote Électronique. Véronique Cortier. 1024 – Bulletin de la société informatique de France. Numéro 9, Novembre 2016.
- How to Explain Modern Security Concepts to your Children. Xavier Bultel, Jannik Dreier, Pascal Lafourcade, Malika More. Cryptologia, Taylor & Francis, 2016. [13]
- Comment sécuriser les communications ? Du bon usage des protocoles et de la cryptographie. Vincent Cheval, JosephALLEMAND – Séminaire *La Pépinière 4.1*, Oct 2016, Maisons pour la science au service des professeurs, Nancy.

VEGAS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of Organizing Committees

Sylvain Lazard organized with S. Whitesides (Victoria University) the **15th Workshop on Computational Geometry** at the Bellairs Research Institute of McGill University in Feb. (1 week workshop on invitation).

Monique Teillaud co-organized the workshop *20 years of CGAL*, with Efi Fogel, Michael Hoffmann, and Emo Welzl, Zurich, Switzerland, September 10-11, and she gave a talk.

9.1.2. Scientific Events Selection

9.1.2.1. Member of Conference Program Committees

Monique Teillaud was a member of the program committee of EuroCG, *European Workshop on Computational Geometry*.

9.1.2.2. Reviewer

All members of the team are regular reviewers for the conferences of our field, namely the *Symposium on Computational Geometry* (SoCG) and the *International Symposium on Symbolic and Algebraic Computation* (ISSAC) and also SODA, CCCG, EuroCG.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Monique Teillaud is a managing editor of JoCG, *Journal of Computational Geometry*. She is also a member of the Editorial Board of IJCGA, *International Journal of Computational Geometry and Applications*. She resigned from the Editorial Board of CGTA, *Computational Geometry: Theory and Applications*, after unsuccessfully trying to convince the Editorial Board to leave Elsevier and move to a free (libre and gratis) open-access model.

Marc Pouget and Monique Teillaud are members of the **CGAL** editorial board.

Olivier Devillers resigned from the Editorial Board of Graphical Models (Elsevier) after discussion to move to a free open-access model.

9.1.3.2. Reviewer - Reviewing Activities

All members of the team are regular reviewers for the journals of our field, namely *Discrete and Computational Geometry* (DCG), *Computational Geometry. Theory and Applications* (CGTA), *Journal of Computational Geometry* (JoCG), *International Journal on Computational Geometry and Applications* (IJCGA), *Journal on Symbolic Computations* (JSC), *SIAM Journal on Computing* (SICOMP), *Mathematics in Computer Science* (MCS), etc.

9.1.4. Invited Talks

Olivier Devillers was invited to give a talk at the geometry week organized by GipsaLab in Grenoble.

Guillaume Moroz was invited to give talks at the LIGM seminar in Marne-la-Vallée university, at the SpecFun team seminary in Inria Saclay and at the MSDOS workshop in CIRM.

Monique Teillaud was invited to give a talk at the seminar *Computer Science meets Mathematics* of the University of Luxembourg, February 8: “**CGAL**, geometry made practical”. She was invited to give a talk at the *Mittagsseminar* of Institute of Theoretical Computer Science of ETH Zürich on September 8: “Delaunay triangulations on orientable surfaces of low genus”.

9.1.5. Seminar Organization

We invited:

Kacper Pluta (LIGM - Laboratoire d'Informatique Gaspard-Monge),

Mickaël Buchet (Tohoku University).

Andrew Yarmola (University of Luxembourg).

9.1.6. Leadership within the Scientific Community

9.1.6.1. Steering Committees

M. Teillaud has been elected Chair of the Steering Committee of the Symposium on Computational Geometry (SoCG). She is a member of the Steering Committee of the European Symposium on Algorithms (ESA).

9.1.7. Research Administration

9.1.7.1. Hiring committees

Sylvain Lazard was president of the hiring committee for a Professor position (UL/École des Mines/LORIA).

Monique Teillaud was the representative of LORIA in the hiring committee for an Associate Professor (MCF) position (École des Mines/LORIA) and composed the committee with the president. She was also a member of the Inria CR2 Nancy - Grand Est interview committee and of the hiring committee for a Professor position (FST/LORIA).

9.1.7.2. National committees

L. Dupont is a member of “Commission Pédagogique Nationale” (CPN) Information-Communication / Métiers du Multimédia et de l'Internet.

M. Teillaud is a member of the Scientific Board of the *Société Informatique de France* (SIF).

M. Teillaud is a member of the working group for the BIL, *Base d'Information des Logiciels* of Inria.

9.1.7.3. Local Committees and Responsibilities

S. Lazard: Head of the PhD and Post-doc hiring committee for Inria Nancy-Grand Est (since 2009). Member of the *Bureau de la mention informatique* of the *École Doctorale IAE+M* (since 2009). Head of the *Mission Jeunes Chercheurs* for Inria Nancy-Grand Est (since 2011). Head of the Department Algo at LORIA (since 2014). Member of the *Conseil Scientifique* of LORIA (since 2014).

G. Moroz is member of the Mathematics Olympiades committee of the Nancy-Metz academy. G. Moroz is member of the *Comité des utilisateurs des moyens informatiques*

M. Pouget is elected at the *Comité de centre*, and member of the board of the Charles Hermite federation of labs. M. Pouget is secretary of the board of *AGOS-Nancy*.

M. Teillaud is a member of the BCP, *Bureau du Comité des Projets* and of the CDT, *Commission de développement technologique* of Inria Nancy - Grand Est.

9.1.7.4. Websites

M. Teillaud is maintaining the Computational Geometry Web Pages <http://www.computational-geometry.org/>, hosted by Inria Nancy - Grand Est since December. This site offers general interest information for the computational geometry community, in particular the Web proceedings of the Video Review of Computational Geometry, part of the Annual/international Symposium on Computational Geometry.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : O. Devillers, *Synthèse, image et géométrie* , 12h (academic year 2015-16) and 12h (academic year 2016-2017), IPAC-R, Université de Lorraine. <https://members.loria.fr/ODevillers/master/>

Master: Marc Pouget, *Introduction to computational geometry*, 10.5h, M2, École Nationale Supérieure de Géologie, France.

Licence: Sylvain Lazard, *Algorithms and Complexity*, 25h, L3, Université de Lorraine, France.

Licence: Laurent Dupont, *Algorithmique*, 78h, L1, Université de Lorraine, France.

Licence: Laurent Dupont, *Web development*, 75h, L2, Université de Lorraine, France.

Licence: Laurent Dupont, *Traitement Numérique du Signal*, 10h, L2, Université de Lorraine, France.

Licence: Laurent Dupont, *Data structures*, 40h, L1, Université de Lorraine, France.

9.2.2. Supervision

PhD : Ranjan Jha, Étude de l'espace de travail des mécanismes à boucles fermées, defended in Jul. 2016, supervised by Damien Chablat, Fabrice Rouillier and Guillaume Moroz.

PhD in progress : Sény Diatta, Complexité du calcul de la topologie d'une courbe dans l'espace et d'une surface, started in Nov. 2014, supervised by Daouda Niang Diatta, Marie-Françoise Roy and Guillaume Moroz.

PhD in progress : Charles Duménil, Probabilistic analysis of geometric structures, started in Oct. 2016, supervised by Olivier Devillers.

PhD in progress : Jordan Iordanov, Triangulations of Hyperbolic Manifolds, started in Jan. 2016, supervised by Monique Teillaud.

Postdoc: Rémy Imbach, Topology and geometry of singular surfaces with numerical algorithms, supervised by Guillaume Moroz and Marc Pouget.

9.2.3. Juries

O. Devillers was president of the PhD defense committee of Vincent Despré (Univ. Grenoble-Alpes).

G. Moroz was in the PhD defense committee of Ranjan Jha (IRCCyN).

9.2.4. Teaching Responsibilities

Licence: Laurent Dupont, creation and opening of L3 (Licence Professionnelle) « Animation des Communautés et Réseaux Socionumériques », Université de Lorraine, France.

VERIDIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Organization of Scientific Events

10.1.1.1. General Chair, Scientific Chair

Jasmin Blanchette and Stephan Merz, with the help of Anne-Lise Charbonnier of Inria Nancy, organized the *7th International Conference on Interactive Theorem Proving (ITP 2016)* and associated workshops in Nancy, on August 22–27, 2016.

10.1.1.2. Member of the Organizing Committees

Jasmin Blanchette co-organized the *Hammers for Type Theories (HaTT 2016)* workshop at IJCAR 2016 in Coimbra, Portugal.

Pascal Fontaine co-organized the *First SC² workshop on Satisfiability Checking and Symbolic Computation* with Erika Abraham (RWTH, Aachen).

Pascal Fontaine co-organized the *5th Workshop on Practical Aspects of Automated Reasoning (PAAR)* with Stephan Schulz (DHBW Stuttgart) and Josef Urban (Czech Technical University in Prague).

Dominique Méry was a member of the organizing committees of the workshops F-IDE, BWare, Impex, and Formose.

Dominique Méry, together with Yamine Aït-Ameur (Toulouse) and Shin Nakajima (Tokyo), organized a meeting on *Implicit and explicit semantics integration in proof based developments of discrete systems* in November within the series of NII Shonan meetings.

The International Summer School on Verification Techniques, Systems, and Applications (VTSA) has been organized since 2008 in the Greater Region (Nancy, Saarbrücken, Luxembourg, Liège, and Koblenz), and Stephan Merz and Christoph Weidenbach are co-organizers of VTSA. In 2016, VTSA took place at the end of August in Liège, Belgium.

10.1.2. Selection of Scientific Events

10.1.2.1. Chair of Conference Program Committees

Jasmin Blanchette and Stephan Merz chaired the program committee of the *7th International Conference on Interactive Theorem Proving (ITP 2016)*.

Stephan Merz co-chaired the program committee of the *Third International Workshop on Formal Reasoning in Distributed Algorithms (FRiDA)*, organized in May as a satellite of NETYS in Marrakech, Morocco.

10.1.2.2. Member of Conference Program Committees

Jasmin Blanchette served on the program committee of the *International Conference on Tests and Proofs (TAP)*.

Pascal Fontaine served on the program committee of the workshop SMT.

Stephan Merz served on the program committees of the international conferences ABZ, ICALP, and ICFEM, and of the workshops ARQNL, FMICS-AVoCS, and GRSRD.

Martin Strecker served on the program committees of ICTERI and ICGT.

Thomas Sturm served on the program committees of CASC and of the SC² workshop at SYNACS.

Uwe Waldmann served on the program committee of the workshop PAAR, colocated with IJCAR 2016.

Christoph Weidenbach served on the program committee of IJCAR.

10.1.3. Journals

Stephan Merz, together with Jun Pang of the University of Luxembourg, edited two volumes of a special issue on Formal Engineering Methods in the journal *Formal Aspects of Computing*.

Thomas Sturm is a member of the editorial boards of the *Journal of Symbolic Computation* (Elsevier) and *Mathematics in Computer Science* (Springer).

Christoph Weidenbach is an editor of the Journal of Automated Reasoning. Together with Deepak Kapur and Stéphane Demri he edited a special issue of JAR containing selected and extended papers of IJCAR 2014.

10.1.4. Invited Talks

Jasmin Blanchette gave invited talks at the Semantic Representation of Mathematical Knowledge Workshop organized by the Wolfram Foundation and the Fields Institute in Toronto, Canada, at the Sino-German Frontiers of Science Symposium (SINOGFOS) organized by the Humboldt Foundation and the Chinese Academy of Science in Shenzhen, China, at the Workshop on Proofs, Justifications, and Certificates in Toulouse, France, at the Universality of Proof seminar at Schloss Dagstuhl in Wadern, Germany, and at the Prague Inter-Reasoning Workshop (PIWo) in Prague, Czech Republic.

Pascal Fontaine gave an invited talk at the AFSEC day of the GdR GPL, and at GT-Verif day of the GdR IM.

Stephan Merz gave invited talks at the TRS meeting and the JAIST-LORIA workshop in Kanazawa, Japan, on *Satisfiability Checking for Modal Logics via SMT Solving* and on *The Design of the TLA⁺ Proof System*. He also gave an invited talk at the *Cloud Reliability Workshop* in Shenzhen, China, on *A Formal Analysis of Pastry*.

Thomas Sturm gave an invited talk at ACA 2016 titled *Real Problems over the Reals*.

Christoph Weidenbach gave an invited lecture at the SMT Summer School in Lisbon, Portugal.

10.1.5. Leadership within the Scientific Community

Jasmin Blanchette served as editor of the newsletter of the Association for Automated Reasoning (AAR) and as member of the AAR board.

Jasmin Blanchette and Christoph Weidenbach were elected on the CADE (*Conference on Automated Deduction*) Inc. Board of Trustees. Christoph Weidenbach was elected President of CADE Inc. by the CADE Inc. Board of Trustees.

Jasmin Blanchette is an ex officio member of the steering committee of the conference series *Interactive Theorem Proving*.

Pascal Fontaine is an SMT-LIB manager, together with Clark Barrett (Stanford University) and Cesare Tinelli (University of Iowa). He is a member of the FroCoS steering Committee. He has been an elected CADE trustee since October 2014. He serves as member of the Association for Automated Reasoning (AAR) board.

Stephan Merz is a member of the IFIP Working Group 2.2 on *Formal Description of Programming Concepts*. He is also a member of the steering committee of the workshop on Automated Verification of Critical Systems (AVoCS).

Thomas Sturm is a member of the steering committee of the conference series *Mathematical Aspects of Computer and Information Sciences* (MACIS).

Christoph Weidenbach is a member of the steering committee of IJCAR.

10.1.6. Scientific Expertise

Pascal Fontaine was a panel member for the CASC-25 competition of first-order theorem prover.

Stephan Merz served as an expert for the French Agence Nationale de la Recherche (ANR), the Haut Conseil de l'Évaluation de la Recherche et de l'Enseignement Supérieur (HCERES), and for the European Research Council (ERC).

Christoph Weidenbach served as an expert for GIF (German Israel Foundation), the FWF (Austrian Science Fund) and the DFG (German Science Foundation).

10.1.7. Research Administration

Dominique Méry is the head of the Doctoral School IAEM Lorraine for the University of Lorraine.

Stephan Merz is a member of the Scientific Directorate of the International Computer Science Meeting Center in Schloss Dagstuhl. Until August 2016, he was the head of the PhD committee for computer science of the Doctoral School IAEM Lorraine. Since September 2016, he is the delegate for scientific affairs at the Inria Nancy – Grand Est research center. He is also the delegate for the organization of conferences at Inria Nancy and the coordinator of the CPER *Sciences du Numérique* in Lorraine (2015–2020). He was a member of the hiring committee of junior researchers at Inria Nancy in 2016 and a member of the committee for the SIF thesis award (*Prix Gilles Kahn*).

Christoph Weidenbach is a member of the selection committee of the Saarbrücken Graduate School in Computer Science.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Jasmin Blanchette, Computational Metaphysics (guest lecturer), 4 HETD, Freie Universität Berlin, Germany.

Licence: Marie Duflot-Kremer, Algorithmique et Programmation 1, 80 HETD L1 Mathématiques, Informatiques Sciences pour l'Ingénieur, Université de Lorraine, France.

Licence: Marie Duflot-Kremer, Bases de données 1 et 2, 35 HETD, L2 informatique, Université de Lorraine, France.

Licence: Marie Duflot-Kremer, Projet personnel et communication, 50 HETD, L2 informatique, Université de Lorraine, France.

Master : Marie Duflot-Kremer, Vérification de systèmes, 30 HETD, M1 Informatique, Université de Lorraine, France.

Master: Marie Duflot-Kremer and Stephan Merz, Vérification algorithmique, 30 HETD, M2 Informatique, Université de Lorraine, France.

Master: Marie Duflot-Kremer and Stephan Merz, Elements of Model Checking, 36 HETD, M2 Informatique and Master Erasmus Mundus DESEM, Université de Lorraine, France.

Master : Marie Duflot-Kremer and Stephan Merz, Conception et architectures distribuées 24 HETD M1 informatique, Université de Lorraine

Licence : Pascal Fontaine, Structure des ordinateurs, 67 HETD, L2 MIASHS, parcours MIAGE, Université de Lorraine, France.

Licence : Pascal Fontaine, Logique des prédicats, 32 HETD, L2 MIASHS, Université de Lorraine, France.

Master : Pascal Fontaine, Réseaux, 50 HETD, M1 MIAGE, Université de Lorraine, France.

Master : Pascal Fontaine, Génie Logiciel, 30 HETD, M1 MIAGE, IGA Rabbat et Université de Lorraine, Maroc.

Master: Dominique Méry, Models and algorithms, 60 HETD, M1, Telecom Nancy, Université de Lorraine, France.

Master: Dominique Méry, Formal model engineering, 24 HETD, M2, Telecom Nancy, Université de Lorraine, France.

Master: Dominique Méry, Modeling Systems, 30 HETD, M2, Telecom Nancy, Université de Lorraine, France.

Master: Dominique Méry, Modeling Systems, 36 HETD, M2 informatique and Master Erasmus Mundus DESEM, Université de Lorraine, France.

Master: Dominique Méry, Event-B modeling, 8 HETD, NUI Maynooth.

Master: Uwe Waldmann, Automated Reasoning I, 90 HETD, Universität des Saarlandes, Germany.

Master: Uwe Waldmann, Automated Reasoning II, 60 HETD, Universität des Saarlandes, Germany.
This lecture received the teaching award of the Computer Science Students Association.

10.2.2. Supervision

PhD: Noran Azmy, An Automated Proof of Correctness for Pastry, Saarland University and Université de Lorraine, defended on November 24, 2016.

PhD: Marek Košta, Computational Logic, Universität des Saarlandes. Defended on December 13, 2016.

PhD in progress: Gabor Alági, Efficient Reasoning in Finite Domains, Saarland University. Supervised by Christoph Weidenbach, since 11/2012.

PhD in progress: Haniel Barbosa, Refutational Completeness in Satisfiability Modulo Theories, Université de Lorraine and UFRN (Natal, Brazil). Supervised by David Déharbe, Pascal Fontaine, and Stephan Merz, since 12/2013.

PhD in progress: Martin Bromberger, Arithmetic Reasoning, Saarland University. Supervised by Christoph Weidenbach, since 07/2014.

PhD in progress: Mathias Fleury, Formalization of Logical Calculi, Saarland University. Supervised by Christoph Weidenbach and Jasmin Blanchette, since 09/2015.

PhD in progress: Marco Voigt, Decidable Hierarchic Combinations, Saarland University. Supervised by Christoph Weidenbach, since 11/2013.

PhD in progress: Daniel Wand, First-Order Extensions to Support Higher-Order Reasoning, Saarland University. Supervised by Christoph Weidenbach and Jasmin Blanchette, since 02/2011.

10.2.3. Thesis committees

Dominique Méry served on the committees for the PhD thesis of Pierre Halmagrand (CNAM) and the habilitation thesis of Brahim Hamid (Université Toulouse Jean Jaurès).

Stephan Merz served as a reviewer for the PhD thesis of Yakoub Némouchi (Université Paris Saclay) and as a PhD examiner for the PhD thesis of Alland Blanchard (Université d'Orléans).

