RESEARCH CENTER
Nancy - Grand Est

FIELD

Activity Report 2019

Section Dissemination

CAMUS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. Member of the Organizing Committees

Philippe Clauss organized the Special Session on Compiler Architecture, Design and Optimization (CADO) of the 17th International Conference on High Performance Computing & Simulation (HPCS 2019), July 2019, Dublin, Ireland.

Philippe Clauss will organize the 10th edition of the International Workshop on Polyhedral Compilation Techniques, held in conjunction with HiPEAC 2020, January 22, 2020, Bologna, Italy.

Cédric Bastoul co-organized HIP3ES 2019 (International Workshop on High Performance Energy Efficient Embedded Systems), in conjunction with the international conference HiPEAC 2019.

Arthur Charguéraud co-organized the summer school École des Jeunes Chercheurs en Programmation (EJCP), June 2019, Strasbourg, France.

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

Vincent Loechner has been member of the program committees of HIP3ES 2019, PDP 2020, IMPACT 2020.

Philippe Clauss has been part of the program committees of: CC 2020 (ACM SIGPLAN International Conference on Compiler Construction); ICPP 2020 (49th International Conference on Parallel Processing); IPDRM 2019 (Third Annual Workshop on Emerging Parallel and Distributed Runtime Systems and Middleware, held in conjunction with the International Conference for High Performance Computing, Networking, Storage and Analysis, SC 19).

Arthur Charguéraud has been member of the program committees of ITP 2019, POPL 2020, OOPSLA 2019.

Cédric Bastoul has been part of the program committee of HiPC 2019 (IEEE International Conference on High Performance Computing, Data and Analytics), HIP3ES 2019 (International Workshop on High Performance Energy Efficient Embedded Systems), IMPACT 2019 (International Workshop on Polyhedral Compilation Techniques), CADO 2019 (Special Session on Compiler Architecture, Design and Optimization of the 17th International Conference on High Performance Computing & Simulation - HPCS 2019).

10.1.2.2. Reviewer

Bérenger Bramas has been a reviewer for COMPAS 2019 and PDP 2020.

Arthur Charguéraud has been a reviewer for FOSSACS 2020 and ESOP 2020.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

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

10.1.3.2. Reviewer - Reviewing Activities

Bérenger Bramas has been a reviewer for the following journals: Journal of Parallel Computing (Elsevier), Journal of Parallel and Distributed Computing (Elsevier), Journal of Computer Science and Technology (Springer), Parallel Processing Letters (World Scientific), Software: Practice and Experience (Wiley).

Philippe Clauss has been a reviewer for the Journal of Software: Practice and Experience (Wiley).

10.1.4. Invited Talks

Cédric Bastoul delivered the invited talk "Loop Optimization: A Matter of Art and Science" at the Huawei Symposium on Foundations of Software 2019.

10.1.5. Scientific Expertise

10.1.5.1. Standardization

Since Nov. 2014, Jens Gustedt has been a member of the ISO working group SC22-WG14 for the standardization of the C programming language and serves as a co-editor of the standards document, see [46], [47], [40], [33]. He participates actively in the clarification report processing, the planning of future versions of the standard and in a subgroup that discusses the improvement of the C memory model, see [45], [35], [48].

He was one of the main forces behind the elaboration of C17, the new version of the C standard that has been published by ISO in 2018 [51] and contributes to the future standard "C2x" in various ways. In particular he proposed the removal of the so-called K&R definitions [27], the reform of sign representation [25], [26], maximum width integers [44], keywords [31], [41], [36], [36], null pointer constants [34], timing interfaces [37], [30], [30], atomicity and synchronization [42], [32], [39], and function error conventions [28]. Most of these are either integrated in the latest draft or have been adopted subject to reformulations and adaptations.

10.1.5.2. Expertise

Philippe Clauss has been a reviewer for a promotion case to Full Professor in a US University.

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

10.1.6. Research Administration

Cédric Bastoul, Philippe Clauss and Vincent Loechner are members of the *Comité d'Experts (section 27, informatique)* of the Université de Strasbourg, providing their scientific and teaching expertise to the university and to the academy. In particular, this committee is involved in the recruitment of researchers and teachers in computer science. Philippe Clauss has been the Vice President of the committee since April 2019.

Jens Gustedt is the head of the ICPS team for the ICube lab, and in that function a member of the board of directors of the lab. He is also a member of the local recruitment committee for PhD students and postdocs of Inria Center Nancy — Grand Est.

Philippe Clauss and Cédric Bastoul are members of the *Collegium Sciences* of the University of Strasbourg, which is a group of representative scientists providing advice regarding the funding of projects.

Philippe Clauss is a member of the *Bureau du Comité des Projets* of the Inria Center Nancy — Grand Est. This group of scientists provides scientific expertise to the Director of the Center.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Bérenger Bramas, Compilation and Performance, 39h, M2, Université de Strasbourg, France

Master: Bérenger Bramas, Compilation, 30h, M1, Université de Strasbourg, France

Licence: Vincent Loechner, responsable pédagogique de la licence professionnelle ASSR-ARS, L3, Université de Strasbourg, France

Licence: Vincent Loechner, algorithmique et programmation, 168h, L1, Université de Strasbourg, France

Licence: Vincent Loechner, administration système et internet, 45h, L3, Université de Strasbourg, France

Licence: Vincent Loechner, programmation parallèle, 23h, L3, Université de Strasbourg, France

Master: Vincent Loechner, programmation temps réel, 10h, M2, Université de Strasbourg, France

Master: Vincent Loechner, calcul parallèle, 20h, 3ième année école d'ingénieur (TPS), Université de Strasbourg, France

Licence: Philippe Clauss, Computer architecture, 18h, L2, Université de Strasbourg, France

Licence: Philippe Clauss, Bases of computer architecture, 22h, L1, Université de Strasbourg, France

Master: Philippe Clauss, Compilation, 84h, M1, Université de Strasbourg, France

Master: Philippe Clauss, Real-time programming and system, 37h, M1, Université de Strasbourg, France

Master: Philippe Clauss, Code optimization and transformation, 31h, M1, Université de Strasbourg, France

Licence (Math-Info): Alain Ketterlin, Algorithmique et programmation, L1, 96h, Université de Strasbourg, France

Licence (Math-Info): Alain Ketterlin, Architecture des systèmes d'exploitation, L3, 38h, Université de Strasbourg, France

Licence (Math-Info): Alain Ketterlin, Programmation système, L2, 40h, Université de Strasbourg, France

Master (Informatique): Alain Ketterlin, Preuves assistées par ordinateur, 18h, Université de Strasbourg, France

Licence: Éric Violard, Modèles de Calcul, 29h, L1, Université de Strasbourg, France

Licence: Éric Violard, Programmation fonctionnelle, 162h, L1, Université de Strasbourg, France

Licence: Éric Violard, Bases de l'architecture informatique, 62h, L1, Université de Strasbourg, France

Licence: Éric Violard, Architecture des ordinateurs, 45h, L2, Université de Strasbourg, France

Licence: Éric Violard, Systèmes concurrents, 9h, L3, Université de Strasbourg, France

Licence: Cédric Bastoul, Computer architecture, 78h, L1, Université de Strasbourg, France, and 25h, L1, UFAZ Azerbaijani-French University, Azerbaijan

Licence: Cédric Bastoul, Parallel programming, 20h, L3, Université de Strasbourg, France, and 25h, L3, UFAZ Azerbaijani-French University, Azerbaijan

Master: Cédric Bastoul, Compiler Design, 48h, M1, Université de Strasbourg, France

Master: Cédric Bastoul, Project Management, 16h, M1, Université de Strasbourg, France

Master: Cédric Bastoul, Introduction to Research, 3h, L2+M1, Université de Strasbourg, France

10.2.2. Supervision

PhD: Armaël Géneau, *Formal verification of complexity analyses*, co-advised by Arthur Charguéraud and François Pottier, defended on December 16th, 2019.

PhD: Paul Godard, *Parallélisation et passage à l'échelle durable d'une chaîne de traitement graphique pour l'impression professionnelle*, Université de Strasbourg, Dec. 16, 2019. Cédric Bastoul and Vincent Loechner.

PhD: Maxime Schmitt, *Génération automatique de codes adaptatifs*, Université de Strasbourg, Sept. 30, 2019. Cédric Bastoul and Philippe Helluy.

PhD: Daniel Salas, *Parallélisation hybride d'une application de détection de noyaux cellulaires*, Université de Strasbourg, Sept. 10, 2019. Jens Gustedt.

PhD in progress: Harenome Ranaivoarivony-Razanajato, *Hierarchical Parallelization and Optimization*, Oct. 2016, Cédric Bastoul and Vincent Loechner.

PhD in progress: Salwa Kobeissi, *Dynamic parallelization of recursive functions by transformation into loops*, since Sept. 2017, Philippe Clauss.

10.2.3. Juries

Philippe Clauss participated in the following PhD committees in 2019:

Date	Candidate	Place	Role
Jan. 28	Hugo Brunie	Université de Bordeaux	Reviewer
Oct. 25	Ksander EJJAAOUANI	Université de Strasbourg	President
Dec. 9	Arif Ali ANAPPARAKKAL	Université de Rennes	Examiner
Dec. 19	Hang YU	Université Grenoble Alpes	Reviewer

Cédric Bastoul participated in the following PhD committees in 2019:

Date	Candidate	Place	Role
Mar. 29	Pierre Huchant	Université de Bordeaux	Reviewer
Jun. 21	Chandan Reddy	École Normale Supérieure	Reviewer

10.3. Popularization

- A. Charguéraud is a co-organizer of the *Concours Castor informatique*. The purpose of the Concours Castor in to introduce pupils (from *CM1* to *Terminale*) to computer sciences. More than 700,000 teenagers played with the interactive exercises in November 2019. More information on: http://castor-informatique.fr/.

10.3.1. Articles and contents

- Jens Gustedt authored the book *Modern C* [24], which since the first publication of an online draft in 2016 has become one of the major references for the C programming language.

- Jens Gustedt is 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.

10.3.2. Education

- Cédric Bastoul participated in the training of high school teachers involved in the forthcoming optional Computer Science course for high school students. Specifically, he produced lectures and materials to teach Computer Architecture to high school students.

10.3.3. Interventions

- Vincent Loechner has been organizing a hub for the Google Hashcode programming contest (online qualification round) at Université de Strasbourg in Feb. 2019. More than 30 students and colleagues were hosted in the university classrooms to participate to this event.

- Cédric Bastoul delivered a presentation on program optimization at "Journée des licences" ("Bachelor Day") in June 2019.

10.3.4. Internal action

- Bérenger Bramas, Jens Gustedt and other members of the scientific computing group (*axe transverse calcul scientifique*) organized two software corners at the ICube laboratory. A software corner is a meeting where researchers exchange about programming best practices, existing and upcoming tools, and their own experiences.

CARAMBA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Selection

10.1.1.1. Member of steering committees

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

Emmanuel Thomé is a member of the steering committee of the Algorithmic Number Theory Symposium (ANTS).

10.1.1.2. Member of the Conference Program Committees

- Aurore Guillevic was a member of the Program Committee of Latincrypt 2019 and WCC 2019.
- Virginie Lallemand was a member of the Program Committee of Asiacrypt 2019.
- Cécile Pierrot was a member of the Program Committee of EUROCRYPT 2020 and Journées Codage et Cryptographie 2020.
- Pierre-Jean Spaenlehauer was a member of the Program Committee of ISSAC 2019.
- Emmanuel Thomé is a member of the scientific directorate of the Dagstuhl computer science seminar series.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Virginie Lallemand is a member of the editorial board of the IACR Transactions on Symmetric Cryptology (ToSC) Journal for 2019/2020. This journal is the open-access journal associated to the International Conference on Fast Software Encryption (FSE). She is also a member of the editorial board for the Special Issue of ToSC on Designs for the NIST Lightweight Standardization Process.

10.1.2.2. Reviewer - Reviewing Activities

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

10.1.3. Invited Talks

- Cécile Pierrot and Pierrick Gaudry were invited to give a talk at the Elliptic Curve Cryptography Conference (ECC19), Bochum, Germany.
- Marine Minier was invited to give a talk at the Journées Scientifiques Inria in Lyon, France, June 2019.
- Pierrick Gaudry gave a lecture during the Summer School Mathematical foundations of asymmetric cryptography, Aussois, France.
- Aurore Guillevic and Virginie Lallemand were invited to give a talk at the C2 seminar (formerly CCA seminar), Paris, France.
- Aurore Guillevic was invited to give a talk at the Workshop on Randomness and Arithmetics for Cryptography on Hardware in Roscoff, Brittany, France.

10.1.4. Research Administration

- Jérémie Detrey chaired the *Commission des Utilisateurs des Moyens Informatiques* (CUMI) of the Inria Nancy – Grand Est research center until November 2019.

- Pierrick Gaudry is:
  - vice-head of the *Commission de mention Informatique* of the *École doctorale IAEM* of the University of Lorraine;
  - a member of the *Conseil Scientifique du GdR IM*;
  - member of the visiting committee for the HCERES evaluation of the CRIStAL laboratory (Lille).
- Aurore Guillevic
  - was member of the CoS, poste MCF number 27MCF1087, Université de Clermont Auvergne;
  - was member of the CoS, poste Chargé d'Enseignement (ChE), École Polytechnique (Palaiseau).
- Marine Minier
  - is a member of Collegium of Science et Techniques of Université de Lorraine;
  - was a member of the CoS, poste MCF number 27MCF-0781944P-4184, Université de Versailles.
- Pierre-Jean Spaenlehauer is a member of the *commission développement technologique* (CDT) 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);
  - is a member of the *Comipers* of the Inria Nancy – Grand Est research center, in charge of deciding the attribution of Inria PhD and post-doc grants;
  - is an elected member of the Inria evaluation committee (CE), and a member of the committee "bureau";
  - is an elected member of the Inria technical committee (CTI).
- Paul Zimmermann is member of the Scientific Committee of the EXPLOR *Mésocentre*, of the "groupe de réflexion" *Calcul, Codage, Information* of the GDR-IM, of the scientific council of the LIRMM laboratory in Montpellier, France.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Jérémie Detrey, *Sécurité des applications Web*, 2h eq. TD, LP, Université de Lorraine, IUT Charlemagne, Nancy, France.

Licence: Pierrick Gaudry, *Intégration Web*, 48h eq. TD, IUT 1A, Université de Lorraine, IUT Charlemagne, Nancy, France.

Licence: Aurore Guillevic, *Introduction to algorithms* (CSE103), 32 eq. TD, L1, École Polytechnique, Palaiseau, France.

Licence: Aurore Guillevic, *Les bases de la programmation et de l'algorithmique* (INF411), 40 eq. TD, 2e année, École Polytechnique, Palaiseau, France.

Master: Marine Minier, *Contrôle d'accès*, 40h eq. TD, M2 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Master: Marine Minier, *Intégration Méthodologique*, 36h eq. TD, M2 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Master: Marine Minier, *Introduction à la cryptographie*, 15h eq. TD, M1 Informatique, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Licence: Marine Minier, *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-lès-Nancy, France.

Licence: Marine Minier, *Mathématiques Discrètes*, 80h eq. TD, L2, Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Responsability of the M2 SIRAV *Sécurité Informatique, Réseaux et Architectures Virtuelles*, 30 students: Marine Minier. Université de Lorraine, Faculté des sciences et technologies, Vandœuvre-lès-Nancy, France.

Master: Cécile Pierrot, *Introduction à la cryptographie*, 60h eq. TD, Mastère spécialisé en sécurité, École des Mines de Nancy, France.

Master: Cécile Pierrot, *Introduction à LaTeX*, 6h eq. TD, Master 1, École des Mines de Nancy, France.

Master: Emmanuel Thomé, *Protocoles de sécurité et Vérification* (sub-part dedicated to cryptographic primitives), 8h (lectures) + 6h (tutorial sessions), Télécom Nancy.

10.2.2. Supervision

PhD in progress: Sandra Rasoamiaramanana, *Délivrance de contextes sécurisés par des approches hybrides*, since May 2017, PhD CIFRE Orange Gardens, Marine Minier. Planed to be defended in April 2020.

PhD in progress: Simon Masson, *Algorithmique des courbes destinées aux contextes de la cryptographie bilinéaire et post-quantique*, since Jan. 2018, Emmanuel Thomé and Aurore Guillevic.

PhD in progress: Aude Le Gluher, *Analyse algorithmique fine et simulation du crible algébrique*, since Sep. 2018, Pierre-Jean Spaenlehauer and Emmanuel Thomé.

PhD in progress: Gabrielle De Micheli, *Le logarithme discret dans les corps finis*, since Oct. 2018, Cécile Pierrot and Pierrick Gaudry.

PhD in progress: Paul Huynh, *Analyse et conception de chiffrements authentifiés à bas coût*, since Oct. 2017, Marine Minier.

PhD in progress: Hamid Boukerrou, *Design of New Finite State Dynamical Systems Admitting a Matrix Representation: Application to Cryptography*, since Oct. 2019, Marine Minier and Gilles Millerioux.

10.2.3. Juries

Pierrick Gaudry was

- reviewer of the PhD thesis *Arithmétique rapide pour des corps finis* defended by Robin Larrieu, December 2019, École polytechnique;
- member of the PhD thesis jury *Delaunay triangulations of a family of symmetric hyperbolic surfaces in practice* defended by Iordan Iordanov, March 2019, Université de Lorraine;
- member of the HdR jury *Cryptographie basée sur les corps quadratiques : cryptanalyses, primitives et protocoles* defended by Guilhem Castagnos, November 2019, Université de Bordeaux.

Virginie Lallemand was member of the PhD thesis jury: *Optimization of Core Components of Block Ciphers* defended by Baptiste Lambin on the 22nd of October 2019 at the University of Rennes 1.

Marine Minier:

- reviewer of the PhD thesis: Secure Multi-Party Computation and Privacy defended by Aurélien Dupin, June 2019, ENS Ulm, Paris.
- reviewer of the PhD thesis: Optimization of Core Components of Block Ciphers defended by Baptiste Lambin, October 2019, Université de Rennes, Rennes.

- reviewer of the PhD thesis: Représentations adaptées à l'arithmétique modulaire et à la résolution de systèmes flous defended by Jérémie Marrez, December 2019, Université Paris 6, Paris.
- reviewer of the PhD thesis: Security for the Internet of Things: A bottom-up approach to the secure and standardized Internet of Things defended by Timothy Claeys, December 2019, Université Grenoble Alpes, Grenoble.
- President of the PhD thesis jury: Software Datapaths for Multi-Tenant Packet Processing defended by Paul Chaignon, June 2019, Université de Lorraine, Nancy.
- President of the PhD thesis jury: Usability: low tech, high security, defended by Nicolas Blanchard, June 2019, Université de Paris, Paris.
- President of the PhD thesis jury: Contributions à l'analyse de canaux auxiliaires sans connaissance des clairs et chiffrés, et à la recherche de S-boxs compactes, defended by Léo Reynaud, December 2019, Université de Limoges, Limoges.

Emmanuel Thomé was:

- reviewer for the HDR thesis *Algorithmes et implantations efficaces en algèbre linéaire exacte* defended by Pascal Giorgi, October 2019, Université de Montpellier.
- member of the PhD thesis jury *Vote électronique : définitions et techniques d'analyse* defended by Joseph Lallemand, November 2019, Université de Lorraine;

Paul Zimmermann was reviewer of the PhD thesis *Formalisations d'analyses d'erreurs en analyse numérique et en arithmétique à virgule flottante* defended by Florian Faissole, December 2019, Université Paris-Saclay.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Pierrick Gaudry was member of a jury for the Innoviris LAUNCH program, whose goal is to fund start-ups created on the basis of academic work.

10.3.2. Articles and contents

- Cécile Pierrot wrote a blog post for Le Monde Binaire.

10.3.3. Interventions

- Cécile Pierrot gave a talk about women in science at a meeting *Les Filles, osez les sciences !* in Reims, March 2019.
- Cécile Pierrot and Paul Zimmermann took part in La Fête de la Science, Nancy and Bouxurulles, October 2019.
- Cécile Pierrot gave a talk at La Cité des Sciences, Paris, to open the exhibition called *Espions*, November 2019.
- Pierre-Jean Spaenlehauer gave an introductory talk on polynomial systems to visiting students of the ÉNS Paris-Saclay.

<p style="text-align:center">**GAMBLE Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. Member of the Organizing Committees

Sylvain Lazard organized with S. Whitesides (Victoria University) the 18th Workshop on Computational Geometry at the Bellairs Research Institute of McGill University in Feb. (1 week workshop on invitation).

Olivier Devillers organized the Trip-Aspag Mini-workshop on routing in triangulations, October 21-25 in Nancy.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Guillaume Moroz was in the program committee of the Maple Conference 2019

Xavier Goaoc was on the organizing committee of the Rouen probability meeting

Xavier Goaoc was on the program committee of the Iranian conference on Computational geometry

Xavier Goaoc was on the scientific committee of the Séminaire Francilien de Géométrie Algorithmique et Combinatoire

10.1.2.2. 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.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Monique Teillaud is a managing editor of JoCG, *Journal of Computational Geometry* and a member of the editorial board of IJCGA, *International Journal of Computational Geometry and Applications*.

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

10.1.3.2. Reviewer - Reviewing Activities

All members of the team are regular reviewers for the journals of our field, namely *Discrete and Computational Geometry* (DCG), *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.

10.1.4. Invited Talks

Olivier Devillers and Monique Teillaud gave talks at the workshop New Horizons in Computational Geometry and Topology

Monique Teillaud gave a talk at the Celebration for the CNRS Silver medal of Claire Mathieu

10.1.5. Leadership within the Scientific Community

10.1.5.1. Steering Committees

Monique Teillaud is chairing the Steering Committee of the Symposium on Computational Geometry (SoCG).

10.1.6. Research Administration

10.1.6.1. Hiring committees

Sylvain Lazard was vice chair of the hiring committee for researchers (CRCN) of Inria Nancy - Grand Est.

Monique Teillaud was a member of the hiring committee for a Professor position at Université Paris Est Marne-la-Vallée.

10.1.6.2. National committees

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

10.1.6.3. Local Committees and Responsabilities

O. Devillers: Elected member to *Pole AM2I* the council that gathers labs in mathematics, computer science, and control theory at *Université de Lorraine*.

L. Dupont is responsible of Fablab of IUT Charlemagne, Univerasité de Lorraine (since 2018, November). Member of *Comité Information Edition Scientifique* of LORIA.

X. Goaoc is a member of the council of the *Fédération Charles Hermite* since sep. 2018.

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 IAEM* (since 2009). Head of the *Mission Jeunes Chercheurs* for Inria national (since 2018). Head of the Department Algo at LORIA (since 2014). Member of the *Conseil Scientifique* of LORIA (since 2014).

G. Moroz is head of the *Comité des utilisateurs des moyens informatiques* (since nov. 2019). He is member of the CDT, *Commission de développement technologique*, of Inria Nancy - Grand Est (since 2018). He is member of the CLHSCT *Comité local d'hygiène, de sécurité et des conditions de travail* of Inria Nancy - Grand Est (since jan. 2019).

M. Pouget is an elected member of the *Comité de centre*, and is secretary of the board of *AGOS-Nancy*.

M. Teillaud is "Chargée de Mission" as Scientific Advisor for Technologic Development for Inria Nancy-Grand Est. She is a member of the *Conseil de Laboratoire* of LORIA.

10.1.6.4. Websites

M. Teillaud is maintaining the Computational Geometry Web Pages http://www.computational-geometry.org/, hosted by Inria Nancy - Grand Est. 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.

10.2. Teaching - Supervision - Juries

10.2.1. Committees

L. Dupont is the secretary of *Commission Pédagogique Nationale Carrières Sociales / Information-Communication / Métiers du Multimédia et de l'Internet* (2017-2022).

L. Dupont: Head of the Bachelor diploma *Licence Professionnelle Animation des Communautés et Réseaux Socionumériques*, Université de Lorraine.

10.2.2. Teaching

Master: Olivier Devillers, *Modèles d'environnements, planification de trajectoires*, 18h, M2 AVR, Université de Lorraine. https://members.loria.fr/Olivier.Devillers/master/

Master: Vincent Despré, *Algorithmique*, 48h, M1, Polytech Nancy, France.

Master: Vincent Despré, *Programmation réseau*, 60h, M1, Polytech Nancy, France.

Master: Vincent Despré, *Architecture avancée*, 20h, M1, Polytech Nancy, France.

Master: Vincent Despré, *Architecture Java EE*, 72h, M1, Polytech Nancy, France.

Licence: Charles Duménil, *Algorithmique et programmation avancée*, 10h, M2, FST, Université de Lorraine, France.

Licence: Charles Duménil, *Découverte de l'informatique*, 88h, L1, Polytech Nancy, Université de Lorraine, France.

Licence: Charles Duménil, *Logiciels scientifiques*, 8h, L3, Polytech Nancy, Université de Lorraine, France.

Licence: Laurent Dupont, *Web development*, 35h, L2, Université de Lorraine, France.

Licence: Laurent Dupont, *Web development*, 150h, L2, Université de Lorraine, France.

Licence: Laurent Dupont *Web development and Social networks* 100h L3, Université de Lorraine, France.

Licence: Xavier Goaoc, *Programmation*, 20 HETD, L3, École des Mines de Nancy, France.

Master: Xavier Goaoc, *Algorithms*, 32 HETD, M1, École des Mines de Nancy, France.

Master: Xavier Goaoc, *Computer architecture*, 32+24 HETD, M1, École des Mines de Nancy + Polytech Nancy, France.

Licence: Galatée Hemery, *Programmation*, 52 HETD, L3, École des Mines de Nancy, France.

Licence: Sylvain Lazard, *Algorithms and Complexity*, 20h, L3, Université de Lorraine, France.

