Activity Report 2018

Section Dissemination

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CAIRN 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

- E. Casseau was General Co-Chair of DASIP, Conference on Design and Architectures for Signal and Image Processing, in Porto, Portugal, October 10-12, 2018.
- D. Chillet was General Chair of 10th Workshop on Rapid Simulation and Performance Evaluation: Methods and Tools (RAPIDO), Manchester, United Kingdom, January 22-24, 2018.

10.1.1.2. Member of the Organizing Committees

- E. Casseau is a member of DASIP Steering Committee, Conference on Design and Architectures for Signal and Image Processing.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- O. Sentieys was Track Chair at IEEE NEWCAS and Co-Chair of the D8 Track on Architectural and Microarchitectural Design at IEEE/ACM DATE.

10.1.2.2. Member of the Conference Program Committees

- D. Chillet was member of the technical program committee of HiPEAC RAPIDO, HiPEAC WRC, MCSoC, DCIS, ComPAS, DASIP, LP-EMS, ARC.
- S. Derrien was a member of technical program committee of IEEE FPL, IEEE FPT and ARC.
- A. Kritikakou was a member of technical program committee of IEEE RTAS, ECRTS, SAMOS.
- O. Sentieys was a member of technical program committee of IEEE/ACM DATE, IEEE FPL, ACM ENSSys, ACM SBCCI, IEEE ReConFig, CROWNCOM.
- T. Yuki was a member of technical program committee of CGO conference and of Impact workshop.

10.1.3. Member of the Editorial Boards

- D. Chillet is member of the Editor Board of Journal of Real-Time Image Processing (JRTIP).
- O. Sentieys is member of the editorial board of Journal of Low Power Electronics.

10.1.4. Invited Talks

- D.Chillet gave an invited talk at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Saint Malo, France, January 2018 on "Gestion des fautes au niveau tâche pour architectures MPSoC et Reconfigurables - Aspects multiprocesseur et reconfiguration dynamique".
- C. Killian gave an invited talk at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Saint Malo, France, January 2018 on "Energy-performance tradeoffs in optical Network-on-Chips".
- C. Killian gave an invited talk at OPTICS (4th International Workshop on Optical/Photonic Interconnects for Computing Systems), in conjunction with IEEE/ACM Design Automation and Test in Europe (DATE), Dresden, Germany, march 2018 on "Offline optimization of wavelength allocation and laser to deal with Energy-Performance tradeoffs in nanophotonic interconnects".

- C. Killian gave an invited talk at a thematic day *Photonique sur silicium pour les architectures de calcul* organized by GDR SoC^2, Lyon, France, November 2018 on "Digital architectures to enhance Optical NoCs efficiency".

- O. Sentieys gave an invited talk at FETCH (École d'hiver Francophone sur les Technologies de Conception des Systèmes embarqués Hétérogènes), Saint Malo, France, January 2018 on "Playing with number representations for energy efficiency: an introduction to approximate and stochastic computing".

- O. Sentieys gave a Keynote at the Third Workshop on Approximate Computing (AxC), in conjunction with IEEE European Test Symposium (ETS), Bremen, Germany, June 2018 on "Playing with number representations and operator-level approximations" [59].

- O. Sentieys gave a tutorial at the Embedded Systems Week (ESWEEK), September 2018 on "A Comprehensive Analysis of Approximate Computing Techniques: From Component- to Application-Level" [55].

- T. Yuki gave an invited talk at TAPAS Workshop, Freiburg im Breisgau, Germany, August 2018 on "Polyhedral Static Analysis for the X10 Language".

10.1.5. Leadership within the Scientific Community

- E. Casseau is a member of the French National University Council in Signal Processing and Electronics (CNU - Conseil National des Universites, 61ème section) since 2018.

- D. Chillet is member of the Board of Directors of Gretsi Association.

- D. Chillet is co-animator of the topics "Connected Objects" and "Near Sensor Computing" of GDR SoC^2.

- F. Charot and O. Sentieys are members of the steering committee of a CNRS Spring School for graduate students on embedded systems architectures and associated design tools (ARCHI).

- O. Sentieys is a member of the steering committee of a CNRS spring school for graduate students on low-power design (ECOFAC).

- O. Sentieys is a member of the steering committee of GDR SoC^2.

10.1.6. Scientific Expertise

- O. Sentieys served as a jury member in the EDAA Outstanding Dissertations Award (ODA).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching Responsibilities

- C. Wolinski is the Director of ESIR.

- O. Sentieys is responsible of the "Embedded Systems" major of the SISEA Master by Research.

- D. Chillet is the responsible of the ICT Master of University of Science and Technology of Hanoi.

- C. Killian is the responsible of the second year of the Physical Measurement DUT at IUT, Lannion.

ENSSAT stands for *"École Nationale Supérieure des Sciences Appliquées et de Technologie"* and is an *"École d'Ingénieurs"* of the University of Rennes 1, located in Lannion. ISTIC is the Electrical Engineering and Computer Science Department of the University of Rennes 1. ESIR stands for *"École supérieure d'ingénieur de Rennes"* and is an *"École d'Ingénieurs"* of the University of Rennes 1, located in Rennes.

10.2.2. Teaching

E. Casseau: signal processing, 21h, ENSSAT (L3)

E. Casseau: low power design, 6h, ENSSAT (M1)

E. Casseau: real time design methodology, 57h, ENSSAT (M1)

E. Casseau: computer architecture, 24h, ENSSAT (M1)

E. Casseau: VHDL design, 42h, ENSSAT (M1)

E. Casseau: SoC and high-level synthesis, 33h, Master by Research (SISEA) and ENSSAT (M2)

S. Derrien, optimizing and parallelising compilers, 14h, Master of Computer Science, ISTIC(M2)

S. Derrien, advanced processor architectures, 8h, Master of Computer Science, ISTIC(M2)

S. Derrien, high level synthesis, 20h, Master of Computer Science, ISTIC(M2)

S. Derrien, computer science research projects, 10h, Master of Computer Science, ISTIC(M1)

S. Derrien: introduction to operating systems, 8h, ISTIC (M1)

S. Derrien, principles of digital design, 20h, Bachelor of EE/CS, ISTIC(L2)

S. Derrien, computer architecture, 48h, Bachelor of Computer Science, ISTIC(L3)

F. Charot: computer architectures, 16h, ESIR (L3)

D. Chillet: embedded processor architecture, 20h, ENSSAT (M1)

D. Chillet: multimedia processor architectures, 24h, ENSSAT (M2)

D. Chillet: low-power digital CMOS circuits, 6h, Telecom Bretagne (M2)

C. Killian: digital electronics, 62h, IUT Lannion (L1)

C. Killian: signal processing, 36h, IUT Lannion (L2)

C. Killian: automated measurements, 56h, IUT Lannion (L2)

C. Killian: measurement chain, 58h, IUT Lannion (L2)

C. Killian: embedded systems programming, 12h, IUT Lannion (L2)

C. Killian: automatic control, 18h, IUT Lannion (L2)

A. Kritikakou: computer architecture 1, 32h, ISTIC (L3)

A. Kritikakou: computer architecture 2, 44h, ISTIC (L3)

A. Kritikakou: C and unix programming languages, 102h, ISTIC (L3)

A. Kritikakou: operating systems, 96h, ISTIC (L3)

A. Kritikakou: multitasking operating systems, 20h, ISTIC (M1)

O. Sentieys: VLSI integrated circuit design, 24h, ENSSAT (M1)

O. Sentieys: VHDL and logic synthesis, 18h, ENSSAT (M1)

C. Wolinski: computer architectures, 92h, ESIR (L3)

C. Wolinski: design of embedded systems, 48h, ESIR (M1)

C. Wolinski: signal, image, architecture, 26h, ESIR (M1)

C. Wolinski: programmable architectures, 10h, ESIR (M1)

C. Wolinski: component and system synthesis, 10h, Master by Research (ISTIC) (M2)

10.2.3. Supervision

PhD: Gabriel Gallin, Hardware arithmetic units and cryptoprocessors for hyperelliptic curve cryptography, Nov. 2018, A. Tisserand.

PhD: Aymen Gammoudi, Scheduling and Mapping Strategies for Software Tasks on Energy-Constrained Reconfigurable Architectures, June 2018, D. Chillet, M.Khalgui.

PhD: Jiating Luo, Architectural and Protocol Exploration for 3D Optical Network-on-Chip, Jul. 2018, D. Chillet, C. Killian, S. Le-Beux.

PhD: Mai-Thanh Tran, Towards Hardware Synthesis of a Flexible Radio from a High-Level Language, Nov. 2018, E. Casseau, M. Gautier.

PhD: Van Dung Pham, Architectural Exploration of Network Interface for Energy Efficient 3D Optical Network-on-Chip, Dec. 2018, O. Sentieys, D. Chillet, C. Killian, S. Le-Beux.

PhD: Rafail Psiakis, Performance Optimization Mechanisms for Fault-Resilient VLIW Processors, Dec. 2018, A. Kritikakou, O. Sentieys.

PhD: Simon Rokicki, Hardware acceleration of Dynamic Binary Translation, Dec. 2018, S. Derrien, E. Rohou.

PhD in progress: Minh Thanh Cong, Hardware Accelerated Simulation of Heterogeneous Multicore Platforms, May 2017, F. Charot, S. Derrien.

PhD in progress: Minyu Cui, Energy-Quality-Time Fault Tolerant Task Mapping on Multicore Architectures, Oct. 2018, E. Casseau, A. Kritikakou.

PhD in progress: Petr Dobias, Energy-Quality-Time Fault Tolerant Task Mapping on Multicore Architectures, Oct. 2017, E. Casseau.

PhD in progress: Mael Gueguen, Improving the performance and energy efficiency of complex heterogeneous manycore architectures with on-chip data mining, Nov. 2016, O. Sentieys, A. Termier.

PhD in progress: Van-Phu Ha, Application-Level Tuning of Accuracy, Nov. 2017, T. Yuki, O. Sentieys.

PhD in progress: Jaechul Lee, Energy-Performance Trade-Off in Optical Network-on-Chip, Dec. 2018, D. Chillet, C. Killian.

PhD in progress: Audrey Lucas, Software support resistant to passive and active attacks for asymmetric cryptography on (very) small computation cores, Jan. 2016, A. Tisserand.

PhD in progress: Thibaut Marty, Compiler support for speculative custom hardware accelerators, Sep. 2017, T. Yuki, O. Sentieys.

PhD in progress: Romain Mercier, Fault Tolerant Network on Chip for Deep Learning Algorithms, Oct. 2018, D. Chillet, C. Killian, A. Kritikakou.

PhD in progress: Genevieve Ndour, Approximate Computing with High Energy Efficiency for Internet of Things Applications, Apr. 2016, A. Tisserand, A. Molnos (CEA LETI).

PhD in progress: Joel Ortiz Sosa, Study and design of a digital baseband transceiver for wireless network-on-chip architectures, Nov. 2016, O. Sentieys, C. Roland (Lab-STICC).

PhD in progress: Davide Pala, Non-Volatile Processors for Intermittently-Powered Computing Systems, Jan. 2018, O. Sentieys, I. Miro-Panades (CEA LETI).

PhD in progress: Joseph Paturel, Design-space exploration of fault-tolerant multicores, Sep. 2018, O. Sentieys, A. Kritikakou.

PhD in progress: Nicolas Roux, Sensor-aided Non-Intrusive Appliance Load Monitoring: Detecting Activity of Devices through Low-Cost Wireless Sensors, Oct. 2016, O. Sentieys, B. Vrigneau.