10.3. Science outreach

Marie Duflot-Kremer took part in various science outreach activities, with a public ranging from primary school kids to golden agers, including high school and potential university students. A selection of these activities is given below:

- two days at “Fête de la science” in Nancy (Faculté de Sciences et Technologies and ARTEM);
- a course on Scratch for high school professors in charge of teaching optional course ISN (Informatique et Sciences du Numérique);
- her explanations of three new unplugged activities (data bases, model checking and text compression) have been recorded by Inria and will soon be added to the Youtube channel of Interstice intended for promoting and sharing such activities;
- she is in charge of the scientific part of the second module in the Class’Code project, aiming at training teachers and educators for carrying out computer science activities with childrens aged 8 to 14 years;

- she is a member of two groups including university and secondary school teachers, dedicated to the training of math teachers who now teach computer science to students of age 11 to 18. A day of training was given to high school teachers;
- “Journée femmes de Sciences”: one day dedicated to the promotion of science towards 14 year-old girls;
- she is a member of the steering committee preparing an itinerant exposition intended for explaining computer science to the public, to be released in December 2016;
- she presented unplugged outreach activities to the staff at Cité des Sciences (Paris);
- she conducted during five months an experiment on the discovery of programming for golden agers using Scratch;
- she took part in “Pépinière 4.0” and 4.1, explaining computer science concepts to teachers.

SPHINX Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General chair, scientific chair

Xavier Antoine was a member of the scientific committee of Waves 2017, University of Minneapolis, USA.

10.1.1.2. Member of the Organizing Committees

Several members of the team were involved in the organization of the 43rd national conference CANUM 2016 (<http://smai.emath.fr/canum2016/>). In particular, Karim Ramdani was the head of the Organizing Committee.

Xavier Antoine was co-organizer of Colloque Couplages numériques, hold in September 27-29, 2016, in Nice, France. <http://math.unice.fr/~massonr/CouplagesNumeriques/index.php>

Julie Valein organized a day Fédération Charles Hermite "Estimation for dynamical systems" (06/10/2016)

10.1.2. Scientific Events Selection

10.1.2.1. Reviewer

Thomas Chambrion is a reviewer for the American Control Conference and the Conference on Decision and Control.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Jean-Claude Vivalda is a member of the editorial board of the *Journal of Dynamical and Control Systems*.

10.1.3.2. Reviewer - Reviewing Activities

Most of the members of our team are regular reviewer for major publications in the field of control.

- Thomas Chambrion is a reviewer for SICON, IEEE TAC, Automatica, International Journal of Control, MCMS.
- Julie Valein is a reviewer for SICON, ESAIM COCV.
- Jean-Claude Vivalda is a reviewer for SICON and for the Mathematical Reviews.

10.1.4. Invited Talks

Julie Valein was invited to

- LMV seminar, Versailles, 14 janvier 2016
- Mathematics-Automatic meeting, IECL – CRAN, Nancy, 28 June, 2016
- Conference « Stability of non-conservative systems », Valenciennes, 4-7 July 2016

Xavier Antoine was invited to

- Seminar, Bale University, December 2016.
- Seminar, Beijing University, July 2016.

10.1.5. Scientific Expertise

Julie Valein was a member of several "Comité de selection":

- for an associate professor position at École des Mines de Nancy;
- for an associate professor position at Université Lyon 1;
- for a teaching position at École des Sciences et Techniques de l'Ingénieur de Nancy.

Thomas Chambrion belongs to the selection panel for the Natural Sciences and Engineering Research Council of Canada.

10.1.6. Research Administration

- Xavier Antoine has been head of IECL since September 2015.
- David Dos Santos has been head of IECL PDE team since September 2014.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Most of the members of the team have a teaching position at Université de Lorraine.

Xavier Antoine teaches at Mines Nancy and ENSEM (Université de Lorraine), L3-M1, 96 hours.

Thomas Chambrion teaches at ESSTIN (Université de Lorraine), L1-L2, 192 hours.

David Dos Santos Ferreira teaches at UFR STMIA (Université de Lorraine), 192 hours.

Alexandre Munnier teaches at UFR STMIA (Université de Lorraine), 192 hours.

Jean-François Scheid teaches at Telecom Nancy (Université de Lorraine), 192 hours.

Julie Valein teaches at ESSTIN (Université de Lorraine), L1-L2, 192 hours.

10.2.2. Supervision

PhD in progress : Boris Caudron, CIFRE thesis with Thales, Coupling between integral equations/finite element for the numerical solution by domain decomposition methods of wave scattering problems, since June 2015, Xavier Antoine and Christophe Guezaine.

PhD in progress : Alessandro Duca, controllability of bilinear Schrödinger equations, since September 2015, Nabile Boussaïd and Thomas Chambrion.

10.2.3. Juries

Xavier Antoine was a referee for the Ph.D. thesis of P. Rammaciotti Morales (Ecole Polytechnique), and Marc Bakry (ENSTA).

Thomas Chambrion was referee of the PhD thesis of Leo Van Damme (Université de Bourgogne).

10.3. Popularization

Karim Ramdani has given several talks at Université de Lorraine to raise researchers awareness on the risks of author-pays publication model (for more information on economic models of scientific publishing, see http://iecl.univ-lorraine.fr/~Karim.Ramdani/KR_BIB/AUTEURS.html).

Thomas Chambrion gave a presentation of applied mathematics at Lycée Poincaré (Nancy) in April 2016.

TOSCA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Promotion of Mathematics in the industry

- M. Deaconu and A. Lejay were invited to give a talk at ILAC, Luxembourg in March 2016.
- A. Lejay has been appointed as representative of Inria Nancy-Grand Est in the Agence Mathématiques et Entreprise (AMIES).
- D. Talay continued to serve as the Vice-President of the Fondation d'Entreprise Natixis which aims to contribute to develop research in quantitative finance. He also serves as a member of the Scientific Committee of the Foundation.
- D. Talay continued to serve as a member of the Scientific Committee of the AMIES National Agency aimed to promote interactions between Mathematics and Industry.

9.1.2. Scientific Events Organisation

- N. Champagnat and M. Deaconu organized the mini-symposium “Un panorama de progrès récents sur les méthodes numériques probabilistes” at CANUM 2016 (Congrès d'Analyse Numérique) at Obernai in July 2016.

9.1.2.1. Member of the Organizing Committees

- A. Lejay was member of the conference organizing committees of *CANUM 2016* (Obernai, France).

9.1.3. Scientific Events Selection

9.1.3.1. Member of the Conference Program Committees

- N. Champagnat served as a member of the program committee of CARI 2016 (13ème Colloque Africain sur la Recherche en Informatique et Mathématiques Appliquées), Tunis, 10–14 octobre 2016.
- A. Lejay is member of the conference program committees of *CANUM 2016* (Obernai, France) and *Journées de Probabilités 2016* (Le Mans, France).
- D. Talay served as a member of the XIIIth France-Romania Colloquium in Applied Mathematics.
- E. Tanré served as a member of the program committee of the International Conference on Mathematical NeuroScience (ICMNS 2016), Juan les Pins.

9.1.4. Journal

9.1.4.1. Member of the Editorial Boards

- M. Bossy served as an Associate Editor of *Annals of Applied Probability*.
- N. Champagnat served as an Associate Editor of *Stochastic Models*.
- A. Lejay is one of the three editors of the *Séminaire de Probabilités*.
- D. Talay served as an Associate Editor of: *Stochastic Processes and their Applications*, *ESAIM Probability and Statistics*, *Stochastics and Dynamics*, *Journal of Scientific Computing*, *Monte Carlo Methods and Applications*, *Oxford IMA Journal of Numerical Analysis*, *SIAM Journal on Scientific Computing*, *Communications in Applied Mathematics and Computational Science*, *Éditions de l'École Polytechnique*. He also served as the Co-editor in chief of *MathematicS in Action*.

9.1.4.2. Reviewer - Reviewing Activities

- M. Deaconu wrote reviews for manuscripts submitted to *Journal of Computational and Applied Mathematics*.
- A. Lejay wrote reviews for manuscripts submitted to *Journal of Computational Mathematics, Mathematics and Computers in Simulation, Mathematical Reports, SIAM Journal of Control and Optimization, Communications in Mathematical Physics, Real Analysis Exchange, Annals of Probability, Electronic Journal of Probability*.
- E. Tanré wrote reviews for manuscripts submitted to *Applied Mathematical Finance, Bernoulli, European Journal of Applied Mathematics*.
- E. Tanré serves as a permanent reviewer of *Mathematical Reviews of the American Mathematical Society (MathSciNet)*
- D. Villemonais wrote reviews for *Mathematical Reviews of the American Mathematical Society (MathSciNet)* and for manuscripts submitted to *Stochastic processes and applications* and *Theoretical Population Biology*.

9.1.5. Invited Talks

- M. Bossy has been invited to give a talk at the seminar of the Laboratoire Jacques-Louis Lions, in May.
- M. Bossy has been invited to give a seminar talk at the Rencontre Niçoise de Mécanique des Fluides, at the Observatoire de la Côte d'Azur in Nice, June
- M. Bossy has been invited to give a talk at the symposium *SDE approximation* at the International Conference on Monte Carlo techniques, In Paris, July.
- N. Champagnat has been invited to give talks at the conference *Stochastic PDE's, Large Scale Interacting Systems and Applications to Biology* in Orsay in March, to the CMO-BIRS workshop *Stochastic and Deterministic Models for Evolutionary Biology* in Oaxaca, Mexico, in August and at the conference *Probabilistic structures in deterministic population genetics* in Vienna in November.
- N. Champagnat has been invited to give seminar talks at *TOSCA seminar* in Inria Sophia Antipolis in April, at the *MAPMO probability seminar* in October and at the seminar *Méthodes probabilistes et statistiques en dynamique des populations* in Grenoble in December.
- N. Champagnat has been invited to give a lecture at the CIMPA School *Mathématiques pour la Biologie* (4h) in Tunis in October.
- M. Deaconu was invited to give a talk at the *Colloque Franco Roumain de Mathématiques Appliquées*, Iași (Romania) in August 2016.
- C. Fritsch has been invited to give talks at the *Workshop on "Approche Interdisciplinaire en Evolution"* in Saint-Martin-de-Londres in December.
- A. Lejay has been invited to give talk at the *Workshop on Numerical Schemes of SDE and SPDE* in Lille in June 2016, and at the *International Conference on Monte Carlo techniques* in Paris in July 2016.
- A. Lejay has been invited to give a seminar talk at the Université de Reims in February 2016.
- P. Pigato gave talks at the Probability Seminar of Luxembourg University, in January, at the Seminar of TOSCA-Sophia Antipolis, in February, at the Seminar of CIMFAV (Valparaíso) in March, at the Journées de Probabilités 2016, in May, at the Probability Seminar of Università degli studi di Padova, in June, and at the London-Paris Bachelier Workshop on Mathematical Finance in September.
- A. Richard gave seminar talks at the LPMA (Paris 6) Probability seminar and the IMT (Toulouse) probability seminar in February, at the Groupe de Travail on stochastic models in finance at Ecole Polytechnique and at the Barcelona probability seminar in April.
- A. Richard had an accepted talk at ICMNS 2016.

- D. Talay gave a lecture at the Mean-field and population-level descriptions of brain dynamics Meeting in February at the EITN, Paris, the opening lecture at the conference in V. Konokov's honor in Moscow in June, a mini-course at Lille University in June, and an invited lecture at the Workshop on the Numerics for Stochastic Partial Differential Equations and their Applications at RICAM, Linz (Austria) in December.
- E. Tanré gave talks at LPMA (Paris 6) and at the workshop on Numerical schemes for SDEs and SPDEs in Lille in June.
- D. Villemonais has been invited to give talks at the workshop *Stochastic processes under constraints* in July in Augsburg, Germany, at the conference *Colloque franco-roumain de mathématiques* in August in Iași, Romania, and at the *School on Information and Randomness* in December in Santiago, Chile.
- D. Villemonais has been invited to give seminar talks at *Institut Montpellierain Alexander Grothendieck* in February, at the *Institut de Recherche Mathématique Avancée* in Strasbourg in November, and at the *Modal'X seminar* in Nanterre in December.

9.1.6. Leadership within the Scientific Community

- A. Lejay is the head of the Probability and Statistics team of the Institut Élie Cartan since September 2016.
- A. Lejay was a member of the Administration Council of the SMAI until June 2016.
- D. Talay continued to chair the Scientific Council of the French Applied Math. Society SMAI.
- D. Talay served as a member of the scientific council of the Complex System academy of the UCA Idex.
- D. Talay is serving as a member of the committee in charge of preparing the application of Paris to the International Congress of Mathematicians 2022.

9.1.7. Scientific Expertise

- N. Champagnat reported on an application submitted to CONICYT (Chilean Funding Agency).
- M. Deaconu has been a member of the Committee for junior permanent research positions of Inria Nancy - Grand Est.
- A. Lejay reported on applications to National Science Centre of Poland.
- A. Lejay participated in a Professor position recruitment committee at Université de Lorraine.

9.1.8. Research Administration

- M. Bossy is an elected member of the Inria Evaluation Board.
- M. Bossy has been a member of the DTK-Committee.
- N. Champagnat is a member of the *Commission de Développement Technologique* and the *Commission Information Scientifique et Technique* of Inria Nancy - Grand Est, a substitute member of the *Comité de Centre* of Inria Nancy - Grand Est (until Nov. 2016), *Responsable Scientifique* for the library of Mathematics of the IECL, member of the *Conseil du laboratoire* of IECL (as *responsable scientifique* of the library). He is also local correspondent of the COERLE (*Comité Opérationnel d'Évaluation des Risques Légaux et Éthiques*) for the Inria Research Center of Nancy - Grand Est. This year, together with Aline Wagner (Inria Nancy - Grand Est), he finished to write the new version of the application form for research approval by the COERLE.
- M. Deaconu is a member of the *Bureau du Comité de Projets* of Inria Nancy - Grand Est, and of the *Comité de Projet* of Inria Nancy - Grand Est.
- A. Lejay is a member of the COMIPERS of Inria Nancy Grand-Est and of *Commission des thèses* of the Institut Élie Cartan (Nancy).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: M. Bossy, *Continuous time stochastic models for quantitative Finance*, 30h, M2 IMAFA (Informatique et Mathématiques Appliquées à la Finance et à l'Assurance), École Polytechnique Universitaire, Univ. Nice - Sophia Antipolis, France.

Master : M. Bossy, *Risk on energetic financial markets*, 27h, Master Spécialisé, Ingénierie et Gestion de l'Énergie, Mine ParisTech, France.

Master : M. Bossy *Stochastic Particle Methods for PDEs*, 18h, M2 Probabilité et Applications, Université Pierre et Marie Curie, France.

PhD-level lectures : M. Bossy *McKean SDEs and related stochastic methods for PDEs*, 18h, University of Edinburgh (UK).

PhD-level lectures : M. Bossy *Stochastic numerical methods for turbulence*, Winter school Numerics for Stochastic Partial Differential Equations and their Applications, 10h, at RICAM - University of Linz.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 18h, M1, École des Mines de Nancy, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 13.5h, M2, École des Mines de Nancy, France.

Master: N. Champagnat, *Chaînes de Markov*, 22.5h, M2 “double diplôme” Mathématiques et Applications - École Supérieure des Sciences et de Technologie de Hammam Sousse, Tunisie (lieu des cours) - Université de Lorraine, France.

Master: M. Deaconu, *Équations différentielles stochastiques : résolution numérique et applications*, 21h, M2, École des Mines de Nancy, France.

Master: M. Deaconu, *Modélisation stochastique*, 30h, M2, Université de Lorraine, France.

Master: M. Deaconu, *Simulation Monte Carlo*, 24h, M1, Faculté de Droit, Sciences Economiques et Gestion, Université de Lorraine, France.

Master: C. Fritsch, *Introduction à la finance quantitative*, 3h, M1, École des Mines de Nancy, France.

Licence: C. Fritsch, *Décision et Prévision Statistiques*, 20h, L3, École des Mines de Nancy, France.

Licence: C. Fritsch, *Supervision d'un projet de recherche*, 6h, M2, École des Mines de Nancy, France.

Licence: B. Henry, *Statistiques*, 20h, L3, École des Mines de Nancy, France.

Licence: B. Henry, *Probabilités*, 36h, L3, École des Mines de Nancy, France.

Master: A. Lejay, *Simulation des marchés financiers*, 28.5h, M2, Université de Lorraine (Metz), France.

Master: P. Pigato, *Calcul Intégral*, 15h, M1, Université de Lorraine (Nancy), France.

Licence: K. Salhi, *Mathématiques Appliquées et Probabilités*, 24h, L3, Télécom Nancy, France.

Master: K. Salhi, *Statistiques et analyse de données*, 20h, M1, Télécom Nancy, France.

Master: K. Salhi, *Probabilités et Statistiques*, 20h, M1, ENSEM Nancy, France.

Master: D. Talay *Invariant measures of diffusion processes*, 18h, M2 Probabilité et Applications, Université Paris 6, France.

Master: E. Tanré (courses) and M. Tomasevic (exercices), *Advanced Numerics for Computational Finance*, 30h (20h + 10h), M2, UCA (Mathmods Erasmus Mundus), France.

Master: E. Tanré, *Mathematical Methods for Neurosciences*, 37h, M2, ENS - Master MVA / Paris 6 - Master Maths-Bio, France.

Master: E.Tanré (courses) and A. Richard (practical classes) *Numerical probability for mathematical finance*, 20h (8h + 12h), M2, EPU (Master IMAFA), France.

9.2.2. Supervision

PhD: Maxime Bonelli, *Behavioral finance approach to risk assessment in quantitative portfolio management*, Univ. Nice Sophia Antipolis, September 2016, M. Bossy.

PhD : Benoît Henry, *Processus de branchements non markoviens en dynamique et génétique des populations*, Univ. Lorraine, 17/11/2016, Nicolas Champagnat, D. Ritchie (EPI CAPSID).

PhD : Khaled Salhi, *Risques extrêmes en finance : analyse et modélisation*, Univ. Lorraine, 05/12/2016, M. Deaconu and A. Lejay.

PhD in progress: Antoine Brault, *Formules de Trotter-Kato pour les trajectoires rugueuses*, Université Toulouse 3, L. Coutin (U. Toulouse 3), A. Lejay.

PhD in progress: Baldwin Dumortier, *Contrôle acoustique des éoliennes*, October 2014, M. Deaconu and E. Vincent (EPI MULTISPEECH).

PhD in progress: Pascal Helson, *Plasticity in networks of spiking neurons in interaction*, October 2016, E. Tanré and R. Veltz (MATHNEURO Inria team).

PhD in progress: Kouadio Jean Claude Kouaho, *Modélisations stochastique et déterministe de croissance de tumeurs cancéreuses*, Mar. 2016, N. Champagnat, Pierre Vallois (EPI BIGS, Modest N’Zi (UFHB, Abidjan).

PhD in progress: Radu Maftai, *A stochastic approach to colloidal particle agglomeration in turbulent flows*, November 2014, M. Bossy.

PhD in progress: Hernán Mardones, *Numerical solutions of stochastic differential equations with multiplicative noise*, Universidad de Concepción, A. Lejay, C. Mora (U. Concepción).

PhD in progress: Milica Tomasevic, *Stochastic approaches to Keller–Segel equations*, October 2015, D. Talay.

9.2.3. Juries

- M. Bossy served as a referee for the Ph.D. theses of Anthony LE CAVIL, *Représentation probabiliste de type progressif d’EDP nonlinéaires nonconservatives et algorithmes particulières associés*, Université Paris Saclay, December 9, 2016.
- M. Bossy served as an examiner for the Ph.D. thesis of Ahmed MTIRAOUI , *EDS Progressives Rétrogrades couplées contrôlées, EDDS Rétrogrades et EDP Stochastiques*. Université de Toulon, November the 25th, 2016.
- N. Champagnat served as a referee for the Ph.D. theses of Elma Nessar, *Modèles probabilistes de l’évolution d’une population dans un environnement variable*, Univ. Aix-Marseille, July 4, 2016, and of Joseba Dalmau, *La quasi-espèce pour une population finie*, Univ. Orsay, November 25, 2016.
- N. Champagnat served as an examiner for the Ph.D. thesis of Lucas Mercier, *Grands graphes et grand arbres aléatoires : Analyse du comportement asymptotique*, Univ. Lorraine, May 11, 2016, and of Benoît Henry, *Processus de branchements non markoviens en dynamique et génétique des populations*, Univ. Lorraine, November 17, 2016.
- A. Lejay served as a referee for the Ph.D. theses of Sarav Mazzone, *On the exact simulation of (Skew) Brownian Diffusions with Discontinuous Drift*, Potsdam Universität / Université Lille 1, November 2016, of Anis Al Gerbi, *Ninomiya-Victoir scheme: strong convergence, asymptotics for the normalized error and multilevel Monte Carlo methods*, Université Paris-Est, October 2016, and of Joseph El Maalouf, *Méthodes de Monte Carlo stratifiées pour la simulation des chaînes de Markov*, Université de Grenoble / Université Saint Joseph de Beyrouth, December 2016.
- A. Lejay served as an examiner for the Habilitation Thesis of Pierre Étoré, *Quelques contributions à l’étude et à la simulation des diffusions asymétriques*, Université de Grenoble, December 2016.