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

10.2.3. Supervision

PhD: Iordan Iordanov, Delaunay triangulations of a family of symmetric hyperbolic surfaces in practice, defended March 12th, supervised by Monique Teillaud [11].

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: George Krait, Topology of singular curves and surfaces, applications to visualization and robotics, started in Nov. 2017, supervised by Sylvain Lazard, Guillaume Moroz and Marc Pouget.

PhD in progress: Galatée Hemery, Algorithmic and geometric aspects of inclusion-exclusion, started in Sep. 2018 , supervised by Xavier Goaoc and Éric Colin de Verdière (UPEM).

PhD in progress: Nuwan Herath, Fast algorithm for the visualization of surfaces, started in Nov. 2019, supervised by Sylvain Lazard, Guillaume Moroz and Marc Pouget.

10.2.4. Juries

M. Teillaud was a member of the PhD committee of Iordan Iordanov (Université de Lorraine)

X. Goaoc was on the reading and defense committees of the habilitation defense of Arnau Padrol (IMJ, Université Paris Sorbonne)

10.3. Popularization

10.3.1. Education

G. Moroz is member of the Mathematics Olympiades committee of the Nancy-Metz academy.

10.3.2. Interventions

L. Dupont participated in several events of popularization of computer science:

Day ♯4 FAN Project, April 23th, Inria project, adult audience.

ISN day, March 7th, adult continuing education of computer science for high-school teachers.

Atelier Google, April 13th, popularization of computer science, general audience.

Atelier Google, December 7th, popularization of computer science, general audience.

MOCQUA Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. General Chair, Scientific Chair

- Mathieu Hoyrup was chair and organizer of the workshop MLA 2019.
- Jointly with Andreas Deutsch (TU Dresden, Germany), Nazim Fatès was chair and organizer of SOLSTICE 2019, Summer Solstice Conference on Discrete Models of Complex Systems.

9.1.1.2. Member of the Conference Program Committees

- Mathieu Hoyrup was member of the PC of CiE 2019.
- Romain Péchoux was member of the PC of DICE and FOPARA 2019.
- Nazim Fatès was member of the PC of AUTOMATA 2019.
- Simon Perdrix was member of the PC of QPL'19.

9.1.1.3. Reviewer

Romain Péchoux was reviewer for DICE and FOPARA 2019, FOSSACS 2019, ICALP 2019, and ISMVL 2019.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

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

9.1.2.2. Reviewer - Reviewing Activities

- Romain Péchoux was reviewer for Information Processing Letters and Journal of Automated Reasoning.
- Nazim Fatès served as a reviewer for the *SIAM Journal on Discrete Mathematics* (SIDMA) and for *Informatica*.

9.1.3. Invited Talks

Romain Péchoux gave an invited talk at Shonan seminar #151 on higher order complexity theory and its applications.

9.1.4. Leadership within the Scientific Community

- Romain Péchoux is guest coeditor of the Theoretical Computer Science, special issue on Implicit Computational Complexity, DICE 2016-2018.

- Nazim Fatès is the vice-president of the IFIP WG 1.5 on Cellular Automata and Discrete Complex Systems. He is a guest coeditor of a special issue of *Natural computing* on the theme "Discrete Models of Complex Systems: recent trends and analytical challenges". This call for papers follows the SOLSTICE 2019 conference (Dresden, Germany, July 2019).

9.1.5. Scientific Expertise

- Romain Péchoux is Rapporteur and Expert for the Marie Curie IF call of the European Commission, ERA.

- Nazim Fatès was an evaluator for a funding project of the CONICYT, the Chilean *Comisión Nacional de Investigación Científica y Tecnológica*.

- Simon Perdrix was member of the HCERES evaluation committee of G-SCOP.

- Simon Perdrix was member of the committee "La Recherche" award (Prix du Magazine La Recherche) 2019.

9.1.6. Research Administration

- Emmanuel Hainry was member of the CNU (Conseil National des Universités), Section 27 until 2019, nov 18th.

- Simon Perdrix is elected member and scientific secretary of the CNRS section 6.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence
  - Isabelle Gnaedig:
    * To the limits of the computable, 6 hours, Opening course-conference of the collegium "Lorraine INP", Université de Lorraine, Nancy, France.
  - Emmanuel Hainry:
    * Operating Systems, 30h, L1, IUT Nancy Brabois, Université de Lorraine, Nancy, France.
    * Algorithmics, 40h, L1, IUT Nancy Brabois.
    * Dynamic Web, 60h, L1, IUT Nancy Brabois.
    * Databases, 30h, L1, IUT Nancy Brabois.
    * Object Oriented Languages, 16h, L2, IUT Nancy Brabois.
    * Complexity, 30h, L2, IUT Nancy Brabois.
  - Emmanuel Jeandel:
    * Algorithmics and Programming 1, 60h, L1 Maths-Info, Université de Lorraine, Nancy, France.
    * Algorithmics and Programming 4, 30h, L3 Informatique.
    * Modeling Using Graph Theory, 30h, L3 Informatique.
    * Networking, 15h, L3 Informatique.
    * Formal Languages, 30h, L2-L3 Informatique.
  - Romain Péchoux had an Inria delegation (2018-2019).
- Master

- Isabelle Gnaedig:
    * Rule-based Programming, 24 hours, M2, Telecom-Nancy, Université de Lorraine, Nancy, France.
- Emmanuel Hainry:
    * Mathematics for Computer Science, 15h, M1 TAL, Institut des Sciences du Digital: Management et Cognition, Université de Lorraine, Nancy, France.
- Mathieu Hoyrup:
    * Mathematics for Computer Science, 15h, M1 TAL, Institut des Sciences du Digital: Management et Cognition, Université de Lorraine, Nancy, France.
- Emmanuel Jeandel:
    * Algorithmics and Complexity, 30h, M1 Informatique, Université de Lorraine, Nancy, France.
    * Quantum Computing, 15h, M1 Informatique.
- Nazim Fatès:
    * Systèmes distribués adaptatifs, 10h, Master 2, informatique, Université de Lorraine, Nancy, France.
    * Agents intelligents et collectifs, 15h, Master 1, sciences cognitives.
    * Modèles de calcul, 12h, Master 2, informatique.

9.2.2. Supervision

- Mathieu Hoyrup supervised the L3 internship of Antonin Callard (ENS Paris Saclay), about descriptive set theory on represented spaces.
- Emmanuel Hainry and Romain Péchoux supervised the L3 internship of Olivier Zeyen (FST, Université de Lorraine), on implementing a complexity parser for Java.
- Nazim Fatès supervised the internship of Karim Boutamine and Maxime Thaon, students of Master 1 in Cognitive Sciences (Université de Lorraine) and the internship of Baptiste Collet, student of Licence 3 at École normale supérieure de Paris.
- PhD: Renaud Vilmart, "Langages graphiques pour calculer et raisonner en quantique", defended september 2019, Advisors: Emmanuel Jeandel and Simon Perdrix.
- PhD in progress: Titouan Carette, "Langage diagrammatique pour l'ordinateur quantique", Start: October 2018, Advisors: Emmanuel Jeandel and Simon Perdrix.
- PhD in progress: Pierre Mercuriali, "Calcul à base de médiane et structures médianes pour la classification", Start: October 2016, Advisors: Miguel Couceiro and Romain Péchoux.
- PhD in progress: Robert Booth, "Formalismes pour la vérification de technologies quantiques", Start: November 2018, Advisors: Damian Markham and Simon Perdrix.
- PhD in progress: Alexandre Clément, "Graphical Languages for Quantum Control", Start: September 2019, Advisors: Emmanuel Jeandel and Simon Perdrix.
- PhD in progress: Margarita Veshchezerova, "Quantum Computing for Combinatorial Optimisation", Start: October 2019, Advisors: Emmanuel Jeandel and Simon Perdrix, joint supervision with Marc Porcheron at EDF (CIFRE).

9.2.3. Juries

- Emmanuel Jeandel participated in the PhD defense of Florian Bridoux (Université d'Aix-Marseille), François Pirot (Université de Lorraine and Rahdboud University) and Alexandre Talon (ENS Lyon).
- Emmanuel Jeandel reviewed the PhD thesis of Paulina Cecchi (University of Santiago and Université Paris-Diderot) and Ilya Galanov (Université de Villetaneuse).

- Nazim Fatès reviewed the PhD of Adam Dzedzej (University of Gdańsk, Poland) and served a the main external examiner during the PhD defense.

- Simon Perdrix was external reviewer for the PhD thesis of Kang Feng Ng (Oxford University), March 2019.

- Simon Perdrix was reviewer for the PhD thesis of Matthew Amy (University of Waterloo, Canada), January 2019.

- Simon Perdrix reviewed the PhD thesis of Ghazal Kachigar (University of Bordeaux), December 2019.

9.3. Popularization

9.3.1. Articles and contents

- The scientific magazine *La Recherche* re-published an article by Nazim Fatès and Irène Marcovici, with the title "Les automates cellulaires jouent le jeu", in a Special issue devoted to the theme "Les maths et le réel" (September 2019) [34]. The original article "Automates cellulaires : la complexité dans les règles de l'art" (2018), was modified with minor changes for this special issue.

- Interviews of Simon Perdrix about the Google's result on quantum advantage. La tribune (online article) ; Sciences et Avenir (November 2019 - paper journal and online articles), We demain (online article).

9.3.2. Education

Nazim Fatès participated to a workshop destined to the high-school teachers which were training on the « Information et sciences du numérique » module.

In the lycée Saint-Exupéry de Saint-Dizier: he gave three one-hour conferences destined to students, related to the film *Imitation game* on Alan Turing (March 18).

9.3.3. Interventions

Nazim Fatès was invited to give various talks on the question of artificial intelligence:

- With the European parliamentary association (APE), he was invited to talk to European MP's on the the theme « Is Europe ready for artificial intelligence? » (Strasbourg, February 13).

- In the « Sciences et société » cycle of IUT Charlemagne (September 26).

- With the association « Jardin des sciences », cycle « intelligences » destined to a wide public, University of Strasbourg (October 10).

- With the association Femmes responsables (November 20).

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PESTO Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- V. Cortier: vice-chair of the ACM Special Interest Group on Logic and Computation (SigLog); vice-chair of the IFIP Wg-1.7 Foundations of Security Analysis.
- J. Dreier: GRSRD 2019, Grande Region Security and Reliability Day 2019, Nancy, March 2019 (chair)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- V. Cortier: POST 2019, E-VoteID 2019 (Track chair), S&P 2019, CSF 2019, Voting 2020, Concur 2020, S&P 2020
- V. Cheval: CSF 2020
- J. Dreier: SEC@SAC 2020, 5G-NS 2019, SP5G@ICISSP 2020
- L. Hirschi: SEC@SAC 2020
- A. Imine : ICEIS 2019, DEXA 2019, VLIoT@VLDB 2019, C2SI 2019
- S. Kremer: Euro S&P 2019, Voting 2019, PERR 2019, ESORICS 2019, FSTTCS 2019, CSF 2020, Euro S&P 2020, Voting 2020
- C. Ringeissen: UNIF 2019, FroCoS 2019, WRLA 2020, IJCAR 2020, UNIF 2020
- M. Rusinowitch: IWSPA 2019, STM 2019, CRISIS 2019, IWSPA 2020

10.1.3. Journal

10.1.3.1. Editor in Chief

- V. Cortier: Journal of Computer Security (EiC since November 2019)

10.1.3.2. Member of the Editorial Boards

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

10.1.4. Invited Talks

- V. Cortier. Keynote speaker at the ACM SIGSAC 14th Workshop on Programming Languages and Analysis for Security (PLAS 2019), London, UK, November 2019.
- V. Cortier. Keynote speaker at the 24th European Symposium on Research in Computer Security (Esorics 2019), Luxembourg, September 2019.
- V. Cortier. Plenary talk at the 28th edition of Computer Science Logic (CSL 2020), Barcelona, Spain, January 2020.
- S. Kremer. Keynote speaker at the ACM SIGSAC 14th Workshop on Programming Languages and Analysis for Security (PLAS 2019), London, UK, November 2019.
- V. Cheval. Invited talk at the Rendez-vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information, RESSI 2019, Erquy, France, May 2019.

10.1.5. Scientific Expertise

- V. Cortier: Member of the W&T5ASP panel of the Research Foundation - Flanders (FWO), Belgium
- A. Imine: ANR project expertise
- L. Hirschi: ANR project expertise
- M. Rusinowitch: FNRS project expertises, Belgium

10.1.6. Research Administration

Inria evaluation committee (S. Kremer)
Inria Committee on Gender Equality and Equal Opportunities (S. Kremer, co-chair)
Jury Junior Research Position Inria Paris (S. Kremer)
Computer science commission of the Doctoral School, Univ Lorraine (L. Vigneron, chair)
Jury Associate Professor at IT University Copenhagen (J. Dreier)
Jury Assistant Professor at EISTI school/ETIS laboratory, Cergy (J. Dreier)
Scientific Council of the Computer Science CNRS Institute INS2I (V. Cortier)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence:

  V. Cheval, Introduction to Theoretical Computer Science (Logic, Languages, Automata), 38 hours (ETD), TELECOM Nancy

  J. Dreier, Introduction to Theoretical Computer Science (Logic, Languages, Automata), 38 hours (ETD), TELECOM Nancy

  J. Dreier, Awareness for Cybersecurity, 7.5 hours (ETD), TELECOM Nancy

  L. Hirschi, Introduction to Theoretical Computer Science (Logic, Languages, Automata), 38 hours (ETD), TELECOM Nancy

- Master:

  V. Cortier, Security of flows, 16 hours, M2 Computer Science, TELECOM Nancy and Mines Nancy

  V. Cortier, Security of flows, 8 hours, M2 Computer Science, TELECOM Nancy and Mines Nancy

  J. Dreier, Introduction to Cryptography, 42 hours, M1 Computer Science, TELECOM Nancy

  A. Imine, Security for XML Documents, 12 hours (ETD), M1, Univ Lorraine

  S. Kremer, Security Theory, 24 hours (ETD), M2 Computer science, Univ Lorraine

  C. Ringeissen, Decision Procedures for Software Verification, 24 hours (ETD), M2 Computer science, Univ Lorraine

  L. Vigneron, Security of information systems, 32 hours (ETD), M2 Computer science, Univ Lorraine

  L. Vigneron, Advanced Security, 28 hours (ETD), Polytech Nancy – Information Systems and Networks, Univ Lorraine

  L. Vigneron, Security of information systems, 16 hours (ETD), M2 MIAGE – Audit and Design of Information Systems, Univ Lorraine

- Summer School:

  V. Cortier. Models and Techniques for Analysing Security Protocols, Winter School of the VMCAI 2019 conference, Cascais/Lisbon, Portugal, January 2019.

10.2.2. Supervision

- PhD defended in 2019:

  Joseph Lallemand, Electronic Voting: Definitions and Analysis Techniques [8], November 2019 (V. Cortier)

- PhD in progress:

  Ahmad Abboud, Compressed and Verifiable Filtering Rules in Software-defined Networking, started in August 2018 (A. Lahmadi, M. Rusinowitch and A. Bouhoula)

  Bizhan Alipour, Privacy protection against inference attacks in social networks, started in October 2018 (A. Imine, M. Rusinowitch)

  Charlie Jacomme, Security protocols: new properties, new attackers, new protocols, started in September 2017 (H. Comon and S. Kremer)

  Itsaka Rakotonirina, Efficient verification of equivalence properties in cryptographic protocols, started in October 2017 (V. Cheval and S. Kremer)

10.2.3. *Juries*

Jury member for J. M. López Becerra, University of Luxembourg (S. Kremer).

Jury president for Hoang-Long Nguyen, University of Lorraine (M. Rusinowitch)

10.3. Popularization

10.3.1. *Articles and contents*

Véronique Cortier. Some interactions (in collaboration with P. Gaudry and S. Glondu) with France Culture to improve an online article on e-voting.

Steve Kremer co-authored (with L. Mé, D. Rémy and V. Roca) Inria's White Book on Cybersecurity [27].

Steve Kremer In Horizon - The EU Research and Innovation Magazine: Online voting isn't ready for high-stakes elections, Avril 2019.

Steve Kremer, Ludovic Mé, Didier Rémy, and Vincent Roca. In Blog Binaire - Le Monde. La cybersécurité aux multiples facettes.

Steve Kremer. Le vote électronique. Chapter of the book "Treize défis pour la Cybersécurité" édited by CNRS. To appear in January 2020.

Interview with Science & Vie Junior about 5G security (J. Dreier, in "Pourquoi la 5G va tout changer", Science & Vie Junior, Juillet 2019)

Lucca Hirschi, Ralf Sasse, Jannik Dreier in ERCIM News 2019. "Security Issues in the 5G Standard and How Formal Methods Come to the Rescue".

10.3.2. *Interventions*

Invited conference at the Espace des sciences, Rennes (audience of about 300 people, 5K+ views on Youtube), October, 22nd, 2019 (V. Cortier)

"breakfast" in the Senat, on Cybersecurity, organized by OPECST / Académie des sciences / Académie de médecine, June 19th, 2019. (V. Cortier)

How to explain security protocols with Playmobil, group of high school students interns for a week, February 3rd, 2019, (V. Cortier)

<p style="text-align:center">**VERIDIS Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Organization of Scientific Events

10.1.1.1. Membership in Organizing Committees

Jasmin Blanchette co-organized the *2nd Deduction Mentoring Workshop* (DeMent 2019). He also coorganized the *VeriDis Group Retreat + Second European Workshop on Higher-Order Automated Reasoning* (Matryoshka 2019).

Pascal Fontaine co-organized the Third Workshop on Mathematical Logic and its Applications, in Nancy.

Igor Konnov and Stephan Merz were organizers of the sixth *Workshop on Formal Reasoning in Distributed Algorithms* (FRIDA 2019), colocated with DISC 2019 in Budapest, Hungary.

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 2019, VTSA took place in August in Esch sur Alzette, Luxembourg.

10.1.2. Program Committees

10.1.2.1. Chair of Conference Program Committees

Jasmin Blanchette co-chaired the program committee of the *9th ACM SIGPLAN International Conference on Certified Programs and Proofs* (CPP 2020).

Pascal Fontaine served as the chair of the *Conference on Automated Deduction* (CADE-27).

Dominique Méry co-chaired the program committee of the *13th International Symposium on Theoretical Aspects of Software Engineering* (TASE 2019).

Stephan Merz was Tool Exhibition Chair at the *3rd World Congress for Formal Methods* (FM Week 2019).

10.1.2.2. Membership in Conference Program Committees

Jasmin Blanchette served on the program committees of the *27th International Conference on Automated Deduction* (CADE-27), *19th Conference on Formal Methods in Computer-Aided Design* (FM-CAD 2019), *21st International Symposium on Principles and Practice of Declarative Programming* (PPDP 2019), *12th International Symposium on Frontiers of Combining Systems* (FroCoS 2019), *26th International Conference on Tools and Algorithms for the Construction and Analysis of Systems* (TACAS 2020), and *4th Conference on Artificial Intelligence and Theorem Proving* (AITP 2019). He also served on the following workshop committees: *Second Workshop on Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements* (ARCADE 2019) and *Deduktionstreffen 2019*.

Pascal Fontaine served on the program committees of the *International Symposium on Frontiers of Combining Systems* (FroCoS 2019), the *International Conference on Automated Reasoning with Analytic Tableaux and Related Methods* (TABLEAUX 2019), and the *International Conference on Theory and Applications of Satisfiability Testing* (SAT 2019). He also served on the committee of *Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements* (ARCADE 2019).

Dominique Méry served on the program committees of the *16th International Colloquium on Theoretical Aspects of Computing* (ICTAC 2019), the *8th Workshop on Formal Methods for Interactive Systems* (FMIS 2019), the *Workshop on Practical Formal Verification for Software Dependability* (AFFORD'19), the *24th International Conference on Engineering of Complex Computer Systems* (ICECCS 2019), the *Workshop on Formal Methods for Autonomous Systems* (FMAS 2019), the *23rd International Symposium on Formal Methods* (FM 2019), the *Workshop on Models and Data Engineering for Cyber-Physical Systems* (CPS@MEDI 2019), the *Workshop on Formal Models for Mastering Heterogeneous Multifaceted Systems* (REMEDY 2019), the *3rd Workshop on Formal Approaches for Advanced Computing Systems* (FAACS 2019), the *21st International Conference on Formal Engineering Methods* (ICFEM 2019), and the *9th International Conference on Model and Data Engineering* (MEDI 2019).

Stephan Merz served on the program committees of the *19th International Workshop on Automated Verification of Critical Systems* (AVoCS 2019), the *Doctoral Symposium, Formal Methods* (DS-FM 2019), the *5th International Workshop on Formal Integrated Development Environment* (F-IDE 2019), and the *21st International Conference on Formal Engineering Methods* (ICFEM 2019).

Sorin Stratulat served on the program committees of the *International Symposium on Symbolic and Numeric Algorithms for Scientific Computing* (SYNASC 2019), the *International Conference on Information Assurance and Security* (IAS 2019), and the *International Conference on Computational Intelligence in Security for Information Systems* (CISIS 2019).

Thomas Sturm served on the program committees of the *21st International Workshop on Computer Algebra in Scientific Computing* (CASC 2019) and the *4th International Workshop on Satisfiability Checking and Symbolic Computation* (SC-SQUARE 2019).

Uwe Waldmann served on the program committees of the *27th International Conference on Automated Deduction* (CADE-27) and the *International Conference on Automated Reasoning with Analytic Tableaux and Related Methods* (TABLEAUX 2019).

Christoph Weidenbach served on the program committees of the *International Conference on Automated Deduction* (CADE 27), and the *International Symposium on Frontiers of Combining Systems* (FroCoS 2019). He also served on the committee of *Automated Reasoning: Challenges, Applications, Directions, Exemplary Achievements* (ARCADE 2019).

10.1.3. Journals

10.1.3.1. Member of Editorial Boards

Jasmin Blanchette and Stephan Merz served as guest editors for the special issue on *Interactive Theorem Proving* (ITP 2016) of the *Journal of Automated Reasoning* [16].

Dominique Méry is the Book Reviews Editor for *Formal Aspects of Computing*.

Thomas Sturm has been an editor of the *Journal of Symbolic Computation* (Elsevier) since 2003 and an editor of *Mathematics in Computer Science* (Springer) since 2013. He edited a special issue of the Journal of Symbolic Computation on *Symbolic Computation and Satisfiability Checking*.

Christoph Weidenbach is a member of the editorial board of the *Journal of Automated Reasoning* (JAR) (Springer). He also served as an editor on the special issue on *Automated Reasoning Systems* of JAR.

10.1.4. Invited Talks

Jasmin Blanchette gave a keynote talk at the *8th ACM SIGPLAN International Conference on Certified Programs and Proofs* (CPP 2019).

Dominique Méry was an invited speaker at the *16th International Colloquium on Theoretical Aspects of Computing* (ICTAC 2019).

Stephan Merz was invited to the meeting of IFIP Working Group 2.3 in October 2019 in Los Altos, California. He was an invited speaker at the meeting of the AFSEC group of GDR GPL in December 2019 in Toulouse.

Sorin Stratulat was an invited speaker at FROM 2019 (Working Formal Methods Symposium) in Timisoara, Romania, where he presented an efficient way to validate cyclic pre-proofs for first-order logic with inductive definitions.

Christoph Weidenbach was invited to give a lecture at the SAT/SMT/AR summer school 2019 in Lisbon, Portugal. He was invited to present at the computer science lecture series at the University of Bonn, Germany.

10.1.5. Leadership within the Scientific Community

Jasmin Blanchette served as a regular member of the CADE (*Conference on Automated Deduction*) Inc. Board of Trustees. He is also a regular member of the steering committees for the ITP (*Interactive Theorem Proving*) and TAP (*Tests and Proofs*) conference series.

Pascal Fontaine is an SMT-LIB manager, together with Clark Barrett (Stanford University) and Cesare Tinelli (University of Iowa). He was a regular member of the steering committee for the FroCoS (*Frontiers of Combining Systems*) conference series until September 2019, and he is a member of the steering committee for the SC-Square (*Satisfiability Checking and Symbolic Computation* workshop series. He was ex-officio member of the CADE (*Conference on Automated Deduction*) Inc. Board of Trustees until July 2019. He is an elected member of the steering committee for the SMT (*Satisfiability Modulo Theories*) workshop series.

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

Thomas Sturm has been elected the chair of the steering committee of the ACM conference series *International Symposium on Symbolic and Algebraic Computation (ISSAC)*.

Christoph Weidenbach is the president of CADE and a member of the steering committee of IJCAR.

10.1.6. Scientific Expertise

Dominique Méry was a member of the committee for the thesis award of GDR GPL (*Génie de la Programmation et du Logiciel*) 2019.

Stephan Merz contributed an assessment of candidates for a professorship at TU Vienna, Austria.

Thomas Sturm served as an external expert on the appointment committee for a professorship in Computer Algebra at the University of Kassel, Germany. He is taking an advisory role as a "project partner" in the UK EPSRC Project EP/R019622/1 *Embedding Machine Learning within Quantifier Elimination Procedures*.

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

10.1.7. Research Administration

Dominique Méry participated in the evaluation committees of HCERES for the LIASD (*Laboratoire d'informatique avancée de Saint-Denis*) and the doctoral school of École Polytechnique.

Stephan Merz is the delegate for scientific affairs at the Inria Nancy – Grand Est research center and a member of Inria's Evaluation Committee. In 2019, he was a member of the hiring committees of senior researchers at Inria and of junior researchers at Inria Rennes Bretagne Atlantique. He is also a member of the *bureau* of the computer science committee of the doctoral school IAEM Lorraine and of the executive committee of the project on citizens' trust in the digital world (DigiTrust) funded by *Lorraine Université d'Excellence*.

Uwe Waldmann is a member of the admissions committee for scholarships of the International Max Planck Research School for students aiming at a master's degree.