10.3. Popularization

10.3.1. Articles and contents

Article (in French) about the Embrace project in *Le Mag numérique*: http://www.lemag-numerique.com/2018/01/embrace-vers-radio-hf-numerique-10653

Article in Emergences on "durcir les multi-cœurs contre les rayonnements ionisants": http://emergences.inria.fr/2018/newsletter-n51/L51-FLODAM

CELTIQUE Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. Member of the Organizing Committees

- Formal Methods meet JavaScript Workshop 2018, organizer: Alan Schmitt

7.1.2. Scientific Events Selection

7.1.2.1. Chair of Conference Program Committees

- AVoCS 2018 (International workshop on automated verification of critical systems), FLOC workshop, Oxford (co-chair) : David Pichardie

7.1.2.2. Member of the Conference Program Committees

- CC 2018 (International Conference on Compiler Construction) : David Pichardie
- CPP 2018 (ACM SIGPLAN Conference on Certified Programs and Proofs) : Sandrine Blazy
- ITP 2018 (International Conference on Interactive Theorem Proving) : Delphine Demange
- Euro S&P 2018 (IEEE European Symposium on Security and Privacy) : Sandrine Blazy
- ICFP 2018 (ACM SIGPLAN International Conference on Functional Programming) : Sandrine Blazy
- LOPSTR 2018 (Symposium on Logic-Based Program Synthesis and Transformation) : Sandrine Blazy
- SAS 2018 artefact evaluation committee : Frédéric Besson
- ProWeb 2018: Alan Schmitt

7.1.3. Journal

7.1.3.1. Reviewer - Reviewing Activities

- Discrete Mathematics & Theoretical Computer: Alan Schmitt
- Theoretical Computer Science: Alan Schmitt
- Theoretical Informatics and Applications: Alan Schmitt

7.1.4. Invited Talks

- F. Besson gave a talk at the Dagstuhl Seminar 18201 "Secure Compilation".
- T. Genet gave an invited talk at the ETAPS "Workshop on Rewriting Logic and Applications" in Thessaloniki [12].

7.1.5. Leadership within the Scientific Community

- Sandrine Blazy coordinated of the LTP (Languages, Types, Proofs) group of the French GDR GPL (until October 2018).
- Thomas Jensen is head of the research axis "Security and Privacy" at the Labex CominLabs.
- Sandrine Blazy and Thomas Jensen are member of the Steering Committee of Static Analysis Symposium (SAS).

7.1.6. Scientific Expertise

- Sandrine Blazy: expertise of an ERC Advanced Grant research proposal

- David Pichardie: expertise of two ERC Advanced Grant research proposals
- Sandrine Blazy and David Pichardie : members of the HCERES evaluation committee of the LSV laboratory in December 2018
- David Pichardie: expertise of 1 ANR project
- David Pichardie, jury member for the selection of a Maître de Conférences at ENSEEIHT (Toulouse), May 2018
- Thomas Jensen: expertise of an ERC Consolidator Grant research proposal
- Alan Schmitt: expertise of a Innovational Research Incentives Scheme Veni research proposal
- Sandrine Blazy is member of IFIP WG 2.11 on program generation and of IFIP WG 1.9/2.15 on verified software

7.1.7. Research Administration

- Sandrine Blazy is member of Section 6 of the national committee for scientific research CoNRS.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Licence : Sandrine Blazy, Programmation de confiance, 81h, L3, Université Rennes 1, France

Licence : David Cachera, Initiation to Pedagogy and Mediation, 11h, L3, ENS Rennes, France

Licence : David Cachera, Algorithmics, 20h, L3, ENS Rennes, France

Licence : Delphine Demange, Spécialité Informatique 1 - Algorithmique et Complexité Expérimentale, 36h, L1, Université Rennes 1, France

Licence : Delphine Demange, Spécialité Informatique 2 - Functional and Immutable Programming, 70h, L1, Université Rennes 1, France

Licence : Delphine Demange, Programmation de Confiance, 36h, L3, Université Rennes 1, France

Licence : Thomas Genet, Spécialité Informatique 1 - Algorithmique et Complexité Expérimentale, 47h, L1, Université Rennes 1, France

Licence : Thomas Genet, Initiation au génie logiciel, 67h, L2, Université Rennes 1, France

Licence : Thomas Jensen, Programmation de confiance, 20h, L3, Université Rennes 1, France

Licence : David Pichardie, Graph algorithms, 24h, L3, ESIR, France

Licence : Alan Schmitt, Programmation Fonctionnelle, 36h, L3, Insa Rennes, France

Licence : Alan Schmitt, Programmation de Confiance, 28h, L3, Université Rennes 1, France France

Master : Sandrine Blazy, Static analysis, 30h, M1, Université Rennes 1, France

Master : Sandrine Blazy, Mechanized Semantics, 30h, M2, Université Rennes 1, France

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

Master : David Cachera, Semantics of Programming Languages, 28h, M1, Université Rennes 1, France

Master : David Cachera, Advanced Semantics, 20h, M2, ENS Rennes, France

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

Master : Thomas Genet, Analyse et conception formelle, 65h, M1, Université Rennes 1, France

Master : David Pichardie, Static analysis, 30h, M1, Université Rennes 1, France

Master : David Pichardie, Preparation of Agregation exam, 70h, M2, ENS Rennes, France

Master : Thomas Jensen, Software Security, 21h, M2, Université Rennes 1, France.

7.2.2. Supervision

PhD : Yon Fernandez De Retana, Toward verified compilation of Sea of Nodes : semantic properties and reasoning, Université Rennes 1, defended 5 July 2018, Delphine Demange and David Pichardie

PhD : Alix Trieu, Verifying constant-time implementations in a verified compilation toolchain, Université Rennes 1, defended 4 December 2018, Sandrine Blazy and David Pichardie

PhD: Gurvan Cabon, Analyse non locale certifiée en JavaScript grâce à une sémantique annotée, Université Rennes 1, defended 14 December 2018, Alan Schmitt

PhD in progress : Timothée Haudebourg, Verification of Higher-Order Functional Programs using Tree Automata, September 2017, Thomas Genet and Thomas Jensen

PhD in progress : Rémi Hutin, A C compiler ensuring security properties, September 2018, Sandrine Blazy and David Pichardie

7.2.3. *Juries*

- Sandrine Blazy, jury member for the selection of CNRS CR and DR (researchers) candidates, February and March 2018, CNRS, Paris, France.

- Sandrine Blazy, jury member for the promotion to a senior lecturer position at the University of Kent, May 2018, Canterbury, Great Britain

- Sandrine Blazy, jury member (reviewer) for the PhD defense of Martin Clochard, March 2018, Paris-Sud University

- Sandrine Blazy, jury member for the PhD defense of Huisong Li, March 2018, ENS, Paris

- Sandrine Blazy, jury member for the HDR defense of Aurélie Hurault, July 2018, Université de Toulouse

- Sandrine Blazy, jury member of the GDR GPL PhD award committee.

- Thomas Jensen, president of jury for the PhD defense of Yon Fernandez de Retana, July 2018, University of Rennes 1.

- Alan Schmitt, jury member (reviewer) for the PhD defense of Guillaume Claret, September 2018, Université Sorbonne Paris Cité

- Sandrine Blazy, jury member for the PhD defense of Rabab Bouziane, December 2018, Université Rennes 1

- David Pichardie, jury member (reviewer) for the PhD defense of Jiangchao Liu, February 2018, Paris Sciences et Lettres Research University

- David Pichardie, jury member (reviewer) for the PhD defense of Thibaut Girka, July 2018, Université Paris-Diderot

- David Pichardie, jury member (reviewer) for the PhD defense of Jean-Christophe Léchenet, July 2018, Université Paris-Saclay

- David Pichardie, jury member (reviewer) for the PhD defense of Sigurd Schneider, November 2018, Saarland University, Germany

- David Pichardie, jury member (reviewer) for the PhD defense of Narjes Jomaa, December 2018, Université de Lille

- Frédéric Besson, member of hiring committee for a Maître de Conférence position, Spring 2018, ENSIMAG

7.3. Popularization

7.3.1. *Interventions*

- Thomas Genet gave a talk "Bug, Virus, Intrusion, Pirates... So many threats and no defense? Yes... maths." in high schools close to Rennes. 2018.

- David Cachera contributed to the animation of "École Médiation scientifique en informatique ", Société Informatique de France, June 2018.

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

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Jean-Louis Lanet served as general chair of the 13rd International Conference on Risks and Security of Internet and Systems CRiSIS 2018, Bordeaux France and general chair of the 11th International Conference on Information Technology and Communication Security, Bucharest, Romania,

9.1.1.2. Member of the Organizing Committees

Christophe Bidan served as a member of the organization committee of C&ESAR 2018 (25rd Computers & Electronics Security Applications Rendez-vous), November 2018, Rennes, France.

Frédéric Tronel served as a member of the organization committee of SSTIC 2018 (Symposium sur la sécurité des technologies de l'information et des communications) that took place in Rennes, France in June, where it gathered more than 600 participants.

Gilles Guette served as a member of the organization committee of InOut18, annual event on new mobility that took place in Rennes, France in March.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Eric Totel chaired the Program Committee of the 2018 French conference RESSI (Rendez-Vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

9.1.2.2. Member of the Conference Program Committees

Frédéric Tronel and Valérie Viet Triem Tong served as a member of the program committee of SSTIC 2017 (Symposium sur la sécurité des technologies de l'information et des communications) June 2018, Rennes, France.

Valérie Viet Triem Tong served as a member of the program committee of SECITC (International conference on Information Technology and Communications Security), october 2018, Bucharest, Romania.

Jean-François Lalande served as a member of the program committee of the international conferences CECC 2018, IEEE AINS 2018, IEEE HPCS 2018 and of the international workshops SHPCS 2018, IWCC 2018, CUING 2018, BioSTAR 2018, WTMC 2018, DACSW 2018.

Michel Hurfin acts as a member of the program committee of the African Conference on Research in Computer Science and Applied Mathematics (CARI 2018), South Africa, October 2018.

Emmanuelle Anceaume served as a member of the program committee of the following international conferences: ICDCN 2018, NCA 2018 CryBlock 2018, DEBS 2018, PEC 2018, BSCT 2018, and ADSN 2018.

Ludovic Mé served as a member of the 2018 MSPN (International Conference on Mobile, Secure and Programmable Networking) and CARI (Colloque Africain sur la Recherche en Informatique et Mathématiques Appliquées 2018) program Committees.

Guillaume Piolle served as a member of the 2018 APVP (Atelier sur la Protection de la Vie Privée) and EGC-IA (Extraction et Gestion des Connaissances - Intelligence Artificielle) program committees.

Gilles Guette served as a member of the program committee of the International Conference on Information Systems Security and Privacy, ICISSP 2018.

9.1.2.3. Reviewer

Valérie Viet Triem Tong served as a reviewer for the African Conference on Research in Computer Science and Applied Mathematics, October 2018, South Africa, Stellenbosch.

Jean-François Lalande served as a reviewer for ICISSP 2018, APVP 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Jean-François Lalande served as a member of the editorial board of IARIA International Journal on Advances in Security.

Michel Hurfin serves as a member of the editorial board of the JISA Journal (Journal of Internet Services and Applications - Springer).

9.1.3.2. Reviewer - Reviewing Activities

Jean-François Lalande served as a reviewer for Journal of Universal Computer Science, Elsevier FGCS, IEEE TIFS, MDPI Future Internet, MDPI Sensors, Elsevier Computer Commmunications.