- M. Deaconu and A. Lejay served as examiners for the Ph.D. thesis of Khaled Salhi, *Risques extrêmes en finance : analyse et modélisation*, Université de Lorraine, December 2016.
- D. Talay chaired the Ph.D. thesis jury of Ahmed Mtiraoui, *Equations différentielles stochastique rétrogrades progressives et leurs applications aux théories de contrôles*, Université de Toulon.
- D. Talay served as a referee for the Ph.D. theses of Daoud Ounaissi, *Méthodes Quasi Monte-Carlo et Monte-Carlo applications aux calculs des estimateurs Lasso et Lasso bayésien*, université de Lille I; and of Ahmed Bel Hadj Ayed *Robustesse de la stratégie de trading optimale*, École Centrale Paris;
- D. Talay chaired the Habilitation à Diriger les Recherches juries of Christophette Blanchet-Scalliet, *Contribution à l'analyse des risques financiers : risque de crédit, asymétrie d'information, analyse chartiste*, École Centrale de Lyon, and of Pierre Étoré, *Quelques contributions à l'étude et à la simulation des diffusions asymétriques*, INP Grenoble.

9.3. Popularization

- D. Talay participated in a scientific France Culture radio program in December.

BIGS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

- BIGS team has organised a two-days workshop "Rencontres des équipes Inria travaillant sur le cancer" in Paris. 10 inria teams were present. <https://team.inria.fr/bigs/workshopcancer/>
- A. Gégout-Petit co-organised the "Health Session" of the day Fédération Charles Hermite- Entreprises, Nancy, January 2016.
- Céline Lacaux participated to the organisation of the following events:
 - European Study Group with Industry, 117th edition, May 2016, Avignon.
 - Session *Statistics* of the 14th Colloque Franco-Roumain de Mathématiques Appliquées, August 2016, Iasi.
 - Conference of GDR 3475 Analyse Multifractale, September 2016, Avignon.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- A. Gégout-Petit is chair of 2017 "Congrès Francophone International de l'Enseignement de la Statistique" (CFIES), Grenoble, September, 2017.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

P. Vallois is in the editorial board of "Risk and Decision Analysis".

10.1.3.2. Reviewer - Reviewing Activities

All the BIGS members are regular reviewers for journals in probability, statistics and machine learning as: Bernoulli, Scandinavian Journal of statistics, Stochastics, Journal of Statistical Planning Inference, Journal of theoretical Biology, IEEE Trans. Biomedical Eng., Theoretical Biology and Medical Modelling, Royal Society of Chemistry, Signal Processing: Image Communication, Mathematical Biosciences, LIDA, Annals of Applied Probability, Annals of Operations Research and Journal of Machine Learning Research, as well as conferences such as ICML, World IFAC Congress, FOSBE, ALCOSP...

10.1.4. Invited Talks

- Anne Gégout-Petit was invited in SADA'2016 conference in Cotonou. [20]
- Bruno Scherrer was an invited speaker in EWRL'2016 workshop in Barcelona.
- Thierry Bastogne was invited the 19 October 2015 by Pr. Luc Leyns at the Vrije Universities Brussels for a talk on the *Statistical Analysis of Cell Impedance Signals for the Characterization of Anti-Cancer Drug Effects*.
- Romain Azaïs was an invited speaker in SSIAB 2016 in Rennes.
- S. Ferrigno : *Nouvelles approches d'estimation de la croissance en Foetopathologie*. Journée "Nouvelle approche de la croissance foetale", Maternité Régionale du CHRU de Nancy (Sept 2016).

10.1.5. Leadership within the Scientific Community

- Anne Gégout-Petit is member of the board of the European Regional Council of the Bernoulli society

- Céline Lacaux is responsible of the *Statistic team*, Laboratory of Mathematic of Avignon (since September 2016)

10.1.6. Scientific Expertise

- T. Bastogne: scientific expert in Biostatistics and Signal Processing in Nanomedicine for CYBER-nano (start-up).

10.1.7. Research Administration

- A. Gégout-Petit: elected member of the laboratory of mathematics "Institut Elie Cartan de Lorraine".
- Céline Lacaux is
 - member of the board of the SMAI-MAS group,
 - elected member of the council of the Laboratory Mathematics of Avignon,
 - correspondent AMIES pour Avignon,
 - Member of the scientific committee of GDR 3477 Stochastic Geometry.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- A. Gégout-Petit : Head of the Master 2 "Ingénierie Mathématique et Outils Informatiques (Mathematical Engineering and Computer Tools)", Université de Lorraine
- A. Gégout-Petit created and is now in charge of cursus CMI in applied mathematics for Lorraine University
- P. Vallois is head of the "Parcours Mathématiques Financières" of the master "Applied mathematics" of Université de Lorraine
- P. Vallois is head of the convention between "Université de Lorraine and Université Hammam Sousse" about master organization. Master ISC (Ingénierie de Systèmes Complexes)
- T. Bastogne is in charge of the spécialité Systèmes & TIC du master Ingénierie de Systèmes Complexes
- T. Bastogne created and is now in charge of professional master: CIIBLE (Cybernétique, Instrumentation, Image en Biologie et medecinE) en M2 with Medicine Faculty of Université de Lorraine
- T. Bastogne created and is now in charge research master << Biosanté Numérique >> with engineering school "Telecom Nancy"
- Master: S. Ferrigno, Experimental designs, 4.5h, M1, fourth year of EEIGM, Université de Lorraine, France
- Master: S. Ferrigno, Data analyzing and mining, 63h, M2, third year of Ecole des Mines, Université de Lorraine, France
- Master: S.Ferrigno, Modeling and forecasting, 43h, M1, second year of Ecole des Mines, Université de Lorraine, France
- Master: S.Ferrigno, Training projects, 18h, M1/M2, second and third year of Ecole des Mines, Université de Lorraine, France
- Master: A. Muller-Gueudin, Probability and Statistics, 160h, second year of ENSEM and ENSAIA, University of Lorraine, France.
- Master: A. Muller-Gueudin, Scientific calculation with Matlab, 20h, second year of ENSAIA, University of Lorraine, France.
- Master: R. Azaïs, Machine learning, 20h, M2, Université de Lorraine and third year of Telecom Nancy, France.

- Master: R. Azaïs, Machine learning, 20h, M1, second year of Ecole des Mines, Université de Lorraine, France.
- Master: J.-M. Monnez, Multivariate Analysis, Master 2 IFM (Ingénierie de la Finance de Marché), until June 2016.
- Master: A.Gégout-Petit, Statistics, modeling, 15h, future teacher, Université de Lorraine, France
- Master: A.Gégout-Petit, Statistics, modeling, data analysis, 80h, master in applied mathematics, Université de Lorraine, France
- Licence: S. Wantz-Mézières, Applied mathematics for management, financial mathematics, Probability and Statistics, 160h, I.U.T. (L1/L2/L3)
- Licence: S. Wantz-Mézières, Probability, 100h, first year in Telecom Nancy engineering school (initial and apprenticeship cursus)
- Master: J.-M. Monnez, Data Analysis, Statistical Learning, Master 2 IMOI (Ingénierie Mathématique et Outils Informatiques), until June 2016.
- Licence: A. Muller-Gueudin, Statistics, 60h, first year of ENSAIA, University of Lorraine, France.
- Licence: S. Ferrigno, Descriptive and inferential statistics, 60h, L2, second year of EEIGM, Université de Lorraine, France
- Licence: S. Ferrigno, Statistical modeling, 60h, L2, second year of EEIGM, Université de Lorraine, France
- Licence: S. Ferrigno, Mathematical and computational tools, 20h, L3, third year of EEIGM, Université de Lorraine, France
- Licence: S. Ferrigno, Training projects, 20h, L1/L3, first, second and third year of EEIGM, Université de Lorraine, France
- Licence: C. Lacaux: Probability and Statistic, 75h, L3, University of Avignon.
- Licence: C. Lacaux: Numerical simulation in probability, 36.75h, L3, University of Avignon.
- Licence: C. Lacaux: Probability and Statistics, 22.5h, L1, University of Avignon.
- Licence: C. Lacaux: Statistic techniques applied to SVT, 25.5h, L3, University of Avignon.
- Licence: C. Lacaux: Statistics, 24h, L2, University of Avignon.

10.2.2. Supervision

- PhD : Clémence Karmann, " Network inference for zero-inflated models", Grant : Inria-Cordis. Advisors: A. Gégout-Petit, A. Muller-Gueudin.
- PhD : Florine Gréciet, " Modèles markoviens déterministes par morceaux cachés pour la propagation de fissures", grant CIFRE SAFRAN AIRCRAFT ENGINES, Advisors : R. Azaïs, A. Gégout-Petit.
- PhD : Kévin Duarte, "Aide à la décision médicale et télémédecine dans le suivi de l'insuffisance cardiaque", Advisors : J.-M. Monnez and E. Albuissou.
- PhD : P. Retif. Modeling, digital simulation and analysis of nanoparticles-X ray interaction. Applications to augmented radiotherapy. Theses, Université de Lorraine, Mar. 2016.
- Post-doc: Florian Bouguet. Advisors: Romain Azaïs, Anne Gégout-Petit, Aurélie Muller-Gueudin.
- Post-doc: Benoît Henry (starting in Dec. 2016). Advisors: Romain Azaïs with Inria team Madynes.
- Master: Yaojie Shi, Toulouse School of economics, 2016. « Analyse de données transcriptomiques et protéomiques en oncologie », Advisors: A. Gégout-Petit, A. Muller-Gueudin, B. Bastien (Société Transgene, Strasbourg).
- Master: Yuyan Cao, Toulouse School of economics, 2016. " Spatio-temporal Bayesian models for the analysis of esca disease", with Inra Bordeaux. Advisor: A. Gégout-Petit, L. Guérin-Dubrana.

- Master: Félicie Bonte, Master Ecologie Ecologie Lille, AgroParistech Nancy et Museum National d'Histoire Naturelle 2016. « Etude des modifications de la croissance et du développement des plantes herbacées en forêt en réponse aux changements globaux », co-direction AgroParistech Nancy. Advisors: A. Gégout-Petit, Jean-Claude Gégout, Serge Muller.
- Master: all BIGS members regularly supervise project and internship of master IMOI students
- Engineering school: all BIGS members regularly supervise project of "Ecole des Mines ", ENSEM or EEIGM students

10.2.3. Juries

- HDR, Bruno Scherrer, "Contributions algorithmiques au contrôle optimal stochastique à temps discret et horizon infini", Université de Lorraine, July, 2016, Examiner, A. Gégout-Petit
- HDR, Corine Hahn, "Penser la question didactique pour la formation en alternance dans l'enseignement supérieur. Dispositifs frontières, Statistique et Management." Université Lyon 2, May, 2016, Examiner, A. Gégout-Petit
- PhD, Florian Bouguet, "Etude quantitative de processus de Markov déterministes par morceaux issus de la modélisation", Université de Rennes, June, 2016, Referee: A. Gégout-Petit
- PhD, Houda Ghamlouch, "Modélisation de la dégradation, maintenance conditionnelle et pronostic : usage des processus de diffusion", Université Technologique de Troyes, June, 2016, Referee: A. Gégout-Petit
- PhD, Etienne Baratchart, "Etude quantitative des aspects dynamiques et spatiaux du développement métastatique à l'aide de modèles mathématiques", Université de Bordeaux, February, 2016, Referee: A. Gégout-Petit
- PhD, Johann Cuenin, Sur les modèles Tweedie multivariés, Université de Besancon, December, Examiner: A. Gégout-Petit
- PhD : Clémence Chamard-Jovenin, Impact d'une surexpression d'ER α 36 et/ou d'une exposition aux alkylphénols sur la physiopathologie de la glande mammaire, Université de Lorraine, 9 décembre 2016. Examiner : A. Muller-Gueudin.
- PhD : M. Ben Abdallah, Université de Lorraine, "Un modèle de l'évolution des gliomes diffus de bas grade sous chimiothérapie", December, 12, 2016, jury member: S. Wantz-Mézières.
- PhD : Marc Bourotte, Générateur stochastique de temps multisite basé sur un champ gaussien multivarié, INRA, Équipe BioSP, July, 4th, 2016, President : C. Lacaux.
- PhD : Nhu Dang, Estimation des indices de stabilité et d'autosimilarité par variations de puissances négatives, Laboratoire Jean Kuntzmann Grenoble, July, 5th, 2016, Examiner : C. Lacaux.

10.3. Popularization

- A. Gégout-Petit is involved in the promotion of study in the fields of mathematics in Lorraine university. She was very active in the realisation of the video for the promotion of Mathematical studies <http://videos.univ-lorraine.fr/index.php?act=view&id=3236>.
- A. Gégout-Petit participates to the "Table ronde Bourse aux technologues, Big data et industrie du futur", Ecole des Mines de Nancy, November, 2016.
- Animation d'ateliers MATH.en.JEANS en collège dans la région de Nancy (Romain Azaïs, Clémence Karmann)
- S. Ferrigno: Advisor of a group of students, "La main à la Pâte" project, elementary schools, Nancy, January-June 2016
- S. Ferrigno: Advisor of a group of students, "La main à la Pâte" project, Institut médico-éducatif (IME), Commercy, September-December 2016
- S. Ferrigno: Advisor of a group of students, "De Léonard de Vinci au Drone" project, Collège Paul Verlaine, Malzéville, December 2016-February 2017.

CAPSID Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Marie-Dominique Devignes is a member of the Steering Committee for the European Conference on Computational Biology (ECCB).

David Ritchie is a member of the Bureau of the GGMM (Groupe de Graphisme et Modélisation Moléculaire).

Marie-Dominique Devignes organised a workshop (“Atelier Santé”) for the Fédération Charles Hermite (“Journée Entreprises”, 21/01/2016).

9.1.1.2. Member of Organizing Committees

Marie-Dominique Devignes co-organised a workshop on Structural Modeling of Type IV Secretion Systems (PEPS workshop “Model-ICE”, 13/12/2016).

9.1.2. Scientific Events Selection

9.1.2.1. Member of Conference Program Committees

Marie-Dominique Devignes was a member of the programme committee for KDIR-2016, ECCB-2016, and BIBM-2016.

9.1.2.2. Reviewer

David Ritchie was a reviewer for IJCAI-2016.

Marie-Dominique Devignes reviewed grant applications for the Medical Research Council (UK) and National Science Centre (Poland).

9.1.3. Journal

9.1.3.1. Member of Editorial Boards

David Ritchie is a member of the editorial board of Scientific Reports.

9.1.3.2. Reviewing Activities

The members of the team have reviewed manuscripts for *Algorithms for Molecular Biology, Bioinformatics, Current Opinion in Structural Biology, Journal of Biomedical Semantics, Journal of Computational Chemistry, Journal of Chemical Information and Modeling, Journal of Molecular Recognition*, and *Proteins: Structure, Function & Bioinformatics*.

9.1.4. Invited Talks

David Ritchie gave a presentation at the *6th CAPRI Evaluation Meeting* in Tel Aviv.

9.1.5. Research Administration

Marie-Dominique Devignes is Chargée de Mission for the CyberBioHealth research axis at the LORIA and is a member of the “Comipers” recruitment committee for Inria Nancy – Grand Est.

David Ritchie is a member of the Commission de Mention Informatique (CMI) of the University of Lorraine’s IAEM doctoral school, and is a member of the Bureau of the Project Committee for Inria Nancy – Grand Est.

Marie-Dominique Devignes was a member of the “Commission de spécialistes” for the recruitment of an associate professor in computer science at Telecom Nancy, Université de Lorraine, April-May 2016.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Sabeur Aridhi, *Programming Techniques and Tools*, 24 hours, L1, Telecom Nancy, Univ. Lorraine.

Licence: Sabeur Aridhi, *Big Data Hackathon*, 4 hours, L3, Telecom Nancy, Univ. Lorraine.

Licence: Marie-Dominique Devignes, *Relational Database Design and SQL*, 30 hours, L3, Telecom Nancy, Univ. Lorraine.

Master: Marie-Dominique Devignes, *Gene Discovery in Biological Databases*, 8 hours, M1, Univ. Lorraine.

9.2.2. Supervision

PhD in progress: Maria Elisa Ruiz Echartea, *Multi-component protein assembly using distance constraints*, 01/11/2016, David Ritchie.

PhD in progress: Gabin Personeni, *Exploration of linked open data in view of knowledge discovery. Application to the biomedical domain*, 01/10/2014, Marie-Dominique Devignes, Adrien Coulet.

PhD in progress: Seyed Ziaeddin Alborzi, *Large-scale exploration of 3D protein domain family binding sites*, 01/10/2014, David Ritchie, Marie-Dominique Devignes.

9.2.3. Juries

HDR: Olivier Dameron, *Ontology-based methods for analysing life science data*, Université de Rennes, 11/01/2016.

PhD: Minh-Son Phan, *Contribution à l'estimation de la similarité dans un ensemble de projections tomographiques non-orientées*, Université de Strasbourg, 07/10/2016, Pr Mohamed Tajine, Dr Étienne Baudrier, Dr Loïc Mazo.

PhD: Yassine Ghouzam, *Nouvelles approches pour l'analyse et la prédiction de la structure tridimensionnelle des protéines*, Université Paris 7, 18/10/2016, Dr Jean-Christophe Gelly.

PhD: Benoît Henry, *Probability theory applied to evolutionary biology*, Université de Lorraine, 17/11/2016, Dr Nicolas Champagnat, Dr David Ritchie.

PhD: Yoann Dufresne, *Algorithmique pour l'annotation automatique de peptides non ribosomiques*, Université de Lille, 01/12/2016, Pr Maude Pupin, Dr Laurent Noé.

9.3. Popularization

An article on our KBDOCK resource for studying protein-protein interactions was published in ERCIM News (edition 104, January 2016) [22].

The team made a presentation at the public "Cité Forum" in Nancy (01-02 Apr 2016).

MIMESIS Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Selection

8.1.1.1. Chair of Conference Program Committees

- Igor Peterlik was chair in the Workshop on Mathematical and Engineering Methods in Computer Science, October 21 — 23, Telc, Czech Republic
- Nazim Haouchine was a co-chair of the Medical Robotics session at IROS 2016, the International Conference on Intelligent Robots and Systems

8.1.1.2. Reviewer

- Hadrien Courtecuisse made reviews for the IEEE Haptics Symposium and the conference Medical and Biological Engineering and Computing
- Nazim Haouchine made reviews for the International Symposium on Biomedical Imaging

8.1.2. Journal

8.1.2.1. Reviewer - Reviewing Activities

- David Cazier is reviewer for the Computer-Aided Design Journal and for the International Journal of Virtual Reality
- Igor Peterlik is reviewer for the following journals: IEEE Transaction on Haptics, IEEE Transaction on Industrial Electronics, IEEE Transaction on Visualization and Computer Graphics and Computer and Graphics
- Hadrien Courtecuisse is reviewer for the journal Transactions on Haptics and Visual Computer
- Nazim Haouchine made reviews for the International Journal of Computer Assisted Radiology and Surgery

8.1.3. Invited Talks

- Stéphane Cotin gave an invited talk at the 14th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (Tel Aviv, Israel, 2016)

8.1.4. Scientific Expertise

- Igor Peterlik made scientific expertises at Masaryk University for teaching, supervision of master and Ph.D. students and scientific consultations. Active participation at project funded by Grand Agency of the Czech Republic: *Development of Reliable Methods for Automated Quantitative Characterization of Cell Motility in Fluorescence Microscopy*.