Christoph Weidenbach coordinates the scientific affairs at MPI-INF.

10.2. Teaching, Supervision, Thesis Committees

10.2.1. Teaching

Licence : Marie Duflot-Kremer, Algorithmique et Programmation 1, 60 HETD, L1, Université de Lorraine, France

Licence : Marie Duflot-Kremer, Algorithmique et Programmation 2, 10 HETD, L1, Université de Lorraine, France

Diplôme inter universitaire : Marie Duflot-Kremer, formation d'enseignants du secondaire à la spécialité NSI, 43 HETD, Université de Lorraine, France

Licence : Marie Duflot-Kremer, Introduction au Web, 20 HETD, L1, Université de Lorraine, France

Licence : Marie Duflot-Kremer, Accompagnement Algorithmique 1, 26 HETD, L1, Université de Lorraine, France

Licence : Marie Duflot-Kremer, Programmation Web, 5 HETD, L3, Université de Lorraine, France

Master: Marie Duflot-Kremer and Stephan Merz, Elements of model checking, 40 HETD, M2 Informatique and Master Erasmus Mundus DESEM, Université de Lorraine, France.

Master: Marie Duflot-Kremer and Stephan Merz, Algorithmes distribués, 24 HETD M1 informatique, Université de Lorraine, France.

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

Master: Pascal Fontaine is the head of the MIAGE degree at Université de Lorraine.

Licence : Sorin Stratulat, Algorithmique des structures de contrôle, 45 HETD, L1 Informatique, ISFATES, Université de Lorraine, France.

Licence : Sorin Stratulat, Algorithmique des structures de données, 45 HETD, L1 Informatique, ISFATES, Université de Lorraine, France.

Master: Sorin Stratulat, Analyse et conception de logiciels, 105.5 HETD, M1 Informatique, Université de Lorraine, France.

Master: Sorin Stratulat, Génie Logiciel, 20 HETD, M2 Informatique, Université de Lorraine, France.

Master: Sophie Tourret, Concrete Semantics with Isabelle/HOL, 6 ECTS, Saarland University, Germany.

Master: Uwe Waldmann, Automated Reasoning, 9 ECTS, Saarland University, Germany.

Master: Christoph Weidenbach, Decision Procedures, 6 ECTS, Saarland University, Germany.

10.2.2. Supervision

PhD: Martin Bromberger, Decision Procedures for Linear Arithmetic. Saarland University, 10 December 2019. Supervised by Thomas Sturm and Christoph Weidenbach.

PhD: Nicolas Schnepf, Orchestration et vérification de fonctions de sécurité pour des environnements intelligents. Université de Lorraine, 30 September 2019. Supervised by Rémi Badonnel, Abdelkader Lahmadi, and Stephan Merz.

PhD: Marco Voigt, Decidable Fragments of First-Order Logic and of First-Order Linear Arithmetic with Uninterpreted Predicates. Saarland University, 31 July 2019. Supervised by Thomas Sturm and Christoph Weidenbach.

PhD in progress: Antoine Defourné, SMT for TLAPS, Université de Lorraine. Supervised by Jasmin Blanchette, Pascal Fontaine, and Stephan Merz, since March 2019.

PhD in progress: Margaux Duroeulx, SAT Techniques for Reliability Assessment, Université de Lorraine. Supervised by Nicolae Brînzei, Marie Duflot-Kremer, and Stephan Merz, since October 2016.

PhD in progress: Alberto Fiori, Clause Learning from Simple Models, Saarland University. Supervised by Christoph Weidenbach, since August 2018.

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

PhD in progress: Alexis Grall, Integration of a modeling language and a language for programming distributed systems, Université de Lorraine. Supervised by Horatiu Cirstea and Dominique Méry, since October 2018.

PhD in progress: Daniel El Ouraoui, Higher-Order SMT, Université de Lorraine. Supervised by Jasmin Blanchette, Pascal Fontaine, and Stephan Merz, since November 2017.

PhD in progress: Pierre Lermusiaux, Analysis of properties of interactive critical systems, Université de Lorraine. Supervised by Horatiu Cirstea and Pierre-Etienne Moreau, since October 2017.

PhD in progress: Hans-Jörg Schurr, Higher-Order SMT, Université de Lorraine. Supervised by Jasmin Blanchette, Pascal Fontaine, and Stephan Merz, since November 2017.

10.2.3. Thesis Committees

Pascal Fontaine served as a reviewer in the thesis committees for Martin Bromberger (Universität des Saarlandes, Germany), Albin Coquereau (Université Paris-Saclay, France), Hakan Metin (Sorbonne Université, France), Simon Robillard (Chalmers University of Technology, Sweden) and Stefano Varotti (University of Trento, Italy).

Stephan Merz served as an examiner in the PhD committee of The Anh Pham (ENS Rennes) and as the president in the PhD committee of Renaud Vilmart (Univ. of Lorraine). He was a member of the PhD committee of Nicolas Schnepf as the thesis advisor.

Thomas Sturm served as a reviewer in the thesis committees for Martin Bromberger and Marco Voigt (Saarland University, Germany).

Christoph Weidenbach served as a reviewer in the thesis committees for Martin Bromberger and Marco Voigt (Saarland University, Germany).

10.3. Popularization

10.3.1. Responsibilities at Inria or Beyond

- Marie Duflot-Kremer is the deputy vice-president for outreach activities in the supervisory council of SIF (*Société Informatique de France*) and a member of the scientific committee of *Fondation Blaise Pascal*.

- Christoph Weidenbach is a member of the advisory committee for the German computer science competitions for pupils. Together with his colleagues at Saarland university he organizes the "Computer Science Research Days" for the most talented high-school students out of the competition every year. In addition, he organizes the final training for the German Informatics Olympiad team and coaches the Saarland University student teams for the ICPC.

10.3.2. Articles and Contents

Marie Duflot-Kremer is a member of the ERASMUS+ project PIAF (cf. section 9.3) with collleagues from Liège, Luxembourg and Saarbrücken. This projects aims at studying how computational thinking can be introduced in primary education (with kids rangng from 5 to 12 years old). The goal is first to agree on a shared reference document on computational thinking competences, and then to produce and test educational scenarios and didactical resources. So far this year the reference document has been designed (and a paper has been submitted recently to a conference). The work on the scenarios and the resources is ongoing.

10.3.3. Education

Marie Duflot-Kremer intervenes in the training of teachers:

- for primary school, half a day for training teachers on how to add a bit of computer science in their teaching;
- for secondary school, she took part (43 hours in 2019) in the advanced training of high school teachers who deliver a newly introduced computer science course (Numérique et Sciences Informatiques), and one day training for math teachers about unplugged activities;
- half a day of training for members of INSPE (Institut National Supérieur du Professorat et de l'Education), the people in charge of training teachers.

10.3.4. Interventions

Marie Duflot-Kremer takes part every year in several events, including local ones such as *Fête de la Science* (for which she trains 3rd year students to handle the workshops and gave this year a talk/show on "informagics"), Pint of Science, a talk for the local phase of the *Tournoi Français des Jeunes Mathématiciennes et Mathématiciens* and the local NSI (*Numérique et Sciences Informatiques*) day for secondary school teachers.

She is also invited for workshops and talks in events outside of the Nancy region, like national or regional days of APMEP (*Association des Professeurs de Mathématiques de l'Enseignement Public*) in Dijon and Grenoble, the SETT conference in Namur or the video game creation competition for kids in Manosque.

10.3.5. Creation of Media or Tools for Science Outreach

As a member of the national group *Informatique Sans Ordinateur* (ISO), Marie Duflot-Kremer takes part in creating new popularization activities and publishing online documentation to help people reproduce unplugged computer science activities. She also proposed and supervised a project of master students in cognitive sciences who created an escape game presenting various computer science concepts to kids from 13 years old. The documentation is available on her webpage. [0]

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[0]https://members.loria.fr/MDuflot/.

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SPHINX Project-Team

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10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

- David Dos Santos Ferreira is the head of the Organization Committee of the next national conference of the SMF (French Mathematical Society) that will take place in Nancy from 25th-29th may 2020 (see: https://smf2020.math.cnrs.fr/).
- David Dos Santos Ferreira is, with Laurent Thomann, co-organizer of the national conference "Journées EDP". (see : http://jedp-2019.iecl.univ-lorraine.fr/).
- Julien Lequeurre and Alexandre Munnier are the heads of the national workshop "Journées EDP de l'Institut Elie Cartan de Lorraine" (see: http://journeesedp.iecl.univ-lorraine.fr/2019/).This an annual conference whose themes are those of the team PDE of the IECL (waves, fluid and fluid-structure interaction, form optimization,...).

10.1.1.2. Member of the Organizing Committees

- Karim Ramdani is a member of the Organizing Committee of the next national conference of the SMF (French Mathematical Society) (see: https://smf2020.math.cnrs.fr/).
- Thomas Chambrion was the organizer of the invited session "Analytic and Geometric Tools in Quantum Control", in the Conference on Decision and Control (CDC 2019, Nice, France).
- Ludovick Gagnon was an organizer of the CRAN/IECL day (November 22, 2019).
- Jean-François Scheid was a member of the organizing committee of the workshop "Journées Corrosion et Analyse Numérique", Laboratoire de Mathématiques d'Orsay, 4 – 5 July 2019.
- David Dos Santos Ferreira was a member of the scientific committee of the "Journées des Jeunes Edpistes Français", Rennes, 20-22 March 2019, https://jjedp19.sciencesconf.org/.

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

Xavier Antoine was a member of the scientific council of the international conference Waves 2019, Vienna, Austria, August, 2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Xavier Antoine is an associate editor of "Multiscale in Science and Engineering" (Springer) and "International Journal of Computer Mathematics" (Taylor and Francis);
- David Dos Santos Ferreira is a member of the editorial board of "Mathematical Control and Related Fields";
- Jean-Claude Vivalda is a member of the editorial board of the "Journal of Dynamical and Control System".

10.1.3.2. Reviewer - Reviewing Activities

Jean-Claude Vivalda is a reviewer for the "Mathematical reviews".

10.1.4. Invited Talks

- Rémi Buffe was an invited speaker at the "International itinerant workshop in PDEs" (Roma (Italy), February 2019).
- Rémi Buffe was an invited speaker at the "Journées Jeunes Contrôleurs" (Paris, June 2019).
- Rémi Buffe was an invited speaker at the "Conférence THESPEGE - Spectral Theory and Geometry", (Seillac (France), September 2019).
- Thomas Chambrion took part to the invited session "Control of nonlinear PDEs" in Conference on Nonlinear Control Systems (NOLCOS 2019, Vienna (Austria)).
- Ludovick Gagnon was an invited speaker at the first Joint Meeting Brazil-France in Mathematics (Rio de Janeiro, July 2019).
- Jean-François Scheid was invited at the "Journées Corrosion et Analyse Numérique", (Orsay, 4–5 July 2019).
- Jean-François Scheid was invited at the workshop "New Trends in Probability and Analysis" (NTPA), (Hammamet, Tunisia, 23–26 September 2019).
- Takéo Takahashi was an invited speaker at the congress VII MACI 2019, Río Cuarto (Argentina), May 2019.
- Takéo Takahashi was an invited speaker at the workshop PDE 2019, Berlin (Germany), September 2019.
- Takéo Takahashi was an invited speaker at the workshop "Franco-Brazilian meeting in mathematical fluid mechanics", Lyon (France), October 2019.
- Takéo Takahashi was an invited speaker at the workshop "Feedback Control", Linz (Austria), November 2019.

10.1.5. Leadership within the Scientific Community

David Dos Santos Ferreira is one of the coordinators of the GDR "Analyse des EDP".

10.1.6. Research Administration

- Xavier Antoine is the director of the maths laboratory IECL and an elected member of the scientific council of the "Université de Lorraine".
- Xavier Antoine was the president of the HCERES evaluation panel of the laboratory Lamav, (Valenciennes, February 2019). He was also a member of the HCERES evaluation panel of the "Fédération de Recherche des Hauts de France", (February 2019).
- Xavier Antoine is the local coordinator of the France-Chinese CNRS LIASFMA in applied mathematics.
- David Dos Santos Ferreira is the treasurer of the SMF (French Mathematical Society).
- Karim Ramdani is member of the board of the RNBM (Réseau National des Bibliothèques de Mathématiques) and is in charge of Open Access issues (with Benoît Kloeckner). Since October 2018, he is also a member of the Working Group "Publications" of the national "Comité pour la Science Ouverte" of the French ministry of Higher Education, Research and Innovation.
- Ludovick Gagnon is International in charge of international relations for the Inria Nancy Grand-Est.
- Julie Valein was a member of the selection committee of new "maître de conférences" at "Université de Besançon-ISIFC" in April-May 2019.
- Julie Valein is a co-organizer of the "Séminaire EDP de l'Institut Elie Cartan de Lorraine, site de Nancy".
- Julien Lequeurre is the organizer of the "Séminaire EDP de l'Institut Elie Cartan de Lorraine, site de Metz".

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Except L. Gagnon, K. Ramdani, T. Takahashi and J.-C. Vivalda, SPHINX members have teaching obligations at "Université de Lorraine" and are teaching at least 192 hours each year. They teach mathematics at different level (Licence, Master, Engineering school). Many of them have pedagogical responsibilities.

Moreover, Julie Valein is a member of the managing board and of the selection committee of the engineer school "Polytech Nancy", she is also a member of the "personnel commission" of IECL.

10.2.2. Supervision

- PhD in progress
  - I. Badia, HPC simulation by domain decomposition methods of electromagnetic problems, (started in september 2019), X. Antoine and Ch. Geuzaine.
  - I. Djebour, Controlability and stabilization of fluid-structure interaction problems, (started in November 2017), T. Takahashi.
  - D. Gasperini, design of a new multi-frequency PDE-based approach for the numerical simulation of the Doppler effect arising in acoustic and electromagnetism, X. Antoine.
  - Z. Liu, Statistical methods for the automatic generation of efficient command laws without model, April 2018, Th. Chambrion.
  - Ph. Marchner, Numerical simulation by domain decomposition methods of aeroacoustic problems, Sept. 2019, X. Antoine and Ch. Geuzaine.
  - Julie Valein is a member of the monitoring committee of the theses of Imène Djebour (september 2018 and 2019, advisor Takéo Takahashi) and Ibtissem Zaafrani (september 2019, advisor Simon Labrunie)

10.2.3. Juries

- Takéo Takahashi reviewed the PhD thesis of Jiao He, Université de Lyon, 2019.
- Xavier Antoine reviewed the PhD theses of
  - M. Averseng, Université de Saclay, 2019.
  - P. Mennuni, Université de Lille, 2019.
  - P. Marchand, Université de Sorbonne Université, 2020 (defense).
- Xavier Antoine reviewed the HDR of S. Chaillat, ENSTA, 2019.
- Jean-Claude Vivalda was a member of the thesis jury of Missie María del Rocío Aguado Rojas defended at June 2019 at "Centrale-Supélec".
- David Dos Santos Ferreira was the president of the HDR thesis jury of Matthieu Léautaud (University of Paris Diderot).
- David Dos Santos Ferreira was a member of the HDR thesis jury of Thierry Daudé (University of Cergy-Pontoise).
- David Dos Santos Ferreira reviewed the PhD thesis of Cristóbal Meroño Moreno (Universidad Autónoma de Madrid)

<h1 style="text-align:center; color:red;">TOSCA Team</h1>

9. Dissemination

9.1. Promotion of Mathematics in the industry

- A. Lejay is member of the board of AMIES (Agence Mathématiques en Intéractions avec l'Entreprise et la Société). A. Lejay is editor of the *success stories* project.
- 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.
- 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.

9.2. Promoting Scientific Activities

9.2.1. Scientific Events: Organisation

- C. Fritsch organizes with Pascal Moyal (Univ. de Lorraine) the weekly Seminar of Probability and Statistics of IECL, Nancy.
- C. Fritsch organized with Constantin Morarescu (CRAN) a scientific day of the *Fédération Charles Hermite* about multiscale models. (IECL, Nancy, 21 June 2019)

9.2.1.1. Member of the Organizing Committees

- N. Champagnat is member of the organizing committee of the conference *Mathematical Models in Evolutionary Biology*, part of the Thematic Month on Mathematical Issues in Biology (CIRM, Luminy, 10–14 Feb. 2020).
- N. Champagnat was member of the organizing committee of the conference ReaDiNet 2019 *Mathematical Analysis for Biology and Ecology* (Inria Nancy – Grand Est, 23–25 Sep.).
- N. Champagnat and U. Herbach organized the workshop *Modélisation de l'hétérogénéité tumorale et thérapies ciblées* (IECL, Univ. Lorraine, 21–22 Oct.).
- C. Fritsch was member of the organizing committee of the conference *51es Journées de Statistiques* (Nancy, 3–7 June).
- A. Lejay organized the conference *TRAG 2019* (Nancy, 9–11 Oct.).
- E. Tanré and R. Veltz organized the workshop on *Mean-field approaches to the dynamics of neuronal networks* (EITN, 3–4 April).

9.2.1.2. Member of the Conference Program Committees

- M. Bossy is member of the SMAI2019 Conference Scientific Committee and MASCOT NUM 2020 Conference.
- D. Talay is serving as a member of the scientific commitee for MasterKesm (Masterclass from kinetic equations to statistical mechanics) summer school to be held in Saint Jean de Monts in 2020.

9.2.2. Journal

9.2.2.1. Member of the Editorial Boards

- A. Lejay is one of the three editors of the *Séminaire de Probabilités* and *Mathematics and Computers in Simulation* (MATCOM).
- N. Champagnat serves as an associate editor of *Stochastic Models*.

- N. Champagnat serves as co-editor-in-chief with Béatrice Laurent-Bonneau (IMT Toulouse) of *ESAIM: Probability & Statistics*.
- D. Talay serves as an Area Editor of *Stochastic Processes and their Applications*, and as an Associate Editor of *Journal of the European Mathematical Society*, *Probability, Uncertainty and Quantitative Risk*, *ESAIM Probability and Statistics*, *Stochastics and Dynamics*, *Journal of Scientific Computing*, *Monte Carlo Methods and Applications*, *SIAM Journal on Scientific Computing*, *Communications in Applied Mathematics and Computational Science*, *Éditions de l'École Polytechnique*. He also served as Co-editor in chief of *MathematicS in Action*.

9.2.2.2. Reviewer - Reviewing Activities

- N. Champagnat wrote reviews for *Stochastic Processes and their Applications* (three times this year), *Electronic Journal of Probability* and *Frontiers of Mathematics in China*.
- C. Fritsch wrote reviews for *PCI Ecology*.
- C. Henry wrote reviews for *Annals of Nuclear Energy*, *Aerosol Science and Technology*, *Building and Environment* and *Journal of Aerosol Science*.
- A. Lejay wrote reviews for *Annals of Institut Henri Poincaré*, *Statistical Inference for Stochastic Processes*, *Journal of Computational and Applied Mathematics*, *Physical Review E*, *Bernoulli*, *Electronic Journal of Probability*, *ESAIM PS*, *Journal Theoretical Probability*, *SIAM Journal on Control and Optimization*, *Applied Probability Journals*, *Journal of Functional Analysis*.
- E. Strickler wrote reviews for *Stochastic Models* and *Stochastic Processes and their Applications*.
- E. Tanré wrote reviews for *The Annals of Applied Probability*, *Electronic Journal of Probability*, *ESAIM PS*, *The Bulletin of the London Mathematical Society*, *Finance and Stochastics*, *The Journal of Mathematical Neuroscience*, *Stochastic Processes and their Applications*.
- E. Tanré serves has a permanent reviewer of *Mathematical Reviews of the American Mathematical Society (MathSciNet)*.
- D. Villemonais wrote reviews for *Markov processes and related fields*, *Electronic communication in Probabilty* (twice), *The Annals of Applied Probability*, *Stochastic processes and Applications*, *Journal of Statistical Physics* and *Electronic Journal of Probability*.
- D. Talay reported on applications to the Swiss National Science Foundation (SNSF).
- D. Talay reported on applications to the Research Grants Council (RGC) of Hong Kong.

9.2.3. Invited Talks

- M. Bossy has been invited to give talks at the conference Simulation and Optimization for Renewable Marine Energies, at Roscoff in July.
- N. Champagnat has been invited to give a Colloquium talk at the Department of Mathematics and Computer Science of the University of Technology in Eindhoven in February.
- N. Champagnat gave a talk at the Journée Charles Hermite *Modélisation fine versus outils d'analyse et simulation, un problème d'échelle* in Nancy in June.
- Q. Cormier has been invited to give a talk at the workshop on *Mean-field approaches to the dynamics of neuronal networks* at EITN in April.
- Q. Cormier and P. Helson have presented posters at the *International Conference on Mathematical Neuroscience* in Copenhagen in June.
- Q. Cormier and E. Tanré have been invited to give talks at the workshop "Nonlinear Processes and their Applications" in St. Etienne in July.
- C. Fritsch has been invited to give a talk at the workshop of the *MAMOVI* group in September.
- C. Fritsch gave a talk at the *Journées de Statistiques* in Nancy in June and at the *Mathematical Models in Ecology and Evolution* conference in Lyon in July.

- V. Hass presented a poster at the conference ReaDiNet 2019 *Mathematical Analysis for Biology and Ecology* in Nancy in September.
- U. Herbach has been invited to give talks at the Journée Charles Hermite *Méthodes et Modèles pour comprendre les réseaux biologiques* in January, at the spring school of *chaire MMB (Modélisation Mathématique et Biodiversité)* in Aussois in May, at the *Journée du RIS (Réseau Interdisciplinaire autour de la Statistique)* in Paris in September and at the workshop *Modélisation de l'hétérogénéité tumorale et thérapies ciblées* in Nancy in October.
- U. Herbach gave seminar talks at the *Séminaire de probabilités et statistiques de l'IECL* in Nancy in April, at the *Groupe de travail Maths-Bio* in Orléans in May, at the *Séminaire CIML (Centre d'immunologie de Marseille-Luminy)* in Marseille in May, at the *Groupe de travail du LBMC (Laboratoire de Biologie et Modélisation de la Cellule)* in Lyon in November, at the *Séminaire de probabilités* in Grenoble in November and at the *Groupe de travail Maths-Bio* in Grenoble in November.
- U. Herbach presented a poster at the conference *Probabilistic Modeling in Genomics* in Aussois in October.
- A. Lejay have been invited to give a mini-talk *A short introduction to Rough Paths* at Ritsumeikan University (Kyoto, Japan) in February.
- A. Lejay gave a talk at the conference *TRAG 2019* (Nancy) in October.
- E. Strickler gave seminar talks at the *Séminaire de probabilités* in Toulouse in October and at the *Séminaire de probabilités et statistiques de l'IECL* in Nancy in November.
- D. Villemonais gave seminar talks at the *Séminaire de Probabilités* of Univ. Paris 13 in April and at the *Probability Seminar* of Zurich Univ. in March.
- D. Villemonais has bee invited to give talks at the *Journées du réseau A2* (Paris-Sorbonne Univ.) in October and at the *Conference ReaDiNet 2019* (Inria Nancy – Grand Est) in September.
- E. Soret has given an invited talk at ICMNS in Copenhagen in June.
- D. Talay was an invited speaker at the Conference in Honor of Philip Protter, Columbia University, New York, USA, September 2019.
- D. Talay was an invited speaker at the Conference in Honor of Nicole El Karoui, Sorbonne University, Paris, 21-24 May 2019.
- D. Talay was an invited speaker at the 'Stochastic Analysis and Related Topics' International Conference, Bucarest, Romania, 6-9 May 2019.
- D. Talay chaired a session at the 'Journées de l'Académie des Sciences en région', Nice and Sophia Antipolis, 2-21 June 2019.
- D. Talay gave a seminar talk at École des Ponts ParisTech on 27 November 2019.

9.2.4. Leadership within the Scientific Community

- M. Bossy was serving as a vice president of the Inria Evaluation Committee until September 2019.
- A. Lejay is head of the Probability and Statistics team of Institut Élie Cartan de Lorraine.
- D. Talay continued to chair the Scientific Council of the French Applied Math. Society SMAI.
- D. Talay is a member of the scientific committee of the 'Institut Mathématiques de la Planète Terre' project suppirted by INSMI-CNRS.
- D. Talay served as a member of the scientific council of the Complex System academy of the Université Côte d'Azur Idex.
- D. Talay is serving as a member of the CMUP Advisory Commission (University of Porto).
- D. Talay is a member of the Comité National Français de Mathématiciens.

9.2.5. Scientific Expertise

- N. Champagnat evaluated a research project submitted to the ANR.
- C. Fritsch is member of the Ph.D. monitoring committee of Léo Darrigade (INRA).
- D. Talay served as a member of the committee for positions in Applied Mathematics at the Ecole Polytechnique.
- D. Talay chaired the HCERES evaluation committee for the Toulouse Mathematics Institute (IMT).
- D. Talay is serving as a member of the evaluation committee of the Charles University (Prague, Czech Republic).

9.2.6. Research Administration

- N. Champagnat is a member of the *Comité de Centre*, the *COMIPERS* and the *Commission Information Scientifique et Technique* of Inria Nancy - Grand Est, *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 Opérationel d'Évaluation des Risques Légaux et Éthiques*) for the Inria Research Center of Nancy - Grand Est.
- C. Fritsch is member of the *Commission du Développement Technologique* of Inria Nancy - Grand Est, of the *Commission du personnel* and the *Commission Parité-Égalité* of IECL. She is the local Raweb correspondent for the Inria Research Center of Nancy - Grand Est.
- A. Lejay is member of the Executive board of *LUE Impact project digistrust* (Univ. Lorraine), of the Conseil de Pôle AM2I (Univ. Lorraine) and of the CUMI (Inria NGE).
- D. Villemonais is responsible of the "Ingénierie Mathématique" cursus of École des Mines de Nancy and is elected member of the conseil de l'École des Mines de Nancy.