Michel Hurfin served as a reviewer for the IEEE TDSC Journal (Transactions on Dependable and Secure Computing), the Springer TOCS Journal (Theory of Computing Systems), and the Taylor & Francis International Journal of Control.

Emmanuelle Anceaume served as a reviewer of the following journals: IEEE TPDS, and ACM TAAS.

Jean Louis Lanet served as reviewer for the Journal of Computer Security.

Guillaume Piolle served as a reviewer for the RIA (Revue d'Intelligence Artificielle) journal.

Guillaume Hiet served as a reviewer for the Journal of Computer Security.

Gilles Guette served as a reviewer for the IEEE JSAC-SI-NETSOFT-ENABLERS and for the IEEE Networking Letters.

9.1.4. Invited Talks

Emmanuelle Anceaume gave several talks:

- *UTXOs as a proof of membership for Byzantine Agreement based Cryptocurrencies* during the National Days of the pre-GDR on security, june 2018.
- *Beyond the block: A lego blockumentary* during "Journées scientifiques de l'Inria".
- *Sycomore, a Directed Acyclic Graph of Blocks*, Chain-in conference, Porto, Portugal, July 2018, [6], also on Youtube "https://www.youtube.com/watch?v=YLW-iHjsWo0".

Valérie Viet Triem Tong gives a talk about *information flow monitoring at the operating system level* during the National Days of the pre-GDR on security, june 2018.

Jean-François Lalande was invited as keynote speaker at SecITC'2018 [7].

Jean-François Lalande was an invited speaker of the workshop SHPCS 2018 [8].

Guillaume Piolle was an invited speaker at the *Surveillance Resilience, & Privacy* conference (Paris, December 2018).

9.1.5. Scientific Expertise

Ludovic Mé has served the Scientific Council of the LIRIMA (Laboratoire International de Recherche en Informatique et Mathématiques Appliquées).

Ludovic Mé has chaired the group of experts dedicated to the evaluation of the security of French computer science research labs (PPST S/C 7).

Ludovic Mé has chaired the Steering Committee of the annual French conference RESSI (Rendez-Vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

Eric Totel has served the Steering Committee of the annual French conference RESSI (Rendez-Vous de la Recherche et de l'Enseignement de la Sécurité des Systèmes d'Information).

Valérie Viet Triem Tong has participated in the scientific evaluation comity *Global Security and Cybersecurity* (CES 39) of the French Research Agency (ANR).

9.1.6. Research Administration

Ludovic Mé acts as Scientific Officer for the Rennes - Bretagne Atlantic Inria Research Center. As such, he is also a member of the Evaluation Commission and of the Internal Scientific Council of Inria.

Ludovic Mé was the president of a recruitment committee for an assistant professor position at the CNAM (Conservatoire national des arts et métier, Paris). He also served a recruitment committee for an assistant professor position at CentraleSupélec, Rennes.

Valérie Viet Triem Tong was a member of a recruitment committee for an assistant professor position at CentraleSupélec, Rennes.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Emmanuelle Anceaume, *Research in Computer Science - Distributed Algorithms*, 20 hours of lecture, M2; Université Rennes 1, France;

Licence: Christophe Bidan, *Algorithms and Data Structures*, 36 hours of lecture including 7.5 hours of lectures, L3 - first year of the engineering degree, CentraleSupélec, France;

Licence: Christophe Bidan, *Software Engineering*, 12 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Licence: Christophe Bidan, *Supervision of student project*, 1 project, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Christophe Bidan is responsible for the module *Secured information systems*, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Christophe Bidan, *Applied cryptography*, 6 hours of lecture, M2 - master 2 degree, University of Rennes 1, France;

Master: Christophe Bidan, *Applied cryptography*, 15 hours including 6 hours of lecture, M2 - third year of the engineer degree, CentraleSupélec, France;

Master : Christophe Bidan, *Cryptographic Protocols*, 6 hours of lecture, mastère CS (Cyber Security), CentraleSupélec, France;

Master: Christophe Bidan, *Information systems*, 4.5 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Christophe Bidan, *Supervision of student project*, 2 projects, M1 - second year of the engineer degree, CentraleSupélec, France;

Licence: Gilles Guette, *Algorith and Complexity*, 36 hours, L1 - Licence, ISTIC/University of Rennes, France;

Licence: Gilles Guette, *Network Initiation*, 72 hours, L3 - Licence, ISTIC/University of Rennes, France;

Licence: Gilles Guette, *Network Initiation*, 69 hours, L3 - first year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Routing*, 45 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Mobile Network Routing*, 5 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Advanced Network Services*, 13 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Network Project*, 24 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Security*, 46 hours, M1 - second year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Sensors Network*, 28 hours, M2 - Master, ISTIC/University of Rennes, France;

Master: Gilles Guette, *Supervision of student*, Contrat de professionnalisation, M2 - third year of the engineer degree, ESIR, France;

Master: Gilles Guette, *Supervision of student internship*, M2 - ISTIC/University of Rennes, France;

Licence: Guillaume Hiet, *Algorithms and Data Structures*, 12.5 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Computer security and privacy for the engineer*, 8 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Buffer overflow vulnerabilities*, 16 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Buffer overflow vulnerabilities*, 16 hours, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Master: Guillaume Hiet, *Pentest*, 19 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Pentest*, 3 hours, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Master: Guillaume Hiet, *Introduction to Linux*, 3 hours, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Master: Guillaume Hiet, *Java Security*, 4.5 hours, M2 - Mastère Spécialisé CS, CentraleSupélec, France;

Master: Guillaume Hiet, *Linux Security*, 18 hours, M2 - Mastère Spécialisé CS , CentraleSupélec, France;

Master: Guillaume Hiet, *Linux Security*, 7.5 hours, third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *LDAP*, 7.5 hours, third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Intrusion Detection*, 15 hours, M2 - Mastère Spécialisé CS, CentraleSupélec, France;

Master: Guillaume Hiet, *Intrusion Detection*, 13.5 hours, M2 - third year of the engineer degree, M2 research degree of University of Rennes 1, CentraleSupélec, France;

Master: Guillaume Hiet, *Security Monitoring*, 3 hours, M2, cycle "Sécurité Numérique", INHESJ, France;

Master: Guillaume Hiet, *Computer Security*, 31.5 hours, M2, Mastère Spécialisé Architecte des Systèmes d'Information, CentraleSupélec, France;

Master: Guillaume Hiet, *Intrusion Detection*, 16 hours, M2, University of Rennes 1, France;

Master: Guillaume Hiet, *Intrusion Detection*, 10 hours, M2 - third year of the engineer degree, ESIR, France;

Master: Guillaume Hiet, *Intrusion Detection*, 9 hours, M2, Université of Limoges, France;

Master: Guillaume Hiet, *Firewall*, 6 hours, M2, University of Rennes 1, France;

Master: Guillaume Hiet, *Supervision of student project*, 4 projects, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Supervision of student project*, 2 projects, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Hiet, *Supervision of student project*, 2 projects, M2 - Mastère Spécialisé CS (Cyber Security), CentraleSupélec, France;

Licence: Jean-François Lalande, *Algorithms and data structures*, 22 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Computer Sciences*, 13 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Operating System*, 7 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Legal aspects of information security*, 4 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Android mobile development*, 18 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Web development*, 18 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Jean-François Lalande, *Supervision of student projects*, 7 projects, engineer degree, CentraleSupélec, France;

Licence: Guillaume Piolle, *Software engineering*, 1.5 hours, L3 - first year of the engineering degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Modelling, Algorithms and Programming*, 22 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computer security and privacy*, 5 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Software project*, 3.5 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Relational databases*, 6 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computer networks*, 30 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Security Policies*, 4.5 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Java programming*, 4.5 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computer networks*, 9 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Software engineering*, 12 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Network Access Control*, 9 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Web development*, 32 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Privacy protection*, 18 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Computing project*, 60 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Guillaume Piolle, *Legal aspects of information security*, 4.5 hours, M2 - master CyberSecurity, CentraleSupélec, France;

Licence : Eric Totel, *Foundations of computer science, data structures and algorithms*, 9 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Licence : Eric Totel, *Software Modeling*, 15 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *Operating Systems*, 30 hours, M1 - second year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *C language*, 24 hours including 6 hours of lecture, M2 - master CS (Cyber Security), CentraleSupélec, France;

Master : Eric Totel, *C language and C++ language*, 12 hours including 6 hours of lecture, M2 - third year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *Dependability* , 9 hours including 7.5 hours of lecture, M2 - third year of the engineer degree and master research, CentraleSupélec, France;

Master : Eric Totel, *Dependability*, 3 hours of lecture, M2 - third year of the engineer degree (ingénierie des systèmes automatisés), CentraleSupelec, France;

Master : Eric Totel, *Dependability*, 4.5 hours of lecture, M2 - post-graduate training (master Architecture des Réseaux de Communication), CentraleSupélec, France;

Master : Eric Totel, *Intrusion Detection*, 6 hours of lecture, M2 - M2 - master CS (Cyber Security), CentraleSupélec, France;

Master : Eric Totel, *Intrusion Detection*, 9 hours of lecture, M2 - master 2 degree, University of Rennes 1, France;

Master : Eric Totel, *Supervision of student project*, 4 projects, M1 - second year of the engineer degree, CentraleSupélec, France;

Master : Eric Totel, *Supervision of student project,* 1 project, M2 - third year of the engineer degree, CentraleSupélec, France;

Licence: Frédéric Tronel, *Software engineering*, 40 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Licence: Frédéric Tronel, *Operating Systems*, 12 hours, L3 - first year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Operating systems*, 21 hours hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Assembly Language*, 6 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Buffer overflow vulnerabilities (theory and practice)*, 20.5 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Firewall*, 15 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master: Frédéric Tronel, *Calculability in distributed systems*, 6 hours, M2, jointly with University of Rennes 1 and CentraleSupélec, France;

Master: Frédéric Tronel, *Computer network*, 8 hours, M2, jointly with University of Rennes 1 and CentraleSupélec, France;

Licence : Valérie Viet Triem Tong, *Algorithms and Data Structures*, 36 hours of lecture including 7 hours of lectures, L3 - first year of the engineering degree, CentraleSupélec, France;

Licence : Valérie Viet Triem Tong, *Supervision of student project*, 2 projects of 2nd year of the engineer degree, CentraleSupélec, France;

Master: Valérie Viet Triem Tong is responsible of the M2 degree in *CyberSecurity* (mastère spécialisé), organized jointly by CentraleSupélec and Institut Mines Télécom (IMT) Atlantique, France;

Master : Valérie Viet Triem Tong, *Formal Methods*, 9 hours, M2 - third year of the engineering degree, CentraleSupélec, France;

Master : Valérie Viet Triem Tong, *Intrusion detection using information flow control*, 9 hours, M2 / third year of the engineering degree, CentraleSupélec, France;

Master : Valérie Viet Triem Tong, , *Compilers*, 18 hours, M2 - third year of the engineer degree, CentraleSupélec, France;

Master : Valérie Viet Triem Tong, *Supervision of student project*, 2 project, mastere CS (Cyber Security), CentraleSupélec, France;

Master : Valérie Viet Triem Tong, *Supervision of student project,* 1 project, M2 - third year of the engineer degree, CentraleSupélec, France;

Doctorant : Valérie Viet Triem Tong, *Malware analysis*, 6 hours, Research week, ENS Lyon, Lyon, France;