8.1.5. Research Administration

- GTAS : David Cazier heads (with Marc Parenthoen) the national Workgroup on Animation and Simulation of the GDR IG-RV since 2014

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master: Stéphane Cotin, *Medical Imaging (4h)*, M2, Arts et Métiers ParisTech - Paris, France
- Master: Stéphane Cotin, *Medical Imaging (4h)*, M2, Master of Surgical Sciences - Paris, France

- Master: Igor Peterlik, *Modélisation des Systèmes Vivants (10h)*, M2, Master TIC-Santé, Télécom Physique Strasbourg
- Master: Hadrien Courtecuisse, *Real time simulation (30h)*, M2, Master TIC-Santé, Télécom Physique Strasbourg
- Master: Hadrien Courtecuisse, *Real time simulation (10h)*, M1, Master IRMC, Télécom Physique Strasbourg
- Licence: David Cazier, *Web technologies and programming (96h)*, Licence, Université de Strasbourg, France

8.2.2. Supervision

- PhD : Rosalie Plantefeve, *Augmented reality and numerical simulations for resection of hepatic tumors*, Université de Lille, defended on 08/06/2016, supervised by Stéphane Cotin
- PhD in progress: Christoph Paulus, *Modélisation et simulation temps-réel pour la prise en compte des changements topologiques dans les tissus mous*, 01/01/2014, supervised by David Cazier, Stéphane Cotin
- PhD in progress: Jaime Garcia Guevara, *Augmented ultrasound imaging for hepatic surgery*, 01/09/2015, supervised by Stéphane Cotin, Marie-Odile Berger
- PhD in progress: Raffaella Trivisonne, *Computer-aided vascular interventions*, 01/09/2015, Stéphane Cotin, Erwan Kerrien
- PhD in progress: Yinoussa Adagolodjo, *Coupling between robotics and medical simulation for automated procedures*, 01/02/2015, supervised by Hadrien Courtecuisse
- PhD in progress: Fanny Morin, *Non linear simulation for intraoperative guidance for neurosurgery*, 01/10/2014, supervised by Yohan Payan, Matthieu Chabanas, Hadrien Courtecuisse (collaboration with the TIMC laboratory, Grenoble)
- PhD in progress: Lukas Rucka, *Validation and verification of soft tissue models*, 2016 - 2019, supervised by Igor Peterlik and Professor Ludek Matyska in the scope of an international collaboration with Faculty of Informatics, Masaryk University, Czech Republic.
- Master thesis in progress: Petra Ondrejko, *Contact modeling for forward and inverse simulations of deformable objects in Matlab*, 01/09/2016 - 31/07/2017, supervised by Igor Peterlik and Prof. Ludek Matyska in the scope of an international collaboration with Faculty of Informatics, Masaryk University, Czech Republic.

8.2.3. Juries

- HdR defense: Benoit Crespin, *Modélisation d'objets complexes, simulation de fluides et interactions*, 14/12/2016, Université de Limoges, David Cazier (reviewer)
- PhD defense: Armelle Bauer, *Modélisation anatomique utilisateur spécifique et animation temps réel : Application à l'apprentissage de l'anatomie*, 11/11/2016, Université Grenoble, Stéphane Cotin (reviewer)
- PhD defense: Yuen Law, *Real-Time Simulation of B-Mode Ultrasound Images for Medical Training*, 23/11/2016, RWTH Aachen, Germany, Stéphane Cotin (reviewer)
- PhD defense: Lucas Royer, *Real-time Tracking of Deformable Targets in 3D Ultrasound Sequences*, 12/12/2016, INSA Rennes, France, Stéphane Cotin (reviewer)

8.3. Popularization

Stéphane cotin gave invited talks at:

- the Fist European workshop on Nanomedicine, Modeling, Virtual Reality and Robotics applied to surgery (Strasbourg, 2016)
- the Business Engineering and Surgical Technologies symposium (Strasbourg, 2016)
- the OpenYourMind seminar (Paris, 2016)
- IHU Scientific meeting on registration and augmented reality (Strasbourg)

Members of the MIMESIS team contributed to the following events:

- presentation of our research activities during several IHU fellow meetings
- demonstration of our prototype of retina surgery training system during the national congress of ophthalmology (May 2016, Paris)
- demonstration of our prototype of retina surgery training system during the DMLA meeting (September 2016, Paris)
- demonstration of our prototype of retina surgery training system during the regional ophthalmology meeting (November 2016, Strasbourg)

NEUROSYS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. Member of the Organizing Committees

- Member of the organization committee of the second OpenViBE workshop as a satellite event of the Brain-Computer Interfaces meeting, May 30th 2016, Asilomar, CA/USA (L. Bougrain) <http://openvibe.inria.fr/the-2nd-international-openvibe-workshop-2016-contents/>
- Member of the organization committee of the iPAC séminar (Image, Perception, Action et Cognition) (L. Buhry)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- French conference on machine learning CAP 2016 (L. Bougrain)
- IEEE International Conference on Systems, Man, and Cybernetics (SMC) special sessions on Brain-Machine Interfaces, Budapest, 2016 (L. Bougrain)

10.1.2.2. Reviewer

- Brain-Computer Interfaces meeting 2016 (L. Bougrain)
- IEEE International Conference on Systems, Man, and Cybernetics (SMC) special sessions on Brain-Machine Interfaces, Budapest, 2016 (L. Bougrain)
- French conference on machine learning CAP 2016 (L. Bougrain)
- IEEE International Conference on Acoustic, Speech and Signal Processing - ICASSP, 2016 (T. Tošić)
- IEEE International Conference on Image Processing - ICIP, 2016. (T. Tošić)
- International Conference on Artificial Neural Networks (M. Fedotenkova)

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- L. Buhry is a reviewer for Journal of Computational Neuroscience, Frontiers in Computational Neuroscience, Journal of Neural Engineering, IEEE TNN (Transactions on Neural Networks), Neurocomputing, CCSP (Circuits, Sys. & Signal Proc.), IEEE international NEWCAS, Hippocampus
- T. Tošić is a reviewer for IEEE Transactions on Signal Processing (TSP), ACM Transactions on Sensor Networks (TOSN), Signal Processing : Image Communication

10.1.4. Invited Talks

- Active brain-computer interfaces and motor handicap compensation, IFRATH (Institut Fédératif de Recherche sur les Aides Techniques pour personnes Handicapées) and ITMO “Neurosciences, Sciences Cognitives, Neurologie, Psychiatrie”, feb. 4th 2017, INJS Paris (L. Bougrain)
- An introduction to OpenViBE, OpenViBE workshop, satellite event of the Brain-Computer Interfaces meeting, May 30th 2016, Asilomar, CA/USA (L. Bougrain) <http://openvibe.inria.fr/the-2nd-international-openvibe-workshop-2016-contents/>

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Engineering school: L. Bougrain, *Interfaces cerveau-ordinateur*, 4.5h, 3rd year, Supélec, France
- Engineering school: T. Tošić, *Atelier Artem (Art-Technologie-Management)* : ABCDWeb, 30h, 2nd year, ICN, Ecole d'art et design, École des Mines Nancy, France
- Engineering school: T. Tošić, *Parcours de recherche et Initiation à la recherche*, 11h, 2nd and 3rd year, Telecom Nancy and École des Mines Nancy, France
- Engineering school: T. Tošić, *Apprentissage automatique - Modélisation avancée des connaissances*, 58h, 3rd year, École des Mines Nancy, France
- Engineering school: T. Tošić, *Tronc Commun d'Informatique - Python*, 140h, 1st year, École des Mines Nancy, France
- Engineering school: T. Tošić, *Techniques et Solutions Informatiques*, 47h, 2nd year, École des Mines Nancy, France
- Engineering school: T. Tošić, *Pépites Algorithmiques*, 18h, 1st year, École des Mines, France
- Engineering school: T. Tošić, *Passerelle au Numérique*, 28h, 1st year, École des Mines, France
- Engineering school: T. Tošić, *Model Driven Architecture and UML*, 21h, 2nd year, École des Mines, France
- Engineering School: F. Giovannini, *Intelligence artificielle* (3rd year), 34h, Telecom Nancy, France
- Licence: L. Buhry, *Applications en Sciences Cognitives*, 3h , niveau L1 MIASHS, University of Lorraine, France
- Licence: L. Buhry, *Programmation Python*, 37h, level L1 MIASHS, University of Lorraine, France
- Licence: L. Buhry *Probabilités-Statistiques*, 30h, level L1 MIASHS, University of Lorraine, France
- Licence : L. Buhry, *IA et Résolution de problèmes*, 25h, level L3 MIASHS, University of Lorraine, France
- Licence : L. Bougrain, *développement sur mobile*, 35h, Licence of computer science (3st year), University of Lorraine, France
- Licence : L. Bougrain, *Intelligence artificielle*, 35h, Licence of computer science (3st year), University of Lorraine, France
- Licence : L. Bougrain, *Optimisation*, 37.5h, Licence of computer science (3st year), University of Lorraine, France
- Master : L. Buhry, *Algorithmique pour l'intelligence artificielle*, 31h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France
- Master : L. Buhry, *IA fondamentale et fouille de données*, 18h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France
- Master: L. Buhry, *Formalismes de Représentation et Raisonnement*, 25h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France
- Master: L. Buhry, *Memory and Machine Learning*, 38h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France
- Master : L. Buhry, *Neurosciences Computationnelles*, 25h, niveau Master 2 SCMN, University of Lorraine, France
- Master : L. Bougrain, *Apprentissage automatique*, 18h, Master of computer science, 2st year, University of Lorraine, France
- Master : L. Bougrain, *Facteurs humains*, 30h, Master of computer science 1st year, University of Lorraine, France

10.2.2. Supervision

PhD : Meysam Hashemi, Analytical and numerical studies of thalamo-cortical neural population models during general anesthesia, Univ. Lorraine, Jan. 14, 2016, A. Hutt [2]

PhD : Mariia Fedotenkova, Extraction of multivariate components in brain signals obtained during general anesthesia, Univ. Lorraine, Dec. 2, 2016, A. Hutt [1]

PhD in progress : Cecilia Lindig-Leon, Multilabel classification of EEG-based combined motor imageries implemented for the 3D control of a robotic arm, November 2013, A. Hutt and L. Bougrain

PhD in progress : Francesco Giovannini, Mathematical modelling of the memory system under general anesthesia, Oct. 2014, L. Buhry and A. Hutt

PhD in progress : Sébastien Rimbart Study of the dynamics of brain motor components during anesthesia, January 2016, A. Hutt and L. Bougrain

PhD in progress : Amélie Aussel, Extraction of electrophysiological markers and mathematical modeling of epileptic hippocampus, Oct. 2016, L. Buhry, Patrick Hénaff and R. Ranta

10.2.3. Juries

Laure Buhry was member of the PhD committee of Meysam Hashemi, University of Lorraine.

Laure Buhry was member of the PhD committee of Guillaume Viejo, Université Pierre et Marie Curie, Paris

10.3. Popularization

Interview and demo "Science on live" for the Science Festival 2016 at Cité des sciences et de l'industrie, Forum Explora about "Brain-Computer Interfaces for stroke rehabilitation" Oct. 8, 2016 (L. Bougrain, S. Rimbart).

<https://www.youtube.com/watch?v=cRCtGuvRW5A>

Interview Huffington Post, Oct. 26, 2016 (L. Buhry)

(<http://www.huffingtonpost.fr/2016/10/26/la-fille-du-train-creativite-imagination/>)

Interview for Inria to introduce Neurosys' research on Brain-Computer Interfaces, Oct. 2016 (L. Bougrain)

<https://www.youtube.com/watch?v=DBajwAI9VEw> at 5:38:10

Interview for the Regional TV news (JT 19/20 France 3 Lorraine): Brain-Computer Interfaces, Sept. 29, 2016 (L. Bougrain, S. Rimbart)

Talk during the National Brain Awareness Week: Brain, consciousness and waves, Mar. 18, 2016, Bibliothèque Multimédia Intercommunale, Epinal (L. Buhry, L. Koessler)

Interview for Radio CaraibNancy: Neuroscience in Lorraine, Mar. 16, 2016 (L. Bougrain, S. Caharel and L. Koessler)

Exhibit at Loria's open day for master students and engineers: controlling a robotic arm using EEG, Apr. 9, 2015 (L. Bougrain, J. Nex)

L. Bougrain & B. le Golvan, Neuroprosthetics, Evolution Psychiatrique, Elsevier [5] published on line on Mar. 8, 2016.

TONUS Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Member of the editorial boards

Philippe Helluy is member of the editorial board of IJFV <http://ijfv.org/>

9.1.1.2. Reviewer - Reviewing activities

Emmanuel Franck has been reviewer for

- Communications in computational physics
- Methods and Algorithms for Scientific Computing
- Methods for Partial Differential equations

Philippe Helluy has been reviewer for

- Math. Review
- International Journal for Numerical Methods in Fluids
- Computers and fluids
- M2AN
- ESAIM Proceedings
- PIER Journal

Sever Adrian Hirstoaga has been reviewer for

- Journal of Fixed Point Theory and Applications
- MathSciNet/Mathematical Reviews

Michel Mehrenberger has been reviewer for

- SISC
- Electronic Journal of Qualitative Theory of Differential Equations (EJQTDE)
- Mathematical Methods in the Applied Sciences
- Journal Of Computational Physics
- Computer Physics Communications
- Computational and Applied Mathematics
- Zeitschrift fuer Angewandte Mathematik und Physik

David Coulette has been reviewer for

- Journal of Plasma Physics - Cambridge University Press

9.1.2. Invited Talks

Emmanuel Franck was invited at

- Minisymposium Fusion, Canum 2016, Obernai
- Workshop Jorek, Nice, France
- Seminar of numerical analysis, Rennes university, France

Emmanuel Franck has participated as speaker at

ECCOMAS 2016, Greece

Workshop ABPDE 2016, Lille, France

IGA and free mesh methods, La Jolla, USA

Philippe Helluy was invited at:

Oberwolfach au workshop (Hyperbolic Techniques for Phase Dynamics)

Sever Adrian Hirstoaga was invited at

17th SIAM Conference on Parallel Processing for Scientific Computing, 12-15 April 2016, Paris.

PASC (Platform for Advanced Scientific Computing), 8-10 June 2016, Lausanne.

NumKin, October 2016, Strasbourg

Michel Mehrenberger was invited at

ECCOMAS Congress 2016 , 5-10 june 2016 Crete Island, Greece.

Conference - Stability of non-conservative systems 4th-7th July 2016, University of Valenciennes, France.

Collaborative Research Center (CRC) seminar, Karlsruhe Institute of Technology (KIT), 28 april 2016.

Seminar, "Modellistica Differenziale Numerica", Dipartimento di Matematica - Sapienza Universita di Roma, 19 april 2016.

Seminar, "Applications des mathématiques", ENS Rennes, 2 mars 2016.

Laurent Navoret was invited at

Seminar. Laboratoire Jean Kuntzmann Grenoble

Workshop: Kinetic theory : from equations to models - Imperial College, Londres

Laurent Navoret has participated as speaker at

Congres Hyp2016, Aachen, Germany

David Coulette was invited at

14eme congress of French Physics Society and IAP Plasma Workshop, Nancy France

European Physical Society - 43rd conference on Plasma Physics, Leuven - Belgium

9.1.3. Scientific Expertise

Philippe Helluy, expertises for:

ANR

9.1.4. Research Administration

Philippe Helluy is the head of the "Modélisation et Contrôle" research team at IRMA Strasbourg.

Michel Mehrenberger is in the IREM ("Institut de recherche sur l'enseignement des mathématiques") team "Modélisation" for the year 2016-2017.

Philippe Helluy and Sever Hirstoaga have participated in a jury for an assistant professor position.

Michaël Gutnic is member of the National Committee for Scientific Research (from september 2012 to august 2016).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Laurent Navoret, Nonlinear optimisation (108h eq. TD)

Licence : Laurent Navoret, Integration (34h eq. TD)
 Licence : Philippe Helluy, scientific computing (70h eq. TD)
 Licence : Philippe Helluy, statistic (50h eq. TD)
 Licence : Philippe Helluy, basic mathematics (20h eq. TD)
 Licence : Michel Mehrenberger, Scientific computing (65 h eq. TD)
 Licence : Michel Mehrenberger, nonlinear optimization (18 h eq. TD)
 Licence : Michel Mehrenberger, mathematics for chemistry (56h eq. TD)
 Licence: Michaël Gutnic, Mathematics for biology, (84h eq. TD)
 Licence: Michaël Gutnic, Statistic for biology, (65h eq. TD)
 Master 1: Laurent Navoret, Python (19h eq. TD)
 Master 1: Philippe Helluy, operational research (50h eq. TD)
 Master 1: Michaël Gutnic, probability and statistic, (30h eq. TD)
 Master 2 (Agrégation) : Laurent Navoret, scientific computing (50h eq. TD)
 Master 2 (Cellar physic) : Laurent Navoret, Basics in maths (24h eq. TD)
 Master 2 (Agrégation) : Michel Mehrenberger, scientific computing (28h eq. TD)
 Master 2: Philippe Helluy, hyperbolic systems (30h eq. TD)
 Master 2: Sever Hirstoaga "two-scales convergence" (24h eq. TD)

9.2.2. Supervision

PhD defended (december 2016): Thi Trang Nhung Pham, "Méthodes numériques pour Vlasov",
 Advisors: Philippe Helluy, Laurent Navoret.
 PhD defended (december 2016): Michel Massaro, "Méthodes numériques pour les plasmas sur
 architectures multicœurs", Advisor: Philippe Helluy.
 PhD in progress: Pierre Gerhard, "Résolution des modèles cinétiques. Application à l'acoustique du
 bâtiment.", October 2015, Advisors: Philippe Helluy, Laurent Navoret.
 PhD in progress: Bruno Weber, "Optimisation de code Galerkin Discontinu sur ordinateur hybride.
 Application à la simulation numérique en électromagnétisme", March 2015, Advisor: Philippe
 Helluy.
 PhD in progress: Nicolas Bouzat, "Fine grain algorithms and deployment methods for exascale
 codes", October 2015, Advisors: Michel Mehrenberger, Jean Roman, Guillaume Latu.
 PhD in progress: Mustafa Gaja, "Compatible finite element method and preconditioning", December
 2015, Advisors: E. Sonnendrucker (IPP, germany), A. Ratnani (IPP), E. Franck
 PhD in progress: Conrad Hillairet, "Implicit Boltzmann scheme and Task Parallelization for MHD
 simulations", November 2016, Advisors: Philippe Helluy, E. Franck
 PhD in progress: Ksander Ejjaouani, "Conception of a programmation model, application to gyroki-
 netic simulations", October 2015, Advisors: Michel Mehrenberger, Julien Bigot, Olivier Aumage.