9.3. Teaching - Supervision - Juries

9.3.1. Teaching

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, *Problèmes inverses*, 22.5h, M1, École des Mines de Nancy, France.

Master: C. Fritsch, *Probability theory*, 40h, L3, École des Mines de Nancy, France.

Master: A. Lejay, *Probabilités*, 9h, 1st year Mines de Nancy, France.

Master: A. Lejay, *Simulation des marchés financiers*, 29h, M2, Master PSA, Université de Lorraine, France.

Master: E. Tanré (courses and exercices), *Advanced Numerics for Computational Finance*, 30h (20h + 10h), M2, Univ. Côte d'Azur (Mathmods Erasmus Mundus), France.

Master: E. Tanré, *Mathematical Methods for Neurosciences*, 20h, M2, ENS - Master MVA / Paris 6 - Master Maths-Bio, France.

Master: E. Tanré (courses) *Stochastic models in neurocognition*, 15h (7h30 + 7h30), M2, Univ. Côte d'Azur (Master 2), France.

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

9.3.2. Supervision

HdR: Denis Villemonais, *Convergence exponentielle vers une distribution quasi-stationnaire et applications*, Université de Lorraine, 28/11/2019.

PhD in progress: Alexis Anagnostakis, *Étude du mouvement brownien collant*, Université de Lorraine, Octobre 2018, A. Lejay and D. Villemonais.

PhD in progress: Lorenzo Campana, *Stochastic modeling of non-spherical particles transport and deposition by turbulent flow*, Université Côte d'Azur, December 2017, M. Bossy.

PhD in progress: Quentin Cormier, *Biological Networks of Spiking Neurons*, September 2017, E. Tanré and R. Veltz (MATHNEURO Inria team).

PhD in progress: Vincent Hass, *Individual-based models in adaptive dynamics and long time evolution under assumptions of rare advantageous mutations*, Université de Lorraine, October 2018, N. Champagnat.

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: Rodolphe Loubaton, *Caractérisation des cibles thérapeutiques dans un programme génique tumoral*, Université de Lorraine, October 2018, N. Champagnat and L. Vallat (CHRU Strasbourg).

9.3.3. Juries

- M. Bossy served as a referee for the Ph.D. thesis of Pierre Antoine Joulin, *Modélisation à fine échelle des interactions entre parcs éoliens et météorologie locale* at Institut National Polytechnique de Toulouse, December 2019.
- M. Bossy served as an examiner for the Ph.D. theses of Victor Marx, *Diffusive processes on the Wasserstein space: Coalescing models, Regularization properties and McKean-Vlasov equations*, Université Côte d'Azur, November 2019, and Sebastian Reyes Riffo, *Méthodes mathématiques pour l'extraction d'énergie marine*, PSL University November 2019.
- N. Champagnat will serve as an examiner for the habilitation thesis of Nicolas Gast, *Refinements of Mean Field Approximation*, Univ. de Grenoble, 30/01/2020.
- N. Champagnat served as a referee for the Ph.D. thesis of Paulien Jeunesse, *Estimation non paramétrique du taux de mort dans un modèle de population générale : théorie et applications*, Univ. Paris Dauphine, 08/01/2019.
- N. Champagnat served as an examiner for the Ph.D. theses of Frédérique Robin, *Modeling and analysis of cell population dynamics: application to the early development of ovarian follicles*, Univ. Paris Saclay, 26/09/2019, William Oçafrain, *Quasi-stationarité avec frontières mobiles*, Univ. Toulouse 3, 4/07/2019, Martin Andrade-resptrepo, *Mathematical modeling and evolutionary processes*, Univ. Paris 7, 26/06/2019 and Edouard Strickler, *Persistance de processus de Markov déterministes par morceaux*, Univ. Neuchâtel, 21/03/2019.
- A. Lejay served as an examiner for the habilitation thesis of Nicolas Marie, *Quelques contributions à la contrainte et à la statistique des équations différentielles dirigées par le mouvement brownien fractionnaire ainsi qu'à la sélection de modèle*, Université Paris Nanterre, November 2019.
- A. Lejay served as an examiner for the Ph.D. thesis of Carlo Bellingeri, *Itô formulae on stochastic heat equation via regularity structures and rough paths*, Sorbonne Université, July 2019.
- D. Talay served as a referee for the Ph.D. thesis of Grégoire Ferré, *Large Deviations Theory in Statistical Physics: Some Theoretical and Numerical Aspects*, Université Paris Est and École des Ponts ParisTech, 27 November 2019.
- D. Talay served as a referee for the habilitation thesis of Adrien Richou, *Quelques Résultats sur les Equations Différentielles Rétrogrades et les Principes de Grandes Déviations pour les Estimateurs de Paramètres de Diffusions*, université de Bordeaux, 4 November 2019.

9.4. Popularization

9.4.1. Interventions

C. Henry gave a presentation at the Inria Café In on the topic of breakup of elongated particles such as spaghettis.

9.4.2. Creation of media or tools for science outreach

- A. Lejay is editor of the project *Success Stories* (AMIES and FSMP) dedicated to create 2-page sheets to present successful interactions between industry and academia.

<p align="center" style="color:red">BIGS Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. Member of the Organizing Committees

- Sandie Ferrigno, Anne Gégout-Petit, Clémence Karmann, Aurélie Muller-Gueudin, Nassim Sahki,Bruno Scherrer and Sophie Wantz-Mézières were very active members of the organizing committee of the "Journées de Statistique de la SFdS" at FST in Nancy, June 2019.
- Anne Gégout-Petit, Aurélie Muller-Gueudin, and Pierre Vallois were in the organizing committee of the workshop "Modélisation de l'hétérogénéité tumorale et thérapies ciblées" at FST in Nancy, September 2019.
- Sophie Wantz-Mézières was part of the organizing committee of the national workshop of the "Fédération Charles Hermite": "Sécurité et confiance dans les échanges des données de santé", at the "Ecole de Chirugie" in Nancy, November 2019.

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

A. Gégout-Petit was ETC program coordinator of the European Meeting of Statisticians, Palermo, July 2019.

10.1.2.2. Member of the Conference Program Committees

A. Gégout-Petit was part of the program committee of the CFIES (Colloque francophone international sur l'enseignement de la statistique), Strasbourg, Septembre 2019.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

All BIGS members are regular reviewers for journals in probability, statistics and machine learning: 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

- Talk "Agrégation de méthodes statistiques pour la sélection de variables corrélées et en grande dimension". Séminaire AgroParisTech, Paris, May 2019, Aurélie Muller-Gueudin.
- Talk "Modélisation de réseaux de régulation de gènes par processus déterministes par morceaux". Journée de la Fédération Charles Hermite, Nancy, June 2019, Aurélie Muller-Gueudin.

10.1.5. Research Administration

Anne Gégout-Petit is member of "Bureau du comité des projets", centre Inria Nancy Grand-Est.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

B. Scherrer excepted, BIGS members have teaching obligations at "Université Lorraine" and are teaching at least 192 hours each year. They teach probability and statistics at different levels (Licence, Master, Engineering school). Many of them have pedagogical responsibilities.

- 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
- T. Bastogne is in charge of the spécialité Systèmes & TIC du master Ingénierie de Systèmes Complexes
- T. Bastogne is in charge of professional master: CIIBLE (Cybernétique, Instrumentation, Image en Biologie et medecinE) en M2 with Medicine Faculty of Université de Lorraine
- T. Bastogne is 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: 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)
- 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

10.2.2. Supervision

- PhD : Clémence Karmann, "Network inference for zero-inflated models", Grant : Inria-Cordis. Advisors: A. Gégout-Petit, A. Muller-Gueudin, Université de Lorraine, defended on November 25, 2019.
- PhD : Florine Greciet, "Modèles markoviens déterministes par morceaux cachés pour la propagation de fissures", grant CIFRE SAFRAN AIRCRAFT ENGINES, Advisors : R. Azaïs, A. Gégout-Petit, Université de Lorraine, defense on January, 2020.
- PhD : Kévin Duarte, "Aide à la décision médicale et télémédecine dans le suivi de l'insuffisance cardiaque", Advisors : J.-M. Monnez and E. Albuisson.
- PhD : Pauline Guyot, "Modélisation et Simulation de l'Electrocardiogramme d'un Patient Numérique", Grant : CIFRE-Cybernano. Advisors: T. Bastogne, E. H. Djermoune.
- PhD: Nassim Shaki, "Détection de rupture dans des signaux multivariés pour la prédiction d'événement redouté à partir de paramètres physiologiques recueillis par capteurs connectés après greffe pulmonaire", grant Inria-Cordis. Advisors: A. Gégout-Petit, S. Mézières, M. d'Ortho.
- Benoît Lalloué, contract research engineer for two years, RHU Fight RF, supervised by Jean-Marie Monnez.
- Postdoc: Lionel Lenôtre, Telomer Modelling, grant LUE GEENAGE. Advisors: A. Gégout-Petit, D. Villemonais.
- Postdoc: Emma Horton, Telomer Modelling, grant LUE GEENAGE. Advisors: A. Gégout-Petit, D. Villemonais.
- 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

- Anne Gégout-Petit participated to the jury of the Phd defense of Edouard Fournier, Paul Sabatier University, Toulouse, October 8th
- Anne Gégout-Petit participated to the jury of the HDR defense of Denis Villemonais, Lorraine Université, November 18th
- Anne Gégout-Petit was reviewer and participated to the jury of the Phd defense of Candy Abboud, INRA d'Avignon, Université d'Aix-MArseille, December 11th.
- Anne Gégout-Petit participated to the jury of the HDR defense of Adrien Coulet, Lorraine Université, December 16th.
- Anne Gégout-Petit is member of the "Jury du prix de thèse AMIES".

10.3. Popularization

10.3.1. Interventions

- Anne Gégout-Petit participated in a round table on Artificial Intelligence and Health as part of "La fête de la science" 2019
- Anne Gégout-Petit participated at the "Brunch Données de santé et thermalisme" Janvier 2019
- Sandie Ferrigno: Advisor of a group of students (EEIGM), "La main à la Pâte" project, elementary schools, Nancy, January-June 2019
- Sandie Ferrigno: Advisor of a group of students (EEIGM), "Energies renouvelables", "La main à la Pâte" project, Institut médico-éducatif (IME), Commercy, October 2019-January 2020
- Sandie Ferrigno: Advisor of a group of students (EEIGM), "L'Astronomie" Cgénial project, Collège Paul Verlaine, Malzéville, November 2019-February 2020.
- Sandie Ferrigno: Advisor of a group of students (EEIGM), "Le Chocolat" Cgénial project, Collège de la Craffe, Nancy, November 2019-January 2020.
- Sophie Wantz-Mézières was part of the organization of a thematic and multidisciplinary week "Neurosciences, neuro-oncologie et numérique", for students from Telecom-Nancy and Faculté de Médecine de Nancy, May 2019.

<div align="center">

CAPSID Project-Team

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9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

- Sabeur Aridhi co-chaired the third international workshop on Advances in managing and mining large evolving graphs (LEG - https://leg-ecmlpkdd19.loria.fr/) held in conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD 2019).
- Isaure Chauvot de Beauchêne and Marie-Dominique Devignes organised the first international Workshop (5 days) of the H2020-ITN project RNAct, "RRMs, RNA and RNAct" (http://rnact.eu/Workshop1/)
- Isaure Chauvot de Beauchêne organised the 3rd meeting (regional, 1 day, 25 pers.) of the Glyco-EST group. GlycoEst is an informal working group which was recently created to develop an interdisciplinary regional network of glyco-scientists.
- Isaure Chauvot de Beauchêne organised a lecture and practical course at the AlgoSB WinterSchool 14-21 january 2019 on *Predicting RNA-Protein Interactions*.

9.1.2. Scientific Events: Selection

- Members of the following Conference Program Committees : Joint ICML 2019 Workshop on Computational Biology, IWBBIO 2019, ACM-BCB 2019, BIBM 2019, SWAT4HCLS 2019, EGC 2019.

9.1.3. Journal

- Editorial board of Intelligent Data Analysis (Sabeur Aridhi), Scientific reports (David Ritchie).
- Reviewer for Nucl. Acids Research (Marie-Dominique Devignes).
- Contribution to the IMIA Yearbook of Medical Informatics, 2019 (Malika Smaïl-Tabbone, [20])

9.1.4. Leadership within the Scientific Community

- Isaure Chauvot de Beauchêne is co-founder of the 3D Bioinfo ELIXIR Community.
- Marie-Dominique Devignes and Malika Smaïl-Tabbone have been invited to participate in the INI-CRCT network which is the subnetwork of the F-CRIN project (French Clinical Research Investigation Network) dedicated to cardio-renal diseases. Their contribution is related to their expertise in machine learning and network science.

9.1.5. Scientific Expertise

- Marie-Dominique Devignes reviewed a grant application for FWO (Flanders Research Organization).
- Malika Smaïl-Tabbone and Marie-Dominique Devignes both reviewed grant applications for the ANR.

9.1.6. Research Administration

- Sabeur Aridhi is a member of the Inria Nancy Grand-Est CDT: Commission du Développement Technologique.
- Marie-Dominique Devignes was a member of the ComiPers at Inria Nancy Grand-Est: Commission for the evaluation of CORDI post-doc and CORDI-S doctoral application.

- Malika Smaïl-Tabbone is a member of the IES commission for the elaboration of the policy concerning Scientific Information and Edition Scientifique at Inria Nancy Grand-Est and at the LORIA.
- Dave Ritchie was a member of the CMI at the LORIA: Commission de Mention Informatique of the Université de Lorraine's IAEM doctoral school.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Sabeur Aridhi and Malika Smaïl-Tabbone are enseignants-chercheurs with a full service. Sabeur Aridhi is responsible for the major in IAMD (Ingénierie et Applications des Masses de Données) at TELECOM Nancy (Université de Lorraine),

Marie-Dominique Devignes teaches about 34h at Telecom Nancy (1A) and 10h in the Cursus Master Ingenieur at the Université de Lorraine.

Isaure Chauvot de Beauchêne teaches about 10h in the Cursus Master Ingenieur at the Université de Lorraine.

9.2.2. Supervision

- PhD: Maria Elisa Ruiz Echartea, *Multi-component protein assembly using distance constraints*. Université de Lorraine. Defense date : 18/12/2019 (Manuscript under revision, soon in HAL). David Ritchie, Isaure Chauvot de Beauchêne.
- PhD in progress: Kévin Dalleau, *Complex graph analysis for classification: application to disease nosography,* 01/12/2016, Malika Smaïl-Tabbone, Miguel Couceiro.
- PhD in progress: Bishnu Sarker, *Developing distributed graph-based approaches for large-scale protein function annotation and knowledge discovery,* 01/11/2017, David Ritchie, Sabeur Aridhi.
- PhD in progress: Antoine Moniot, *Modeling protein / nucleic acid complexes by combinatorial structural fragment assembly,* 01/11/2018, David Ritchie, Isaure Chauvot de Beauchêne.
- PhD in progress: Athénaïs Vaginay, *Model selection and analysis for biological networks: use of domain knowledge and application to networks disturbed in diseases,* 01/11/2018, Taha Boukhobza, Malika Smaïl-Tabbone.
- PhD in progress: Anna Kravchenko, *Fragment-based modeling of protein-RNA complexes for protein design,* 01/10/2019, Malika Smaïl-Tabbone, Isaure Chauvot de Beauchêne.
- PhD in progress: Hrishikesh Dhondge, *A new knowledge base for modeling and design of RNA-binding proteins,* 01/10/2019, Marie-Dominique Devignes, Isaure Chauvot de Beauchêne.
- PhD in progress: Diego Amaya Ramirez, *HLA genetic system and organ transplantation: understanding the basics of immunogenicity to improve donor / receptor compatibility when assigning grafts to recipients,* 01/10/2019, Marie-Dominique Devignes, Jean-Luc Taupin.
- PhD in progress: Kamrul Islam, *Distributed link prediction in large complex graphs: application to biomolecule interactions,* 01/11/2019, Malika Smail-Tabbone, Sabeur Aridhi.

9.2.3. Juries

- Sabeur Aridhi was a member (examinator) of the PhD committee of Manel Zoghlami, Universiy of Clermont Auvergne, *Multiple instance learning approaches for ionizing-radiation-resistance prediction,* 20/12/2019.
- Sabeur Aridhi was a member (reviewer) of the PhD committee of Zekarias Tilahun Kefato, Universiy of Trento, *Network and Cascade Representation Learning Algorithms based on Information Diffusion Events,* 29/04/2019.
- Sabeur Aridhi was a member (reviewer) of the PhD committee of Nasrullah Sheikh, Universiy of Trento, *Network Representation Learning with Attributes and Heterogeneity,* 16/07/2019.

- Marie-Dominique Devignes was a member (reviewer) of the PhD committee of Manel Zoghlami, Universiy of Clermont Auvergne, *Multiple instance learning approaches for ionizing-radiation-resistance prediction,* 20/12/2019.

9.3. Popularization

9.3.1. Interventions

- Dominique Mias-Lucquin was co-organizer of the "Pint of Science" event, 21-22 may, 2019 (24 countries involved ; http://pintofscience.com).

MIMESIS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Reviewer - Reviewing Activities

Members of the teams regularly provide reviews for:

- International conferences and journals on Image Processing and Computer-Assisted Interventions (MICCAI, IPCAI, IJCARS, Medical Image Analysis, Transactions on Medical Imaging)
- International conferences and journals on Computer Graphics and Physics-based modeling (Eurographics, VRIPHYS)
- International conferences on Robotics (IROS, ICRA, EuroHaptics)

10.1.2. Invited Talks

- **Nava Schulmann**: talk on "Bayesian data assimilation" at the Data-driven computational mechanics workshop, New York (USA), February 2019.
- **Hadrien Courtecuisse**: Next Generation Intelligent Surgical Systems workshop, Verona (Italy), November 2019
- **Stéphane Cotin**: Next Generation Intelligent Surgical Systems workshop, Verona (Italy), November 2019
- **Stéphane Cotin**: International Conference on Nonlinear Solid Mechanics, Roma (Italy), June 2019.
- **Stéphane Cotin**: talk on "Digital Twin for medicine" at the Data-driven computational mechanics workshop, Luxembourg, September 2019
- **Stéphane Cotin**: talk on "Patient-specific simulation in medicine" at the Data-driven computational mechanics workshop, February 2019.

10.1.3. Scientific Expertise

Stéphane Cotin provides scientific expertise for Insimo (www.insimo.com).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: Igor Peterlik, Modélisation des systèmes vivants, 17h, M2, University of Strasbourg
- Master: Igor Peterlik, Visualisation des données et simulation, 10h, M1, University of Strasbourg
- Master: Hadrien Courtecuisse, Real time simulation, 30h, M2, University of Strasbourg
- Master: Hadrien Courtecuisse, Visualisation des données et simulation, 10h, M2, University of Strasbourg
- Master: Hadrien Courtecuisse, Visualisation des données et simulation, 10h, M1, University of Strasbourg

10.2.2. Supervision

PhD : Jaime Garcia Guevara, Augmented ultrasound imaging for hepatic surgery, supervised by Stéphane Cotin, Marie-Odile Berger. Defended on Dec 2nd 2019.

PhD in progress: Raffaella Trivisonne, Computer-aided vascular interventions, started 01/09/2015, supervised by Stéphane Cotin and Erwan Kerrien.

PhD in progress: Nicolas Golse, Navigation using the augmented reality during hepatic surgery, started 01/09/2016, supervised by Stéphane Cotin.

PhD in progress: Sergei Nikolaev, Characterization of boundary conditions for biomechanical modeling of liver, started 01/05/2017, supervised by Stéphane Cotin, co-supervised by Igor Peterlik and Hadrien Courtecuisse.

PhD in progress: Jean-Nicolas Brunet, Characterization of boundary conditions for biomechanical modeling of liver, started 01/09/2017, supervised by Stéphane Cotin.

PhD in progress: Andrea Mendizabal, Numerical simulation of soft tissues and machine learning, 01/09/2017, supervised by Stéphane Cotin.

PhD in progress: Paul Baksic, Robotic assistance for percutaneous surgical interventions in deformable structures – Application to radiofrequency ablation, started 01/10/2018, supervised by Hadrien Courtecuisse.

PhD in progress: Ziqiu Zeng started 01/07/2019, SPERRY - Supervised Robotic Surgery - Application to needle insertion, supervised by Hadrien Courtecuisse.

PhD in progress: Guillaume Mestdagh, started 01/09/2019, Real-Time Tumor Tracking as an Optimization Problem, co-supervised by Stéphane Cotin.

10.2.3. Juries

Stephane Cotin was president of the Ph.D. committee for Lorenzo Sala (September 27, 2019). Mathematics laboratory, Strasbourg

Stephane Cotin was in the Ph.D. committee for Jaime Guevara (December 2, 2019). LORIA, Nancy.

10.3. Popularization

10.3.1. Articles and contents

Stephane Cotin wrote a chapter for the book entitled "Virtual Reality and Augmented Reality - Myths and Realities", which is an easy access book on the usages and developments of Virtual Reality and Augmented Reality for various domains. ISBN 978-1-78630-105-5.

10.3.2. Education

We are developing a training system dedicated to flexible endoscopy, used in university diplomas and masters programs for clinicians.

NEUROSYS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

Laurent Bougrain is a member of the steering committee of the research network in neuroscience of the university of Lorraine.

Laure Buhry is an elected member of the "Pôle Scientifique AM2I" council of university of Lorraine.

9.1.1. Scientific Events: Organisation

Laurent Bougrain is a member of the organization committee of the scientific days of the research network in neuroscience of the university of Lorraine, April 25th 2019 (topic: emotions, motivation and addictions) & December 5th 2019.

9.1.2. Leadership within the Scientific Community

Laurent Bougrain is a member of the Board of Directors of the scientific society CORTICO for the promotion of Brain-Computer Interfaces in France.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Engineering school: L. Bougrain, Brain-Computer Interfaces, 4.5h, 3rd year, Supelec, France

Engineering school: L. Bougrain, Artificial Intelligence, 61h, 3rd year, Telecom Nancy, France

Engineering school: A. Aussel, Python, Ecole des Mines, Nancy, France

Master: L. Buhry, Algorithms for Articifial Inteligence, 31h, Master of cognitive science, M1, University of Lorraine, France

Master: L. Buhry, Fondamental Artificial Intelligence and data mining, 18h, Master of cognitive science, M1, University of Lorraine, France

Master: L. Buhry, Formalisms for representation and reasoning, 25h, Master of cognitive science, M1, University of Lorraine, France

Master: L. Buhry, Memory and Machine Learning, 38h, Master of cognitive science, M1, University of Lorraine, France

Master: L. Buhry, Computationnal Neurosciences, 25h, Master of cognitive science/SCMN, M2, University of Lorraine, France

Master: L. Bougrain, Learning and reasoning in the uncertain, 32h, Master of computer science, M2, University of Lorraine, France

Master: S. Rimbert, Brain-Computer Interface, 17h, Master of cognitive sciences, M2, University of Lorraine, France

Master: A. Aussel, Computational Neuroscience, Master of cognitive sciences, M2, University of Lorraine, France

Licence: S. Rimbert, Introduction to Neurosciences, 15h, Licence of cognitive sciences, L1 University of Lorraine, France

Licence: L. Buhry, Programmation Python, 37h, level L1 MIASHS, University of Lorraine, France

Licence: L. Buhry, Probability and statistics, 30h, L1 MIASHS, University of Lorraine, France

Licence: L. Buhry, Artificial Intelligence and problem solvinges, 25h, L3 MIASHS, University of Lorraine, France

Licence: L. Bougrain, programming on mobile devices, 17h, Licence of computer science, L3, University of Lorraine, France

Licence: N. Azevedo Carvalho, Mathematics, 64h, L1 SPI, University of Lorraine, France

9.2.2. Supervision

PhD: Amélie Aussel, Extraction of electrophysiological markers and mathematical modelling of the epileptic hippocampus, October 14 2019, Laure Buhry and Radu Ranta (CRAN).

PhD in progress: Sébastien Rimbert, Study of the dynamic of cerebral motor patterns during general anesthesia, January 1st 2016, Axel Hutt and Laurent Bougrain.

PhD in progress: Oleksii Avilov, methods for on-line detection of neural rythm changes in the motor system: application to brain-computer interfaces, June 1st 2018, Patrick Hénaff, Laurent Bougrain and Anton Popov (Kiev Polytechnic institute).

PhD in progress: Nathalie Azevedo Carvalho, a biologically plausible computer model of pathological neuronal oscillations observed in Parkinson's disease, November 1st 2018, Dominique Martinez and Laure Buhry.

9.2.3. Juries

Amélie Aussel, Extraction of electrophysiological markers and mathematical modelling of the epileptic hippocampus, October 14 2016, Univ Lorraine, (Laure Buhry and Radu Ranta, supervisors)

Committee of selection for an assistant professor position MCF69/19 University of Toulouse (2019), Laurent Bougrain

<p style="text-align:center;color:red;">**TONUS Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Member of the Organizing Committees

Philippe Helluy: Workshop on Compressible Multiphase Flows : Derivation, closure laws, thermo-dynamics, IRMA, May 2019.

Yannick Privat with Raphaël Côte and Thomas Duyckaerts: Workshop Control and dynamics of PDEs, Strasbourg, October 2019.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Yannick Privat is a member of the editorial boards of:

- AIMS Applied Mathematics,
- Evolution Equations and Control Theory.

Philippe Helluy is member of editorial board in:

- Computational and Applied Mathematics,
- International Journal of Finite Volume.