9.2.2. Supervision

9.2.2.1. Thesis defended in 2018

PhD: Thomas Letan, *Contribution à la sécurité des couches basses des systèmes d'information*, novembre 2018, supervised by Guillaume Hiet (50%), Pierre Chifflier (25% - ANSSI), and Ludovic Mé (25%);

PhD: Oualid Koucham, *Détection d'intrusions pour les systèmes de contrôle industriels*, november 2018, supervised by Stéphane Mocanu (50% - Gipsa-lab), Guillaume Hiet (25%), and Jean-Marc Thiriet (25% - Gipsa-lab);

PhD : Mourad Leslous, *Highlighting and executing Android suspicious execution path in Android malware*, 18th december 2018, supervised by Thomas Genet (20% - Celtique Inria project), Jean François Lalande (40% - INSA Centre Val de Loire), and Valérie Viet Triem Tong (40%);

PhD : Yves Mocquard, *Population protocols*, december 2018, supervised by Bruno Sericola (Dyonisos Inria project) and Emmanuelle Anceaume;

PhD : Razika Lounas, *Validation des spécifications formelles de la mise à jour dynamique des applications Java Card*, December 2018, supervised by Jean-Louis Lanet (50%) and Mohamed Mezguiche (50%-Limose, Algerie)

PhD : Abdelhak Mesbah, *Rétroconeption d'application Java Card*, November 2018, supervised by Jean-Louis Lanet (50%) and Mohamed Mezguiche (50%-Limose, Algerie)

9.2.2.2. Theses in progress

PhD in progress (previously in Tamis): Aurélien Palisse, *Detection and early mitigation of ransomware on Windows platforms*, started in 2015, supervised by Jean-Louis Lanet and Hélène Le Bouder (IMT Atlantique);

PhD in progress (previously in Tamis): Kevin Bukasa, *Vulnerability analysis of a Secure Enclave in Embedded Devices*, started in 2016, supervised by Jean-Louis Lanet and Ronan Lashermes (SED Inria);

PhD in progress (previously in Tamis): Leopold Ouairy, *Analyse des vulnérabilités dans des systèmes embarqués*, started in 2017, supervised by Jean-Louis Lanet;

PhD in progress: Mathieu Escouteloup *Micro-architectures Sécurisées*, started in 2018, supervised by Jean-Louis Lanet and Jacques Fournier (CEA);

PhD in progress: Damien Crémilleux, *Visualisation d'évènements de sécurité pour la supervision*, started in October 2015, supervised by Christophe Bidan (30%), Nicolas Prigent (35%), and Frédéric Majorczyk (35% - DGA MI);

PhD in progress: Mounir Nasr Allah, *Contrôle de flux d'information par utilisation conjointe d'analyse statique et d'analyse dynamique accélérée matériellement*, started in November 2015, supervised by Guillaume Hiet (75%) and Ludovic Mé (25%);

PhD in progress: Pernelle Mensah, *Adaptation de la Politique de Sécurité guidée par l'Évaluation du Risque dans les Infrastructures de Communication modernes*, started in January 2016, supervised by Eric Totel (25%), Guillaume Piolle (25%), Christine Morin (25% - Myriad Inria project), and Samuel Dubus (25% - Nokia);

PhD in progress: David Lanoë, *Détection d'intrusion dans les applications distribuées : l'approche comportementale comme alternative à la corrélation d'alertes*, started in october 2016, supervised by Michel Hurfin (50%) and Eric Totel (50%);

PhD in progress : Ronny Chevalier , *Enhanced computer platform security through an intrusion-detection approach*, started in November 2016, supervised by Guillaume Hiet (50%), Boris Balacheff (25% - HP), and Ludovic Mé (25%);

PhD in progress: Laetitia Leichtnam, *Visualisation pour la caractérisation d'événements de sécurité*, started in october 2016, supervised by Eric Totel (40%), Nicolas Prigent (30%) and Ludovic Mé (30%);

PhD in progress : Charles Xosanavongsa, *Combining Attack Specification and Dynamic Learning from traces for correlation rule generation*, started in december 2016, supervised by Eric Totel (50%) and Ludovic Mé (50%);

PhD in progress : Pierre Graux, *Security of Hybrid Mobile Applications*, started in october 2017, supervised by Valérie Viet Triem Tong (50%) and Jean-Francçois Lalande (50%);

PhD in progress : Vasile Cazacu, *Calcul distribué pour la fouille de données cliniques*, started February 2017, supervised by Emmanuelle Anceaume (50%) and Marc Cuggia (50%)

PhD in progress : Aurélien Dupin, *Secure multi-partie computations*, started February 2016, supervised by Christophe Bidan(40%), David Pointchavalm (30% - ENS) and Renaud Dubois (30% - Thales).

PhD in progress : Cedric Herzog, *Simulation d'environnement d'observation afin d'éviter le déploiement de malware sur une station de travail*, started in November 2018, supervised by Jean Louis Lanet (50%), Pierre Wilke (25%) and Valérie Viet Triem Tong (25%);

PhD in progress : Benoit Fournier, *Secure routing in drone swarms*, started in november 2018, supervised by Gilles Guette (50%), Jean Louis Lanet (25%) and Valérie Viet Triem Tong (25%);

PhD in progress : Aimad Berady, *Attacker characterization*, started in november 2018, supervised by Christophe Bidan (25%), Guillaume Carat (25%),Gilles Guette (25%), and Valérie Viet Triem Tong (25%);

PhD in progress : Cyprien Gottstein, *Problématiques de stockage et d'interrogation de très grands graphes répartis dans le contexte de l'internet des objets*, started in october 2018, supervised by Michel Hurfin (50%) and Philippe Raipin Parvedy (50%);

9.2.2.3. *Supervision of external PhD candidates*

LL. D. (Doctor of Laws) in progress: Gustav Malis, *Droit à l'effacement des données mises à disposition par les personnes elles-mêmes*, started in March 2014, supervised by Annie Blandin (80% - IODE) and Guillaume Piolle (20%);

Ruta Moussaileb, in progress, *From Data Signature to Behavior Analysis* started January 2018, supervised by Nora Cuppens (50%-) and Jean-Louis Lanet (50%)

9.2.3. Juries

Valérie Viet Triem Tong has reported the following PhD thesis:

Mickael Salaun, *Inté´gration de l'utilisateur au contro^le d'acce`s: du processus cloisonne´ a` l'interface homme-machine de confiance*, february 2018.

Alicia Filipiak, *Design and formal analysis of security protocols, an application to electronic voting and mobile payment*, march 2018.

Anaël Beaugnon, *Expert-in-the-Loop Supervised Learning for Computer Security Detection Systems*, june 2018.

Steve Muller, *Risk Monitoring and Intrusion Detection for Industrial Control System*, june 2018

Guilia De Santis, *Modeling and Recognizing Network Scanning Activities with Finite Mixture Models and Hidden Markov Models*, december 2018.

Jean-Louis Lanet has reported the following PhD thesis:

Mark Angoustures, December 2018, *Automatic malicious behaviors extraction usable in malware detection*

Damien Marion, December 2018 *Multidimensionality of the Models and the Data in the Side Channel Domain*

Guillaume Hiet was a member of the PhD committee for the following PhD thesis:

Thomas Letan, *Specifying and Verifying Hardware-based Security Enforcement Mechanisms*, October 2018.

Oualid Koucham, *Détection d'intrusions pour les systèmes de contrôle industriels*, November 2018.

Muhammad Abdul WAHAB, *Support matériel pour l'analyse de sécurité du comportement des applications*, December 2018.

Valérie Viet Triem Tong was a member of the PhD committee for the following PhD thesis:

Guillaume Brogi, *Real-time detection of Advanced Persistent Threats using Information Flow Tracking and Hidden Markov Models*, february 2018.

Mourad Leslous, *Highlighting and Executing Suspicious Paths in Android Malwar*, december 2018.

Mark Angoustures, *Extraction automatique de caracte´ristiques malveillantes et me´thode de de´tection de malware dans un environnement re´el*, december 2018.

Jean-François Lalande has reported the following PhD thesis:

Guillaume Brogi, *Détection temps réel de Menaces Persistentes Avancées par Suivi de Flux d'Information et Modèles de Markov Cachés*, april 2018.

Jean-François Lalande was a member of the PhD committee for the following PhD thesis:

Mourad Leslous, *Highlighting and Executing Suspicious Paths in Android Malwar*, december 2018.

Jean-Louis Lanet was a member of the PhD committee for the following PhD thesis:

Khanh Huu The DAM, 2018, *Automatic Learning and Extraction of Malicious Behaviors*

Emmanuelle Anceaume was a member of the grading PhD committee of

Ivan Walulya PhD thesis *On design and applicatins of practical concurrent data structures*, Chalmers University, Sweden, November 2018.

Emmanuelle Anceaume was a member of the PhD committee of

Yves Mocquard, *Analyse probabiliste de protocoles de population* December, 2018.

Ludovic Mé was a member of the PhD committee for the following PhD committee of :

Tan Ngoc Nguyen, *A Security Monitoring Plane for Information Centric Networking: application to Named Data Networking*, Université de Technologie de Troyes, 2018.

9.3. Popularization

9.3.1. Articles and contents

- Emmanuelle Anceaume was interviewed by Jean-Michel Prima. This gave rise to an article: "Améliorer le Bitcoin ... à coup de fourches", Emergences Inria, 2018.

- Jean François Lalande and Valérie Viet Triem Tong were interviewed by Jean-Michel Prima. This gave rise to an article: "Disséquer automatiquement les malware sous Android", Emergences Inria, 2018.

- Emmanuelle Anceaume belonged to the working group "Blockchains challenges" organized by the french governmental group "France Strategie". This gave rise to a report accessible here: https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs-rapport-blockchain-21-juin-2018.pdf.

9.3.2. Interventions

Interviews, videos and podcasts :

Emmanuelle Anceaume was interviewed by Joanna Jongwane for a https://interstices.info/le-potentiel-revolutionnaire-de-la-technologie-blockchain/podcast in online Interstice journal, 2018. (Talk is in french).

Emmanuelle Anceaume was interviewed by the Parliamentary Office For Scientific and Technological Assessment (OPECST) in 2018. The OPECST acts as an intermediary between the political world and the world of research. The goal of this interview was to describe the Bitcoin cryptocurrency system and its associated blockchain, and to discuss on the different vulnerabilities Bitcoin is confronted with.

Emmanuelle Anceaume was interviewed by the *mission d'information sur l'usage des blockchains*, by the French National Assembly in 2018.

Demos : Practical results concerning malware analysis issued from the Kharon project were presented during:

Forum International de la Cybersécurité at Lille in 2018

Fête de la science at Inria in 2018

These works also regularly presented during the visits of the *Laboratoire Haute Sécurité* in the Inria Rennes Bretagne Atlantique center.

9.3.3. Internal action

- Emmanuelle Anceaume was invited to join the internal meetings at La Cordée Rennes on "Blockchain focus: Cinéma: Quel potential d'innovation", November the 8th, 2018.

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

10. Dissemination

10.1. Scientific Events Organisation

We organized the *13th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing*, in Rennes, July 1-6, 2018. The MCQMC Conference is a biennial meeting on Monte Carlo and quasi-Monte Carlo methods and the premier event on the topic; it has attracted 300 people from all over the world.

10.1.1. General Chair, Scientific Chair

- Bruno Tuffin was the General Chair for the *13th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing*, in Rennes, July 1-6, 2018.
- Yassine Hadjadj-Aoul was the General Chair for the *The 5th International Symposium on Networks, Computers and Communications*, Co-sponsored by IEEE, in Roma (Italy), May 2018.