9.2.3. Juries

Philippe Helluy:

PhD defense of Rémi Chauvin (Toulouse)
 PhD defense of Eric Madaule (Nancy)
 PhD defense of Juan Manuel Martinez Caamano (Strasbourg)
 PHD defense of Thibault Gasc (CEA Paris)
 PHD defense of Nicolas Deymier (Toulouse)
 Habilitation defense of Virginie Grandgirard (CEA cadarache)

Michel Mehrenberger:

PhD defense of Florian Delage (Strasbourg)

COAST Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

- François Charoy was co-chair of the PhD Forum for ICSOC 2016
- Claudia-Lavinia Ignat is in the organisation committee of The Fifteenth International Workshop on Collaborative Editing Systems in conjunction with CSCW 2017

8.1.2. Scientific Events Selection

8.1.2.1. Member of the conference program committees

- Claude Godart was PC member of the conference program committee of BPMDS (Business Process Modeling, Development and Support), EDOC (The enterprise computing conference), ICSOC (International Conference on Services Oriented Computing), IEEE CLOUD Computing, ICWS (IEEE International Conference on Web Services), SCC (IEEE International Conference on Services Computing), S2 ICIOT (S2 International Conference on Internet of Things), IEEE/WIC/ACM WI (Web Intelligence conference), WISE (Web Information Systems Engineering) conferences.
- Claudia-Lavinia Ignat was PC member of CSCW (International Conference on Computer Supported Cooperative Work and Social Computing) 2016, CDVE (International Conference on Cooperative Design, Visualization and Engineering) 2016, ICEBE (International Conference on e-Business Engineering) 2016 and The First IFIP Internet of People Workshop (IoP-W'16) in conjunction with Networking 2016 conference
- Olivier Perrin was PC Member of ICSOC 2016, I3E 2016 (15th IFIP Conference on e-Business, e-Services and e-Society), VECOS 2016 (10th International Workshop on Verification and Evaluation of Computer and Communication Systems), and some workshops.
- François Charoy was PC Member of ICEBE (International Conference on Business Engineering) 2016, CTS 2016 (International Symposium on Collaborative Technologies and Systems), DG.O (International Conference on Digital Government Research) 2016, IEEE WETICE 2016, ICSOC 2016, IEEE International Conference on Business Information Systems and of several workshops.
- Khalid Benali was PC Member of WorldCIST'16 (World Conference on Information Systems and Technologies), I-ESA'2016 (Interoperability of Enterprise Software and Applications), AFIN 2016 (International Conference on Advances in Future Internet), I3E 2016 (IFIP Conference on e-Business, e-Services and e-Society), ICICS 2016 (7th International Conference on Information and Communication Systems), MEDES 2016 (8th International Conference on Management of Digital EcoSystems), SYSCO'16 (third international conference on collaborative systems) and SoEA4EE'2016 (The 8th Workshop on Service oriented Enterprise Architecture for Enterprise Engineering).
- Gérald Oster was a PC member of CoopIS 2016 (International Conference on Cooperative Information Systems).

8.1.3. Journal

8.1.3.1. Member of the editorial boards

- Claude Godart is member of the editorial board of IEEE Transactions on Service Computing, International Journal of Services Computing, and member of the review board of the International Journal of Next Generation Computing.

- Claudia-Lavinia Ignat is member of the editorial board of Journal of CSCW (Computer Supported Cooperative Work).
- François Charoy is member of the editorial board of Service Oriented Computing and Applications Journal (Springer).

8.1.3.2. Reviewer - Reviewing activities

- In 2016, Olivier Perrin reviewed papers for IEEE Transactions on Services Computing journal, IEEE Transactions on Parallel and Distributed Systems and Journal of Systems and Software.
- In 2016, Claudia-Lavinia Ignat reviewed papers for Concurrency and Computation: Practice and Experience, World Wide Web Journal, CHI 2016 and CSCW 2017.
- In 2016, Gérald Oster reviewed papers for Computer Supported Cooperative Work Journal, Concurrency and Computation: Practice and Experience journal and CSCW 2017.

8.1.4. Invited talks

- François Charoy has been invited as a keynote Speaker at the IEEE WETICE Conference in Paris [6] on Collaborative Networks and Crisis Management.
- Claudia-Lavinia Ignat gave an invited lecture in May 2016 at SOAMED Graduate School in Berlin on Replicated Data Consistency
- Claudia-Lavinia Ignat gave an invited talk in June 2016 at the Department of Psychology, Wright State University, on Large-scale trust-based collaboration
- Claudia-Lavinia Ignat gave an invited talk in July 2016 at the Department of Computer Science and Engineering, Ohio Center of Excellence in Knowledge-enabled Computing (Kno.e.sis), Wright State University on Large-scale trust-based collaboration
- Gérald Oster gave an invited talk in July 2016 at the Department of Computer Science and Engineering, Ohio Center of Excellence in Knowledge-enabled Computing (Kno.e.sis), Wright State University on Distributed real-time collaborative editing

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Permanent members of the COAST project-team are leading teachers in their respective institutions. They are responsible of lectures in disciplines like software engineering, database systems, object oriented programming and design, distributed systems, service computing and more advanced topics at all levels and in different of departments in the University. Most of the PhD Students have also teaching duties in the same institutions. As a whole, the COAST team accounts for more than 2500 hours of teaching. Members of the COAST team are also deeply involved in the pedagogical and administrative life of their departments.

- Gérôme Canals was the head of the Computer science department of the Nancy-Charlemagne University Institute of Technology (IUT Nancy Charlemagne) since September 2010 and until August 2016, and is responsible for the professional licence degree “Web application programming” since sept. 2001.
- Claude Godart is responsible for the Computer Science department of the engineering school ESSTIN.
- Khalid Benali is responsible for the professional Master degree speciality “Distributed Information Systems” of MIAGE and of its international branch in Morocco.
- François Charoy is responsible of the Software Engineering specialisation at the TELECOM Nancy Engineering School of University of Lorraine.
- Pascal Urso is responsible for the “Security, Services, Systems and Network” track of the master degree in computer science at University of Lorraine since September 2013.

8.2.2. Supervision

PhD (in progress): Quang Vinh Dang, Trust-based large scale collaboration, started in 10/2014, Claudia-lavinia Ignat and François Charoy

PhD (in progress): Hoai Le Nguyen, Study of group performance and behavior in collaborative editing, started in 9/2015, Claudia-Lavinia Ignat and François Charoy

PhD (in progress): Hoang Long Nguyen, A Trust Based Authorization Model and Framework for the Cloud, started in 11/2015, Claudia-Lavinia Ignat and Olivier Perrin

PhD (defended): Luc André, Replication and Consistency Maintenance in Peer-to-Peer Collaborative Environment, started in 9/2011, François Charoy and Gérald Oster

PhD (in progress): Victorien Elvinger, Secured Replication for Peer-to-Peer Collaborative Infrastructures, started in 10/2015, François Charoy and Gérald Oster

PhD (defended): Ahmed Bouchami, Sécurité des données collaboratives d'une plateforme PaaS, started in 11/2012, Olivier Perrin

PhD (in progress): Jordi Martori i Adrian, Data constraints for large-scale collaboration, started in 10/2013, François Charoy and Pascal Urso

PhD (in progress): Guillaume Rosinoski, Elastic BPM and the Cloud, started in 10/2014, François Charoy and Samir Youssef

PhD (in progress): Quentin Laporte-Chabasse, Federation of Organisations over Peer to Peer Collaborative Network, started in 10/2016, François Charoy and Gérald Oster

PhD (in progress): Béatrice Linot, Trust in cooperative systems, Jérôme Dinet et François Charoy, started 11/2016

8.2.3. Juries

- François Charoy was head of the Selection committee at TELECOM Nancy, Université de Lorraine
- COAST members were members of the following PhD and HdR defense committees:
- Mondri Ravi, PhD, Université de Grenoble, January 2016 (François Charoy)
 - Tomasz Buchert, PhD, Université de Lorraine, January 2016 (François Charoy)
 - Luc André, PhD, Université de Lorraine, May 2016 (François Charoy and Gérald Oster)
 - Adrian Shatte, PhD, James Cook University, Cairns, Australia, September 2016 (François Charoy)
 - Wassim Derguech, PhD, National University of Ireland, Galway, Ireland, December 2016 (François Charoy)
 - Philippe Dirix, PhD, Université de Lille, July 2016 (Khalid Benali)
 - Bouchra El Idrissi, PhD, Université Mohammed V de Rabat, Maroc, September 2016 (Khalid Benali)
 - Ghada Gharbi, PhD, Université de Toulouse 3, November 2016 (Claude Godart)
 - Hind Benfenatki, PhD, Université de Lyon 1, December 2016 (Claude Godart)
 - Brice Nedelec, PhD, Université de Nantes, October 2016 (Gérald Oster)
 - Anthéa Mayzaud, PhD, Université de Lorraine, October 2016 (Olivier Perrin)
 - Noran Azmy, PhD, Universität des Saarlandes and Université de Lorraine, November 2016 (Olivier Perrin)

8.3. Popularization

- In March 2016 members of the team (François Charoy and Phillippe Kalitine) participated to the “Rencontres Université Entreprise” in Paris to demonstrate the collaborative editor MUTE (<http://www.rue-aef.com>)
- In January 2016 Claudia-Lavinia Ignat presented Coast research activities to the first year students at Ecole de Mines de Nancy
- In May 2016 Claudia-Lavinia Ignat gave a lecture on Replicated Data Consistency at SOAMED Graduate School in Berlin
- In May 2016 Claudia-Lavinia Ignat organised the meeting Research@Inria at Inria Nancy-Grand Est for presenting to internship students, PhD students and postdocs various Inria programs and the main research topics at Inria with a focus on activities of research teams at Inria Nancy-Grand Est. She also presented the main activities of a researcher and briefly described her research work.
- In November 2016 members of the team (François Charoy and Matthieu Nicolas) participated to the “Rencontre Inria-Industrie” (RII) on the topic - Interactions avec les objets et services numériques” in Lille to demonstrate MUTE collaborative editor
- In December 2016 members of the team (Claudia-Lavinia Ignat, Gérald Oster, Matthieu Nicolas and Phillippe Kalitine) participated to the “Rencontre Inria-Industrie” (RII) on the topic - Nouvelles technologies pour la protection des données et des systèmes numériques” in Nancy to demonstrate collaborative editor MUTE
- In December 2016 members of the team (Gérald Oster, Matthieu Nicolas and Phillippe Kalitine) demonstrated the collaborative editor MUTE during the visit of the Rectors of the Mexican Technological Universities at LORIA in the context of the bilateral MEXPROTEC program.

8.4. Institutional commitment

- Claudia-Lavinia Ignat is in charge of European affairs for Inria Nancy Grand-Est. She is the Delegate of International Relations for Inria Nancy-Grand Est and member of COST-GTRI commission. She is member of the Inria Nancy-Grand Est COMIPERS committee. She participated to a working group in charge with the design of a booklet for industrials describing the technological offer of Inria Nancy-Grand Est (she was responsible for the part concerning Large-scale collaborative services and systems). She is responsible with the activity kindergarten at AGOS Inria Nancy-Grand Est.

MADYNES Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Rémi Badonnel was member of the organizing committee for the following conferences: IEEE International Conference on Network Softwarization (IEEE NetSoft 2016), IEEE/IFIP/In Assoc. with ACM SIGCOMM International Conference on Network and Service Management (IEEE/IFIP/In Assoc. with ACM SIGCOMM CNSM 2016), IEEE/IFIP International Symposium on Integrated Network Management (IEEE/IFIP IM 2017).

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Rémi Badonnel was TPC co-chair for the following conferences: the Experience Track of the IFIP/IEEE Network Operations and Management Symposium (IFIP/IEEE NOMS 2016), IFIP/IEEE International Workshop of Management of the Future Internet (IFIP/IEEE ManFI 2016), IFIP International Conference on Autonomous Infrastructure, Management and Security (IFIP AIMS 2016).

Isabelle Chrisment was TPC co-chair of the first IFIP Internet of People Workshop co-located with IFIP Networking 2016. She was member of the steering committee for RESSI'16 (Rendez-vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

Olivier Festor was TPC co-chair of ACM/IEEE/IFIP Conference on Network and Service Management (CNSM) 2016. He is also member of the steering committee (NISC) that coordinates the main conferences in network and service management (IM, NOMS, CNSM and AIMS). He was also Tutorial chair of IEEE Netsoft 2016 and workshop co-chair at IEEE/IFIP NOMS'2016.

9.1.2.2. Member of the Conference Program Committees

Rémi Badonnel: IFIP International Conference on Autonomous Infrastructure, Management and Security (IFIP AIMS 2016) ; IFIP/IEEE International Conference on Network and Service Management (IFIP/IEEE CNSM 2016) ; IEEE Global Information Infrastructure and Networking Symposium (IEEE GIIS 2016) ; IEEE Global Communications Conference (IEEE GLOBECOM - SAC 2016) ; IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM 2017).

Thibault Cholez: 2nd IEEE International Workshop on Security Testing and Monitoring (STAM 2016, IEEE ICDCS Workshop)

Isabelle Chrisment: IFIP International Conference on Autonomous Infrastructures, Management and Security (IFIP AIMS'16) ; Rencontres Francophones sur la Conception de Protocoles, l'évaluation de Performance et l'Expérimentation Aspects Algorithmiques de Télécommunications (CoResl'16) ; IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet 2016) ; IEEE/IFIP International Symposium on Network Operations and Management (IEEE/IFIP NOMS'16).

Oliver Festor: IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM'2017) ; IEEE/IFIP Network Operations and Management Symposium 2016 ; IEEE Netsoft 2016 ; IEEE Asia Pacific NOMS'2016.

Jérôme François: IFIP International Conference on Autonomous Infrastructure, Management and Security (IFIP AIMS 2016) ; IEEE Global Information Infrastructure and Networking Symposium (IEEE GIIS 2016) ; Principles, Systems and Applications of IP Telecommunications (IPTComm'16) ; IFIP/IEEE International Workshop on Management of SDN and NFV Systems (IFIP/IEEE ManSDN 2016) ; Asia-Pacific Network Operations and Management Symposium (APNOMS 2016); IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM 2017).

Abdelkader Lahmadi: IFIP International Conference on Autonomous Infrastructure, Management and Security (IFIP AIMS 2016), PhD workshop ; Asia-Pacific Network Operations and Management Symposium (APNOMS 2016); IFIP/IEEE International Symposium on Integrated Network Management (IFIP/IEEE IM 2017); IEEE/IFIP International Workshop on Management of the Future Internet (ManFI 2016, held as part of IEEE/IFIP NOMS 2016); IEEE Conference on Network Softwarization (IEEE NetSoft 2016).

Ye-Qiong Song: IEEE International Workshop on Factory Communication Systems (WFCS 2016); IEEE International Conference on Communications and Networking (ComNet 2016) ; IEEE International Conference on Emerging Technologies and Factory Automation (ETFAs 2016) ; 24th International Conference on Real-Time Networks and Systems (RTNS 2016) ; IEEE International conference on Telecommunications (ICT-2016) ; IFIP Wireless and Mobile Networking Conference (WMNC 2016).

Laurent Ciarletta: International Program Committee, IEEE CSS / RAS International Conference on Unmanned Aircraft Systems ICUAS 2016.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Rémi Badonnel is Associate Editor for the Wiley International Journal of Network Management (IJNM).

Olivier Festor is an associate editor of IEEE Transactions on Networks and Systems Management (TNSM).

Ye-Qiong Song is an Associate Editor for the Elsevier Computers and Electrical Engineering journal, and for the Journal of Multimedia Information System.

9.1.3.2. Reviewer - Reviewing Activities

The following reviews for journals has been made by team members:

Rémi Badonnel: IEEE Transactions on Network and Service Management (IEEE TNSM), Springer Journal of the Network and Systems Management (JNSM), Wiley International Journal of Network Management (IJNM), IEEE Communications Magazine (COMMAG).

Thibault Cholez: Journal of Communications and Networks, Elsevier Computer Networks, IEEE Transactions on Network and Service Management, Elsevier Computers & Security, IEEE Global Communications Conference, IFIP/IEEE International Symposium on Integrated Network Management

Isabelle Chrisment: IEEE Transactions on Network and Service Management (IEEE TNSM), IEEE Communications Magazine (COMMAG), Wiley Security and Communication Networks (SCN).

Jérôme François: IEEE Transactions on Network and Service Management (IEEE TNSM), Springer Journal of Network and Systems Management, Elsevier Computer Networks Journal

Abdelkader Lahmadi: IEEE Transactions on Network and Service Management (IEEE TNSM); IEEE Communications Magazine (COMMAG); Springer Journal of Network and Systems Management (JNSM); Elsevier Journal of Computer Communications (COMCOM); Elsevier Journal of Engineering Applications of Artificial Intelligence (EAAI).

Ye-Qiong Song: Elsevier Computers and Electrical Engineering journal, Elsevier Ad hoc network journal, Journal of Real-time systems (Springer), IEEE Transactions on Industrial Informatics.

9.1.4. Invited Talks

Thibault Cholez:

- RESSI 2016, Toulouse: "Efficiently Bypassing SNI-based HTTPS Filtering"
- IRTF ICNRG, Paris: "Challenges and directions for the security management of ICN services"

Isabelle Chrisment:

- US-EU Workshop on the Next Generation Internet of Things, March 30-April, 2016, USC, Los Angeles, USA. "Security and Monitoring of (Every)Things"

Jérôme François:

- IRTF NMLRG (IETF 95), Buenos Aires, Argentina: "HTTPS Traffic Classification"
- IRTF NMLRG (colocated with EuCNC), Athens, Greece, " NML in Inria High Security Lab: overview and datasets"
- IRTF NMLRG (IETF 96), Berlin, Germany: "Malicious Domains: Automatic Detection with DNS Traffic Analysis"

Abdelkader Lahmadi:

- i-NOVIA (Salon of Nouvelle Technologies), Strasbourg, "Cybersecurity: monitoring and defense", 5 October 2016

9.1.5. *Scientific Expertise*

Laurent Ciarletta serves as expert for the 2016 ANR Generic call.

Jérôme François serves as reviewer for ANRT to evaluate a CIFRE PhD proposition

Ye-Qiong Song serves as reviewer for ANRT to evaluate a CIFRE PhD proposition.

Ye-Qiong Song serves as expert for "Fonds de recherche nature et technologies, Quebec".

9.2. Teaching - Supervision - Juries

9.2.1. *Teaching*

Rémi Badonnel is heading the Telecommunications, Networks and Services specialization of the 2nd and 3rd years at the TELECOM Nancy engineering school, and is coordinating the Security Pathway Program at the same school, elaborated in the context of the International Master of Science in Security of Computer Systems built with the Mines Nancy and ENSEM engineering schools.

Laurent Ciarletta is co-heading the specialization Safe Systems Architecture of the Computer Science and IT department of the Ecole des Mines de Nancy ("Grande Ecole", Engineering School, Master degree level).

Olivier Festor is the Director of the TELECOM Nancy Engineering School.

Team members are teaching the following courses:

Rémi Badonnel 242 hours - L3, M1, M2 - Networks, Systems and Services, Software Design and Programming, Cloud Computing, Network and Security Management - TELECOM Nancy, Université de Lorraine

Thibault Cholez 300 hours - L3, M1, M2 - Techniques and Tools for Programming, Computer Networks, Object-Oriented Programming, C and Shell Programming, Network Services, Constraint development on small Connected Objects, Mobile applications and Internet of Things - TELECOM Nancy, Université de Lorraine

Isabelle Chrisment 220 hours -L3, M1, M2 -C and Shell Programming, Computer Networking, Operating Systems, Network Security. - TELECOM Nancy, Université de Lorraine

Laurent Ciarletta 250 hours - M1, M2 - Networks and Services, Interactive Computing, Pervasive Computing, Software Design and Programming, ARTEM - Mines Nancy - Ecole Nationale Supérieure des Mines de Nancy - Engineering school, Université de Lorraine, France

Jérôme François 70 hours - M1, M2 -Network security, Big Data - TELECOM Nancy, Université de Lorraine

Abdelkader Lahmadi 280 hours - L1, M1, M2 and Master Degree in Computer Science - Algorithms and Java programming, C language programming, Distributed algorithms, Sensor networks programming -ENSEM Engineering school, Université de Lorraine, France.