10.1.2.2. Reviewer - Reviewing Activities

- Emmanuel Franck was a reviewer for:
    - Numerical Methods for Partial Differential Equations.
- Yannick Privat was a reviewer for:
    - Applied Math. and Optimization,
    - Esaim Control Optimization and Calculust of Variations,
    - Discrete and Continuous Dynamical Systems,
    - Esaim Proceeding,
    - Journal de Mathématiques Pures et Appliquées,
    - Journal of Math. Biology,
    - Proceedings of the Royal Society A,
    - SIAM Journal on Control and Optimization,
    - Zeitschrift für angewandte Mathematik und Physik.
- Philippe Helluy was a reviewer for:
    - Journal of Computational Physics,
    - Computers and Fluids,
    - Numerical Methods for Partial Differential Equations,
    - European Journal of Mechanics / B Fluids.
- Matthieu Boileau was a reviewer for:
    - Proceedings of the Combustion Institutes.

10.1.3. Invited Talks and participations to conference as speaker

Yannick Privat:

- New Trends in PDE-Constrained Optimization, Linz, Austria. October 2019.
- Shape optimization and application days, Ecole Polytechnique, France. October 2019.
- "Groupement Euro-Maghrébin de Mathématiques et leurs Interactions". Madrid, Spain. November 2019.
- Dynamics, Equations and Applications (organizer of a mini-symposium), Cracovia, Poland. September 2019.

Emmanuel Franck:

- ICIAM 2019 (organizer mini-symposium), Valencia, Spain. July 2019.
- Workshop Multi-scale, Inria Nancy, June 2019.
- Jorek Meeting 2019, Munich, May 2019.

Laurent Navoret:

- ICIAM 2019 (organizer of a mini-symposium), Valencia, Spain. July 2019.

P. Helluy:

- ICNAAM 2019, Rhodes, September 2019
- NUMHYP, Malaga, June 2019.
- NUMKIN, Garching, Ocotober 2019.

Laura Mendoza:

- ICIAM 2019, Valencia, Spain. July 2019.
- Iter codeCamp, Cadarache, April 2019.
- EuroScipy 2019, Bilbao, September 2019.
- PyConFr, Bordeaux, November 2019.

Matthieu Boileau:

- Computation and learning days. April 2019. Lyon.
- Workshop Compressible multiphase flows, Strasbourg 2019.

10.1.4. Research Administration

Philippe Helluy:

- Director of the IRMA mathematics institute.

Mickael Gutnic:

- Director of the mathematics department (IRMA) in Strasbourg university.

Yannick Privat:

- Member of CNU section 26,
- Member of expert committee at IRMA Strasbourg

Matthieu Boileau:

- Manager of the "GDR calcul",
- Co-Manager of the network "metier calcul",
- Member of the "Commission de la Recherche du Conseil Académique de l'Université de Strasbourg"

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: E. Franck, "Informatics S6", 35h, L3, Strasbourg University, France.

Master: Y. Privat, "Optimal control", 64h, M2, Strasbourg University, France.

Master: Y. Privat, "Optimization", 64h, M1, Strasbourg University, France.

Licence: Y. Privat, "Nonlinear Optimization", 52h, L3, Strasbourg University, France.

Agrégation: Y. Privat, "Text study", 30h. Strasbourg University, France

Licence: C. Courtès, "Scientific computing", 37h, L3, Strasbourg University, France.

Licence: C. Courtès, "Numerical analysis", 34h, L3, Strasbourg University, France.

Licence: C. Courtès, "Numerical analysis", 18h, L2, Strasbourg Unversity, France.

Licence: C. Courtès, "Multiple variables function", 10h, L2, Strasbourg Unversity, France.

Licence: L. Navoret, "Nonlinear Optimization", 18h, L3, Strasbourg University, France.

Licence: L. Navoret, "Statistics for biologists", 21.5h, L2, Strasbourg University, France.

Master: L. Navoret, "Scientific computing", 35h, M1, Strasbourg University, France.

Master: L. Navoret, "Numerical methods for PDEs", 30h, M1, Strasbourg University, France.

Master: L. Navoret, "Optimization", 12h, M1, Strasbourg University, France.

Master (physics): L. Navoret, "Numerical resolution techniques for engineering", 22h, M1, Strasbourg University, France.

Master (Agregation): L. Navoret, "Scientific computing", 50h, M2, Strasbourg University, France.

Master (cell physics): L. Navoret, "Basics in mathematics", 24h, M2, Strasbourg University, France.

Licence, P. Helluy, "Numerical analysis", 17h, L3, Strasbourg University, France.

Master, P. Helluy, "Scientific computing", 20h, Préparation agrégation, Strasbourg University, France.

Master, P. Helluy, "Scientific computing", 28h, M1, Strasbourg University, France.

Master, P. Helluy, "Hyperbolic systems", 35h, M2, Strasbourg University, France.

Licence, M. Boileau, "informatic", 10h, L3, Strasbourg university, France.

Master, M. Boileau, "data sciences", 20h , M2, Strasbourg University, France.

Master, M. Boileau, "Parallel computing", 20h, M1, Strasbourg University, France.

Master, M. Boileau, "Python for science", 36h, Strasbourg University, France.

Other, M. Boileau, "Basic for python", 14h, Urfist (Unité Régionale de Formation à l'Information Scientifique et Technique), France.

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10.2.2. Supervision

PhD in progress: G. Mestdagh, "Suivi de tumeur en temps réel par des méthodes d'optimisation", Strasbourg university. Beginning: September 2019. Y. Privat, S. Cotin.

PhD in progress: J. B. Arnau, "Stratégie de contrôle d'une population de moustiques pour la lutte contre les arbovirus". Beginning: September 2019. Y. Privat, Luis Almeida.

PhD in progress: A. Courtais, "Contrôle optimal de contacteurs à lit fixe par fabrication additive". Beginning: September 2017. Y. Privat, F. Lesage and A. Latifi.

PhD in progress: Idriss Mazari, "Répartition des ressources dans un enclos optimisant la survie des populations". Beginning: September 2017. Y. Privat, G. Nadin.

PhD in progress: Alexandre Delyon, "Étude de la géométrie des œufs de certains branchiopodes". Beginning: September 2016. Y. Privat, A. Henrot.

PhD in progress: Mustafa Gaja, "Compatible Finite Elements for Wave and Fluid Models: Application to Plasma Physics". Beginning: October 2015. E. Franck, E. Sonnendrücker (main supervisor).

PhD in progress: Pierre Gerhard, "Numerical methods for kinetic models. Application to building acoustic". Beginning: Ocotober 2015. P. Helluy (main supervisor), L. Navoret.

PhD in progress: Romane Helie, "Relaxation methods for kinetic models in plasma physics". Beginning: October 2019. P. Helluy (main supervisor), L. Navoret, E. Franck.

PhD in progress: Marie Houillon: "Modeling of thin wires in electromagnetic software", Advisors:Philippe Helluy and Laurent Navoret, from October 2017, Labex Irmia support.

PhD in progress: Lucie Quibel (CIFRE support): in collaboration with EDF Chatou, from October2017, Advisor: Philippe Helluy.

PhD: Maxime Schmitt: "Optimization of scientific software with arbitrary mesh refinement", Defense: September 2019, Advisors: Philippe Helluy and Cédric Bastoul (CAMUS team). Labex Irmia support.

10.2.3. Juries

Y. Privat was member of jury of the PhD committee of F. Feppon, Ecole Polytechnique.

Y. Privat was member of jury of the PhD committee of A. Rebei. Paris Sciences et Lettres university.

Y. Privat was reviewer of jury of the PhD committee of N. Lebbe. Grenoble university.

P. Helluy was reviewer of jury of the PhD committee of S. Fornet. Toulouse, ISAE.

P. Helluy was reviewer of jury of the PhD committee of M. Kadiri. Normandie university.

P. Helluy was member of jury of the PhD committee of S. Bulteau. Nantes university.

P.Helluy was member of jury of the PhD committee of P. A. Giorgi. Aix-Marseille university.

10.3. Popularization

L. Navoret were allowed to participate in the "fete de la science"

<p style="text-align:center;color:red;font-weight:bold;">COAST Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Selection

10.1.1.1. Member of the Conference Program Committees

- Khalid Benali was a PC member of WorldCIST (World Conference on Information Systems and Technologies) 2019, MEDES (11th International Conference on Management of Digital EcoSystems) 2019, ICCCI (11th International Conference on Computational Collective Intelligence) 2019, CEISEE (15th China-Europe International Symposium on Software Engineering Education) 2019, I3E (IFIP Conference on e-Business, e-Services and e-Society) 2019, INFORSID (INFormatique des ORganisations et Systèmes d'Information et de Décision) 2019, ISKO-Maghreb (8th. Edition of the International Symposium on: « Digital Sciences: impacts and challenges on Knowledge Organization. ») 2019, and SysCoBIoTS (4th International Conference on Systems of Collaboration, Big Data, Internet of Things and Security), 2019.

- Claudia-Lavinia Ignat was a PC member of ECSCW (European Conference on Computer-Supported Cooperative Work: The International venue on Practice-centred computing and the Design of cooperation technologies) 2019, CDVE (International Conference on Cooperative Design, Visualization and Engineering) 2019 and 2020, CollabTech (International Conference on Collaboration Technologies and Social Computing) 2019

- Olivier Perrin was a PC member of the conference program committee of ICSOC (International Conference on Services Oriented Computing) 2019, CoopIS (27h International Conference on Cooperative Information Systems) 2019, and IEEE ATC-19 (16th IEEE International Conference on Advanced and Trusted Computing).

- François Charoy was a PC Member of ICEBE (International Conference on Business Engineering) 2019, ICSOC 2019, IEEE International Conference on Business Information Systems, ISCRAM 2019, and of several workshops.

- Claude Godart is a member of the editorial board of IEEE transaction on Service Computing. In 2019, he was a PC member of BPMDS (Business Process Modeling, Development and Support), EDOC (The enterprise computing conference), ICSOC (International Conference on Services Computing), ICWS (IEEE International Conference on Web Services), SCC (IEEE International Conference on Services Computing)and WISE (Web Information Systems Engineering) conferences.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Claudia-Lavinia Ignat is an Associate editor for the Journal of Computer Supported Cooperative Work (JCSCW) since 2011 and is Member of Editorial Board for the journal track of ECSCW conference since 2019

- François Charoy is a member of the editorial board of Service Oriented Computing and Applications (Springer)

10.1.2.2. Reviewer - Reviewing Activities

- Claudia-Lavinia Ignat reviewed papers for International Journal of Cooperative Information Systems

- Olivier Perrin reviewed papers for Elsevier Information Systems and Spring SoSyM (Software and Systems Modeling) journals.

- Francois Charoy reviewed papers for IEEE IoT, VLDB Journal and Interacting with Computers

10.1.3. Invited Talks

- In November 2019 Claudia-Lavinia Ignat was invited to give a talk at Inria Paris on "Large-scale trustworthy distributed collaborative systems"

10.1.4. Leadership within the Scientific Community

- François Charoy is steering committee member of European Society for Socially Embedded Technologies (EUSSET).
- Claudia-Lavinia Ignat was steering committee member of EUSSET until August 2019

10.1.5. Scientific Expertise

François Charoy was a member of the HCERES committee for the evaluation of the Laboratoire d'Informatique de Grenoble, Université de Grenoble Alpes

10.1.6. Research Administration

- Claudia-Lavinia Ignat is member of the Inria Evaluation Commission. She is a member of the Inria Nancy-Grand Est COMIPERS committee. She was a member of COST-GTRI commission. She is a member of the organisation committee of the Security Seminar at LORIA. Until March 2019 she was in charge of the European affairs and Delegate for International Relations for Inria Nancy-Grand Est. Until August 2019 she was member of Inria CAP Chercheurs commission. In 2019, she was a member of the CRCN recruitment jury at Inria Nancy-Grand Est and at Inria Saclay Ile de France. In 2019, she was a member of the national CRCN Inria recruitment jury and of the CRCN Inria admission jury.
- Gérald Oster is an elected member at AM2I scientist council of University of Lorraine
- Francois Charoy is an elected member of the CNU 27. He is a member of the board as assessor.

10.2. Teaching - Supervision - Juries

10.2.1. 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 PhD Students have also teaching duties in the same institutions. Claudia-Lavinia Ignat teaches the lecture and the exercises on data replication and consistency at master level (M2 SIRAV) at University of Lorraine. 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.

- Olivier Perrin is responsible for the MIAGE of Nancy at the IDMC of University of Lorraine.
- Claude Godart is responsible for the Computer Science Department of the Polytech Nancy engineering school .
- 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 for the Software Engineering specialisation at the TELECOM Nancy Engineering School of University of Lorraine.
- Gérald Oster is responsible for the 3rd (last) year of study at the TELECOM Nancy Engineering School of University of Lorraine.

10.2.2. Supervision

- PhD : Guillaume Rosinoski, Elasticity of business processes execution, January 2019, François Charoy and Samir Youssef [2]
- PhD : Amina Ahmed Nacer, Contributions au déploiement sécurisé de processus métiers dans le cloud, Université de Lorraine et Université A. Mira (Bejaïa, Algérie), February 2019, Claude Godart, Samir Youcef and Abdelkamel Tari. [1]
- PhD : Hoang Long Nguyen, Blockchain based transparency system, December 2019, Claudia-Lavinia Ignat and Olivier Perrin
- PhD in progress: Hoai Le Nguyen, Study of group performance and behaviour in collaborative editing, started in September 2015, Claudia-Lavinia Ignat and François Charoy
- PhD in progress: Victorien Elvinger, Secured Replication for Peer-to-Peer Collaborative Infrastructures, started in October 2015, François Charoy and Gérald Oster
- PhD in progress: Abir Ismaïli-Alaoui, started in September 2016, Khalid Benali and Karim Baïna (Université Mohammed V, Rabat, Morocco)
- PhD in progress: Quentin Laporte-Chabasse, Federation of Organisations over Peer to Peer Collaborative Network, started in October 2016, François Charoy and Gérald Oster
- PhD in progress: Béatrice Linot, Trust in cooperative systems, started in November 2016, Jérome Dinet and François Charoy
- PhD in progress: Anis Ahmed Nacer, Safe Service Composition, started in March 2017, Olivier Perrin and François Charoy
- PhD in progress: Matthieu Nicolas, Optimisation of Replication Algorithms, started in October 2017, Olivier Perrin and Gérald Oster
- PhD in progress: Jean Philippe Eisenbarth, Securing the future blockchain-based security services, started in May 2019, Olivier Perrin and Thibault Cholez.
- PhD in progress: Clélie Amiot, Trust and Human/Chatbot collaboration, started in October 2019, Jérome Dinet and François Charoy

10.2.3. Juries

Coast members were members of the following PhD defence committees:

- Sina Namaki Arraghi, PhD,IMT Mines d'Albi-Carmaux, November 2019 (François Charoy, rapporteur)
- Nicolas Schnepf, PhD, Université de Lorraine, September 2019 (François Charoy, président)
- Suhrid Satyal, PhD, University of New South Wales, June 2019 (François Charoy, rapporteur)

<p style="text-align:center;color:red;">**RESIST Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

Olivier Festor: IEEE Conference on Network Softwarization (NetSoft 2019), general co-chair.

Isabelle Chrisment: IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet 2020), general co-chair.

10.1.1.2. Member of the Organizing Committees

Laurent Andrey: IEEE Conference on Network Softwarization (NetSoft 2019), web chair.

Rémi Badonnel: IEEE International Symposium on Integrated Network Management (IM 2019); IFIP International Conference on Networking (Networking 2020); IEEE/IFIP Network Operations and Management Symposium (NOMS 2020).

Olivier Festor: IEEE International Symposium on Integrated Network Management (IM 2019), member of the steering committee & Publications co-chair; IEEE/IFIP Network Operations and Management Symposium (NOMS 2020), tutorial co-chair; IFIP International Conference on Networking (Networking 2020), patrons co-chair.

Thibault Cholez: IEEE/IFIP Workshop on Security for Emerging Distributed Network Technologies (DISSECT 2020).

Isabelle Chrisment: Rendez-vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information (RESSI 2019), member of the steering committee.

Jérôme François: Rendez-vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information (RESSI 2019), member of the steering committee; IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2019), demonstration co-chair.

Abdelkader Lahmadi : IEEE International Symposium on Integrated Network Management (IM 2019), co-chair of the workshop HotNSM; IEEE/IFIP Network Operations and Management Symposium (NOMS 2020), publicity co-chair.

Lucas Nussbaum: TILECS workshop.

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

Rémi Badonnel: IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2019), technical program committee co-chair; IEEE International Symposium on Integrated Network Management (IM 2019), experience program committee co-chair; IEEE/IFIP Network Operations and Management Symposium (NOMS 2020), experience program committee co-chair.

Olivier Festor: IEEE International Symposium on Integrated Network Management (IM 2019), Tutorial chair; IEEE Conference on Network Softwarization (NetSoft 2019), Technical Program Committee co-chair; IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2019).

Isabelle Chrisment: IFIP, in-cooperation with ACM SIGCOMM Network Traffic Measurement and Analysis Conference (TMA 2019).

Jérôme François: IEEE International Symposium on Integrated Network Management (IM 2019); IEEE/IFIP Workshop on Security for Emerging Distributed Network Technologies (DISSECT 2019); IEEE Workshop on Emerging Trends in Softwarized Networks (ETSN 2019).

10.1.2.2. Member of the Conference Program Committees

Laurent Andrey: IEEE Conference on Network Softwarization (NetSoft 2019).

Rémi Badonnel: IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2019); IEEE International Symposium on Integrated Network Management (IM 2019); IEEE Conference on Network Softwarization (NetSoft 2019); IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet 2019); IEEE Global Information Infrastructure and Networking Symposium (GIIS 2019); IEEE International Conference on Communications (ICC 2020); IEEE/IFIP Network Operations and Management Symposium (NOMS 2020).

Isabelle Chrisment: IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2019); IEEE International Symposium on Integrated Network Management (IM 2019); IEEE/IFIP International Workshop on Analytics for Network and Service Management (AnNet 2019); Rencontres Francophones sur la Conception de Protocoles, l'Évaluation de Performance et l'Expérimentation des Réseaux de Communication (CoRes 2019); IEEE/IFIP Network Operations and Management Symposium (NOMS 2020); ACM/IEEE International Conference on Internet of Things Design and Implementation (IoTDI 2020);

Thibault Cholez: IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2019); IEEE International Conference on Cloud Networking (CloudNet 2019); IEEE International Symposium on Integrated Network Management (IM 2019); IEEE/IFIP Workshop on Security for Emerging Distributed Network Technologies (DISSECT 2019); IEEE/IFIP International Workshop on Managing and Managed by Blockchain (Man2block 2019); IEEE/IFIP Network Operations and Management Symposium (NOMS 2020).

Olivier Festor: IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2019); IEEE International Symposium on Integrated Network Management (IM 2019); IEEE Conference on Network Softwarization (NetSoft 2019); IEEE/IFIP Network Operations and Management Symposium (NOMS 2020); IEEE/IFIP/In Coop. with ACM SIGCOMM International Conference on Network and Service Management (CNSM 2020); IEEE Conference on Network Softwarization (NetSoft 2020); IFIP International Conference on Networking (Networking 2020).

Jérôme François: IFIP, in-cooperation with ACM SIGCOMM Network Traffic Measurement and Analysis Conference (TMA 2019); IEEE INFOCOM Workshop on Cryptocurrencies and Blockchains for Distributed Systems (CryBlock 2019); Conference on Blockchain Research & Applications for Innovative Networks and Services (BRAINS 2019); IEEE/IFIP International Workshop on Managing and Managed by Blockchain (Man2block 2019).

Abdelkader Lahmadi: IEEE INFOCOM Workshop on Cryptocurrencies and Blockchains for Distributed Systems (CryBlock 2019); IEEE/IFIP International Workshop on Managing and Managed by Blockchain (Man2block 2019); IEEE/IFIP Network Operations and Management Symposium (NOMS 2020); IEEE International Symposium on Integrated Network Management (IM 2019); IEEE Conference on Network Softwarization (NetSoft 2019); Cyber Security in Networking Conference (CSNet 2019); IEEE Workshop on Emerging Trends in Softwarized Networks (ETSN 2019).

Lucas Nussbaum: International Conference on Enabling Technologies: Infrastructure for Collaborative Entreprises (WETICE 2019); 39th IEEE International Conference on Distributed Computing System (ICDCS 2019); 16th International Conference on Mining Software Repositories (MSR 2019 – FOSS award); 11th IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2019). 5th International Workshop on Serverless Computing (WoSC 2019); 54th IEEE International Conference on Communications (ICC) – NGNI Symposium; IEEE Global Information Infrastructure and Networking Symposium (GIIS 2019).

10.1.2.3. Reviewer

The permanent team members made many reviews for the conferences the team is involved in.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Rémi Badonnel: Associate Editor for the Wiley International Journal of Network Management (IJNM), Associate Editor for the Springer Journal of Network and System Management (JNSM)and guest editor for the IEEE Transactions on Network and Service Management (TNSM).

Isabelle Chrisment: Associate Editor for the IEEE Transactions on Network and Service Management (TNSM).

Abdelkader Lahmadi : Associate Editor for the Wiley International Journal of Network Management (IJNM)and Guest Editor for a special issue of Springer Journal of Network and System Management (JNSM).

Jérôme François: Associate Editor-In-Chief for the Wiley International Journal of Network Management (IJNM).

10.1.3.2. Reviewer - Reviewing Activities

Rémi Badonnel: IEEE Transactions on Network and Service Management (TNSM), IEEE Journal on Selected Areas in Communications (JSAC), Springer Journal of Network and System Management (JNSM), IEEE Communications Magazine (COMMAG), Wiley International Journal of Network Management (IJNM) and Elsevier Journal of Industrial Information Integration (JIII).

Thibault Cholez: IEEE Transactions on Network and Service Management (TNSM), IEEE Communications Magazine (COMMAG), Elsevier Journal on Communication Networks (COMNET)and SIGCOMM Computer Communication Review.

Isabelle Chrisment: IEEE Transactions on Network and Service Management (TNSM).

Laurent Andrey: Springer Journal of Network and System Management (JNSM) and Wiley International Journal of Network Management (IJNM).

Jérôme François: IEEE Transactions on Network and Service Management (TNSM), IEEE Journal on Selected Areas in Communications (JSAC) and Wiley International Journal of Network Management (IJNM).

Abdelkader Lahmadi : IEEE Transactions on Network and Service Management (TNSM), IEEE Journal on Selected Areas in Communications (JSAC), Wiley International Journal of Network Management (IJNM), Springer Journal of Network and System Management (JNSM), IEEE Communications Magazine (COMMAG) and Elsevier Journal Computer Communications (COMCOM).

Lucas Nussbaum: International Journal of Grid and Utility Computing (IJGUC).

10.1.4. Invited Talks

Abdelkader Lahmadi provided a keynote on "Toward Self-driving Networks: Network Management and Security Challenges" in the IEEE/IFIP Workshop on Security for Emerging Distributed Network Technologies (DISSECT), 8 April, 2019, Washington D.C., USA.

Isabelle Chrisment provided a talk on "Experimentation in Cybersecurity: from Requirements to Platforms" in the TILECS (Towards an Infrastructure for Large-Scale Experimental Computer Science) workshop, 3-4 July 2019, Grenoble, France.

Olivier Festor gave a keynote on the coupling of Information Centric Networks and Programmable Networks at the Orange Network of the Future workshop in may 2019. He also gave a talk at the Distinguished Experts Panel of IEEE/IFIP IM'2019 in Washington on Intelligent Management and gave a short invited presentation entitled "Opening the Network for More Secure Services" at the SecSoft 2019 workshop in Paris on June 24th, 2019.

10.1.5. Leadership within the Scientific Community

Rémi Badonnel has been elected as the chair of the IFIP (International Federation for Information Processing) WG6.6 (Working Group 6.6) dedicated to the management of networks and distributed systems.

Isabelle Chrisment has been a co-chair of the Allistene cybersecurity working group, whose main goal is to help drive the French cybersecurity research and innovation.

Olivier Festor is a member of the IEEE/IFIP NISC (NOMS IM Stering Committee) which manages the set of conferences in the area of network and service management for both IEE and IFIP scientific communities worldwide.

Jérôme François has been appointed as co-chair of NMRG (Network Management Research Group) of IRTF (Internet Research Task Force).

10.1.6. Scientific Expertise

Isabelle Chrisment served as an expert of the HCERES (High Council for Evaluation of Research and Higher Education) committee for the LISTIC Laboratory. She was a member of the GDR RSD/ASF selection committee for the thesis award. She is also a member of the AFNIC's Scientific Council.

Abdelkader Lahmadi served as reviewer for ANRT (CIFRE PhD). Abdelkader Lahmadi has contributed to the writing of a document about the protection of critical infrastructures in transport and energy within the working group "enjeux 2025" of CoFIS (Comité de la Filière industrielle de sécurité).

Olivier Festor is a member of the Scientific Council of Orange and Director of TELECOM Nancy, the graduate Engineering School of Computer Science at the University of Lorraine. He is also contributing to the HCERES national scientific evaluation board.

Jérôme François and Rémi Badonnel serve as reviewers for ANRT (CIFRE PhD). Jérôme François is in the advisory board of the Interreg TERMINAL project (2019-2021).

10.1.7. Research Administration

Thibault Cholez is a member of the executive council of the Digitrust project (I-Site project of the Université de Lorraine to foster research on trust and security in IT).

Isabelle Chrisment is also an elected member of the scientific pole AM2I (Automatique, Mathématiques, Informatique et leurs Interaction) at Université de Lorraine. She is a member of the COMIPERS at Inria Nancy Grand Est. She is also involved in the CMI (Commission de la Mention Informatique) board, which is a part of the doctoral school IAEM.

Abdelkader Lahmadi is a member of the CDT of Inria Nancy Grand Est.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

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

Rémi Badonnel is heading the Internet Systems and Security 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 school.

Thibault Cholez is in charge of the organization of professional projects for the three years of TELECOM Nancy students in apprenticeship.