10.1.2. Member of the Organizing Committees

- Pierre L'Ecuyer is member of the Steering Committee of MCQMC and the president of the Steering Committee of MCM.
- Gerardo Rubino and Bruno Tuffin are members of the Steering Committee of the International Workshop on Rare Event Simulation (RESIM).
- Y. Hadjadj-Aoul is co-chairing the Steering Committee of the International Conference on Information and Communication Technologies for Disaster Management (ICT-DM) from December 2016 and member of the steering committee since 2015.
- Yann Busnel has been member of the Organization Committee of the 17th International Conference on Ad Hoc Networks and Wireless (AdHoc-Now 2018), in Saint-Malo, France, in July 2018, acting as Publicity Chair.

10.1.3. Scientific Events Selection

10.1.3.1. Chair of Conference Program Committees

- Bruno Tuffin Area chair for the area "Performance Evaluation, Control and Optimization" of ITC, 11-14 Sep, 2018 in Vienna, Austria.
- Bruno Tuffin was Track-Coordinator for Network and Communications mini-track for WSC'2018 (Winter Simulation Conference, Gotheburg, Sweden, Dec 9-12).
- Yassine Hadjadj-Aoul was Track-Coordinator for the "Satellites IoT and M2M Networks" of the "International Conference on Smart Communications and Networking" (SmartNets), Hammamet, Tunisia (Nov. 2018).

10.1.3.2. Member of the Conference Program Committees

Pierre L'Ecuyer was a member of the program committee of the following events:

- MCQMC'2018: Thirteenth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Rennes, France, July 2018.
- SIMULTECH 2018: International Conference on Simulation and Modeling Methodologies, Technologies and Applications, Porto, Portugal, July 2018.
- ICORES 2018: International Conference on Operations Research and Enterprise Systems, Funchal, Portugal, Feb. 2018

Patrick Maillé was a member of the program committee of the following events:

- MobiHoc 2018,
- WiOpt 2018,
- IFIP Performance 2018,
- NetEcon 2018,
- AdHocNow 2018.

Bruno Tuffin was a member of the program committee of the following events:

- Ninth International Workshop on Simulation, Barcelona, Spain, June 18-22, 2018
- The 4th International Symposium on Ubiquitous Networking (UNET 2018), Hammamet, Tunisia, May 03-05, 2018.
- IEEE International Conference on Communications, 20-24 May 2018, Kansas City, MO, USA
- IEEE 1st 5G World Forum, Santa Clara, July 9-11, 2018
- GECON 2018 - International Conference on Economics of Grids, Clouds, Software, and Services, Pisa, 18-20.Sept.2018
- NETGCOOP 2018 - International Conference on NETwork Games, COntrol and OPtimisation New York, November 14-16, 2018
- IFIP WG 7.3 Performance 2018, 36th International Symposium on Computer Performance, Modelling, Measurement and Evaluation, Toulouse, France, December 5-7, 2018

Yann Busnel was a member of the program committee of the following events:

- NCA 2018: 17th IEEE International Symposium on Network Computing and Applications, Boston, USA, October 2018.
- AdHoc Now: 17th International Conference on Ad Hoc Networks and Wireless (AdHoc-Now 2018), Saint-Malo, France, July 2018.

Gerardo Rubino was a member of the program committee of the following event:

- MCQMC'2018: Thirteenth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Rennes, France, July 2018.

Yassine Hadjadj-Aoul was a member of the program committee of the following events:

- IEEE Globecom 2018 - IEEE Global Communications Conference, Abu Dhabi, UAE, December 9-13, 2018.
- IEEE ICC 2018 - IEEE International Conference on Communications, Kansas City, MO, USA, May 20-24, 2018.
- IEEE WCNC 2018 - IEEE Wireless Communications and Networking Conference, Barcelona, Spain, April 15-18, 2018.
- IEEE ISCC 2018 - IEEE Symposium on Computers and Communications, Natal, Brazil, June 25-28, 2018.
- IEEE CCNC 2018 - IEEE Consumer Communications & Networking Conference, Las Vegas, USA, January 12-15, 2018.

10.1.3.3. Reviewer

Yann Busnel served as a reviewer for several major international journals and conferences, such as TPDS (IEEE Transactions on Parallel and Distributed Systems).

Bruno Sericola served as a reviewer for several major international conferences.

César Viho has reviewed papers for the journals IEEE Transaction on Wireless Communication, IEEE Transactions on Vehicular Communications, IEEE Communications Magazine, and for the following international conferences: IWCNC, Globecom, and CCNC.

Yassine Hadjadj-Aoul has served as a reviewer for several major international conferences such as IEEE Globecom, IEEE ICC.

Gerardo Rubino served as a reviewer for several major international conferences.

10.1.4. Journals

10.1.4.1. Member of the Editorial Boards

Bruno Tuffin is the Simulation Area Editor for *Informs Journal on Computing* since Jan. 2016.

Bruno Tuffin is an associate editor for the following journal:

- ACM Transactions on Modeling and Computer Simulation, since November 2008.

Pierre L'Ecuyer is an associate editor for the following journals:

- ACM Transactions on Mathematical Software, since August 2004.

- Statistics and Computing (Springer-Verlag), since June 2003.

- International Transactions in Operational Research, since May 2007.

Bruno Sericola is an associate editor for the following journals:

- International Journal of Stochastic Analysis, since April 2010.

- Performance Evaluation, since April 2015.

Bruno Sericola is Editor in Chief of the books series "Stochastic Models in Computer Science and Telecommunications Networks", ISTE/WILEY, since March 2015.

10.1.4.2. Reviewer - Reviewing Activities

Bruno Sericola, Bruno Tffin, Gerardo Rubino, served as reviewers for several major international journals.

Yassine Hadjadj-Aoul has reviewed papers for the journals: Elsevier Computer Networks, Elsevier Computer communication, IEEE Communication Letters, Transaction on Vehicular Technologies (TVT), IEEE Communication magazine, IEEE Journal On Selected Area of Communication, IEEE Transactions on Emerging Topics in Computational Intelligence, Springer Journal of Network and Systems Management, Springer Annals of Telecommunications.

10.1.5. Invited Talks

B. Tuffin. gave the tutorial "Recherche opérationnelle et théorie des jeux pour l'analyse de la neutralité du Net" in *19ème congrès de la Société Française de Recherche Opérationnelle et d'Aide A la Decision (ROADEF)*, Lorient, France, 21-23 Février 2018.

B. Tuffin gave the following seminar presentations:

- B. Tuffin. Estimating the mean and tail-distribution measures of time to failure by simulation. Meeting COSMOS(Contrôle et Optimisation Stochastique, MOdélisation et Simulation), GR Recherche Opérationnelle CNRS, June 18, 2018.

- B. Tuffin. Mean Time To Failure Estimation by simulation. RNA Kinetics Day, LRI October 3, 2018.

Yann Busnel made several invited and keynote talks:

- *How to generate uniform Samples on large-scale data streams*, Invited talk at SMURF Workshop: Survey Methods and their use in Related Fields, Institute of Statistics, University of Neuchâtel, August 2018.

- *Big Data Panorama & Large-scale Data Streaming*, Keynote at CEP/FDP on Big Data Computing, IIT Patna, India, December 2018.

Gerardo Rubino made several invited and keynote talks:

- *Machine Learning Developments around the PSQA Project*, **plenary speaker** in the workshop by invitation *Machine Learning in Communication Systems*, organized by the German DFG Collaborate Research Center 1053 "MAKI": Multi-Mechanism Adaptation for the Future Internet, Darmstadt, Germany, March 23, 2018.

- *Random Neural Networks and Extensions. Applications to networking*, **plenary speaker** in the TMA Experts Summit by invitation, as part of *IEEE Network Traffic Measurement and Analysis Conference (TMA'18)*, Vienna, Austria, June 2018.

- *Duality concepts and applications in difference and differential linear systems*, A. Krinik and G. Rubino, invited talk in *The American Mathematical Society (AMS) Fall Western Sectional Meeting*, San Francisco State University, San Francisco, CA, October 2018.

- *Performance evaluation targeting Quality of Experience*, **keynote speaker** in *The 15th European Performance Engineering Workshop (EPEW'18)*, Paris, France, October 2018.

- *Efficient Monte Carlo estimation of network reliability metrics with the standard estimator*, invited talk in *INFORMS Annual Meeting*, Phoenix, USA, November 2018.

Yassine Hadjadj-Aoul gave the following tutorial:

- "Analysis of caching strategies for content centric networks" in the International Conference: "The 7th IEEE International Conference on Smart Communications in Network Technologies (SaCoNet)".

Gerardo Rubino gave the following tutorial:

- *Introduction to rare event analysis using Monte Carlo*, G. Rubino, tutorial in 13th International Conference in Monte Carlo & Quasi-Monte Carlo Methods in Scientific Computing (MCQMC 2018), Rennes, France, July 2018.

Yassine Hadjadj-Aoul gave the following seminar presentation:

- "Efficient support of massive IoT deivces' access in future wireless networks" at the Manchester Metropolitan University (MMU).

10.1.6. Leadership within the Scientific Community

- Bruno Tuffin is the co-director of the common lab ALSTOM-Inria since 2014.

- Bruno Tuffin is an elected member of I-SIM council of INFORMS Society.

- Yann Busnel is a member of the CSV (the technical committee) of the Images and Networks Cluster of Brittany, France.

- Gerardo Rubino is a member of the CSV (the technical committee) of the Images and Networks Cluster of Brittany, France.

- Yann Busnel is a member of the Steering Committee of the RESCOM research group at GDR CNRS RSD.

- Yassine Hadjadj-Aoul is a founding member of Special Interests Group "IEEE Sig on Big Data with Computational Intelligence" under the IEEE COMSOC Big Data TC (Since June 2017).

- Yassine Hadjadj-Aoul is a member of the scientific committee of GT ARC (Automatique et Réseaux de Communication) scientific committee (since Nov. 2017).

- Gerardo Rubino is the coordinator of the research action "Analytics and machine learning", in collaboration with Nokia Bell Labs.

10.1.7. Scientific Expertise

- César Viho has reviewed project proposals for the ANR and for CIFRE contracts for the ANRT.
- Yassine Hadjadj-Aoul has reviewed project proposals for the Irish Research Council (COALESCE Research Fund 2019).

10.1.8. Research Administration

- Yann Busnel is the head of « Network System, Cybersecurity and Digital law » Research Department at IMT Atlantique (2017–*).
- Bruno Sericola is responsible for the Inria Rennes-Bretagne Atlantique budget.
- Bruno Sericola is the leader of the research group MAPI (Math Appli Pour l'Info) the goal of which is to improve the collaboration between computer scientists and mathematicians.
- Bruno Sericola is member of the research commission of the academic council of University of Rennes 1.
- César Viho is director of the MAthSTIC (Mathematics, Electronics and Computer Sciences) doctoral school in charge of managing the recruitment of around 1100 PhD students and their activities during their doctorate, in all the concerned areas of the UBL (Université Bretagne Loire).

10.2. Teaching

Master: Bruno Tuffin, MEPS (performance evaluation), 35h, M1, Univ Rennes, France

Master: Bruno Tuffin, GTA (Game Theory and Applications), 15h, M2, Univ Rennes, France

Master: Patrick Maillé, GTA (Game Theory and Applications), 15h, M2, Univ Rennes, France

Master:Rennes 1 Patrick Maillé, Simulation and queuing theory, 25h, M2, IMT Atlantique, France

Licence:Rennes 1 Patrick Maillé, Techniques and models in networks, 20h, L3, IMT Atlantique, France

Master:Rennes 1 Patrick Maillé, Performance Evaluation, 30h, M1, IMT Atlantique, France

Licence:Rennes 1 Yann Busnel, Introduction to Network, 12h, 1st year ENS Rennes, France.