Ye-Qiong Song 230 hours - L1, M1, M2 Engineering degree and Master Degree in Computer Science - Algorithms and Java programming, Databases, Networking, Sensor networks - ENSEM - Engineering school, Université de Lorraine, France.

9.2.2. Supervision

9.2.2.1. PhD in progress in team

Elian Aubry, *Using Software Defined Network to manage Content Centric Networks*, since October 2013, supervised by Isabelle Chrisment & Thomas Silverston.

Pierre-Olivier Brissaud, *Anomaly detection in encrypted traffic*, since July 2016, supervised by Isabelle Chrisment, Jérôme François & Olivier Bettan (Thales)

Paul Chaignon, *Monitoring of SDN networks*, since July 2016, supervised by Olivier Festor, Jérôme François & Kahina Lazri (Orange Labs)

Maxime Compastie, *Software-Defined Security for the Cloud*, since Dec 2015, supervised by Olivier Festor & Rémi Badonnel.

Giulia De Santis, *Modelling and Analysis of Complex and Targeted Cyberattacks*, since October 2015, Olivier Festor & Abdelkader Lahmadi.

Meihui Gao, *Optimization models and methods for Network Functions Virtualization architectures*, since Nov 2015, supervised by Ye-Qiong Song & Bernardetta Addis.

Florian Greff, *QoS and fault-tolerance of distributed real-time systems over mesh networks*, since Feb. 2015, supervised by Ye-Qiong Song & Laurent Ciarletta.

Julien Vaubourg, *IP network models and simulators integration with DEVS for co-simulation of CPS*, since Oct. 2013, supervised by Vincent Chevrier & Laurent Ciarletta.

Thomas Paris, *Complex systems modeling using composition*, since Oct. 2015, supervised by Vincent Chevrier & Laurent Ciarletta.

Petro Aksonenko, *Optimized method of Calibration, Aligement and Advanced Attitude Algorithms for Strapdown Inertial Navigation Systems*, since Oct. 2016, supervised by Patrick Henaff, Anton Popov (KPI University) & Laurent Ciarletta

Patrick-Olivier Kamgue, *Routing management in WSNs*, since Jun 2012, supervised by Emmanuel Nataf & Olivier Festor in France, Thomas Djotio in Cameroun.

Daishi Kondo, *New Networking Architecture through Virtualization*, since September 2015, supervised with Olivier Perrin (EPI COAST) & Thomas Silverston.

Xavier Marchal, *Secure operation of virtualized Named Data Networks traffic*, since December 2015, supervised by Olivier Festor & Thibault Cholez.

Abdulqawi Saif, *Open Science for the scalability of a new generation search technology*, since December 2015, supervised by Ye-Qiong Song & Lucas Nussbaum.

Evangelia Tsiontsiou, *Multiconstrained QoS routing for wireless sensors networks with applications to smart space for ambient assisted living*, since Oct 2013, supervised by Ye-Qiong Song & Bernardetta Addis.

Shbair Wazen, *Service-level Monitoring of HTTPS*, since December 2013, supervised by Isabelle Chrisment & Thibault Cholez.

Nicolas Schnepf, *Orchestration and Verification of Security Functions for Smart Environments*, since October 2016, supervised by Stephan Merz, Rémi Badonnel & Abdelkader Lahmadi.

9.2.2.2. PhD defended in team

- [1] Tomasz Buchert, *Managing large-scale, distributed systems research experiments with control-flows*, Université de Lorraine, January 2016, supervised by Jens Gustedt & Lucas Nussbaum.
- Anthea Mayzaud, *Monitoring and Security for the Internet of Things⁰*, Université de Lorraine, October 2016, supervised by Isabelle Chrisment & Rémi Badonnel.
- Kévin Roussel, *Dynamic management of QoS and energy in heterogeneous sensor networks for e-health applications⁰*, June 2016, supervised by Ye-Qiong Song & Olivier Zendra.

⁰registration not fully completed

⁰<http://www.theses.fr/2016LORR0051>

9.2.3. Juries

Team members participated to the following Ph.D. defense committees in Computer Science if no other indication:

- Femke De Backere, in Computer Science from Ghent University, Belgium. Title: Design and Management of Pervasive eCare Services, June 2016 – (Rémi Badonnel as reviewer).
- Pasquale Puzio, PhD in Computer Science from TELECOM ParisTech, Sophia Antipolis, France. Title: Deduplication of Encrypted Data in Cloud Computing, February 2016 – (Isabelle Chrisment as examiner).
- Ziad Ismail, PhD in Computer Science from TELECOM ParisTech, Paris, France. Title: Optimal Defense Strategies to Improve the Security and Resilience of Smart Grids, April 2016 – (Isabelle Chrisment as reviewer).
- Erwan Godefroy, PhD in Computer Science from CentraleSupélec, Rennes, France. Title: *Définition et évaluation d'un mécanisme de génération de règles de corrélation liées à l'environnement*, September 2016 – (Isabelle Chrisment as president).
- Hiep Huu Nguyen, PhD in Computer Science from Université de Lorraine, Nancy, France. Title: Social Graph Anonymization, November 2016 – (Isabelle Chrisment as president).
- Chakadkit Thaenchaikun, PhD in Computer Science from Université de Toulouse, France. Title: Economie d'énergie en réseau filaire: Ingénierie de trafic et mise en veille, November 2016 – (Isabelle Chrisment as reviewer).
- Kim Thuat Nguyen, PhD in Computer Science from Télécom SudParis, France. Title: Protocoles de sécurité efficaces pour les réseaux de capteurs IP sans-fil et l'Internet des Objets, December 2016 – (Isabelle Chrisment as reviewer).
- Mohamed Sabt, PhD in Computer Science from Université de Technologie de Compiègne, France. Title: Outsmarting Smartphones - Trust based on Provable Security and Hardware Primitives in Smartphones Architectures, December 2016 – (Isabelle Chrisment as examiner).
- Michal Krol, PhD. in Computer Science from University of Grenoble, France. Title: Routing in wireless sensor networks, March 2016 – (Olivier Festor as reviewer).
- Marc Bruyère, PhD. in Computer Science from University of Toulouse 3 - Paul Sabatier, France. Title: An outright open source approach for simple and pragmatic Internet eXchange, July 2016 – (Olivier Festor as reviewer).
- Ahmed Bouchami, PhD. in Computer Science from Université de Lorraine. Title: Sécurité des ressources collaboratives dans les réseaux sociaux d'entreprise, July 2016. – (Olivier Festor as President).
- Benjamin Baron, PhD. in Computer Science from Pierre et Marie Curie Paris VI - Sorbonne Universités, France. Title: *Transport intermodale données massives pour le délestage des réseaux d'infrastructure*, October 2016 – (Olivier Festor as examiner).
- Messaoud Aouadj, PhD. in Computer Science from University of Toulouse 3 - Paul Sabatier, France. Title: *AirNet: le modèle de virtualisation Edge-Fabric comme plan de contrôle pour les réseaux programmables*, November 2016. – (Olivier Festor as reviewer).
- Tiphaine Viard, PhD. in Computer Science from Pierre et Marie Curie - Sorbonne Universités, France. Title: *Flots de liens pour la modélisation d'interactions temporelles et application à l'analyse de trafic IP*, September 2016 – (Olivier Festor as reviewer).
- Christoph Neumann, HDR in Computer Science from University of Rennes 1, France. Title: Contributions to Content Placement, Load-balancing and Caching: System Design and Security, November – 2016 (Olivier Festor as reviewer).
- Nadjib Ait Saadi, HDR in Computer Science from University Paris Est Créteil, France. Title: From Sensors to Data Centers: Optimization of Deployment, Resource Allocation and Reliability, July 2016 – (Olivier Festor as President).

- Promethee Spathis, HDR in Computer Science from Pierre et Marie Curie - Sorbonne Universités, France. Title: Information DeliveryPast Struggles and New Directions, December 2016 – (Olivier Festor as reviewer).
- Hassan Said MOUSTAFA HARB, PhD. Université de Franche-Comté, France. Title: Energy Efficient Data Handling and Coverage for Wireless Sensor Networks, July 2016 – (Ye-Qiong Song as examiner).
- d'Abderrahmen Belfkih, PhD. Université du Havre, Title Contraintes temporelles dans les bases de données de capteurs sans fil, October 2016 – (Ye-Qiong Song as reviewer).
- Kawther Hassine, Ph.D. in ICT from Université de Carthage - SUPCOM Tunis. Title: Performance study of future wireless networks IEEE802.11 xy, December 2016 – (Ye-Qiong Song as reviewer).
- Lemia Louail, PhD. Université de Franche-Comté, Title: Approches cross-layer pour l'optimisation de la latence des communications dans les réseaux de capteurs sans fil, December 2016 – (Ye-Qiong Song as reviewer).
- Ahlem Mifdaoui, HDR. Université de Toulouse, Title: Contributions to Performance Analysis of Networked Cyber-Physical Systems, December 2016 – (Ye-Qiong Song as reviewer).

ALICE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Sylvain Lefebvre is program co-chair for SMI 2017.

9.1.1.2. Member of the Organizing Committees

Bruno Lévy was conference co-chair of GMP 2016.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Bruno Lévy was member of the program committee of ACM/EG Symposium on Geometry Processing, Pacific Graphic, Shape Modeling International

9.1.2.2. Member of the Conference Program Committees

Sylvain Lefebvre was member of the SIGGRAPH 2016 program committee, and is a member of the EUROGRAPHICS 2017 program committee.

9.1.2.3. Reviewer

- Jonas Martinez: Eurographics'16 Short papers.
- N. Ray: SIGGRAPH, SIGGRAPH ASIA, eurographics

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Sylvain Lefebvre is associate editor for ACM TOG. Bruno Lévy is associate editor of ACM Transactions on Graphics, The Visual Computer and Graphical Models

9.1.3.2. Reviewer - Reviewing Activities

- D. Sokolov: Computer Graphics Forum, The Visual Computer
- N. Ray: ACM TOG, TVCG, Electronics Letters
- Dobrina Boltcheva : International Journal of Discrete & Computational Geometry
- Jonas Martinez: Computers & Graphics journal.
- Laurent Alonso: Graphs and Combinatorics, Discrete Applied Mathematics, ACM Translation of Algorithms, ESA 2016, LATIN 2016

9.1.4. Invited Talks

- Dmitry Sokolov: "Towards hexahedral meshes" Numerical geometry, grid generation and scientific computing NUMGRID 2016, Moscow
- Sylvain Lefebvre: Computer Graphics lab of Aachen, led by Pr. Leif Kobbelt
- Sylvain Lefebvre: IST Austria, visiting Pr. Bernt Bickel
- Sylvain Lefebvre: invited at CNR Imati (Genova, Italy) for a week to present his work and collaborate on a joint survey paper submitted to EUROGRAPHICS 2017.

9.1.5. Scientific Expertise

Bruno Lévy evaluated projects for the ANR, for the European Research Council.

9.1.6. Research Administration

Samuel Hornus was moderator of the CDT (Commission for Technological Development) of Inria nancy.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Enseignant, titre du cours, nombre d'heures en équivalent TD, niveau (L1, L2, L3), université, pays

Licence : Cédric Zanni, Informatique 1, 20h ETD, L3, École des Mines de Nancy, France

Licence: Dobrina Boltcheva, Licence Pro ISN, Computer Graphics 20h, Image Processing 20h, IUT Saint-Dié-des-Vosges

License: Dobrina Boltcheva, 2A DUT INFO, Advanced Java Programming 100h, IUT Saint-Dié-des-Vosges

License: Dobrina Boltcheva, 1A DUT INFO, Programming 60h, IUT Saint-Dié-des-Vosges

Licence : Dmitry Sokolov, Informatique graphique, 55h ETD, L1, Université de Lorraine, France

Licence : Dmitry Sokolov, Programmation Avancée, 40h ETD, L2, Université de Lorraine, France

Licence : Dmitry Sokolov, Logique, 20h ETD, L3, Université de Lorraine, France

Licence : Dmitry Sokolov, Introduction à la robotique mobile, 30h ETD, L2, Université de Lorraine, France

Licence : Samuel Hornus, Mathématiques Appliquées pour l'Informatique, 32 h ETD, L3, Télécom Nancy

Master : N. Ray, communication, 10h equivalent TD, M1, Université de Lorraine, France

Master :Cédric Zanni, Software Engineering, 19h ETD, M1, École des Mines de Nancy, France

Master :Cédric Zanni, Operating System, 14h ETD, M1, École des Mines de Nancy, France

Master :Cédric Zanni, Modèles et simulations d'instrument de musique, 9h ETD, M1, École des Mines de Nancy, France

Master :Dmitry Sokolov, Optimisation Combinatoire, 30h ETD, M1, Université de Lorraine, France

Master :Dmitry Sokolov, Infographie, 30h ETD, M1, Université de Lorraine, France

Master :Dmitry Sokolov, Algorithmique et programmation, 45h ETD, M1, Université de Lorraine, France

Master :Dmitry Sokolov, Algorithmique et Programmation Avancée, 60h ETD, M2, Université de Lorraine, France

Master, Sylvain Lefebvre, Programmation pour le jeux vidéo, 30h ETD, Ecole des Mines de Nancy, France.

Master, Sylvain Lefebvre, Introduction au parallélisme et au graphisme, 9h ETD, ENSG Nancy, France.

Master, Sylvain Lefebvre, Introduction à la fabrication additive, 9h ETD, ENSEM Nancy, France.

Master, Sylvain Lefebvre, Synthèse procédurale pour le design, 9h ETD, ENSAD, Nancy, France.

E-learning

Pedagogical resources **tinyRender**: Dmitry Sokolov, Computer graphics course. Short series of lectures on what is under the hood of OpenGL/DirectX. The course is already adopted in several universities throughout the world, and is now included in the distribution of Bullet physics library. Microsoft includes its C# port in the distribution of Xamarin Workbooks .

9.2.2. Supervision

HdR : Dmitry Sokolov, *Modélisation géométrique*, Université de Lorraine, 10 juin 2016

PhD thesis submitted, defense 01/02/2017 : Jean Hergel, *Modeling under Fabrication Constraints*, Oct. 2013, supervised by Sylvain Lefebvre

PhD thesis submitted, defense 03/02/2017 : Jérémie Dumas, *By-example shape synthesis for Fabrication*, Sept. 2013, supervised by Sylvain Lefebvre

PhD in progress : Maxence Reberol, *Finite elements for non-conformal mixed hexahedral-tetrahedral meshes*, Janvier 2015, co-supervised by Bruno Lévy and Sylvain Lefebvre

9.2.3. Juries

Dobrina Boltcheva was a member of the recruitment committee for an associate professor position (maître de conférence) at the University of Poitiers (MCF 27 - XLIM/IRIAF).

Sylvain Lefebvre was a member of the CR2 recruitment jury for Inria Nancy Grand-Est. He was reviewer ('rapporteur') for the PhD defense of Hugo Loi (Université de Grenoble).

9.3. Popularization

Sylvain Lefebvre participated in the 2016 science festival (stand and general public conference), and gave a presentation in front of an industrial public in an event organized by Fondation Charles Hermite.

LARSEN Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- Amine Boumaza co-organized “Projections, Interactions, Emotions - Journées PsyPhIne 2016”, the second workshop of the PsyPhIne project (<http://poincare.univ-lorraine.fr/fr/manifestations/psyphine-2016>).
- François Charpillat co-organized and co-chaired the Workshop on On-line decision-making in multi-robot coordination, June 19, 2016, Ann Arbor, Michigan, USA, organized in conjunction of the 2016 Robotics: Science and Systems Conference (RSS 2016).
- Serena Ivaldi co-organized the Workshop “Human-Robot collaboration: towards co-adaptive learning though semi-autonomy and shared control” at IROS 2016 (<http://www.ausy.tu-darmstadt.de/Workshops/IROS2016>).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Amine Boumaza was a PC member of GECCO’2016 (Genetic and Evolutionary Computation Conference), ALIFE’2016 (International Conference on the Synthesis and Simulation of Living Systems), CEC’2016 (Congress on Evolutionary computation).
- Francis Colas was a Technical PC member for the EAI International Conference Track on Smart Cities and the Future Internet (SCiFI).
- Serena Ivaldi was an Associate Editor for the 2016 IEEE/RAS International Conference on Robotics and Automation (ICRA), the 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), the 2016 IEEE/RAS International Conference on Humanoid Robots (HUMANOIDS), the 2016 IEEE International Conference on Development and Learning (ICDL).
- Jean-Baptiste Mouret was a PC member of GECCO’2016 (Genetic and Evolutionary Computation Conference), ALIFE’2016 (International Conference on the Synthesis and Simulation of Living Systems), EVO*2016 (EvoStar), SAB’2016 (Conference on System and Adaptive Behaviors – from animals to animats).
- Vincent Thomas was a member of the program committee for “Journées Francophones sur la Planification la Décision et l’Apprentissage pour la conduite de systèmes 2016” (JFPDA 2016).

9.1.2.2. Reviewer

- François Charpillat was a reviewer for the 2016 IEEE International Conference on Robotics and Automation (ICRA), The 2016 european conference on artificial intelligence (ECAI), Rob&IA2016, RFP-IA 2016, WACAI2016, DEMUR, and the 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- Francis Colas was a reviewer for the 2016 IEEE International Conference on Robotics and Automation (ICRA), the EAI International Conference on Smart Cities and the Future Internet (SCiFI), and the 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- Serena Ivaldi was a reviewer for the ACM International Conference on Human-Robot Interaction (HRI), the IEEE International Conference on Human-Robot Communication (RO-MAN), the International Conference Robotics: Science and Systems (RSS).

- Jean-Baptiste Mouret was a reviewer for the 2016 IEEE International Conference on Robotics and Automation (ICRA), and the 2016 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- Vincent Thomas was a reviewer for “Journées Francophones sur la Planification la Décision et l’Apprentissage pour la conduite de systèmes 2016” (JFPDA 2016).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Serena Ivaldi is an editorial board member for the Journal "Intelligent Service Robotics", Springer. She was also Guest Editor for Springer Autonomous Robots for the Special Issue “Whole-body control of contacts and dynamics for humanoid robots”.

9.1.3.2. Reviewer - Reviewing Activities

- Amine Boumaza is a Review Editor for Frontiers in AI and Robotics.
- Francis Colas was a reviewer for the Journal of Field Robotics, and the IEEE Transactions on Automation Science and Engineering.
- Serena Ivaldi was a Review Editor and reviewer for Frontiers in AI and Robotics, and a reviewer for IEEE Transactions on Cognitive and Developmental Systems.
- Jean-Baptiste Mouret is Review Editor for Frontiers in AI and Robotics. He was a reviewer for Nature Communications, Frontiers in Neurobotics, Artificial Life.
- Vincent Thomas was a reviewer for the IEEE Transactions on Cybernetics.