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 290 hours - L3, M1, M2 - Computer Networks, Object-Oriented Programming, Network Services, Constraint development on small Connected Objects, Mobile applications and Internet of Things, IT tools for Project Management - 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

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

Abdelkader Lahmadi 280 hours - L3, M1, M2 - Real time and Embedded Systems Programming, Distributed Systems and Algorithms, Green IT, Algorithms and Advanced Programming, Security of Cyber Physical Systems - ENSEM Engineering School, Université de Lorraine

Lucas Nussbaum 200 hours - L2, Licence Pro (L3), M1 - several courses about systems administration, monitoring, virtualization, configuration management, networking, operating systems. - IUT Nancy-Charlemagne

E-learning

MOOC *Supervision de Réseaux et Services (Session 2)*, FUN Project, Université de Lorraine, Ingénieur, formation initiale et continue, Thibault Cholez, Rémi Badonnel, Laurent Andrey, Olivier Festor, Abdelkader Lahmadi, Jérôme François, January-March 2019, over 6000 from 77 countries, and 347 certificates of achievement. Each MOOC Resist participant contributed to the 2019 maintenance for a third opening on January 2020.

10.2.2. Supervision

PhD in progress: Ahmad Abboud, *Compressed and verifiable filtering rules in Software-defined Networking*, since September 2018, supervised by Michael Rusinowitch, Abdelkader Lahmadi, and Adel Bouhoula.

PhD in progress: Pierre-Olivier Brissaud, *Encrypted traffic analysis*, since July 2016, supervised by Isabelle Chrisment, Jérôme François and Thibault Cholez.

PhD in progress: Jean-Philippe Eisenbarth, *Securing the future blockchain-based security services*, since May 2019, supervised by Thibault Cholez and Olivier Perrin (Coast team).

PhD in progress: David Espinel, *SDN solution for Massively Distributed Cloud Infrastructure*, since February 2018, supervised by Lucas Nussbaum, Adrien Lebre and Abdelhadi Chari.

PhD in progress: Adrien Hemmer, *Predictive Security Monitoring for Large-Scale Internet-of-Things*, since October 2018, supervised by Isabelle Chrisment and Rémi Badonnel.

PhD in progress: Pierre-Marie Junges, *Internet-wide automated assessment of the exposure of the IoT devices to security risks*, since October 2018 supervised by Olivier Festor and Jérôme François.

PhD in progress: Mingxiao Ma, *Cyber-Physical Systems defense through smart network configuration*, since Novemeber 2017, supervised by Isabelle Chrisment, Abdelkader Lahmadi.

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

PhD in progress: Matthews Jose, *Programming model for new flow-based network monitoring*, since January 2019, supervised by Olivier Festor & Jérôme François.

PhD in progress: Data-Driven Intelligent Monitoring for Software-Defined Networks, *Programming model for new flow-based network monitoring*, since October 2018, supervised by Isabelle Chrisment, Raouf Boutaba & Jérôme François.

PhD in progress: Abir Laraba, *Data-Driven Intelligent Monitoring for Software-Defined Networks*, since October 2018, supervised by Isabelle Chrisment, Raouf Boutaba & Jérôme François.

PhD in progress: Mehdi Zakroum, *Forecasting cyberthreats from exogeneous data*, since October 2019, supervised by Isabelle Chrisment & Jérôme François.

PhD: Paul Chaignon, *Software Datapaths for Multi-Tenant Packet Processing*, supervised by Olivier Festor, Jérôme François and Kahina Lazri [1].

PhD: Xavier Marchal, Secure operation of virtualized Named Data Networks, supervised by Olivier Festor & Thibault Cholez [2].

PhD: Nicolas Schnepf, *Orchestration and Verification of Security Functions for Smart Environments*, supervised by Stephan Merz, Rémi Badonnel and Abdelkader Lahmadi [3].

PhD: Lakhdar Meftah, *Towards Privacy-sensitive Mobile Crowdsourcing*, supervised by Romain Rouvoy (University of Lille) and Isabelle Chrisment.

10.2.3. *Juries*

Team members participated to the following Ph.D. defense committees:

- Damien Crémilleux, PhD in Computer Science from CentraleSupélec, Rennes, France. Title: Visualization for information system security monitoring, February 2019 – (Isabelle Chrisment as president).

- Philippe Pittoli, PhD in Computer Science from the University of Strasbourg, France.Title: Influence d'une architecture de type maître-esclave dans les problématiques de l'Internet des Objets. May 2019 – (Isabelle Chrisment as reviewer).

- Kallol Krishna Karmakar, PhD in Computer Science from the University of Newcastle, Australia. Title: Techniques for Securing Software Defined Networks and Services, June 2019 – (Isabelle Chrisment as reviewer).

- Pierre-Marie Bajan, Phd in Computer Science from Télécom SudParis, France. Title: Simulation d'attaque et d'activité : application à la cyber-défense, July 2019 – (Isabelle Chrisment as examiner).

- Muhammad Jawad Khokhar, PhD in Computer Science from the University of Nice-Sophia Antipolis, France. Title: Modeling Quality of Experience of Internet Video Streaming by Controlled Experimentation and Machine Learning, October 2019 - (Isabelle Chrisment as examiner).

- François Boutigny, Phd in Computer Science from Télécom SudParis, France. Title: Multidomain Virtual Network Embedding under Security-oriented Requirements applied to 5G Networks Slices, November 2019 – (Isabelle Chrisment as examiner).

- Fetia Bannour, PhD in Computer Science and Electrical Engineering from the Paris-Est Créteil University, France. Title: Contributions pour le contrôle distribué dans les réseaux SDN, November 2019 - (Olivier Festor as reviewer).

- Danilo Cerovic, PhD in Computer Science from Sorbonne Université, Paris, France. Title: Architecture réseau résiliente et hautement performante pour les datacenters virtualisés, February 2019 - (Olivier Festor as reviewer).

Team members participated to the following Habilitation Degree committees:

- Nozar Kheir, Habilitation Degree in Computer Science from Université Paris-Saclay, France. Title : From Cyber-secure to Cyber-resilient Computer Systems - The way forward, May 2019 - (Olivier Festor as reviewer).

10.3. Popularization

10.3.1. *Articles and contents*

Abdelkader Lahmadi and Frédéric Beck provided a podcast about the security of connected devices available at Interstices (https://interstices.info/des-outils-pour-evaluer-la-securite-des-objets-connectes/)

Thibault Cholez gave an interview for the *factuel* (newsletter of the University of Lorraine) to present the H2020 project CONCORDIA (https://factuel.univ-lorraine.fr/node/11394). He also wrote a blog entry entitled "Assessing blockchains' network infrastructure: why it matters for cybersecurity" for the CONCORDIA website (https://www.concordia-h2020.eu/blog-post/assessing-blockchains-network-infrastructure-why-it-matters-for-cybersecurity/).

Isabelle Chrisment contributed to the ARCEP Report entitled "The State of the Internet in France", June 2019, page 19, https://www.arcep.fr/uploads/tx_gspublication/rapport-etat-internet-2019-270619.pdf (French version) or https://en.arcep.fr/uploads/tx_gspublication/report-state-internet-2019-eng-270619.pdf (English version).

Jérôme François has been interviewed by France 3 Lorraine to present how cyberthreat can be predicted in the context of ThreatPredict (section 9.4.3.1). He also gave an introduction to network security in the context of FAN (https://fan.inria.fr/)

10.3.2. Education

Isabelle Chrisment participated in the SNT (Sciences Numériques et Technologie) MOOC, more especially in the design of a video entitled "Internet IP, a universal protocol?" in the module "Internet and Networks. The SNT MOOC is a FUN Project dedicated to the teachers in high schools to help them within the context of the high school reform.

10.3.3. Internal action

Jérôme François presented ThreatPredict (section 9.4.3.1) at the "Café des Sciences" in Inria Rocquencourt Center.

<p style="text-align:center;color:red;font-weight:bold">ALICE Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

The team has organized the "2nd Workshop of the Grand-Est in Computer Graphics and Virtual Reality" (50 participants).

10.1.2. Scientific Events: Selection

10.1.2.1. Member of the Conference Program Committees

Members of the team were IPC members for SPM and ISVC.

10.1.2.2. Reviewer

Members of the team were reviewers for Eurographics, SIGGRAPH, SIGGRAPH Asia, ISVC, Pacific Graphics, and SPM.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

Members of the team were reviewers for Computer Aided Design (CAD), Journal of Computational Physics (Elsevier), Transactions on Visualization and Computer Graphics (IEEE), Transactions on Graphics (ACM), and Computers & Graphics (Elsevier).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Dobrina Boltcheva, Computer Graphics, 30h, 3A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, Advanced Object Oriented Programming & UML, 60h, 2A, IUT SaintDié-des-Vosges

Licence : Dobrina Boltcheva, Advanced algorithmics, 50h, 2A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, Image Processing, 30h, 2A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, UML Modeling, 20h, 1A, IUT Saint-Dié-des-Vosges

Licence : Dobrina Boltcheva, Algorithmics, 30h, 3A, PolyTech Nancy

Licence : Dobrina Boltcheva, Computer Graphics, 12h, 5A, PolyTech Nancy

Licence : Dmitry Sokolov, Computer Graphics, 12h, 5A, PolyTech Nancy

Licence : Dmitry Sokolov, C++, 40h, 2A, University of Lorraine

Licence : Dmitry Sokolov, Programming, 30h, 1A, University of Lorraine

Licence : Dmitry Sokolov, Logic, 30h, 3A, University of Lorraine

Master : Dmitry Sokolov, Logic, 22h, M1, University of Lorraine

Master : Dmitry Sokolov, 3D printing, 12h, M2, University of Lorraine

Master : Dmitry Sokolov, Numerical modeling, 12h, M2, University of Lorraine

10.2.2. Supervision

PhD in progress: Justine Basselin, *"Reconstruction of buildings from 3D point clouds"*, since December 2019, Dmitry Sokolov, Nicolas Ray and Hervé Barthélémy.

PhD in progress: François Protais, *"Polycube-dominant meshing"*, since October 2019, Dmitry Sokolov and Franck Ledoux.

10.2.3. Juries

Dmitry Sokolov participated in the PhD jury of Lucas Morlet as an examinator.

10.3. Popularization

Dmitry Sokolov continues to develop TinyRenderer [0] computer graphics lectures. More than 1M views in 2019, 14k GitHub stars in total.

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[0] https://github.com/ssloy/tinyrenderer/wiki

LARSEN Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

- Conference Chair for the 30th International Conference on Automated Planning and Scheduling (ICAPS 2020), which will take place in Nancy in June 2020 (https://icaps20.icaps-conference.org/) [Olivier Buffet].
- Co-chair and co-organizer with Olivier Simonin the JNRR (National bi-annual conference on Robotics) 2019, in Vittel [François Chapillet]

10.1.1.2. Member of the Organizing Committees

- Conference "Drôles d'objets - Un nouvel art de faire 2020" that will take place in La Rochelle in april 2020 [Amine Boumaza, co-organizer]
- Workshop at the International Conference on Robotics and Automation (ICRA 2019) (*Human movement science for physical human-robot collaboration)* [Pauline Maurice and Serena Ivaldi, co-organizers]
- Local Organization Committee of the 30th International Conference on Automated Planning and Scheduling (ICAPS 2020) [Vincent Thomas]
- Workshop "Women in Robotics V" at the international conference Robotics: Science and Systems (RSS 2019) [Serena Ivaldi]
- Workshop "Tele-operation of Humanoid Robots" at IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS 2019) [Serena Ivaldi]

10.1.2. Scientific Events: Selection

10.1.2.1. Chair of Conference Program Committees

- Program chair of the 2019 IEEE-RAS International Conference on Humanoid Robots (Toronto, Canada) [Serena Ivaldi]
- Co-chair of the track "Evolutionary Machine Learning" at GECCO 2019 (Prague, Czech Republic) [Jean-Baptiste Mouret]

10.1.2.2. Awards Chair of Conference Program Committees

- Awards co-chair of the 12th International Workshop on Human-Friendly Robotics (HFR 2019) [Serena Ivaldi]

10.1.2.3. Member of the Conference Program Committees

- 24th European Conference on Artificial Intelligence (ECAI 2020) [Francis Colas, Vincent Thomas, F. Charpillet]
- 36th International Conference on Machine Learning (ICML 2019) [Olivier Buffet]
- 28th International Joint Conference on Artificial Intelligence (IJCAI 2019) [Olivier Buffet, Vincent Thomas]
- *Journées Francophones sur la Planification, la Décision et l'Apprentissage pour la conduite de systèmes* (JFPDA 2019) [Olivier Buffet, Vincent Thomas]
- 34th AAAI Conference on Artificial Intelligence (AAAI 2020) [Olivier Buffet, F. Charpillet]
- 33th AAAI Conference on Artificial Intelligence (AAAI 2019) [Olivier Buffet, F. Charpillet]

- ALIFE 2019 (European Conference on Artificial Life) [Amine Boumaza, Jean-Baptiste Mouret]
- GECCO 2019 (Genetic and Evolutionary Computation Conference) [Amine Boumaza, Jean-Baptiste Mouret]
- EA 2019 (Artificial Evolution) [Amine Boumaza, Jean-Baptiste Mouret]
- IEEE/RAS International Conference on Robotics and Automation (ICRA 2020) [Pauline Maurice – Associate editor]
- 12th International Workshop on Human-Friendly Robotics (HFR 2019) [Pauline Maurice]
- 27emes Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2019)[François Charpillet]
- 11th International Conference on Agents and Artificial Intelligence (ICAART 2019)[François Charpillet]

10.1.2.4. Reviewer

- Robotics: Science and Systems (RSS 2019) [Francis Colas, Serena Ivaldi]
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019) [Francis Colas, Pauline Maurice, Jean-Baptiste Mouret]
- IEEE International Conference on Robotics and Automation (ICRA 2020) [Pauline Maurice, Jean-Baptiste Mouret]
- IEEE-RAS International Conference on Humanoid Robots (Humanoids 2019) [Francis Colas, Jean-Baptiste Mouret]
- 24th European Conference on Artificial Intelligence (ECAI 2020) [Francis Colas, Vincent Thomas, François Charpillet]
- 36th International Conference on Machine Learning (ICML 2019) [Olivier Buffet, Vincent Thomas]
- 28th International Joint Conference on Artificial Intelligence (IJCAI 2019) [Olivier Buffet, Vincent Thomas]
- *Journées Francophones sur la Planification, la Décision et l'Apprentissage pour la conduite de systèmes* (JFPDA 2019) [Olivier Buffet, Vincent Thomas]
- 34th AAAI Conference on Artificial Intelligence (AAAI 2020) [Olivier Buffet]
- 33th AAAI Conference on Artificial Intelligence (AAAI 2020) [François Charpillet]
- IEEE International Conference on Advanced Robotics ans its Social Impacts (ARSO 2019) [Pauline Maurice]
- Conference on Robot Learning (CoRL 2019) [Jean-Baptiste Mouret]
- ACM WomeENcourage 2019 [Serena Ivaldi]
- 27emes Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2019)[François Charpillet]
- 11th International Conference on Agents and Artificial Intelligence (ICAART 2019)[François Charpillet]

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- IEEE Robotics and Automation Letters [Serena Ivaldi – associate editor]
- ACM Transactions on Evolutionary Learning and Optimization [Jean-Baptiste Mouret – associate editor]
- Frontiers in AI and Robotics – review editors [Amine Boumaza, Jean-Baptiste Mouret]

10.1.3.2. Reviewer - Reviewing Activities

- Artificial Intelligence Journal (AIJ) [Olivier Buffet]
- Journal of Artificial Intelligence Research (JAIR) [Olivier Buffet].
- Genetic Programming and Evolvable Machines [Amine Boumaza]

- Robotica [Francis Colas]
- Robotics and Automation Letter [Francis Colas, Jean-Baptiste Mouret]
- Artificial Life [Jean-Baptiste Mouret]
- ACM Transactions on Evolutionary Learning and Optimization (TELO) [Jean-Baptiste Mouret]
- ACM Transactions on Human-Robot Interaction [Pauline Maurice]
- PloS One [Pauline Maurice]
- Paladyn Journal of Behavioral Robotics [Pauline Maurice]
- The Journal on Multimodal User Interfaces [Pauline Maurice]
- Frontiers in Neurorobotics [Serena Ivaldi]
- IEEE Robotics and Automation Magazine [Serena Ivaldi]

10.1.4. Invited Talks

- Keynote at the 10th International Conference on Information, Intelligence, Systems and Applications, Patras (Greece) [Jean-Baptiste Mouret]
- Keynote at the 12th International Workshop on Human-Friendly Robotics (HFR 2019) in Reggio Emilia (Italy) [Serena Ivaldi]
- Invited talk at the Conference on "Novel technological innovations for occupational safety and health" organised by the Polish Central Institute for Labour Protection – National Research Institute (CIOP-PIB), Warsaw (Poland) [Pauline Maurice]
- Invited talk at the workshop on "Closing the Reality Gap in Sim2real Transfer for Robotic Manipulation" at RSS 2019, Freiburg (Germany) [Jean-Baptiste Mouret]
- Invited talk at the CNRS GDR ISIS (Information, Signal, Image et ViSion), special day on robot learning, Paris (France) [Jean-Baptiste Mouret]
- talk at Workshop on "Task-Informed Grasping" at RSS 2019,Freiburg (Germany) [Serena Ivaldi]
- invited talk at the HUMANOIDS 2019 Workshop "Can we build Baymax?", Toronto (Canada) [Serena Ivaldi]
- invited talk at HUMANOIDS 2019 Workshop on "Humanoid Teleoperation", Toronto (Canada) [Serena Ivaldi]
- invited talk at the HUMANOIDS 2019 Workshop on "Challenges and solutions for HRI and collaboration", Toronto (Canada) [Serena Ivaldi]
- invited talk at the IROS 2019 "Cutting Edge Forum on Cognitive architecture for humanoids: where are we in our quest to achieve human-level AI in robotics?", Macau (China) [Serena Ivaldi]
- invited talk at the IROS 2019 Workshop on "Progress in Ergonomic Physical Human-Robot Collaboration", Macau (China) [Serena Ivaldi]
- invited talk at the IROS 2019 Workshop on "Open-Ended Learning for Object Perception and Grasping: Current Successes and Future Challenges", Macau (China) [Serena Ivaldi]

10.1.5. Research Administration

- Serena Ivaldi is member of the scientific council of the Federation Charles Hermite
- Jean-Baptiste Mouret is a member of the "Bureau du Comité des Projets" of Inria Nancy – Grand-Est
- François Charpillet is member of the scientific commitee of the Robotic GDR (All the teams in France contributing to research in Robotics are members of the Groupe de Recherche (GDR) en Robotique, an open national Research Group established by the CNRS).
- François Charpillet is co-leading with Pr Rossignol the SCIARAT plateform of the CPER IT2MP

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Alexis Scheuer, "Introduction à la robotique autonome", 30h eq. TD, M1 informatique, Univ. Lorraine, France.

Master: Alexis Scheuer, "Vie artificielle", 22,5h eq. TD, 3ème année, CentraleSupélec, France.

Master: Francis Colas, "Robotique autonome", 18h eq. TD, M2 "Systèmes Interactifs et Robotiques", CentraleSupélec, France.

Master: Francis Colas, "Planification de trajectoires", 12h eq. TD, M2 "Apprentissage, Vision, Robotique", Univ. Lorraine, France.

Master: Alexis Scheuer, "Modélisation et commande en robotique", 16h eq. TD, M2 "Apprentissage, Vision, Robotique", Univ. Lorraine, France.

Master: Francis Colas, "Autonomous Robotics", 39.5h eq. TD, M1, CentraleSupélec, France.

Master: Pauline Maurice, "Analyse Comportementale", 10h eq. TD, M2 "Sciences Cognitives", Univ. Lorraine, France.

Master: Jean-Baptiste Mouret, "Creative automatic design", 3h, M2, M2 "Management de l'innovation", Mines de Paris, France

Master: Serena Ivaldi, "Analyse Comportementale", 16h CM/TD, M2 "Sciences Cognitives", Univ. Lorraine, France.

Master: Amine Boumaza, "Méta-heuristiques et recherche locale stochastique", 30h eq. TD, M1 informatique, Univ. Lorraine, France.

Tutorial: Olivier Buffet, "Planification dans l'incertain", 3h CM, CNRS Formation Entreprise.

Tutorial, Jean-Baptiste Mouret, "Evolutionary robotics", 3h, ACM GECCO 2019 (with S. Doncieux and N. Bredeche, Sorbonne Université)

10.2.2. Supervision

PhD in progress: Adrien Malaisé, "*Capteurs portés dans la robotique collaborative : de l'apprentissage du mouvement à l'acceptabilité de cette technologie*", started in January 2017, Francis Colas (advisor), Serena Ivaldi (co-advisor).

PhD in progress: Yang You, "*Modèles probabilistes pour la collaboration humain-robot*", started in October 2019, Olivier Buffet (advisor), Vincent Thomas (co-advisor)

PhD canceled: Jérôme Truc, "*Apprentissage de comportement et interactions prédictives pour un robot d'assistance en environnement structuré*", started in September 2018, canceled in July 2019, Francis Colas (advisor)

PhD in progress: Rituraj Kaushik, "*Damage recovery by trial and error and multiple simulation priors*", started in October 2016, Jean-Baptiste Mouret (advisor)

PhD in progress: Adam Gaier, "*Surrogate-based illumination for aerodynamics*", started in October 2016, Jean-Baptiste Mouret (Advisor)

PhD in progress: Vladislav Tempez, "*Learning to fly a micro-UAVs in highly confined environments*", started in October 2018, Jean-Baptiste Mouret (advisor), Franck Ruffier (co-advisor, CNRS/Aix-Marseille Université)

PhD in progress: Waldez Azevedo Gomes Junior, "*Intelligent Human-Robot collaboration*", started in October 2018, Jean-Baptiste Mouret (advisor), Serena Ivaldi (co-advisor)

PhD in progress: Yoann Fleytoux, "*Human-guided manipulation learning of irregular objects*", started in April 2019, Jean-Baptiste Mouret (advisor), Serena Ivaldi (co-advisor)

PhD in progress: Luigi Penco, "*Intelligent whole-body tele-operation of humanoid robots*", started in April 2019, Jean-Baptiste Mouret (advisor), Serena Ivaldi (co-advisor)

PhD in progress: Lorenzo Vianello, "*Adaptation in human-robot collaboration*", started in December 2019, Alexis Aubry (advisor, CRAN, Univ. Lorraine), Serena Ivaldi (co-advisor)

PhD in progress : Yassine EL Khadiri, Cifre with Diatelic, "*Machine learning for Ambient Assisted Living (AAL)*", started in June 2017, François Charpillet adviser.

PhD in progress : Eloise Zehnder, "*Elderly-technology interaction: accessibility and acceptability of assistive technology (at) at home*", started October 2018, François Charpillet (advisor), Jérome Dinet (advisor, 2LPN).

PhD in progress : Julien Uzzan, Cifre with PSA, "*navigation of an autonomous vehicle in a complex environment using unsupervised or semi-supervised learning*", started in January 2019, François Charpillet (advisor), François Aioun (co-advisor, PSA).

PhD in progress : Jessica Colombel, "*Analysis of human movement for assistance*", started in Feburary 2019, François Charpillet (advisor) David Daney(advisor, Auctus team, Bordeaux)

PhD in progress : Nicolas Gauville, CIFRE with SAFRAN, "*Coordination of autonomous robots evolving in unstructured and unknown environment for Search and Rescue*", started in May 2019, François Charpillet (advisor), Christophe Guettier (co-adviser, Safran).

10.2.3. Juries

- François Charpillet was a reviewer for the HDR of Antony Fleury (Lille University)
- François Charpillet was a reviewer for the HDR of François Portet (LIG, Grenoble Alpes University)
- Pauline Maurice was an examinator for the PhD of Nolwenn Briquet-Kerestedjian (Univ. Paris-Saclay)
- Jean-Baptiste Mouret was a reviewer for the PhD of Christophe Reymann (INSA Toulouse / LAAS)
- Jean-Baptiste Mouret was a reviewer for the PhD of Daniele Gravina (University of Malta)
- Serena Ivaldi was an examiner for the PhD of Rohan Budhiraja (LAAS)
- François Charpillet was a reviewer for the PhD of Facundo Benavides Olivera (ISAE, Toulouse University & Universidad de la República, Uruguay)
- François Charpillet was a reviewer for the PhD of Mehdi Othmani-Guibourg (Sorbonne University)
- François Charpillet was a reviewer for the PhD of Sandra Castellanos (LIG, Grenoble Alpes University)
- François Charpillet was a examiner for the PhD of Pavan Vasishta(Grenoble Alpes University)

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Amine Boumaza is a member of the editorial board of "Interstice".

10.3.2. Articles and contents

- Pauline Maurice gave an interview for Radio Canada (radio).
- Serena Ivaldi gave an interview to France 3 (TV) during the inauguration of the Creativ'Lab.

10.3.3. Education

- Vincent Thomas gave a tutorial on path planning for teachers during "journées ISN-EPI 2019" (Nancy, France).