Master:Rennes 1 Yann Busnel, Big Data and Stream Processing, 9h, 3rd year IMT Atlantique , France.

Licence: Bruno Sericola, Mathematics, 14h, L2, IUT/University of Rennes 1, France.

Master: Bruno Sericola, Mathematics, 12h, M2, Istic/University of Rennes 1, France.

Master: Bruno Sericola, Logistic and performance, 12h, M2, Faculté de sciences économiques, Univ of Rennes 1, France

Master: Bruno Sericola, MEPS (performance evaluation), 36h, M1, Univ Rennes, France

Master M1: César Viho, Networks:Rennes 1 from Services to protocols, 36 hours, Istic/University of Rennes 1, France

Master M2: César Viho, Algorithms on graphs, 40 hours, Istic/University of Rennes 1, France

Bachelor L2: César Viho, Network architecture and components, 16 hours, Istic/University of Rennes 1, France

Master, 2nd year: Yassine Hadjadj-Aoul, Scalable Network Infrastructure (SNI), 10 hours, The Research in Computer Science (SIF) master and EIT Digital Master/University of Rennes 1, France

Master, pro 2nd year: Yassine Hadjadj-Aoul, Multimedia streaming over IP (MMR), 48 hours, Esir/University of Rennes 1, France

Master, pro 2nd year: Yassine Hadjadj-Aoul, Multimedia services in IP networks (RSM), 29 hours, Esir/University of Rennes 1, France

Master, pro 2nd year: Yassine Hadjadj-Aoul, Software Defined Networks, 6 hours, Istic/University of Rennes 1, France

Master, 2nd year: Yassine Hadjadj-Aoul, Video streaming over IP, 8 hours, Istic/University of Rennes 1, France

Master: Yassine Hadjadj-Aoul, Introduction to networking (IR), 26 hours, Esir/University of Rennes 1, France

Master: Yassine Hadjadj-Aoul, Mobile and wireless networking (RMOB), 20 hours, Esir/University of Rennes 1, France

Master 2nd year: Yassine Hadjadj-Aoul, Overview of IoT technologies: focus on LPWAN, 2 hours, INSA, France

Master pro 2nd year: Sofiéne Jelassi, Supervision of heterogeneous networks, 32 hours, Istic/University of Rennes 1, France

Master pro 2nd year: Sofiéne Jelassi, Cloud & SDN virtualization, 32 hours, Istic/University of Rennes 1, France

Master pro 2nd year: Sofiéne Jelassi, Multimedia networks, 32 hours, Istic/University of Rennes 1, France

Master, 2nd year: Gerardo Rubino, Scalable Network Infrastructure (SNI), 10 hours, The Research in Computer Science (SIF) master and EIT Digital Master/University of Rennes 1, France

Supelec Rennes 3rd year: Gerardo Rubino, Dependability Analysis, 15 hours.

Master 2nd year: Gerardo Rubino, Quality of Experience, 4 hours, for two different groups of students of the Esir/University of Rennes 1, France

UDELAR, Uruguay: Gerardo Rubino, post-graduate course on queuing models, 21 hours.

10.2.1. Supervision

PhD: Ajit Rai, Availability prediction with logistics, ALSTOM/Université de Rennes 1, Defense in July 2018, supervised by Bruno Tuffin.

PhD: Imad Alawe, "Mobile SDN architecture", Defense in November 2018; supervised by César Viho and Yassine Hadjadj-Aoul, University Rennes 1, Philippe Bertin, B-COM and Davy Darche, TDF.

PhD: Nicolás Jara, "Fault tolerant design of dynamic WDM optical networks", Technical University Federico Santa María (UTFSM) and university of Rennes 1, France. Advisors: R. Vallejos (Chile) and G. Rubino (France). Defended in July 2018.

PhD in progress: Ximun Castoreo, Measurements to check network neutrality, started 10/2018, supervised by Bruno Tuffin.

PhD in progress: Ayman Chouayakh, Jeux d'acteurs et mécanismes d'enchères pour la gestion du spectre dans les réseaux 5G, Orange/IMT Atlantique, started 03/2017, supervised by Patrick Maillé.

PhD in progress: Hiba Dakdouk, Algorithmes asynchrones et économes pour l'optimisation des communications d'un réseau d'objets connectés, Orange/IMT Atlantique, started 11/2018, supervised by Patrick Maillé

PhD in progress: Alassane Samba, Technologies Big Data et modèles prédictifs pour la QoS des réseaux, IMT Atlantique, defended in October 2018, supervised by Yann Busnel, Gwendal Simon and Philippe Dooze (Inria).

PhD in progress: Richard Westerlynck, Analyse répartie et extraction de tendances à grande échelle pour les données massives en santé, IMT Atlantique, defense in 2020, supervised by Yann Busnel and Marc Cuggia (PUPH, CHU Rennes).

PhD in progress: Vasile Cazacu, Calcul distribué pour la fouille de données cliniques, IMT Atlantique, defense in 2020, supervised by Emmanuelle Anceaume (CNRS/IRISA Rennes), Yann Busnel and Marc Cuggia (PUPH, CHU Rennes).

PhD in progress: Corentin Hardy, Device-Assisted Distributed Machine-Learning on Many Cores, started in April 2016; supervisors: Bruno Sericola and Erwan Le Merrer from Technicolor, University Rennes 1.

PhD: Yves Mocquard, Analyse probabiliste de protocoles de population, Defense in December 2018; supervisors: Bruno Sericola and Emmanuelle Anceaume from team Cidre, University Rennes 1.

PhD in progress: Jean-Michel Sanner; Cifre Grant, Orange Labs, "SDN technologies for network services performances adaptation of carriers networks"; started on January 2013.

PhD in progress: Ali Hodroj, Enhancing content delivery to multi-homed users in broadband mobile networks, started in November 2015; supervisors: Bruno Sericola, Marc Ibrahim and Yassine Hadjadj-Aoul, University Rennes 1 and St Joseph University of Beyrouth.

PhD in progress: Jean-Michel Sanner; Cifre Grant, Orange Labs, "SDN technologies for network services performances adaptation of carriers networks"; started on January 2013; Advisors: Y. Hadjadj-Aoul and G. Rubino; University Rennes 1.

PhD in progress: Hamza Ben Ammar, "Socially-aware network and cache resources optimization for efficient media content delivery in Content Centric Networks", started in October 2015; advisors: Yassine Hadjadj-Aoul, Gerardo Rubino and Soraya Ait Chellouche, University Rennes 1.

PhD in progress: Imane Taibi, "Big data analysis for network monitoring and troubleshooting"; started on Nov. 2017; Advisors: G. Rubino, Inria, and Yassine Hadjadj-Aoul, University Rennes 1, and Chadi Ibrahim, Inria.

PhD in progress: Anouar Rkhami, "Data analytics for optimized resources' management in future 5G networks"; started on Oct. 2018; Advisor: Gerardo Rubino and Yassine Hadjadj-Aoul, University Rennes 1, and Abdelkader Outtagarts, Nokia Bell labs.

PhD in progress: Mohamed Rahali, "Machine learning-based monitoring and management for hybride SDN networks"; started on Oct. 2017; Advisors: G. Rubino, Inria, and Sofiène Jelassi, University of Rennes 1.

PhD in progress: Laura Aspirot, "Fluid Approximations for Stochastic Telecommunication Models", University of the Republic, Uruguay. Advisors: E. Mordecki (Uruguay) and G. Rubino (France). Defense in 2019.

PhD in progress: Jorge Graneri, "Mathematical Models for Semantic Memory", University of the Republic, Uruguay. Advisors: E. Mizraji (Uruguay) and G. Rubino (France). Defense in 2019.

10.2.2. *Juries*

Bruno Tuffin was a member of the following PhD defense committees:

- Graciela FERREIRA LEITES MUNDELL. Analysis and Optimization of Highly Reliable Systems. University of the Republic, Montevideo, Uruguay, 2018, rapporteur.

- Robert Salomone, Advances in Monte Carlo Methodology, The University of Queensland, Australia, 2018, rapporteur.

- Jean-Bernard Eytard, Une approche par la géométrie tropicale et la convexité discrète de la programmation bi-niveau : application à la tarification des données dans les réseaux mobiles de télécommunications, Ecole Polytechnique, Novembre 2018, president.

Patrick Maillé was a member of the following PhD defense committees:

- Wilfried YORO. Modeling the correlation between the energy consumption and the end-to-end traffic of services in large telecommunication networks, Telecom SudParis, 2018, rapporteur.

- Àngel SANCHIS CANO, Economic analysis of wireless sensor-based services in the framework of the Internet of Things, Polytechnic University of Valencia, Spain, 2018, rapporteur.

- Kodjo Sena APEKE, Modélisation hybride et multiéchelle pour la prédiction de la réponse d'une tumeur sous traitement en radiothérapie, Décembre 2018, président.

Yann Busnel was a member of the following PhD defense committee:

- Mansour Khelghatdoust, University of Sidney, November 2018, rapporteur.

Bruno Sericola was member of the final selecting board for the recruitment of CNRS researchers in 2018.

César Viho was a member of juries for the recruitment of:

- Young graduate scientists and senior researchers at Inria.
- Associate Professors and senior Professors at ISTIC-Université

Gerardo Rubino was a member of the following PhD defense committees:

- Imen TRIKI, Rôle du vidéo streaming mobile qui dépend du contexte dans l'amélioration de la qualité d'expérience. Université d'Avigon, June 5, 2018. Rapporteur.
- Nadhir Ben Rached. Rare Events Simulations with Applications to the Performance Evaluation of Wireless Communication Systems. Kaust, Saudi Arabia, October 8, 2018. Rapporteur.

10.3. Popularization

Yann Busnel is a member of Development Council of Computer Sciences Master at Université de Nantes (2017–*).

10.3.1. Internal or external Inria responsibilities

- Bruno Tuffin was a member of Inria-MITACS selection committee

10.3.2. Interventions

G. Rubino makes regular presentations to high school students about the research work in general, and specific technical topics in particular. Current talks:

- Randomness as a tool
- Internet as a research problem
- Great challenges in maths: the Riemann Hypothesis
- Great challenges in math/computer science: the "P versus NP" problem

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

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Benoit Combemale has been appointed in 2018 Deputy Editor in Chief of the international journal JOT, and chair of the steering committee of the ACM SIGPLAN conference SLE.
Benoit Baudry was General chair for SSBSE'2018

9.1.1.2. Member of the Organizing Committees

Benoit Combemale has been a co-organizer of the session "Application of Advanced Software Engineering Tools and Methods in the Environmental Sciences" at CMWR'18.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Benoit Combemale has been co-chair for the Industry Day at MODELS 2018, and the GEMOC Workshop at MODELS 2018.