9.1.4. Invited Talks

- Jean-Baptiste Mouret was invited to talk at:
 - The Origins Workshop (Arizona State University, USA),
 - The cross-disciplinary symposium on Machine Learning and Architecture (Copenhagen, Denmark),
 - 9th SIG on Design Theory of the International Design Society (Keynote, Paris, France),
 - Journée des Jeunes Chercheuses et Chercheurs organisée de l’ANR (Paris, France),
 - Ministère des finances (Conseil Général de l’Economie / mission de réflexion sur les armes autonomes, Paris, France),
 - Journée “Apprentissage et IA” organized by CERNA (Commission de réflexion sur l’Éthique de la Recherche en sciences et technologies du Numérique d’Allistene),
 - Journée Scientifiques Inria (Rennes, France),
 - Journée Intelligence Artificielle et Voiture Autonomes (Institut VEDECOM, Versailles, France),
 - HLR 2016 (German-French Winter School on Humanoids and Legged robots).
- Serena Ivaldi gave the following invited talks:
 - 06/2016: *Humanoid robotics and human-robot interaction*. Invited talk at Journée Robotique et IA, RFIA 2016, by Olivier Simonin.
 - 10/2016: *Grasping, vision and interaction for object manipulation with iCub*. Invited talk at IEEE-RAS IROS 2016 Workshop on Grasping and Manipulation, by Yasemin Bekiroglu.
 - 11/2016: *Exploiting tactile information for whole-body dynamics, learning and human-robot interaction*. Invited talk at IEEE-RAS Humanoids 2016 Workshop on Tactile Manipulation, by Qiang Li.
 - 11/2016: *Studying human behavior during human-robot collaborative tasks*. Invited talk at IEEE-RAS Humanoids 2016 Workshop on Human Movement Understanding, by Emel Demircan.
 - 11/2016: *Les robots humanoïdes: de l’acceptabilité à l’interaction*. Invited talk at the Forum de Sciences Cognitives, Nancy, by Christine Bourjot.
 - 12/2016: *Learning and interaction with iCub*. Invited talk at the German-French Conference on Humanoid and Legged Robots 2016, by Olivier Stasse.

9.1.5. Leadership within the Scientific Community

- Jean-Baptiste Mouret is the chair of the “evo-devo-robot” task force of the IEEE technical committee “Developmental and Cognitive Systems”.

9.1.6. Scientific Expertise

- Serena Ivaldi was appointed vice-president of the CES 33 panel Interaction and Robotics of the ANR. She was an invited member of the CNRS for the “Groupe de Discussion pour le renouvellement de la liste des candidats” section 07 CNRS (Specif Campus, GRETSI & Club EEA) - invited by Specif Campus, 2016.

9.1.7. Research Administration

- Amine Boumazza is a board member of the Évolution Artificielle association.
- Serena Ivaldi was member of the hiring committees:
 - CNRS: Committee member for jury n.29 - IR2 - BAP, sept.-oct. 2016.
 - Maître de conférence: Committee member for jury 27MCF1744 (4335) at UPMC, Paris, apr.-may 2016.
- Francis Colas was member of the hiring committee 27-MCF-0762 at ESSTIN, Université de Lorraine.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master: Karim Bouyarmane, “Programmation C/C++”, 20h eq. TD, M1/M2, ESSTIN, France.
- Master: Francis Colas, “Robotique Autonome”, 18h eq. TD, M2 “Systèmes Interactifs et Robotiques”, CentraleSupélec, France.
- Master: Francis Colas, “Introduction à ROS”, 6h eq. TD, M1, Mines de Nancy, France.
- Master: Serena Ivaldi, “Analyse du comportement”, 15h eq. TD, M2 “Science Cognitive”, Université de Lorraine, France.
- Master: Jean-Baptiste Mouret, “Disruptive technologies: Robotics”, 3h eq. TD, M2 (School of Public Affairs), Sciences Po Paris, France.
- Master: Vincent Thomas, “Modèles probabilistes et Apprentissage par renforcement”, 15h eq. TD, M2 “Informatique - Image Perception Raisonnement Cognition”, Univ. Lorraine, France.
- Master: Vincent Thomas, “Game Design”, 20h eq. TD, M1 “Sciences Cognitives”, Univ. Lorraine, France.
- Master: Vincent Thomas, “Agent intelligents et collectifs”, 20h eq. TD, M1 “Sciences Cognitives”, Univ. Lorraine, France.
- Master: Vincent Thomas, “Serious Game”, 12h eq. TD, M2 “Sciences Cognitives”, Univ. Lorraine, France.

9.2.2. Supervision

- PhD: Abdallah Dib, “Assistance à la personne en perte d'autonomie : étude de l'apport d'un robot compagnon”, 24 May 2016, François Charpillet (advisor).
- PhD in progress: Adrian Bourgaud, “Multi-sensor Fusion and Active Sensing”, started in Jul. 2015, François Charpillet (advisor).
- PhD in progress: Konstantinos Chatzilygeroudis, “Diagnosis-free Damage Recovery in Robotics with Machine Learning”, started in Oct. 2015, Jean-Baptiste Mouret (advisor).
- PhD in progress: Oriane Dermay, “Learning to control the physical interaction of a humanoid robot with humans”, started in Nov. 2015, François Charpillet (advisor), Serena Ivaldi.

- PhD in progress: Yassine El Khadiri, “Apprentissage automatique pour l’assistance à l’autonomie à domicile”, started in Nov. 2016, François Charpillet (advisor).
- PhD in progress: Iñaki Fernández Pérez, “*Apprentissage incrémental évolutif*”, started in Oct. 2013, F. Charpillet (advisor), Amine Boumaza.
- PhD in progress: Nassim Kaldé, “*Exploration et reconstruction d’un environnement inconnu par une flottille de robots*”, started in Oct. 2012, François Charpillet (advisor), Olivier Simonin.
- PhD in progress: Rituraj Kaushik, “Fast adaptation to damage by exploiting trajectory data”, started in Oct. 2016, Jean-Baptiste Mouret (advisor).
- PhD in progress: Van Quan Nguyen, “Mapping of a sound environment by a mobile robot”, started in Dec. 2014, Emmanuel Vincent (advisor), Francis Colas, François Charpillet.

9.2.3. Juries

- François Charpillet was reviewer and member of the PhD committee of :
 - Hendry Ferreira Chame, “Egocentric Representations for Autonomous Navigation of Humanoid Robots”, école centrale de Nantes, IRCCYN.
 - Patrick Béchon, “Planification multi-robot pour des missions de surveillance avec contraintes de communication”, Université de Toulouse, ISAE, LAAS, ONERA.
 - Raphael Lallemand, “Symbolic and Geometric Planning for teams of Robots and Humans”, Université de Toulouse, INSA Toulouse, LAAS.
 - Loïc Sevrin, “Mesure et suivi d’activité de plusieurs personnes dans un Living Lab en vue de l’extraction d’indicateurs de santé et de bien être”, Université de Claude Bernard Lyon 1, Institut des nanotechnologies de Lyon;
 - Vishnu Karakkat Narayanan, “Characterizing assistive shared control through vision-based and human-aware designs for wheelchair navigation assistance”, Université Bretagne Loire, INSA Rennes, Team Project Lagatic and Chroma.
 - Haïfa Rabai, “Réseau dynamique d’applications chaotiques couplées pour l’étude de la mobilité urbaine”, Université du Havre.
- François Charpillet was member and chair of the PhD committee of :
 - Coralie Angeletti, “Stratégie de Perception Active pour l’Interprétation de Scènes”, University Blaise Pascal, Clermont Ferrand.
 - Kevin Roussel, “Évaluation et amélioration des plates-formes logicielles pour réseaux de capteurs sans-fil, pour optimiser la qualité de service et l’énergie”, Université de Lorraine.
- François Charpillet was member of the Phd committee of :
 - Abdallah Dib, “Vers un système de capture du mouvement humain en 3D pour un robot mobile évoluant dans un environnement encombré”, Lorraine University.
 - Seifallah Ben Saad, “Conception d’un algorithme de coordination hybride de groupes de robots sous-marins communicants Application : acquisition optique systématique et détaillée des fonds marins”, Université de Bretagne occidentale, ENSTA Bretagne.

9.3. Popularization

- Amine Boumaza is a member of the editorial board of “Interstice”.
- Vincent Thomas gave proposed tutorials on “physics simulation” and “reinforcement learning” during “journées ISN-EPI” (24th of Mars 2016).
- Vincent Thomas participated in the preparation of “Computer Science Exporoute” (conducted by Inria Nancy Grand-Est) planned for 2017.
- Jean-Baptiste Mouret wrote an article for “Interstices” (“ Des robots qui s’adaptent aux dommages en seulement quelques minutes”).

- Jean-Baptiste Mouret helped Pierre Vandeginste (journalist) to write an article about his work in “La Recherche” (Dec. 2016); he also appeared in Science et Avenir, Arte Future Mag, Socialter, Telerama.
- Serena Ivaldi appeared in the following articles / gave the following interviews:
 - 07/2016: Humanité Dimanche, Homme/robot. Le trouble au rendez-vous. <http://www.humanite.fr/hommerobot-le-trouble-au-rendez-vous-612149>
 - 06/2016: Inriality, Robots humanoïdes : une inquiétante étrangeté. <http://www.inriality.fr/culture-loisirs/relations-homme-robot/robophobie/robots-humoïdes-une/>
 - 06/2016: Les Inrockuptibles, n.1070, Comment les robots ont conquis nos cœurs. <http://www.lesinrocks.com/2016/06/01/actualite/dossier-high-tech-androïdes-ont-conquis-coeurs-11832819/>
 - 03/2016: Interstices, Des robots au service de l’homme. https://interstices.info/jcms/p_88305/des-robots-au-service-des-hommes
 - 03/2016: La semaine, Têtes chercheuses. <http://www.lasemaine.fr/2016/03/17/tetes-chercheuses>
 - 03/2016: Pour la science, Quels obstacles à l’insertion des robots en société ? <https://pbs.twimg.com/media/CceuEH3W4AEoNx-.jpg:large>

MAGRIT 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

- M.-O. Berger was member of the program committee of: International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2016), International Conference on Pattern recognition (ICPR 2016), International Conference on Robotic and automation (ICRA 2016), International Conference on Information Processing in Computer assisted interventions (IPCAI 2017)
- Erwan Kerrien was a member of the program committee of MICCAI 2016 and of IPCAI 2017.
- F. Sur was a member of the program committee of RFIA 2016 (Reconnaissance des formes et intelligence artificielle).
- P.-F. Villard was member of the program committee of MICCAI 2016, International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing 2016, Eurographics Workshop on Visual Computing for Biology and Medicine 2016.

9.1.1.2. Reviewer

M.-O. Berger was a reviewer for IROS 2016.

9.1.2. Journal

9.1.2.1. Reviewer - Reviewing Activities

The members of the team reviewed articles in Computers in Biology and Medicine (Elsevier), Digital Signal Processing, IEEE Transactions on Biomedical Engineering.

9.1.3. Invited Talks

- Pierre-Frédéric Villard gave a seminar on "Mitral Valve Biomechanical Model Construction" at the Department of Cardiac Surgery at Boston Children's Hospital, Boston (USA) on the 08/01/2016

9.1.4. Scientific Expertise

- Marie-Odile Berger was a member of the HCERES visiting committee of LTSI (Rennes)
- Marie-Odile Berger was president of the AFRIF thesis prize and member of the GDR Robotique thesis prize.
- Marie-Odile Berger is president of the Association française pour la reconnaissance et l'interprétation des formes (AFRIF)

9.1.5. Research Administration

- Marie-Odile Berger is a member of the Inria evaluation committee.
- Gilles Simon is Chargé de Mission Loria to take part in an EIT's KIC (Knowledge and Innovation Communities) proposal in the thematic of manufacturing (KIC Added-value Manufacturing).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

The four associate professors of the MAGRIT team actively teach at Université de Lorraine with an annual number of around 200 teaching hours in computer sciences, some of them being accomplished in the field of image processing. Inria researchers have ponctual teaching activities in computer vision and shape recognition mainly in the computer science Master of Nancy and in several Engineering Schools near Nancy (ENSMN Nancy, SUPELEC Metz, ENSG). Our goal is to attract Master students with good skills in applied mathematics towards the field of computer vision. The list of courses given by staff members which are tightly related to image processing and computer vision is detailed below:

- Licence: Graphic and haptic rendering, 30h, IUT Saint-Dié des Vosges.
- Licence: Image processing, 30h, IUT Saint-Dié des Vosges.
- Licence: 3D programming, 30h, IUT Saint-Dié des Vosges.
- Game design with Unity3D , 15h, IUT Saint-Dié des Vosges.
- Introduction to augmented reality, 6h, IUT Saint-Dié des Vosges.
- Master: Signal analysis, 50 h, Université de Lorraine.
- Master: Augmented reality, 24 h, Télécom-Nancy, Université de Lorraine.
- Master : Introduction to computer vision, 12h, Université de Lorraine.
- Master : Shape recognition, 15 h, Université de Lorraine.
- Master : Computer vision: foundations and applications, 15 h, Université de Lorraine.
- Master : Introduction to image processing, 21 h, École des Mines de Nancy
- Master : Image processing for Geosciences, ENSG, 12h.
- Master : Introduction to signal processing and applications, 21 h, Ecole des Mines de Nancy
- Master : Augmented reality, 24h, M2 IHM Metz
- Master : Augmented reality, 3 h, SUPELEC Metz.

In addition, G. Simon was interim director of the CESS (Centre d'Études Supérieures et Scientifiques) in Epinal, a branch of the science faculty of Nancy, from january to april 2016. He is also head of the Licence professionnelle Infographie Paysagère of the faculty of Nancy.

A software, named artEoz, has been co-designed by B. Wrobel-Dautcourt [21]. It aims at supporting students in learning computer programming. artEoz original design stems from the author's long term experience in teaching object oriented programming. It offers the students a pedagogical view of the memory state, that is dynamically updated while the user's program runs. artEoz can be freely downloaded for academic use only. This year, we have proposed an on-line version of the software. Documentation, tutorials, on-line tools and download are available on the website <http://arteoz.loria.fr>. Tutorials can be customized to fit different students' needs.

9.2.2. Supervision

PhD in progress: Pierre Rolin, Calcul de pose par simulation de points de vue pour la réalité augmentée, octobre 2013, Marie-Odile Berger, Frédéric Sur.

PhD in progress: Charlotte Delmas, Reconstruction 3D des outils chirurgicaux en radiologie interventionnelle, avril 2013, Marie-Odile Berger, Erwan Kerrien.

PhD in progress: Antoine Fond, Introduction de sémantique dans la modélisation urbaine dans un contexte de calcul du point de vue, octobre 2014, Marie-Odile Berger, Gilles Simon.

PhD in progress: Jaime Garcia Guevara, Vers une utilisation clinique de la réalité agmentée pour la chirurgie hépatique, octobre 2015, Marie-Odile Berger, Stéphane Cotin (MIMESIS).

PhD in progress: Raffaella Trivisonne, Image-guided real-time simulation using stochastic filtering, novembre 2015, Erwan Kerrien, Stéphane Cotin (MIMESIS).

PhD in progress: Vincent Gaudillière, Reconnaissance de lieux et d'objets pour la réalité augmentée en milieux complexes, décembre 2016, Marie-Odile Berger, Gilles Simon.

9.2.3. *Juries*

Marie-Odile Berger was external reviewer of the PhD of A. Bauer and A. Agustinos and of the HDR of R. Grompone. Gilles Simon was a member of the PhD committee of Liming Yang.

9.3. Popularization

Members of the team participate on a regular basis, to scientific awareness and mediation actions.

- Marie-Odile Berger and Gilles Simon wrote an article about augmented reality in *Interstices* [27].
- Erwan Kerrien is Chargé de Mission for scientific mediation at Inria Nancy-Grand Est. As such, he is a member of the steering committee of "la Maison pour la Science de Lorraine"⁰, and member of the IREM⁰ steering council. He also serves as the academic referent of an IREM working group aiming at introducing computer science in middle and high school curricula. Among other activities, he was also an associate researcher to a MATH.en.JEANS workshop, and he participated in the creation of a MOOC for teachers of the new ICN option (Informatique et Création Numérique - *Computer Science and Digital Creation*) at the beginning of high school curriculum.
- Gilles Simon participated to the "Fête de la science" (unplugged activities in computer science).
- Pierre-Frédéric Villard participated to open days and science festival in the IUT of Saint-Dié des Vosges. He presented augmented and virtual reality demos and their link to the high school mathematics program.
- Pierre-Frédéric Villard has been involved in the conception of the virtual visit for the Homo Numericus Exhibition (<http://homonumericus.inria.fr>).

⁰"Houses for Science" project, see <http://maisons-pour-la-science.org/en>

⁰Institut de Recherche sur l'Enseignement des Mathématiques - *Research Institute for Teaching Mathematics*

MULTISPEECH Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- General co-chair, 4th CHiME Speech Separation and Recognition Challenge (E. Vincent)
- General co-chair, 4th International Workshop on Speech Processing in Everyday Environments, San Francisco, USA, September 2016 (E. Vincent)
- General co-chair, 14th International Conference on Auditory-Visual Speech Processing, Stockholm, Sweden August 2017 (S. Ouni)
- Chair, SiSEC 2016, Signal Separation Evaluation Challenge (A. Liutkus)
- Elected chair, Steering Committee of the Latent Variable Analysis and Signal Separation (LVA/ICA) conference series (E. Vincent)
- Chair, Challenges Subcommittee, IEEE Technical Committee on Audio and Acoustic Signal Processing (E. Vincent)

10.1.1.2. Member of the Organizing Committees

- Member of the organizing committee, 2017 IEEE Automatic Speech Recognition and Understanding Workshop, Okinawa, Japan, December 2017 (E. Vincent)
- Member of the steering committee, Detection and Classification of Acoustic Scenes and Events (DCASE) challenge series (E. Vincent)

10.1.1.3. Member of the Conference Program Committees

- Area chair for Analysis of Speech and Audio Signal, INTERSPEECH'2016 (D. Juvet)
- Area chair for Audio and Speech Source Separation, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (E. Vincent)

10.1.1.4. Reviewer

- CHiME 2016 - Speech Separation and Recognition Challenge (E. Vincent)
- EUSIPCO 2016 - European Signal Processing Conference (D. Juvet)
- ICECS 2016 - Conference on Environmental and Computer Science (R. Serizel)
- INTERSPEECH 2016 (A. Bonneau, S.Ouni, E. Vincent, I. Illina, Y. Laprie)
- IROS 2016 - International Conference on Intelligent Robots and Systems (E. Vincent)
- IVA 2016 - International Conference on Intelligent Virtual Agents (S. Ouni)
- JEP 2016 - Journées d'Etudes sur la Parole (D. Juvet, A. Bonneau, E. Vincent, D. Fohr, I. Illina, O. Mella, Y. Laprie)
- SLT 2016 - IEEE Spoken Language Technology Workshop (E. Vincent)

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Computer Speech and Language, special issue on Multi-Microphone Speech Recognition in Everyday Environments (E. Vincent)
- Speech Communication (D. Juvet)
- Traitement du signal (E. Vincent)

International Journal of Learner Corpus Research, special issue on "Investigating segmental, prosodic and fluency features in spoken learner corpora" (A. Bonneau, Guest Editor)

Speech Communication, special issue on Realism in Robust Speech and Language Processing (E. Vincent)

10.1.2.2. Reviewer - Reviewing Activities

Computer Speech and Language (D. Jouvét, S. Ouni, E. Vincent)

Digital Signal Processing (E. Vincent)

IEEE Transactions on Audio, Speech and Language Processing (A. Liutkus, S. Ouni, R. Serizel)

IEEE Transactions on Signal Processing (A. Liutkus)

IEEE Signal Processing Letters (A. Liutkus, R. Serizel)

Journal of the Acoustical Society of America (Y. Laprie)

JASA Express Letters (Y. Laprie)

Speech Communication (E. Vincent, Y. Laprie)

10.1.3. Invited Talks

Séparation de sources: quand l'acoustique rencontre le machine learning, keynote talk, 13e Congrès Français d'Acoustique (E. Vincent) [22]

Speech recognition, Ecole Nationale d'Ingénieurs de Tunis, May 2016 (D. Jouvét)

Les corpus acoustiques et langagiers pour la reconnaissance de la parole, Seminar about Big Data, LIA-LINOS (Laboratoire International Associé), May 2016 (O. Mella)

Parole audiovisuelle : pour faciliter la communication parlée, Praxiling, Université de Montpellier 3, October 2016 (S. Ouni)

10.1.4. Leadership within the Scientific Community

Elected chair, ISCA Special Interest Group on Robust Speech Processing (E. Vincent)

Secretary/Treasurer, executive member of AVISA (Auditory-VISual Speech Association), an ISCA Special Interest Group (S. Ouni)

Member IEEE Technical Committee on Audio and Acoustic Signal Processing (A. Liutkus)

10.1.5. Scientific Expertise

Expertise of an ANR project proposal (D. Jouvét, Y. Laprie, E. Vincent)

Expertise of a project for the Research Foundation Flanders – FWO (S. Ouni)

10.1.6. Research Administration

Elected Member of the board of the AM2I Scientific Pole - Université de Lorraine (Y. Laprie)

Member of the HCERES visiting committee for LIUM (D. Jouvét)

Chairman of selection committee for the position of Assistant Professor (ESSTIN 0762, May 2016), Y. Laprie.