10.3.4. Interventions

- Public workshop on robot programming with Thymio at "Fête de la Science" [Alexis Scheuer, Olivier Buffet, Jessica Colombel, Francis Colas, Yassine El Khadiri, Vincent Thomas, Yang You]
- Pauline Maurice gave a talk at the Forum Sciences Cognitives 2019 in Université de Lorraine.
- Jean-Baptiste Mouret was invited to debate about artificial intelligence at "La Tronche en Biais", an online popularization channel (27k view for this video)
- Eloïse Dalin and Pierre Desreumaux participated to a "Café des Sciences" artificial intelligence and robotics at the "Cité des Sciences et de l'Industrie" (Paris)
- Serena Ivaldi participated to the "Fête de la Science" as tutor for school children in Inria/Loria

<p style="text-align:center; color:red">**MAGRIT Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Selection

9.1.1.1. Reviewer

- Marie-Odile Berger was reviewer for ISMAR (International Symposium for Mixed and Augmented Reality), IPCAI (International Conference on Information Processing in Computer-Assisted Interventions), IROS (International Conference on Intelligent Robots and Systems), ICRA (International conference on Robotics and Automation), RSS (Robotics: Science and Systems), AE-CAI (Workshop on Augmented Environments for Computer Assisted Interventions), ORASIS (French conference on computer vision)

- Erwan Kerrien was reviewer for MICCAI 2019, IPCAI 2020, MIAR/AE-CAI/CARE 2019 workshop and Orasis 2019

- Gilles Simon was reviewer for IEEE VR 2019 and IEEE ISMAR 2019

- Pierre-Frederic Villard was a reviewer for MICCAI 2019, the Eurographics Workshop on Visual Computing for Biology and Medicine 2019 and the International Conference on Computer Graphics, Visualization, Computer Vision And Image Processing 2019

9.1.2. Journal

- Marie-Odile Berger was a reviewer for the International Journal of Computer Assisted Radiology and Surgery.

- Erwan Kerrien was a reviewer for IEEE Transactions on Medical Imaging

- Frédéric Sur was a reviewer for IEEE Transactions on Medical Imaging, Experimental Mechanics, Signal Processing: Image Communication, Digital Signal Processing, IEEE Transactions on Image Processing, SIAM Journal on Imaging Science

- Gilles Simon was a reviewer for IEEE Transactions on Visualization & Computer Graphics

- Pierre-Frédéric Villard was a reviewer for the International Journal of Computer Assisted Radiology and Surgery.

9.1.3. Invited Talks

- Fabien Pierre gave an invited talk entitled "Coupling Variational Method with CNN for Image Colorization" at the workshop "Variational methods and optimization in imaging" (Paris), at Jean Kuntzmann's laboratory (Grenoble), at ENSEEIHT(Toulouse) and at the one day workshop géométrie de la couleur, organized by GDR ISIS.

- Gilles Simon gave an invited talk at the Nanjing Institute of Advanced AI in China entitled "Camera localization for AR in large indoor environments".

- Pierre-Frédéric Villard gave a seminar at the department of information technology of Uppsala University. Title: "Segmentation of Mitral Valve Chordae".

- Daryna Panicheva gave a talk at the Harvard Biorobotics Lab. Title: "Physically-coherent Extraction of Mitral Valve Chordae".

- Pierre-Frederic Villard gave a talk at the Harvard Biorobotics Lab. Title: "An Overview of Deformable Models".

9.1.4. Scientific Expertise

- Erwan Kerrien was an expert to evaluate NExT Isite (https://next-isite.fr/) calls for projects.

9.1.5. Research Administration

- Marie-Odile Berger is the president of the Association française pour la reconnaissance et l'interprétation des formes (AFRIF).
- Marie-Odile Berger was a member of the Inria evaluation committee.
- Frédéric Sur was a member of the recruitment committee for a Professor at IUT Charlemagne.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

The academic members of the MAGRIT team actively teach at Université de Lorraine with an annual number of around 200 teaching hours in computer sciences each, some of them being accomplished in the field of image processing. Inria researchers have punctual teaching activities in computer vision and shape recognition mainly in the computer science Master of Nancy and in several Engineering Schools near Nancy (ENSMN Nancy, SUPELEC Metz, ENSG). Our goal is to attract Master students with good skills in applied mathematics towards the field of computer vision.

The complete list of courses given by staff members is detailed below:

- M.-O. Berger
    - Master : Shape recognition, 24 h, Université de Lorraine.
    - Master : Introduction to image processing, 12 h, École des Mines de Nancy .
    - Master : Image processing for Geosciences, ENSG, 12h.
- E. Kerrien
    - Master : Introduction to image processing, 15 h, École des Mines de Nancy.
    - Licence: Basics of computer science, 71h, IUT Saint-Dié-des-Vosges.
    - Professional training: Computer science unplugged for science teachers, 6h, INSPE de Lorraine.
- Fabien Pierre
    - Licence: Introduction au traitement d'image, 30h, IUT Saint-Dié des Vosges.
    - Master: Introduction à l'apprentissage automatique, 16 h, Université de Lorraine.
    - Licence: Algorithmique et programmation, 87h, IUT Saint-Dié des Vosges
    - Licence: Culture scientifique et traitement de l'information, 69h, IUT Saint-Dié des Vosges
    - Licence: Programmation objet et évènementielle, 35h, IUT Saint-Dié des Vosges
    - Licence: Initiation à l'intelligence artificiell, 8h, IUT Saint-Dié des Vosges
- G. Simon
    - Master: Augmented reality, 24 h, Télécom-Nancy.
    - Master : Augmented reality, 3 h, SUPELEC Metz.
    - Master: Augmented reality, 24h, M2 Informatique FST
    - Master: Visual data modeling, 12h, M1 Informatique FST
    - Image processing and computer vision, 12h, M1 informatique, FST
    - Licence pro : 3D modeling and integration, 40h FST - CESS d'Epinal
- F. Sur
    - Master: Introduction to machine learning, 60 h, Mines Nancy
    - Master: Time series analysis, 30h, Mines Nancy

- – Licence: Javascript programming, 150h, IUT Charlemagne
- – Introduction to signal processing, 20h, IUT Charlemagne
- P.-F. Villard
  - – Licence: Computer Graphics with webGL, 30h, IUT Saint-Dié des Vosges.
  - – Licence: Game design with Unity3D, 15h, IUT Saint-Dié des Vosges.
  - – Licence: Virtual and Augmented Reality in Industrial Maintenance, 2h, Faculty of Science and Technology, Université de Lorraine
  - – Master : Augmented and Virtual Reality, 16h, M2 Cognitive Sciences and Applications, Institut des Sciences du Digital, Université de Lorraine
  - – Virtual and Augmented Reality within Unity, 15h, Glyndwr University, Wrexham, UK (ERASMUS+ program)
  - – Licence: Web programming, 20h, IUT Saint-Dié des Vosges.
  - – Licence: Graphical user interface programming, 30h, IUT Saint-Dié des Vosges.
  - – Licence: Object-oriented programming, 20h, IUT Saint-Dié des Vosges.
  - – Licence: UML modeling,16h, IUT Saint-Dié des Vosges.
  - – Licence: Security and life privacy with internet, 2h, IUT Saint-Dié des Vosges.
  - – Licence: Parallel programming, 18h, IUT Saint-Dié des Vosges.
- Brigitte Wrobel-Dautcourt
  - – Master: modélisation objet et conception des systèmes d'information, 30h, Télécom
  - – Master: projet de conception et développement java, 27h, Télécom 2A
  - – Licence: bases de la programmation objet, 44h, Faculté des Sciences et Techniques, Université de Lorraine
  - – Licence: interfaces graphiques,22h, Faculté des Sciences et Techniques, Université de Lorraine
  - – Licence: projet de synthèse (activité intégratrice), 30 h, Faculté des Sciences et Techniques, Université de Lorraine
  - – Licence: système, 24h, Faculté des Sciences et Techniques, Université de Lorraine
  - – Licence: compilation, 16, Faculté des Sciences et Techniques, Université de Lorraine

9.2.2. Supervision

PhD: Jaime Garcia Guevara, Biomechanical graph matching for hepatic intra-operative image registration, October 2015, Marie-Odile Berger, Stéphane Cotin (MIMESIS). PhD defended in December 2019.

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

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

PhD in progress: Daryna Panicheva, Image-based Biomechanical Simulation of Mitral Valve Closure, October 2017, Marie-Odile Berger, Pierre-Frédéric Villard.

PhD in progress: Matthieu Zins, Localization in a world of objects, October 2019, Marie-Odile Berger, Gilles Simon.

9.2.3. Juries

- Marie-Odile Berger was an external reviewer of the PhD of Karim Makki (IMT Atlantique, Brest) and of the HdR of Guillaume Caron (Univ Picardie Jules Verne). She was examiner of the PhD of Yilin Zhou (IGN, Paris), Florian Tilquin (ICUBE, Strasbourg) and of the HdR of Omar Ait Aider (Institut Pascal, Clermont Ferrand)

- Erwan Kerrien was an external reviewer for the PhD of Alessio Virzì (Université Paris Saclay and Telecom ParisTech) and Emmanuelle Poulain (I3S, Université Côte d'Azur)
- Frédéric Sur was an external reviewer for the PhD thesis of Debolina Chakraborty (IIEST Shibpur, India) and Alberto Lavatelli (Polytecnico di Milano, Italy)

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

Erwan Kerrien is Chargé de Mission for scientific mediation at Inria Nancy-Grand Est, and thereby is part of the Inria scientific mediation network. As such, he is a member of the steering committee of "la Maison pour la Science de Lorraine" [0], and member of the IREM [0] steering council.

9.3.2. Education

- Pierre-Frédéric Villard is involved with the secondary school of Champigneulles (France) as a "Collège Pilote" of "La Main à la pâte" foundation. He gave a seminar on augmented and virtual realities to the pupils, he helped the teacher with preparing some activities with augmented and virtual reality technologies. Finally, he is supervising Université de Lorraine students to produce teaching applications with augmented and virtual reality technologies that will be used in secondary school classes.
- Erwan Kerrien participated in the creation and animation of a MOOC for teachers of the new SNT class (Sciences du Numérique et Technologie - *Digital Science and Technology* included in the 1st year of core curriculum in upper secondary education, see https://www.fun-mooc.fr/courses/course-v1:inria+41018+session01/about), where he brought his expertise in image processing. This MOOC is part of the Class'Code project (https://pixees.fr/classcode-v2).

  He also participates in *MOOCFOLIO*, a PIA3-funded project https://www.fun-mooc.fr/news/pia-3-le-projet-moocfolio-est-laureat/). The objective is to create a MOOC to help students choose their undergraduate studies to pursue after high schools. Erwan is part of a working group to create a module about studies and professions related to digital usages and sciences.

  He also participated in the creation, and teaching, of a 5-day training course for scientific animators (in a broad sense, from science club animators to science teachers). This course was funded by Région Grand-Est (see https://fan.loria.fr).

  He gave a 2-day class about the use of unplugged computer science to introduce computer science in science class, along with another researcher and 2 secondary school maths teachers. This class has been organized with Maison pour la Science since 2015, and is proposed to around 20 maths and science secondary school teachers each year.

9.3.3. Interventions

Erwan Kerrien was an associate researcher to a MATh.en.JEANS workshop (https://www.mathenjeans.fr) within Loritz high school in Nancy.

He also regularly intervenes to demonstrate computer science unplugged activities and/or give conferences to secondary school pupils and teachers.

9.3.4. Internal action

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.

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

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

MFX Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Selection

10.1.1.1. Chair of Conference Program Committees

- Sylvain Lefebvre was a program co-chair for the SGP 2019 graduate school.

10.1.1.2. Member of the Conference Program Committees

- Jonàs Martínez was on the full papers program committee of EUROGRAPHICS 2020.
- Sylvain Lefebvre was a conflict of interest coordinator for ACM SIGGRAPH 2019.
- Sylvain Lefebvre was on the paper advisory board of EUROGRAPHICS 2020.
- Sylvain Lefebvre was on the papers program committee of SMI 2019.

10.1.1.3. Reviewer

- Jonàs Martínez was reviewer for ACM SIGGRAPH, Pacific Graphics, and the Symposium on Solid and Physical Modeling (SPM).
- Sylvain Lefebvre was a reviewer for ACM SIGGRAPH and ACM SIGGRAPH Asia.
- Samuel Hornus was a reviewer for ACM SIGGRAPH 2019, SPM 2019 (Symposium on Physical Modeling), HPG 2019 (High Performance Graphics) and EUROGRAPHICS 2020.

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

- Jonàs Martínez was a reviewer for the ACM Transactions on Graphics journal and the SV–Journal of Mechanical Engineering.
- Cédric Zanni was a reviewer for the Elsevier Computer and Graphics journal and the Elsevier Graphical Models journal.
- Sylvain Lefebvre was a reviewer for the ACM Transactions on Graphics journal and the Computer Aided Geometric Design journal.
- Samuel Hornus was a reviewer for the Computer Graphics Forum journal.

10.1.3. Invited Talks

Jonàs Martínez gave an invited talk at Journées Matériaux Numériques 2019 entitled "Generalized Voronoi Diagrams for Metamaterial Design".

Sylvain Lefebvre gave a keynote at SCF 2019 (Pitsburg, USA), at the IS2M annual meeting (Mulhouse, France) and at the JGA 2019 (La Bresse, France).

10.1.4. Research Administration

Jonàs Martínez is the scientific correspondent for Europe (Inria Nancy Grand-Est). Samuel Hornus is the chair of the CDT (Commission de dévelopement technologique) of Inria Nancy Grand-Est.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Jonàs Martínez, Introduction to data parallelism, 14 ETD, Université de Lorraine, France.

Master : Jonàs Martínez, Geometric modelling for additive manufacturing, 10 ETD, ENSEM Nancy, France.

Master: Cédric Zanni, Software Engineering, 13.5h ETD, M1, École des Mines de Nancy, France.

Master: Cédric Zanni, Operating System, 12h ETD, M1, École des Mines de Nancy, France.

Master: Cédric Zanni, Introduction to C/C++, 27h ETD, M1, École des Mines de Nancy, France.

Master: Cédric Zanni, Techniques for video game programming, 54h ETD, M1, École des Mines de Nancy, France.

Master: Sylvain Lefebvre, Additive manufacturing for soft robotics, 6h ETD, École Polytechnique, Saclay, France.

Master: Sylvain Lefebvre, Introduction to parallel programming, 9h ETD, ENSG Nancy, France.

Master: Sylvain Lefebvre, Introduction to additive manufacturing, 9h ETD, ENSEM Nancy, France.

License : Cédric Zanni, Computer science, 11h ETD, École des Mines de Nancy, France.

License : Cédric Zanni, Introduction to Computer Science, 13.5h ETD, École des Mines de Nancy, France.

License : Samuel Hornus, Mathematics for Computer Science, 64h ETD, Télécom Nancy, France. (responsible of class series for 2019-2020, 2020-2021.)

IUT: Thibault Tricard, Data structures, data bases, 40h ETD.

IUT: Jimmy Étienne, Introduction to programming, 64h ETD.

10.2.2. Supervision

- PhD in progress : Thibault Tricard, Procedural synthesis of structured patterns, started October 2018, advisors: Sylvain Lefebvre, Dider Rouxel (IJL).

- PhD in progress : Jimmy Étienne, Curved slicing for additive manufacturing, started September 2018, advisors: Sylvain Lefebvre, Cédric Zanni

- PhD in progress : Semyon Efremov, procedural microstructures for additive manufacturing, started October 2018, advisors: Jonàs Martínez, Sylvain Lefebvre

- PhD in progress : Melike Aydinlilar, Implicit modeling for additive manufacturing, started November 2019, advisors: Cédric Zanni, Sylvain Lefebvre.

10.2.3. Juries

Sylvain Lefebvre was reviewer (*rapporteur)* on the PhD thesis of Geoffroy Guingo (University of Strasbourg) and participated in the thesis mid-term committees of Nicolas Lutz et Pascal Guehl (University of Strasbourg).

Sylvain Lefebvre was a member of the jury for the Young Researcher Fellow EGFR, which awards every year a young French researcher with outstanding research and community contributions in the field of Computer Graphics.

10.3. Popularization

10.3.1. Articles and contents

Sylvain Lefebvre co-authored a position paper for NEM on Creative AI [18], and appeared in a short movie on the Creativ'Lab's shared fabrication space and MFX's research.

10.3.2. Interventions

In March 2019, IceSL was presented at the **Maker Faire Lille**, with a focus on color printing, printing big parts using cavities and polyfoams (all results from prior years now available in IceSL). IceSL was presented during an **Inria Tech Talk at Station-F** in Paris, along with a display of best prints [0].

In April 2019, IceSL was presented to an audience of designers for the second part of **Affinité Design** (http://www.affinitedesign.com/), with a discussion about the transition from 3D printing to "4D printing", in a joint talk with Sylvain Lefebvre, Jean-Claude André and Samuel Kenzari (http://www.nancy.archi.fr/fr/biennale-du-design-grand-est-2019_-e.html). In October 2019, Pierre Bedell and Pierre-Alexandre Hugron presented IceSL at **OctoberMAKE**, a meeting organised by the French FabLabs network (http://www.fablab.fr/octobermake/). Sylvain Lefebvre gave an IceSL tutorial at the **Soft Robotics days** in Lille (https://jrs2019.sciencesconf.org/). Sylvain Lefebvre created quick tutorial videos on Youtube (channel *icesl-fr*), to help introduce new users to IceSL.

Sylvain Lefebvre gave a presentation at **Grand-Est Numerique** 2019, geared towards start-ups, presenting results from MFX.

10.3.3. Internal action

The team actively participated to the inauguration of the Creativ'Lab space in December 2019.

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[0]https://french-tech-central.com/events/du-modele-3d-a-la-piece-fabriquee-utilisez-icesl-pour-vos-prototypages/

<p align="center" style="color:red">MULTISPEECH Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events: Organisation

10.1.1.1. General Chair, Scientific Chair

Elected chair, Steering Committee of the Latent Variable Analysis and Signal Separation (LVA/ICA) conference series (E. Vincent, until Nov. 2019)

General co-chair, 1st Inria-DFKI Workshop on Artificial Intelligence, Nancy, Jan. 2020 (E. Vincent)

General co-chair, 6th CHiME Speech Separation and Recognition Challenge, May 2020 (E. Vincent)

General co-chair, 6th International Workshop on Speech Processing in Everyday Environments, Barcelona, Spain, May 2020 (E. Vincent)

General co-chair, 1st Voice Privacy Challenge, Sept. 2020 (E. Vincent)

General co-chair, Detection and Classification of Acoustic Scenes and Events Challenge (R. Serizel, since Nov. 2018)

Area chair, 2019 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA) (E. Vincent)

Area chair, 2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) (E. Vincent, A. Deleforge)

10.1.1.2. Member of the Organizing Committees

Steering Committee of the Detection and Classification of Acoustic Scenes and Events (DCASE) challenge series (E. Vincent until Nov. 2019, R. Serizel from Nov. 2019)

Organizing Committee of the ASVspoof 2019 Challenge: Automatic Speaker Verification Spoofing And Countermeasures Challenge (M. Sahidullah)

Organizing Committee of Special Sessions on ASVspoof 2019 at INTERSPEECH 2019 and at IEEE ASRU 2019 (M. Sahidullah).

Organizing Committee of AVSP 2019 (S. Ouni)

Main organizer of IEEE Signal Processing Cup 2019 on Search & Rescue with Drone-Embedded Sound Source Localization (A. Deleforge).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Review chair, IEEE Technical Committee on Audio and Acoustic Signal Processing, responsible for organizing the review of the 443 papers submitted to the 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) in the general AASP domain (E. Vincent)

10.1.2.2. Member of the Conference Program Committees

ICALP 2019 - International Conference on Arabic Language Processing (D. Jouvet)

SIIE 2019 - Edition of the International Conference on Information Systems and Economic Intelligence (D. Fohr, I. Illina)

SPECOM 2019 - International Conference on Speech and Computer (D. Jouvet)

TSD 2019 - International Conference Text, Speech and Dialogue (D. Jouvet)

10.1.2.3. Reviewer

ASRU 2019 - IEEE Automatic Speech Recognition and Understanding Workshop (D. Jouvet, I. Illina, S. Ouni, M. Sahidullah, E. Vincent)

AVSP 2019 - International Conference on Auditory-Visual Speech Processing (S. Ouni)

DCASE 2019 - Workshop on Detection and Classification of Acoustic Scenes and Events (R. Serizel, E. Vincent)

ECML PKDD Joint International Workshop on Advances in Interpretable Machine Learning and Artificial Intelligence & eXplainable Knowledge Discovery in Data Mining (E. Vincent)

EUSIPCO 2019 - European Signal Processing Conference (M. Sahidullah)

ICALP 2019 - International Conference on Arabic Language Processing (D. Jouvet)

ICASSP 2020 - IEEE International Conference on Acoustics, Speech and Signal Processing (A. Bonneau, A. Deleforge, D. Jouvet, M. Sahidullah, R. Serizel, E. Vincent)

ICPhS 2019 - International Congress of Phonetic Sciences (A. Bonneau, Y. Laprie)

INTERSPEECH 2019 (A. Bonneau, I. Illina, D. Jouvet, S. Ouni, M. Sahidullah, E. Vincent)

IROS 2019 - International Conference on Intelligent Robots and Systems (A. Deleforge)

IVA 2019 - Intelligent Virtual Agents Conference (S. Ouni)

NeurIPS 2019 - Conference on Neural Information Processing Systems (A. Deleforge)

PaPE 2019 - Phonetics and Phonology in Europe conference (A. Bonneau)

SLATE 2019 - Workshop on Speech and Language Technology in Education (A. Bonneau, D. Jouvet)

SPECOM 2019 - International Conference on Speech and Computer (D. Jouvet)

TSD 2019 - International Conference Text, Speech and Dialogue (D. Jouvet)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Speech Communication (D. Jouvet)

Journal on Audio, Speech, and Music Processing (Y. Laprie)

Associate Editor of Circuits, Systems, and Signal Processing (M. Sahidullah)

Associate Editor of IET Signal Processing (M. Sahidullah)

Guest Editor of Computer Speech and Language, Special issue on Advances in Automatic Speaker Verification Anti-spoofing (M. Sahidullah)

Guest Editor of Journal on Audio, Speech and Music Processing, special issue on Advances in Audio Signal Processing for Robots and Drones (A. Deleforge)

10.1.3.2. Reviewer - Reviewing Activities

Computer Speech and Language (A. Deleforge, D. Jouvet, M. Sahidullah)

IEEE Access (A. Deleforge)

IEEE Signal Processing Letters (A. Deleforge, M. Sahidullah)

IEEE Transactions on Audio, Speech and Language Processing (M. Sahidullah, A. Deleforge)

IEEE Transactions on Biometrics, Behavior, and Identity Science (M. Sahidullah)

IEEE Transactions on Cognitive and Developmental Systems (A. Deleforge)

IEEE Transactions on Information Forensics and Security (M. Sahidullah)

IEEE Transactions on Signal Processing (A. Deleforge)

IET Biometrics (M. Sahidullah)

JASA Express Letter (Y. Laprie, S. Ouni)

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

Journal of Language, Speech and Hearing Research (Y. Laprie)

Journal on Audio, Speech, and Music Processing (A. Deleforge)

Sensors (A. Deleforge)

Speech Communication (D. Jouvet)

10.1.4. Invited Talks

Keynote "Grands défis scientifiques et technologiques en traitement de la parole: quelles initiatives chez Inria et au niveau européen?", Voice Tech Paris 2019 (E. Vincent) [18]

Keynote "Speech Processing and Prosody", 22nd International Conference of Text, Speech and Dialogue (TSD 2019) (D. Jouvet) [15]

"COMPRISE", META-FORUM 2019 (E. Vincent) [17]

Lecture "Taking the Best of Physics and Machine Learning in Robot Audition", IEEE/EURASIP/ISIF 2019 Summer School of Signal Processing, Arenzano, Italy (A. Deleforge)

Language pathology, Séminaire "Dépistage des troubles des apprentissages" in EHESP, Rennes, Jan. 2019 (A. Piquard-Kipffer)

"Dyslexie, dysorthographie : quels parcours scolaires ? Quelles rémédiations et adapatations ?" in Journée nationale des Dys, Bavilliers, Oct. 2019 (A. Piquard-Kipffer)

10.1.5. Leadership within the Scientific Community

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

Member of the board of AFCP - Association Francophone de la Communication Parlée (S. Ouni)

Elected members of the IEEE Technical committee on Audio and Acoustic Signal Processing (A. Deleforge, R. Serizel).