9.1.2.2. Member of the Conference Program Committees

Mathieu Acher:

- 33rd IEEE/ACM International Conference on Automated Software Engineering
- 22nd International Systems and Software Product Line Conference
- 12th International Workshop on Variability Modelling of Software-Intensive Systems

Olivier Barais:

- PC member for ICWE 2018. Full Research Papers
- PC member for ICWE 2018. Short and Vision Papers
- PC member for SAC'2018
- PC member for SecureMDE 2018 workshop at MODELS'18

Benoit Baudry:

- PC member for SPLC 2018
- PC member for SAC 2018

Arnaud Blouin:

- 30th French speaking conference on Human-Computer Interaction (IHM), 2018
- Second International Workshop on Debugging in Model-Driven Engineering at MODELS'2018 (MDEBug), 2018
- Third International Workshop on Human Factors in Modeling at MODELS'2018 (HuFaMo), 2018
- PC member of the ACM Student Research Competition (SRC) at MODELS 2018

Benoit Combemale:

- PB member for MODELS'18
- PC member for ICMT'18
- PC member for ECMFA'18
- PC member for the MiSE'18 workshop at ICSE'18
- PC member for the EXE'18 workshop at MODELS'18
- PC member for the MDEBug'17 workshop at MODELS'18
- PC member for the DevOps'18 workshop

Jean-Marc Jézéquel:

- PC member for SPLC 2018 Industry Track
- PC member for SEAMS 2018

Johann Bourcier:

- PC member for SEsCPS workshop at ICSE, 2018
- PC member for the eCAS workshop at SASO 2018

Noël Plouzeau:

- PC member for ICSA 2018, Technical Track
- PC member for SEAA 2018, Cloud Based Systems and CPS Systems tracks

9.1.2.3. Reviewer

Arnaud Blouin, external reviewers for:

- EICS'18, ICWE'18

Olivier Barais, external reviewers for:

- ASE'18

Johann Bourcier, external reviewers for:

- Models'18

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Benoit Combemale is a member of the editorial board of the journals SoSyM (Springer), COMLAN (Elsevier), and SCP (Elsevier, Advisory Board of the Software Section).

Jean-Marc Jézéquel:

- Associate Editor in Chief of SOSYM
- Associate Editor in Chief of IEEE Computer
- Associate Editor of JSS
- Associate Editor of JOT

Benoit Baudry:

- Associate Editor in Chief of STVR
- Associate Editor in Chief of SOSYM

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9.1.3.2. Reviewer - Reviewing Activities

In addition to his editorial duties, Benoit Combemale is a regular reviewer for the journals ACM Survey, and IEEE Transactions on Software Engineering (TSE).

Arnaud Blouin:

- COMLAN (Computer Languages, Systems and Structures), JVLC (Journal of Visual Languages and Computing), SCP (Science of Computer Programming), KAIS (Knowledge and Information Systems)

Olivier Barais:

- COMLAN (Computer Languages, Systems and Structures), JVLC (Journal of Visual Languages and Computing), Software and Systems Modeling (SoSyM), IEEE Computer

Noël Plouzeau:

- Software and Systems Modeling (SoSyM)

Johann Bourcier:

- Software and Systems Modeling (SoSyM), Journal of System and Software (JSS), IEEE Communication Magazine

9.1.4. Invited Talks

Mathieu Acher:

- *Reverse Engineering Language Product Lines from Existing DSL Variants*, David Méndez-Acuña, José Galindo, Benoit Combemale, Arnaud Blouin, Benoit Baudry, at GDR-GPL 2018
- *Re-engineering Software Variability into Software Product Lines*, Tewfik Ziadi, Mathieu Acher, at ASE 2018 (tutorial: http://www.ase2018.com/?p=tutorials#spl)

Jean-Marc Jézéquel:

- *Keynote speech for the LIG seminar on the Future of Informatics: "On Turning Domain Knowledge into Tools"*

Benoit Combemale:

- Model Execution: Past, Present and Future. Keynote at EXE'18, DK (14/10/18).
- Modeling For Sustainability - Or How to Make Smart CPS Smarter?. Keynote at Models@run.time'18, DK (14/10/18), and invited talk at TU Wien, AT (15/05/18)
- Execution Framework of the GEMOC Studio. Talk at LangDev'18, NL (08/03/18).

9.1.5. Leadership within the Scientific Community

Mathieu Acher is member of the steering committee of SPLC, the major venue in software product line and variability http://splc.net/.
Arnaud Blouin:

- Founding member and member of the GL-IHM (software engineering and human-computer interaction) working group (action spécifique GDR-GPL 2017)

Benoit Baudry organized a dagstuhl-Seminar on the relationship between DevOps and quality assurance from a software engineering perspective https://www.dagstuhl.de/de/programm/kalender/semhp/?semnr=18122.

Benoit Combemale:

- Chair of the Steering committee of the ACM SIGPLAN conference SLE
- Founding member and member of the advisory board of the GEMOC initiative.
- Chair of the Eclipse Research Consortium GEMOC and the Eclipse Project GEMOC Studio.

9.1.6. Scientific Expertise

Olivier Barais is an external expert for the H2020 ENACT project. Olivier Barais provides scientific expertises for DGRI international program (20 proposals per year)

9.1.7. Research Administration

Jean-Marc Jézéquel is Director of IRISA (UMR 6074). He is Coordinator of the academic club of the French Cyber-defense Excellence Cluster, and Director of the Rennes Node of EIT Digital.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

The DIVERSE team bears the bulk of the teaching on Software Engineering at the University of Rennes 1 and at INSA Rennes, for the first year of the Master of Computer Science (Project Management, Object-Oriented Analysis and Design with UML, Design Patterns, Component Architectures and Frameworks, Validation & Verification, Human-Computer Interaction) and for the second year of the MSc in software engineering (Model driven Engineering, Aspect-Oriented Software Development, Software Product Lines, Component Based Software Development, Validation & Verification, *etc.*).

Each of Jean-Marc Jézéquel, Noël Plouzeau, Olivier Barais, Johann Bourcier, Arnaud Blouin, and Mathieu Acher teaches about 200h in these domains, with Benoit Baudry and Benoit Combemale teaching about 50h, for a grand total of about 1300 hours, including several courses at ENSTB, Supelec, and ENSAI Rennes engineering school.

Olivier Barais is deputy director of the electronics and computer science teaching department of the University of Rennes 1. Olivier Barais is the head of the final year of the Master in Computer Science at the University of Rennes 1. Johann Bourcier is co-manager of the Home-Automation option at the ESIR engineering school in Rennes. Arnaud Blouin is in charge of industrial relationships for the computer science department at INSA Rennes.

The DIVERSE team also hosts several MSc and summer trainees every year.

Mathieu Acher gave courses to EJCP (Ecole Jeune Chercheur en Programmation), a well-known, national training school for PhD students https://ejcp2018.sciencesconf.org/resource/page/id/5

9.2.2. Supervision

- PhD in progress: Alejandro Gomez Boix, *Distributed counter-measure against browser fingerprinting*, 2016, B. Baudry, D. Bromberg
- PhD in progress: Manuel Leduc, *Formal and Executable Specification of domain-specific language families*, 2016, O. Barais, B. Combemale
- PhD in progress: Youssou NDiaye, *Modelling and evaluating security in user interfaces*, 2016, N. Aillery, O. Barais, A. Blouin, A. Bouabdallah
- PhD in progress: Jean-Émile Dartois, *Efficient resources management for hybrid cloud computing*, 2016, O. Barais
- PhD in progress: Ludovic Mouline, *Omniscient fault localization in IOT systems using model-driver data analytics*, 2016, O. Barais, Y. Le-Traon, J. Bourcier.
- PhD in progress: Oscar Luis, *Automatic test amplification*, 2016, B. Baudry
- PhD in progress: Alexandre Rio, *Demand Side Management A model driven approach to promote energy self-consumption* , 2016, O. Barais, Y. Maurel
- PhD in progress: Dorian Leroy, *A generic and generative white-box testing framework for model transformations*, 2017, B. Combemale.
- PhD in progress: Fabien Coulon, *Web engineering for domain-specific modeling languages*, 2017, B. Combemale, S. Begaudeau.
- PhD in progress: Romain Lebouc, *Techniques de test front-end en DevOps*, 2018, A. Blouin, N. Plouzeau, A. Ribault

- PhD in progress: June Benvegnu-Sallou, Decision support for the assessment of risks associated with the operation of underground environments, 2018, J-R. De dreuzy, B. Combemale, J. Bourcier.
- PhD in progress: Pierre JeanJean, *Refining simulators by analyzing execution traces of complex systems*, 2018, O. Barais, B. Combemale.
- PhD in progress: Akbar-pranata Alif, *Chaos Engineering for IoT and Network Services*, 2018, O. Barais, J. Bourcier.
- PhD in progress: Antoine Cheron, *Abstractions for linked data and the programmable web*, 2018, O. Barais, J. Bourcier.
- PhD in progress: Gauthier LYAN, *Urban mobility: machine learning for building simulators using large amounts of data*, 2018, J-M. Jééquel, D. Gross Amblard.
- PhD in progress: Hugo Martin, *Learning variability*, 2018, M. Acher.
- PhD: Gwendal Le Moulec, *Synthèse d'applications de Réalité Virtuelle à partir de modèles*, sept. 2018, B. Arnaldi, A. Blouin, V. Gouranton
- PhD: Paul Temple, *Investigate the Matrix: Leveraging Variability to Specialize Software and Test Suites*, dec. 2018, J-M. Jézéquel, M. Acher
- PhD: Kevin Corre, *User controlled trust and security level of Web real-time communications*, May. 2018, O. Barais, G. Sunye

9.2.3. Juries

9.2.3.1. Jean-Marc Jézéquel

was in the examination committee of the following PhD and HDR thesis:

- Jessie carbonnel, November 2018, Univ Montpellier (examiner)
- Paul Temple, December 2018, Univ Rennes I (Advisor)
- Johan Bourcier, HDR, December 2018, Univ Rennes I

9.2.3.2. Mathieu Acher

was in the examination committee of the following PhD thesis:

- Jessie carbonnel, November 2018, Univ Montpellier (examiner)
- Paul Temple, December 2018, Univ Rennes I (co-supervisor)

9.2.3.3. Olivier Barais

was in the examination committee of the following PhD thesis:

- Kevin Corre, May 2018, Univ Rennes I, Supervisor
- Thomas Durieux, Sep 2018, Univ Lille, Reviewer
- Mathieu Allon, Sep 2018, Univ Lille, Reviewer
- Tayeb LEMLOUMA, HDR, June 2018, Univ Lille, President
- Simon Bouget, Oct 2018, Univ Lille, President
- Mounir Chadli, Nov 2018, Univ Rennes I, President
- Arezki Laga, Dec 2018, Univ Bretagne Occidentale, President
- Franck Petitdemange, Dec 2018, Univ Bretagne Sud, President

9.2.3.4. Benoit Baudry

was in the examination committee of the following PhD thesis:

- Hugo Brunelière (IMT), Dec 2018, Reviewer
- Johanna Binti Ahmad (Univ. Putra Malaysia), 2018, Reviewer
- Daniel Schoepe (Chalmers), 2018, Reviewer

9.2.3.5. Benoit Combemale

was in the examination committee of the following PhD thesis:

- Stephanie Challita, Univ Lille 1 (December 2018), Reviewer
- Pablo Inostroza Valdera, Univ. Amsterdam & CWI (November 2018), The Netherlands

9.3. Popularization

- Exhibitions to Open Cloud Forum, Paris 21/03/2018
- Exhibitions to EclipsCon Toulouse 13-14/04 2018
- Exhibitions to Paris Open Source Submit 05-06/12/2018

9.3.1. Internal or external Inria responsibilities

- Olivier Barais was in charge of the recruitment committee for the position of associate professor at the University of Rennes 1 in cyber security.
- Olivier Barais was a member the recruitment committee for the position of associate professor at the University of Nantes in Software Engineering.
- Olivier Barais was a member of the recruitment committee for the position of associate professor at the University of Bordeaux in Software Engineering.