Member of a selection committee (Université d'Avignon, May 2016), E. Vincent

Member of a selection committee (Université du Maine, May 2016), D. Jouvét

Member of a selection committee (Télécom ParisTech, June 2016), E. Vincent

Member of the "Commission de développement technologique" (A. Bonneau)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

DUT: I. Illina, Programming in Java, 150 hours, L1, University of Lorraine, France

- DUT: I. Illina, Linux System, 65 hours, L1, University of Lorraine, France
- DUT: I. Illina, Supervision of student projects and stages, 50 hours, L2, University of Lorraine, France
- DUT: S. Ouni, Programming in Java, 24 hours, L1, University of Lorraine, France
- DUT: S. Ouni, Web Programming, 24 hours, L1, University of Lorraine, France
- DUT: S. Ouni, Graphical User Interface, 96 hours, L1, University of Lorraine, France
- DUT: S. Ouni, Advanced Algorithms, 24 hours, L2, University of Lorraine, France
- DUT: R. Serizel, Introduction to computer tools, 108h, L1, University of Lorraine – IUT Nancy Charlemagne, France
- Licence: V. Colotte, C2i - Certificat Informatique et Internet, 50h, L1, University of Lorraine, France
- Licence: V. Colotte, System, 115h, L3, University of Lorraine, France
- Licence: O. Mella, C2i - Certificat Informatique et Internet, 28h, L1, University of Lorraine, France
- Licence: O. Mella, Introduction to Web Programming, 30h, L1, University of Lorraine, France
- Licence: O. Mella, Computer Networking, 80h, L2-L3, University of Lorraine, France
- Licence: A. Piquard-Kipffer, Education Sciences, 36h, L1, France
- Licence: A. Piquard-Kipffer, Reading and Writing, 27h, L2, Département Orthophonie, University of Lorraine, France
- Licence: A. Piquard-Kipffer, Psycholinguistics, 6 hours, L2 Département Orthophonie, University Pierre et Marie Curie-Paris, France
- Licence: A. Piquard-Kipffer, Reading and Writing assessment, 10h, L3, Département Orthophonie, University of Lorraine, France
- Master: V. Colotte, Introduction to Speech Analysis and Recognition, 18h, M1, University of Lorraine, France
- Master: Y. Laprie, Analyse, perception et reconnaissance de la parole, 32 hours, M1, University of Lorraine, France
- Master: O. Mella, Computer Networking, 74h, M1, University of Lorraine, France
- Master: O. Mella, Introduction to Speech Analysis and Recognition, 12h, M1, University of Lorraine, France
- Master: S. Ouni, Multimedia in Distributed Information Systems, 31 hours, M2, University of Lorraine, France
- Master: A. Piquard-Kipffer, Dyslexia, 25 hours, M1, Département Orthophonie, University of Lorraine, France
- Master: A. Piquard-Kipffer, Reading and writing, 6 hours, M1, Département Orthophonie, University Pierre et Marie Curie-Paris, France
- Master: A. Piquard-Kipffer, Deaf People and Reading, 15 hours, M2 Département Orthophonie, University of Lorraine, France
- Master: A. Piquard-Kipffer, Psychology, 40 hours, M2, ESPE, University of Lorraine, France
- Master: A. Piquard-Kipffer, French Language Didactics, 80 hours, M2, ESPE, University of Lorraine, France
- Engineer school: V. Colotte, Conception and developpement in XML, 20h, Bac+3, Telecom Nancy, France
- Ecole d'audioprothèse : A. Bonneau, Phonetics, 16 h, University of Lorraine
- Doctorat: A. Piquard-Kipffer, Language Pathology - speech and language screening, 15 hours, EHESP, University of Sorbonne- Paris Cité, France

Adults: O. Mella, Computer science courses for secondary school teachers (Informatique et Sciences du Numérique courses) (21h), ESPE of Academy Nancy-Metz, University of Lorraine, France

Other: V. Colotte, Responsible for "Certificat Informatique et Internet" for the University of Lorraine, France (50000 students, 30 departments)

Other: S. Ouni, Responsible of Année Spéciale DUT, University of Lorraine, France

10.2.2. Supervision

PhD: Imran Sheikh, "Exploiting Semantic and Topic Context to Improve Recognition of Proper Names in Diachronic Audio Documents", November 2016, Irina Illina, Dominique Fohr and Georges Linares.

PhD in progress: Baldwin Dumortier, "Contrôle acoustique d'un parc éolien", September 2014, Emmanuel Vincent and Madalina Deaconu.

PhD in progress: Quan Nguyen, "Mapping of a sound environment by a mobile robot", November 2014, Francis Colas and Emmanuel Vincent.

PhD in progress: Aditya Nugraha, "Deep neural networks for source separation and noise-robust speech recognition", January 2015, Antoine Liutkus and Emmanuel Vincent.

PhD in progress: Ken Deguernel, "Apprentissage de structures musicales en situation d'improvisation", March 2015, Emmanuel Vincent and Gérard Assayag.

PhD in progress: Amal Houdidhek, "Élaboration et analyse d'une base de parole arabe pour la synthèse vocale", December 2015, Denis Juvet and Vincent Colotte (France) and Zied Mnasri (Tunisia).

PhD in progress: Imène Zangar, "Amélioration de la qualité de synthèse vocale par HMM pour la parole arabe", December 2015, Denis Juvet and Vincent Colotte (France) and Zied Mnasri (Tunisia).

PhD in progress: Mathieu Fontaine, "Processus alpha-stable pour le traitement du signal", May 2016, Antoine Liutkus and Roland Badeau (Télécom ParisTech).

PhD in progress: Amine Menacer, "Traduction automatique de vidéos", May 2016, Kamel Smaïli and Denis Juvet.

PhD in progress: Anastasiia Tsukanova, "Coarticulation modeling in articulatory synthesis", May 2016, Yves Laprie.

PhD in progress: Nathan Libermann, "Deep learning for musical structure analysis and generation", October 2016, Frédéric Bimbot and Emmanuel Vincent.

PhD in progress: Yang Liu, "Merging acquisition and processing of cineMRI of the vocal tract", October 2016, Pierre-André Vuissoz and Yves Laprie.

10.2.3. Participation in HDR and PhD juries

Participation in PhD thesis Jury for David Guennec (Université Rennes 1, September 2016), Y. Laprie.

Participation in PhD thesis Jury for Ugo Marchand (Université Paris 6, November 2016), E. Vincent, reviewer.

Participation in PhD thesis Jury for Joachim Flocon-Cholet (Université Rennes 1, June 2016), E. Vincent, reviewer.

Participation in PhD thesis Jury for Aly Magassouba (Université Rennes 1, December 2016), E. Vincent, reviewer.

Participation in PhD thesis Jury for Diandra Fabre (Université Grenoble Alpes, December 2016), S. Ouni, reviewer.

Participation in PhD thesis Jury for Ivana Didirková (Université Montpellier 3, December 2016), Y. Laprie, reviewer.

10.2.4. Participation in other juries

Chairman of Scientific « Baccalauréat », specialty Earth Sciences (Académie de Nancy-Metz and Université de Lorraine, July 2016), A. Piquard-Kipffer.

Participation in the Competitive Entrance Examination into Speech-Language Pathology Department (University of Lorraine, June 2016), A. Piquard-Kipffer.

10.3. Popularization

Demonstration at Village Sciences LORIA, March 2016 (K. Deguernel, E. Vincent, S. Ouni).

Demonstration at Forum des métiers, Collège Peguy, Le Chesnay, March 2016 (A. Piquard-Kipffer).

Demonstration at EHESP-University of Sorbonne- Paris Cité, March 2016 (A. Piquard-Kipffer).

Demonstration at LORIA's 40th Anniversary, June 2016 (K. Deguernel, E. Vincent).

"Démixer la musique", Interstices, January 2016 (A. Liutkus and E. Vincent).

Intervention lors d'une action pour la Maison pour la Science en Lorraine au service des professeurs (A. Bonneau)

Démonstration lors de la journée Rencontre Inria Industrie sur le thème « Ed-Techs au service de e-Education », December 2016 (D. Jouvét)

ORPAILLEUR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organization, General Chairs, Scientific Chairs

- “FCA4AI 2016”. Amedeo Napoli organized with Sergei O. Kuznetsov (HSE Moscow) and Sebastian Rudolph (TU Dresden) the fifth workshop FCA4AI (“What can do FCA for Artificial Intelligence”) which was associated with the ECAI Conference in The Hague (Netherlands, August 2016, see <http://www.fca4ai.hse.ru/2016> and <http://ceur-ws.org/Vol-1703>) [53].

9.1.1.1. Scientific Animation

- The scientific animation in the Orpailleur team is based on the Team Seminar which is called the “Malotec” seminar (<http://malotec.loria.fr/?p=1>). The Malotec seminar is held in general twice a month and is used either for general presentations of members of the team or for invited presentations of external researchers.
- Members of the Orpailleur team are all involved, as members or as head persons, in various national research groups.
- The members of the Orpailleur team are involved in the organization of conferences and workshops, as members of conference program committees (ECAI, ECML-PKDD, ICCBR, ICDM, ICFCA, IJCAI, KDD...), as members of editorial boards, and finally in the organization of journal special issues.

9.2. Teaching – Supervision – Juries

- The members of the Orpailleur team are involved in teaching at all levels of teaching, mainly at University of Lorraine. Actually, most of the members of the Orpailleur team are employed on “Université de Lorraine” positions.
- The members of the Orpailleur team are also involved in student supervision, at all university levels, from under-graduate until post-graduate students.
- Finally, the members of the Orpailleur team are involved in HDR and thesis defenses, being thesis referees or thesis committee members.

SEMAGRAMME Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

MAXIME AMBLARD: LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

8.1.1.2. Member of the Organizing Committees

PHILIPPE DE GROOTE: LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

SYLVAIN POGODALLA: LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

SYLVAIN POGODALLA: co-chair of FG 2016 *21st Conference on Formal Grammar* [19]; co-chair of LACL 2016 (*Logical Aspects of Computational Linguistics 2016*) [18]

MAXIME AMBLARD: co-chair of LACL 2016 (*Logical Aspects of Computational Linguistics 2016*) [18]

8.1.2.2. Member of the Conference Program Committees

PHILIPPE DE GROOTE: FG 2016, *21st Conference on Formal Grammar*; NLCS'16, *Fourth Workshop on Natural Language and Computer Science*; LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

MAXIME AMBLARD: LACL 2016 *Logical Aspects of Computational Linguistics 2016*; TALN 2016 *Traitement Automatique des Langues 2016*; RECITAL 2016 *Rencontre des Étudiants Chercheurs en Informatique pour le Traitement Automatique des Langues*.

GUY PERRIER: HfTAL2016 *10th International Conference on Natural Language Processing*.

8.1.2.3. Reviewer

PHILIPPE DE GROOTE: FG 2016, *21st Conference on Formal Grammar*; NLCS'16, *Fourth Workshop on Natural Language and Computer Science*; LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

SYLVAIN POGODALLA: NISM 2016 *New Ideas in Semantics and Modelisation*; Cognitive Structures: Linguistic, Philosophical and Psychological Perspectives; FG 2016 *21st Conference on Formal Grammar*; LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

MAXIME AMBLARD: LACL 2016 *Logical Aspects of Computational Linguistics 2016*; TALN 2016 *Traitement Automatique des Langues 2016*; RECITAL 2016 *Rencontre des Étudiants Chercheurs en Informatique pour le Traitement Automatique des Langues*.

GUY PERRIER: HfTAL2016 *10th International Conference on Natural Language Processing*; LACL 2016 *Logical Aspects of Computational Linguistics 2016*.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

PHILIPPE DE GROOTE: area editor of the *FoLLI-LNCS series*; associate editor of *Higher-Order and Symbolic Computation*; member of the editorial board of *Cahiers du Centre de Logique*.

SYLVAIN POGODALLA: Member of the editorial board of the journal *Traitement Automatique des Langues*, in charge of the *Résumés de thèses* section.

MAXIME AMBLARD: Member of the editorial board of the journal *Traitement Automatique des Langues*, in charge of the final editing process

8.1.3.2. Reviewer - Reviewing Activities

PHILIPPE DE GROOTE: *Journal of Logic, Language and Information*; *Journal of Applied Logic*.

SYLVAIN POGODALLA: *Journal of Language Modelling*; *Traitement Automatique des Langues*.

MAXIME AMBLARD: *Traitement Automatique des Langues*.

8.1.4. Invited Talks

MAXIME AMBLARD: *Sémantique : modélisation formelle et interprétation de données empiriques*, ATILF, Nancy; *L'informaticien face au traitement du langage : que peut-on faire et que croit-on que nous faisons ?*, at the occasion of *Images du savoir pratique : les figures de l'informaticien et du médecin dans les récits de fiction populaire contemporains*, IRIST, Strasbourg.

8.1.5. Leadership within the Scientific Community

PHILIPPE DE GROOTE: vice president of SIGMOL, *Association for Mathematics of Language, a Special Interest Group of the Association for Computational Linguistics*; member of the LACL steering committee.

BRUNO GUILLAUME: nominated as a Management Committee Substitute of the COST Action CA16105 "European Network for Combining Language Learning with Crowdsourcing Techniques" (http://www.cost.eu/COST_Actions/ca/CA16105)

SYLVAIN POGODALLA: member of the LACL steering committee; member of the Formal Grammar standing committee.

8.1.6. Scientific Expertise

PHILIPPE DE GROOTE: expert for the FNRS, *Fond National de la Recherche Scientifique*, Belgium; expert for the *National Science Center*, Poland.

SYLVAIN POGODALLA: expert for the Research Executive Agency (REA) of the EU.

MAXIME AMBLARD: member of the PhD award of ATALA

8.1.7. Research Administration

PHILIPPE DE GROOTE: member of the *bureau du comité des projets d'Inria-Nancy*.

BRUNO GUILLAUME:

- Head of the Loria department NLPKD (Natural Language Processing and Knowledge Discovery)
- Animator of the CPER 2015-2020 project *Langues, Connaissances et Humanités Numériques* (Languages, Knowledge and Digital Humanities) in which ten laboratories of the *Université de Lorraine* are implied.
- Elected member of the *Pôle scientifique AM2I* of the Université de Lorraine.
- Member of the Comipers (Inria committee for PhD and Post-doctoral selection).

MAXIME AMBLARD:

- member of *conseil scientifique de l'Université de Lorraine*.
- member of *conseil de laboratoire du Loria*
- member of *conseil de gestion de la Maison des sciences de l'homme, MSH-Lorraine*
- head of the master (M2) in Natural Language Processing.
- in charge of the proposal of a new master in NLP.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence: Maxime Amblard, Formalismes de représentation et raisonnement, 25h, L3, Université de Lorraine, France

Licence: Maxime Amblard, C2i, 20h, L1, Université de Lorraine, France

Licence: Jirka Maršík, Ingénierie linguistique, 25h, L3, Université de Lorraine, France

Master: Maxime Amblard, Formalisms : from Syntax to Discourse, 50h, M2, Univ. Lorraine, France

Master: Maxime Amblard, Remise à niveau TAL, 6h, M2, Université de Lorraine, France

Master: Maxime Amblard, Programming for NLP, 44h, M1, Université de Lorraine, France

Master: Philippe de Groote, Formal logic, 35h, M2, Université de Lorraine, France.

Master: Philippe de Groote, Computational structures and logics for natural language modelling, 18h, M2, Université Paris Diderot, France.

Master : Bruno Guillaume, NLP Toolchain and Linguistic Resources, 15h, M2, Université de Lorraine, France.

Master: Jirka Maršík, IA fondamentale : représentation des connaissances et fouille de données, 11h30, M1, Université de Lorraine, France

Master: Jirka Maršík, Communication scientifique, 15h30, M1, Université de Lorraine, France

Master: Jirka Maršík, Cognitive Aspect of Computational Linguistic, 15h, M2, Université de Lorraine, France

Master: Jirka Maršík, Aspects cognitives de la linguistique computationnelle, 16h30, M2, Université de Lorraine, France

Master: Jirka Maršík, Remise à niveau TAL, 10h, M2, Université de Lorraine, France

Master : Sylvain Pogodalla, Formal Languages, 24h, M2, Université de Lorraine, France.

8.2.2. Supervision

HdR: Maxime Amblard, Sémantique et discours, de la modélisation à l'interprétation, Université de Lorraine, November 28th, 2016, Philippe de Groote.

PhD: Jirka Maršík, Effects and Handlers in Natural Language, Université de Lorraine, December 9th, 2016, Philippe de Groote and Maxime Amblard.

PhD: Aleksandre Maskharashvili, Discourse Modeling with Abstract Categorical Grammars, Université de Lorraine, December 1st, 2016, Philippe de Groote and Sylvain Pogodalla.

PhD in progress: Clément Beysson, Quantificateurs généralisés dynamiques pour l'analyse discursive, since september 2015, Philippe de Groote and Bruno Guillaume.

8.2.3. Juries

PHILIPPE DE GROOTE was member of the jury of the HdR of Maxime Amblard, *Sémantique et discours, de la modélisation à l'interprétation* [6], November 28th, 2016, Université de Lorraine.

PHILIPPE DE GROOTE was member of the jury of the PhD thesis of Aleksandre Maskharashvili, *Discourse Modeling with Abstract Categorical Grammars* [8], December 1st, 2016, Université de Lorraine.

PHILIPPE DE GROOTE was member of the jury of the PhD thesis of Jirka Maršík, *Effects and Handlers in Natural Language* [7], Université de Lorraine, December 9th, 2016, Université de Lorraine.

SYLVAIN POGODALLA was member of the jury of the PhD thesis of Aleksandre Maskharashvili, *Discourse Modeling with Abstract Categorical Grammars* [8], December 1st, 2016, Université de Lorraine.

MAXIME AMBLARD was member of the jury of the PhD thesis of Jirka Maršík, *Effects and Handlers in Natural Language* [7], Université de Lorraine, December 9th, 2016, Université de Lorraine.

GUY PERRIER was member of the jury of the PhD thesis of Bikash Gyawali *Surface Realisation from Knowledge Bases*, January 20, 2016, Université de Lorraine.

8.3. Popularization

- Maxime Amblard is scientific vice head of the editorial board of *interstice* ^{ji}, a french magazine popularizing computer sciences. He is the head of the rubric *informatique —ou presque— dans les films*.
- Maxime Amblard was scientific expert for the exhibition *Homo Numericus*.
- Bruno Guillaume was invited twice to present and lead an open discussion about Citizen Science: *Séminaire ESPÉ DANE : la pépinière 4.0*, in January, and *Séminaire ESPÉ DANE : la pépinière 4.1*, in October.
- Bruno Guillaume was invited in July to a panel discussion about Citizen Science, *Les rendez-vous de Science&You*.