10.1.6. Scientific Expertise

Member of the Scientific Committee of an Institute for deaf people (INJS-Metz), A. Piquard-Kipffer

Member of an expertise Committee for specific language disabilities (MDPH 54), A. Piquard-Kipffer

10.1.7. Research Administration

Head of the AM2I Scientific Pole of Université de Lorraine (Y. Laprie)

Deputy Head of Science of Inria Nancy - Grand Est (E. Vincent)

Member of Management board of Université de Lorraine (Y. Laprie)

Member of the Comité Espace Transfert of Inria Nancy - Grand Est (E. Vincent)

Member of the national recruitment jury for Inria Junior Research Scientists (E. Vincent)

Member of the recruitment jury for Junior Research Scientists, Inria Paris (E. Vincent)

Member of a recruitment committee for Assistant Professor at Université Paris-Sud, May 2019 (D. Jouvet)

Member of the recruitment jury for an Associate Professor position, University of Lorraine (R. Serizel)

Member of the HCERES committee for Gipsa-Lab (S. Ouni)

Member of the National Council of Universities - CNU 27 (S. Ouni)

Member of "Commission paritaire" of Université de Lorraine (Y. Laprie)

Member of the Commission de développement technologique of Inria Nancy - Grand Est (R. Serizel)

Member of the Commission du personnel scientifique of Inria Nancy - Grand Est (R. Serizel)

Member of the Bureau de la Commission de Mention Informatique (I. Illina, S. Ouni)

Animator of the Commission Locale Développement Durable of Inria Nancy - Grand Est (A. Deleforge)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

DUT: I. Illina, Java programming (56 hours), Linux programming (58 hours), and Advanced Java programming (40 hours), L1, University of Lorraine, France

DUT: I. Illina, Supervision of student projects and internships (50 hours), L2, University of Lorraine, France

DUT: R. Serizel, Introduction to office tools (108 hours), Multimedia and web (20 hours), Documents and databases (20 hours), L1, University of Lorraine, France

DUT: R. Serizel, Multimedia content and indexing (14 hours), Content indexing and retrieval software (20 hours), L2, University of Lorraine, France

DUT: S. Ouni, Programming in Java (24 hours), Web Programming (24 hours), Graphical User Interface (96 hours), L1, University of Lorraine, France

DUT: S. Ouni, Advanced Algorihms (24 hours), L2, University of Lorraine, France

Licence: A. Bonneau, Speech manipulations (2 hours), L1, Département d'orthophonie, University of Lorraine, France

Licence: A. Bonneau, Phonetics (17 hours), L2, École d'audioprothèse, University of Lorraine, France

Licence: V. Colotte, Digital literacy and tools (hybrid courses, 50 hours), L1, University of Lorraine, France

Licence: V. Colotte, System (45 hours), L3, University of Lorraine, France

Licence: O. Mella, Introduction to Web Programming (22 hours), Digital tools (20 hours), L1, University of Lorraine, France

Licence: O. Mella, Computer Networking (72 hours), L2-L3, University of Lorraine, France

Licence: A. Piquard-Kipffer, Education Science (32 hours), L1, Département d'orthophonie, University of Lorraine, France

Licence: A. Piquard-Kipffer, Learning to Read (34 hours), L2, Département d'orthophonie, University of Lorraine, France

Licence: A. Piquard-Kipffer, Dyslexia, Dysorthographia (12 hours), L3, Département d'orthophonie, University of Lorraine, France

Master: V. Colotte, Introduction to Speech Analysis and Recognition (18 hours), M1, University of Lorraine, France

Master: V. Colotte, Integration project: multimodal interaction with Pepper (10 hours), M2, University of Lorraine, France

Master: D. Jouvet and S. Ouni, Multimodal oral comunication (24 hours), M2, University of Lorraine

Master: Y. Laprie, Speech corpora (30 hours), M1, University of Lorraine, France

Master: O. Mella, Computer Networking (67 hours), Introduction to Speech Analysis and Recognition (12 hours), M1, University of Lorraine, France

Master: S. Ouni, Multimedia in Distributed Information Systems (31 hours), M2, University of Lorraine

Master: A. Piquard-Kipffer, Dyslexia, Dysorthographia diagnosis (9 hours), Deaf people & reading (21 hours), M1, Département d'orthophonie, University of Lorraine, France

Master: A. Piquard-Kipffer , Psycholinguistics (20 hours), Departement Orthophonie, University Pierre et Marie Curie, Paris, France

Master: A. Piquard-Kipffer, French Language Didactics (53 hours), ESPE, INSPE University of Lorraine, France

Master: A. Piquard-Kipffer, Psychology (6 hours), M2, Departement of Psychology, University of Lorraine, France

Master: R. Serizel, Introduction to machine listening (3 hours), M2, University of Lorraine

Master: R. Serizel and S. Ouni, Oral speech processing (24 hours), M2, University of Lorraine

Master: E. Vincent and A. Kulkarni, Neural networks (38 hours), M2, University of Lorraine

Continuous training: O. Mella, DIU "Teaching computer science in high school" (7 hours), Computer science courses for secondary school teachers (ISN courses, 21 hours), ESPE, University of Lorraine, France

Continuous training: A. Piquard-Kipffer, Special Educational Needs (53 hours), ESPE, INSPE, University of Lorraine, France

Other: V. Colotte, Co-Responsible for NUMOC (Digital literacy by hybrid courses) for the University of Lorraine, France (for 7000 students)

Doctorat: A. Piquard-Kipffer , Language Pathology (20 hours), EHESP, University of Sorbonne, Paris, France

10.2.2. Supervision

PhD: Mathieu Fontaine, "Processus alpha-stable pour le traitement du signal", University of Lorraine, Jun. 12, 2019, A. Liutkus and R. Badeau (Télécom ParisTech) [1].

PhD: Lauréline Perotin, "Localisation et rehaussement de sources de parole au format Ambisonique", University of Lorraine, Oct. 31, 2019, R. Serizel, E. Vincent, and A. Guérin (Orange) [2].

PhD: Anastasiia Tsukanova, "Coarticulation modeling in articulatory synthesis", University of Lorraine, Dec. 13, 2019, Y. Laprie .

PhD in progress: Amal Houidhek, "Synthèse paramétrique de parole arabe", Dec. 2015, cotutelle, V. Colotte, D. Jouvet and Z. Mnasri (ENIT, Tunisia).

PhD in progress: Amine Menacer, "Traduction automatique de vidéos", May 2016, K. Smaïli (LORIA) and D. Jouvet.

PhD in progress: Nathan Libermann, "Deep learning for musical structure analysis and generation", Oct. 2016, F. Bimbot (IRISA) and E. Vincent.

PhD in progress: Théo Biasutto, "Multimodal coarticulation modeling: Towards the animation of an intelligible speaking head", Dec. 2016, S. Ouni.

PhD in progress: Sara Dahmani, "Modeling facial expressions to animate a realistic 3D virtual talking head", Jan. 2017, S. Ouni and V. Colotte.

PhD in progress: Guillaume Carbajal, "Apprentissage profond bout-en-bout pour le rehaussement de la parole", Mar. 2017, R. Serizel, E. Vincent and É. Humbert (Invoxia).

PhD in progress: Sunit Sivasankaran, "Exploiting contextual information in the speech processing chain", Jul. 2017, D. Fohr and E. Vincent.

PhD in progress: Ioannis Douros, "Combining cineMRI and static MRI to analyze speech production", Jul. 2017, P.-A. Vuissoz (IADI) and Y. Laprie.

PhD in progress: Diego Di Carlo, "Estimating the Geometry of Audio Scenes Using Virtually-Supervised Learning", Oct. 2017, A. Deleforge and N. Bertin (Inria Rennes).

PhD in progress: Lou Lee, "Du lexique au discours: les particules discursives en français", Oct. 2017, Y. Keromnes (ATILF) and D. Jouvet.

PhD in progress: Nicolas Turpault, "Deep learning for sound scene analysis in real environments", Jan. 2018, R. Serizel and E. Vincent.

PhD in progress: Raphaël Duroselle, "Adaptation de domaine par réseaux de neurones appliquée au traitement de la parole", Sept. 2018, D. Jouvet and I. Illina.

PhD in progress: Nicolas Furnon, "Deep-learning based speech enhancement with ad-hoc microphone arrays", Oct. 2018, R. Serizel, I. Illina and S. Essid (Télécom ParisTech).

PhD in progress: Ajinkya Kulkarni, "Synthèse de parole expressive par apprentissage profond", Oct. 2018, V. Colotte and D. Jouvet.

PhD in progress: Manuel Pariente, "Deep learning-based phase-aware audio signal modeling and estimation", Oct. 2018, A. Deleforge and E. Vincent.

PhD in progress: Adrien Dufraux, "Leveraging noisy, incomplete, or implicit labels for automatic speech recognition", Nov. 2018, E. Vincent, A. Brun (LORIA) and M. Douze (Facebook AI Research).

PhD in progress: Ashwin Geet D'Sa, "Natural Language Processing: Online hate speech against migrants", Apr. 2019, I. Illina and D. Fohr.

PhD in progress: Tulika Bose, "Online hate speech and topic classification", Sep. 2019, I. Illina, D. Fohr and A. Monnier (CREM).

PhD in progress: Mauricio Michel Olvera Zambrano, "Robust audio event detection", Oct. 2019, E. Vincent and G. Gasso (LITIS).

PhD in progress: Shakeel Ahmad Sheikh, "Identifying disfluency in speakers with stuttering, and its rehabilitation, using DNN", Oct. 2019, S. Ouni.

PhD in progress: Sandipana Dowerah, "Robust speaker verification from far-field speech", Oct. 2019, D. Jouvet and R. Serizel.

PhD in progress: Georgios Zervakis, "Integration of symbolic knowledge into deep learning", Nov. 2019, M. Couceiro (LORIA) and E. Vincent.

PhD in progress: Nicolas Zampieri, "Automatic classification using deep learning of hate speech posted on the Internet", Nov. 2019, I. Illina and D. Fohr.

10.2.3. Juries

10.2.3.1. Participation in HDR and PhD juries

Participation in the HDR jury of Fabrice Hirsch (Sorbonne nouvelle University, Nov. 2019), Y. Laprie.

Participation in the HDR jury of Éric Bavu (CNAM, Dec. 2019), E. Vincent, president.

Participation in the PhD jury of Corentin Louboutin (Bretagne Loire University, Mar. 2019), E. Vincent, president.

Participation in the PhD jury of Neil Zeghidour (PSL Research University, Mar. 2019), E. Vincent, reviewer and president.

Participation in the PhD jury of Zied Elloumi (Communauté Université Grenoble Alpes, Mar. 2019), D. Jouvet, reviewer.

Participation in the PhD jury of Céline Jacques (Sorbonne University, Apr. 2019), E. Vincent.

Participation in the PhD jury of João Felipe Santos (University of Québec, Jul. 2019), E. Vincent, reviewer.

Participation in the PhD jury of Alice Cohen-Hadria (Sorbonne University, Oct. 2019), E. Vincent, reviewer.

Participation in the PhD jury of Lode Vuegen (KU Leuven, Oct. 2019), R. Serizel.

Participation in the PhD jury of Anne Bouvet (Grenoble Alpes University, Nov. 2019), Y. Laprie.

Participation in the Phd jury of Kevin Vythelingum (Le Mans Université, Dec. 2019), D. Jouvet, reviewer.

Participation in the PhD jury of Karima Abidi (Univertsité de Lorraine, Dec. 2019), D. Jouvet, president.

10.2.3.2. Participation in other juries

Participation in CAFIPEMPF Jury - Master Learning Facilitator, Académie de Nancy-Metz & Université de Lorraine, Apr. & May 2019, A. Piquard-Kipffer

Participation in the Competitive Entrance Examination into Speech-Language Pathology Department, University of Lorraine, Jun. 2019, A. Piquard-Kipffer.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Member of the Commission Information et Edition Scientifique of Inria Nancy (A. Deleforge).

10.3.2. Articles and contents

Interview for "Un assistant vocal qui protège les données", *France 3 Grand Est*, Jun. 7, 2019 (E. Vincent)

Interview for "La voix crescendo", *L'Usine Nouvelle*, Jun. 27, 2019 (E. Vincent)

Interview for "On transmet beaucoup plus d'informations par la voix qu'un message", *Rue89 Strasbourg*, Nov. 20, 2019 (E. Vincent)

Participation to the white paper "AI in the media and creative industries", New European Media (NEM) consortium (E. Vincent) [52]

10.3.3. Education

5 interventions (3 hours) : "Dyslexic pupils in mainstream and special education". Training of trainers. ESPE de l'Académie de Nancy-Metz. Feb., Mar. & May 2019 (A. Piquard-Kipffer)

10.3.4. Interventions

6 interventions (1 hour) on robot audition and artificial intelligence research in classes from 5th (*CM2*) to 12th (*terminale*) grade around Nancy, Jan. 2019 (A. Deleforge)

Talk "Parole & deep learning: succès et grands défis", Journée IA, Langage et Citoyens, LORIA, Mar. 2019; and also at Meetup IA Nancy, Jun. 2019 (E. Vincent)

Panel discussion on "Se positionner à l'Europe, une opportunité à saisir", General assembly of Pôle Materalia, Nancy, Apr. 2019 (E. Vincent)

Demos and talk "Aider des enfants ayant des troubles du langage, quels métiers ? Quels outils ?" Forum des métiers, Collège Péguy, Le Chesnay, Apr. 2019 (A. Piquard-Kipffer)

4 interventions (1 hour) on robot audition and artificial intelligence research in high-school classes in Serbia, Sep. 2019 (A. Deleforge)

Demo "Apprendre aux robots à nous entendre" at the "Nuit des Chercheurs" of Belgrade, Serbia in Sept. 2019 and of Nancy for the 80th anniversary of CNRS in Oct. 2019 (A. Deleforge)

Demos "Apprendre aux robots à nous entendre" and "Assistants vocaux et vie privée", Fête de la Science, Université de Lorraine, Oct. 2019 (A. Deleforge, I. Illina, M. Sahidullah, B. M. L. Srivastava, E. Vincent)

Panel discussion "Tous connectés et après : les enjeux des applications d'interactions vocales", Shadok, Strasbourg, Nov. 2019 (E. Vincent)

10.3.5. Internal action

"H2020 COMPRISE", Internal "Café'In" event, Inria Nancy, Jun. 2019 (E. Vincent & Z. Chelly-Dagdia)

10.3.6. Creation of media or tools for science outreach

Video "Exposed by your own voice", https://www.youtube.com/watch?v=gm2cC8za8Us.

Video 'When voice assistants don't understand", https://www.youtube.com/watch?v=-HvADcfEOuE.

Video "Why is voice assistant integration so expensive", https://www.youtube.com/watch?v=5LQb9X3RtUs

ORPAILLEUR Project-Team

10. Dissemination

10.1. Scientific Events Organization, General Chairs, Scientific Chairs

- Amedeo Napoli was the scientific co-chair with Sergei Kuznetsov of the track "General Topics of Data Analysis" at the AIST Conference held in Kazan Russia on July 17-19 2019 (8th International Conference on Analysis of Images, Social Networks, and Texts http://aistconf.org/ and http://aistconf.org/board/).

- Amedeo Napoli was the scientific co-chair with Sergei O. Kuznetsov (HSE Moscow) and Sebastian Rudolph (TU Dresden) of the seventh workshop FCA4AI "What can do FCA for Artificial Intelligence", which was co-located with the IJCAI Conference in Macao China, August 10 2019 (see http://www.fca4ai.hse.ru/).

- Miguel Couceiro and Amedeo Napoli were the general and scientific chairs of the 26ièmes Rencontres de la Société Francophone de Classification (SFC 2019) that were held on September 3-5 at Inria NGE/LORIA Nancy (see https://project.inria.fr/sfc2019/).

10.2. 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/). 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 (AAAI, ECAI, ECML-PKDD, ESWC, ICCBR, ICDM, ICFCA, IJCAI, ISWC, KDD, SDM...), as members of editorial boards, and finally in the organization of journal special issues.

10.3. Teaching - Supervision - Juries

10.3.1. Teaching

- All the permanent members of the Orpailleur team are involved in teaching at all levels and mainly at Université de Lorraine. Actually, most of the members of the Orpailleur team are employed on "Université de Lorraine" positions.

- Responsability of the 2nd year of the NLP Master's program in the IDMC, Université de Lorraine.

- Local coordination of the European Erasmus Mundus Master's program LCT (Language and Communication Technologies).

  The LCT Master's program "Language and communication Technologies" (LCT) is designed to provide students with practice–oriented knowledge in computational and theoretical linguistics, natural language processing, and computer science, to meet the demands of industry and research in these rapidly growing areas. The LCT consortium includes 7 European Universities, i.e. Saarland, Lorraine, Trento, Malta, Groningen, Charles in Prague, Basque Country, and includes several partners, e.g., DFKI, IBM (Czech Rep.), VICOMTECH, Sony (Europe), IBM (Ireland), and Inria (France).

- Responsability in teaching courses about Artificial Intelligence and Knowledge-Based Systems at TELECOM Nancy, a engineer school for graduation in computer science at Université de Lorraine.

10.3.2. Supervision – Juries

- The members of the Orpailleur team are also involved in student supervision, at all university levels, from under-graduate until post-graduate students, engineers, PhD, postdoc students.
- Finally, the permanent members of the Orpailleur team are involved in HDR and thesis defenses, being thesis referees or thesis committee members.

SEMAGRAMME Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events: Organisation

9.1.1.1. Member of the Organizing Committees

- Karën Fort co-organized of the first enetCollect (European Network for Combining Language Learning with Crowdsourcing Techniques) hackathon

9.1.2. Scientific Events: Selection

9.1.2.1. Chair of Conference Program Committees

- Philippe de Groote: Chair of the 16th Meeting on the Mathematics of Language [24].
- Sylvain Pogodalla: co-chair of FG 2019 *23rd Conference on Formal Grammar* [23].

9.1.2.2. Member of the Conference Program Committees

- Philippe de Groote: Senior PC member of: IJCAI 2019, the 28th International Joint Conference on Artificial Intelligence; PC member of: SCiL 2020, the third meeting of the Society for Computation in Linguistics; WOLLIC 2019, the 26th Workshop on Logic, Language, Information and Computation; IWCS 2019, the 13th International Conference on Computational Semantics ; FG'19, the 24th Conference on Formal Grammar; SPE 11, the 11th Semantics and Philosophy in Europe Colloquium.

9.1.2.3. Reviewer

- Maxime Amblard: 13th International Conference on Computational Semantics (IWCS 2019), IJCAI 2019, TALN 2019, JPC2019.
- Karën Fort: ACL 2019, NAACL 2019, TALN 2019, CJC-Praxiling 2019. *La fabrique de la participation culturelle. Plateformes numériques et enjeux démocratiques*
- Sylvain Pogodalla: 13th International Conference on Computational Semantics (IWCS 2019), Logic and Engineering of Natural Language Semantics 16 (LENLS16).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Maxime Amblard: Member of the editorial board of the journal *Traitement Automatique des Langues*, in charge of the hard copy editorial process,
- Philippe de Groote: area editor of the *FoLLI-LNCS series*.
- Sylvain Pogodalla: Member of the editorial board of the journal *Traitement Automatique des Langues*, in charge of the *Résumés de thèses* section.

9.1.3.2. Reviewer - Reviewing Activities

- Maxime Amblard: Logic and Algorithms in Computational Linguistics, Springer series Studies in Computational Intelligence (SCI)
- Philippe de Groote: Journal of Language, Logic and Information; Journal of Logic and Computation; Logical Methods in Computer Science.
- Sylvain Pogodalla: Journal of Language, Logic and Information.

9.1.4. Invited Talks

- Karën Fort:

- – *La production participative (crowdsourcing) : miroir grossissant sur l'annotation manuelle.* Inria Almanach. Paris, France. October 11th 2019
- – *Productions participatives de corpus annotés : des modèles encore incertains.* Colloque Jeunes Chercheurs PRAXILING 2019
- – with Denis Maurel. *Regards croisés sur la linguistique informatique.* Colloque Décrire une langue : objectifs et méthodes. Sorbonne Université, Paris, France. September 13th 2019

- Michel Musiol:
  - – *Improving the investigation of conversational discontinuities using the support of eye-tracking methods.* Workshop on Incoherence of Dialogue, University of Göteborg, 2019, october 9-10th
  - – *Approche différentielle des registres communicationnels de l'interlocuteur schizophrène dans l'entretien clinique*, Faculté de Médecine and Centre Hospitalo-Universitaire of Tizi Ouzou, Algeria, June 13th.

- Bruno Guillaume:
  - – *Rigor Mortis* EnetCollect 3rd Annual Action meeting in Lisbon, March 14th. The game Rigor Mortis ((http://rigor-mortis.org) is a crowdsourcing projet when users have to find Multi-Word expression.

9.1.5. Leadership within the Scientific Community

- Maxime Amblard: Management Committee of the OLKI project (*Lorraine Université d'Excellence* project - PIA), co-leader of the workpackage 2 on NLP activities.
- Karën Fort:
  - – Management Committee member of the COST Action CA16105 "European Network for Combining Language Learning with Crowdsourcing Techniques" (http://www.cost.eu/COST_Actions/ca/CA16105).
  - – Management Committee Substitute member of the COST Action CA18209 "European network for Web-centred linguistic data science" (http://www.cost.eu/COST_Actions/ca/CA18209).
  - – in charge with G. Wisniewski of axis 2 of GDR LIFT (*Linguistique informatique, formelle et de terrain*) : *Linguistique et évaluation des systèmes de traitement automatique des langues*. Kick off meeting at the end of Nov., Orléans, France, co-organized (with A. Millour, SU) a working group on variations in GDR LIFT
- Philippe de Groote: 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: Management Committee Substitute member 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.

9.1.6. Scientific Expertise

- Philippe de Groote: member of the scientific council of the AREN e-FRAN project, *ARgumentation Et Numérique*.
- Sylvain Pogodalla: expert for the Research Executive Agency (REA) of the EU.

9.1.7. Research Administration

- Maxime Amblard:

- – Member of *conseil scientifique* of *Université de Lorraine*
- – Standing invitee at the *pôle scientifique* AM2I of *Université de Lorraine*
- – Member of the *Sénat Académique* of *Université de Lorraine*
- – Member of the progress commission of *Université de Lorraine*
- – Member of the administration council of the *Institut des sciences du digital, management et cognition*
- – Member of the board of the *Maison des sciences de l'homme*, MSH-Lorraine
- – Head of the master in Natural Language Processing (master 1 and 2)
- • Philippe de Groote:
  - – Member of the *bureau du comité des projets d'Inria Nancy – Grand Est*.
  - – Member of the scientific council of the LIRMM, *Laboratoire d'Informatique, de Robotique et de Microélectronique de Montpellier*
- • Bruno Guillaume:
  - – Head of the Loria department NLPKD (Natural Language Processing and Knowledge Discovery).
  - – Leader of the CPER 2015-2020 project *Langues, Connaissances et Humanités Numériques* (Languages, Knowledge and Digital Humanities) in which ten laboratories of *Université de Lorraine* participate.
  - – Member of the Comipers (committee for PhD and Post-doctoral selection).
- • Michel Musiol:
  - – Member of the McF selection committee 1231/4381 (section 16), *Université de Reims Champagne-Ardenne*
  - – Member of the McF selection committee 739 (section 16), *Aix-Marseille Université*
- • Sylvain Pogodalla:
  - – Elected member of the *comité de centre d'Inria Nancy – Grand Est*,
  - – in charge of the *commission IES (information et édition scientifique du centre d'Inria Nancy – Grand Est*.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence:

Maxime Amblard, NLP Introduction, 4h, L1, Université de Lorraine, France

Maxime Amblard, Linguistic engineering, 20h, L3, Université de Lorraine, France

Maria Boritchev, Formalisms and reasoning representations , 20h, L3, Université de Lorraine, France

Maria Boritchev, Algorithmic 1, 22h, L1, Université de Lorraine, France

Master:

Maxime Amblard, Python Programming (english), 30h, M1 NLP, Université de Lorraine, France.

Maxime Amblard, Methods for NLP (english), 36h, M1 NLP, Université de Lorraine, France.

Maxime Amblard, Formalisms (english), 24h, M2 NLP, Université de Lorraine, France.

Maxime Amblard, Discourse and Dialogue (english), 18h, M2 NLP, Université de Lorraine, France.

Philippe de Groote, Formal Logic, 22h, M1 NLP, Université de Lorraine, France.

Philippe de Groote, Formal languages, 22h, M1 NLP, Université de Lorraine, France.

Philippe de Groote, Computational Semantics, 18h, M2 NLP, Université de Lorraine, France.

Philippe de Groote, Computational structures and logics for natural language modeling, 18h, M2 NLP, Université Paris Diderot – Paris 7, France.

Bruno Guillaume, Written Corpora TAL (english), 30h, M1 NLP, Université de Lorraine, France.

9.2.2. Supervision

PhD defended:

- Timothée Bernard, *Approches formelles de l'analyse du discours : relations discursives et verbes d'attitude propositionnelle*, September 1st 2019

PhD in progress:

William Babonnaud, *Lexical semantics, compositionality and type coercion*, since September 2018, Philippe de Groote.

Clement Beysson, *Dynamic generalized quantifiers for discourse analysis*, since September 2015, Philippe de Groote and Bruno Guillaume.

Maria Boritchev, *Dialogue Dynamics Modeling in the Simple Theory of Types*, since September 2017, Maxime Amblard and Philippe de Groote.

Pierre Ludmann, *Dynamic construction of discursive structures*, since September 2017, Philippe de Groote and Sylvain Pogodalla.

Chuyuan Li, *Formal and statistical modeling of dialogue*, since October 2019, Maxime Amblard and Chloé Braud.

Vincent-Thomas Barrouillet, *Towards an automated formalization of logical deviations of pathological discourse from schizophrenic patients*, since October 2019, Maxime Amblard and Michel Musiol.

Samuel Buchel, *Linguistic, semantic and cognitive modelling of dialogical incongruities and discontinuities in the interaction with the schizophrenic patients*, since December 2019, Maxime Amblard and Michel Musiol.

9.2.3. Juries

- Karën Fort was member of the jury PhD thesis of:
  - Claire Wolfarth, Université Grenoble Alpes. December 9th.
  - Arne Skjærholt, Oslo University. First opponent. December 4th.
  - Ivan Garrido Marquez, Université Paris 13. February 8th.
- Michel Musiol
  - Yann Auxemery, Université de Lorraine, October 15th
  - Aurore Morel, Université de Lyon 1 Claude Bernard, December 20th

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

Maxime Amblard is the vice head of editorial board of Interstices.info

9.3.2. Articles and contents

- Karën Fort: 3 articles in volume 140 of *Culture et Recherche* (Journal of the Ministry of Culture):

- Ouvrir le dédale des données des recherches myriadisées (with Lisa Chupin, Université Paris-Descartes)
- Les jeux ayant un but : des sciences participatives ? (with Bruno Guillaume)
- Sciences participatives et diversité linguistique : retours d'expériences (with Alice Millour, Sorbonne Université)

9.3.3. Interventions

Maxime Amblard was an organizer of the *Forum des Sciences Cognitives* in Nancy

Maxime Amblard organized a Diabolo Science presentation with Marie Duflot-Kremer for PintOf-Science

Maxime Amblard gave a presentation for high school students in the laboratory

Karën Fort: ethics and citizen science class at the Museum national d'histoire naturelle (3h)

9.3.4. Creation of media or tools for science outreach

Maxime Amblard was the leader of the project Happy Family Cards Game, which aimed to develop such a game for promoting computer science as a scientific field. 20 000 copies have been printed and are currently being distributed. The project was presented at the Fête de la Science panel in Paris.

Maxime Amblard designed an unplugged activity on syntactic parsing (about rabbits and carrots), [25].

Karën Fort: participation in the Sorbonne Université portal for citizen science with ZombiLUDik and Recettes (with A. Millour) : https://www.science-ensemble.org/