9.3.2. Interventions

- Exhibitions to the Lycée Sévigné to present career paths in Research
- Exhibitions to the "forum des métiers du collège Bourgchevreuil"

9.3.3. Internal action

- Olivier Barais provide one day course on Modern Web Engineering to SED Engineer.

DYLISS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Workshop on Systems Biology Chile-France, Co-organization (A. Siegel) [More details]

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- SWAT4HCLS (2018) Semantic Web and Tools for Health Care and Life Sciences (O. Dameron)
- BBCC (2018): Bioinformatica e Biologia Computazionale in Campania (O. Dameron)
- JFO (2018): Journées Francophones sur les Ontologies (O. Dameron)
- Journée IA et santé, organized by AFIA and AIM (O. Dameron)
- JOBIM (2018): French conference of Bioinformatics (A. Siegel)
- ISCB (2018) International Conference on Systems Biology (A. Siegel)
- WCB (2018) Workshop on Constraint-based methods in Bioinformatics (A. Siegel)
- BIOINFORMATICS (2018) (A. Siegel)
- ICGI 2016: The 13th International Conference on Grammatical Inference [F. Coste]

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- O. Dameron is an associate editor of the Journal of Biomedical Semantics
- A. Siegel is an academic editor of Genes (MDPI)

10.1.3.2. Reviewer - Reviewing Activities

- Artificial Intelligence in Medicine
- Briefings in Bioinformatics
- Journal of Biomedical Semantics
- Journal on Data Semantics
- Journal of Theoretical Biology
- Natural Computing
- PLOS One

10.1.4. Invited Talks

- Meziane Aite. Workshop France-Chile on Systems Biology. *Tools for metabolic network comparison at genome- scale: application on algaes*, Valparaiso, Chile.
- Maxime Folschette. 4th Annual Meeting of the Bioss Workgroup (Journées annuelles du GT Bioss). *GULA: Semantics-Free Learning of a Biological Regulatory Networks from a Synchronous, Asynchronous or Generalized State Graph*. Marseille.
- Clémence Frioux. Invited speaker of weekly seminar: Bioinformatics group at Laboratoire de Recherche en Informatique (LRI). *Investigating host-microbiota cooperation with gap-filling optimization problems*. Orsay.

- Clémence Frioux. Invited speaker at UMR NUtriomics, Institute of Cardiometabolism and Nutrition (ICAN). *Scalable and exhaustive screening of metabolic functions in microbiotas*. Paris.

- Clémence Frioux. Seminar in the Ecology group led by Pr. Pablo Marquet Universida Catolica de Chile. *Scalable and exhaustive screening of metabolic functions in microbiotas*. Santiago, Chile.

- Clémence Frioux. Workshop France-Chile on Systems Biology. *Scalable and exhaustive screening of metabolic functions in microbiotas*. Valparaiso, Chile.

- Clémence Frioux. Journées Scientifiques de Nantes. *Scalable and exhaustive screening of metabolic functions in carried out by microbial consortia*. Nantes.

- Marine Louarn. Workshop France-Chile on Systems Biology. *Integration of omics data for the specification of regulation networks in health; identification of regulatory mechanisms*. Valparaiso, Chile.

- Anne Siegel. National meeting of the French Society of Microbiology. *Several aspects of artificial intelligence : which perspectives for microbiology?*. Paris.

- Anne Siegel. Century Seminar. *Reasoning over biological systems with large-scale and incomplete data*. Marseille.

- Anne Siegel. Journées annuelles du GT Bioss. *Learning boolean rules for the regulatory control of metabolism : a case study*. Marseille.

- Anne Siegel. Séminaire INRA-CATI. *Metabolic network reconstruction for non-model organisms*. INRA.

- Anne Siegel. ECCB worshop Logical modeling of cellular networks. *Learning boolean rules for the regulatory control of metabolism : a case study*. Athens, Greece.

- Anne Siegel. Workshop France-Chile on Systems Biology. *Integrating and querying data with AskOmics*. Valparaiso, Chile.

- Nathalie Théret. *Causality analysis of TGF-β-dependent signaling pathways*. Workshop "Computational System Biology for Cancer", Paris.

- Nathalie Théret. *Computational modeling to identify biomarkers and targets* Workshop DHU2020, Nantes, France

10.1.5. Leadership within the Scientific Community

- Member of the steering committee of the International Conference on Grammatical Inference [F. Coste]

- The team was involved in the foundation of a national working group on the symbolic study of dynamical systems named bioss [web access]. The group gathers more than 170 scientists, from computer science to biology. Three meetings were organized this year (Rennes, Marseille, Paris). The group is supported by two French National Research Networks: bioinformatics (GDR BIM : bioinformatique moléculaire) and informatics-mathematics (GDR IM : Informatique Mathématique).

10.1.6. Scientific Expertise

10.1.6.1. International expertise

- Luxembourg, FNR. Core program [A. Siegel]

- Senegal, CEA-MITIC (Centre d'Excellence Africain en Mathématiques, Informatique et TIC [O. Dameron, reviewed 1 project]

10.1.6.2. National responsibilities

- **Scientific program committee** National Research Agency, CES 45 [A. Siegel]

- **Institutional boards for the recruitment and evaluation of researchers**.
  - National Council of Universities, section 65 [O. Dameron, nominated member].

- **Recruitment committees**.

– Inria Senior Researchers [national committee, A. Siegel]
– Inria Junior Researchers [Saclay, A. Siegel]
– Assistant Professor [Univ. Marseille, A. Siegel]

10.1.6.3. National scientific boards

- Animation of the Systems Biology working group of national infrastructure GDR IM and GDR BIM (Bioss, details above) [A. Siegel].
- Board of directors of the French Society for biology of the extracellular matrix [N. Théret].

10.1.6.4. Local responsibilities

- Scientific Advisory Board of Biogenouest [N. Théret]
- IRISA laboratory (computer science department of Univ. Rennes 1) council [A. Siegel]
- Responsability of the IRISA laboratory "Health-biology" cross-cutting axis [O. Dameron] [More details]
- Elected member of the social action services (ASUR) of Univ. Rennes 1 [C. Belleannée]
- Scientific committee of Univ. Rennes 1 school of medicine [O. Dameron, A. Siegel].

10.1.7. Research Administration

10.1.7.1. Inria Instances

- Inria National evaluation board [A. Siegel, nominated member].
- Equality and diversity Committee, Inria - Responsible of the working group focusing on recruitment procedures [A. Siegel].

10.1.7.2. Prospective working groups

- "Big & Open Data en recherche à l'horizon 2040" foresight working group of PROSPER network [F. Coste].

10.1.7.3. Inria local instances

- Gender equality commission, IRISA & Inria Rennes [A. Siegel, coordinator]
- Inria-Rennes Computer science infrastructure users commission - CUMI-R commission [F. Coste]
- Inria Rennes PHD recruitment (CORDIs) [C. Belleannée]

10.2. Teaching - Supervision - Juries

10.2.1. Teaching track responsibilities

- Coordination of the doctoral school "Biology and Health" of University of Bretagne Loire, Rennes Site 1 [N. Théret]
- Coordination of the master degree "Bioinformatics and genomics", Univ. Rennes1 [O. Dameron]

10.2.2. Course responsibilities

- "Internship", Master 1 in Computer Sciences, Univ. Rennes 1 [C. Belleannée]
- "Supervised machine learning", Master 2 in Computer Sciences, Univ Rennes 1 [F. Coste]
- "Atelier bioinformatique", Licence 2 informatique, Univ. Rennes 1 [O. Dameron]
- "Bioinformatique pour la génomique", 2nd year school of medicine, Univ. Rennes 1 [O. Dameron]
- "Bases de mathématiques et probablité" and "Méthodes en informatique", Master1 in public health, Univ. Rennes 1 [O. Dameron]
- "Intégration: Remise à niveau en informatique", Master 1 in bioinformatics, Univ. Rennes 1 [O. Dameron]
- "Programmation en Python", Master 1 in Public Health, Univ. Rennes 1 [O. Dameron]

- "Programmation impérative en Python", Master 1 in bioinformatics, Univ. Rennes 1 [O. Dameron]

- "Système informatique GNU/Linux", Master 1 in bioinformatics, Univ. Rennes 1 [O. Dameron]

- "Semantic Web and bio-ontologies", Master 2 in bioinformatics, Univ. Rennes 1 [O. Dameron]

- "Internship", Master 2 in bioinformatics, Univ. Rennes 1 [O. Dameron]

- Master: A. Siegel, Integrative and Systems biology, Master 2 in bioinformatics, Univ. Rennes 1 [A. Siegel]

- Micro-environnement Cellulaire normal & pathologique, Master 2 in Biologie cellulaire et Moléculaire, Univ. Rennes 1 [N. Théret]

10.2.3. Teaching

Licence: C. Belleannée, Langages formels, 20h, L3 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Projet professionnel et communication, 16h, L1 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Enseignant référent, 20h, L1 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Spécialité informatique : Functional and immutable programming , 42h, L1 informatique, Univ. Rennes1, France

Licence: O. Dameron, Biostatistiques, 12h, 1st year school of medicine, Univ. Rennes 1, France

Licence: O. Dameron, Bioinformatique pour la génomique, 2h, 2nd year school of medicine, Univ. Rennes 1, France

Licence: O. Dameron, "Atelier bioinformatique", 8h, Licence 2 informatique, Univ. Rennes 1, France

Master: O. Dameron, "Intégration: Remise à niveau en informatique", 14h Master 1 in bioinformatics, Univ. Rennes 1, France

Licence: C. Frioux, Projet Python, 18h, L3 ENSAI, France.

Licence: C. Frioux, Techniques d'optimsiation, 12h, L3 ENSAI, France.

Licence: M. Louarn, Introduction à la BioInformatique, 2h, L2 Informatique, Univ. Rennes 1, France.

Licence: M. Louarn, TPs Python, 8h, L1 Biologie, Univ. Rennes 1, France.

Licence: H. Talibart, Programmation scientifique Python, 24h, L1, Rennes1, France.

Licence: M. Wery, TPs Python, 36h, L1 Biologie, Univ. Rennes 1, France

Master: O. Dameron, "Programmation impérative en Python", 82.25h Master 1 in bioinformatics, Univ. Rennes 1, France

Master: C. Belleannée, Programmation logique avec contraintes et algorithmes génétiques, 40h, M1 informatique, Univ. Rennes1, France.

Master: C. Belleannée, Algorithmique du texte et bioinformatique, 10h, M1 informatique, Univ. Rennes1, France

Master: L. Bourneuf, Projet, 20h, M1 Santé Publique, France.

Master: F. Coste, Supervised machine learning, 15h, M2 Computer Sciences, Univ Rennes 1, France

Master: O. Dameron, "Object-oriented programming", 20h Master 1 in bioinformatics, Univ. Rennes 1, France

Master: O. Dameron, "Système informatique GNU/Linux", 20h, Master 1 in bioinformatics, Univ. Rennes 1, France

Master: O. Dameron, 8h, "Internship", Master 1 in bioinformatics, Univ. Rennes 1

Master: O. Dameron, "Bases de mathématiques et probablité", 18.75h, Master1 in public health, Univ. Rennes 1

Master: O. Dameron, "Programmation impérative en Python", 3h Master 1 in public health, Univ. Rennes 1, France

Master: O. Dameron, 21h, "Semantic Web and bio-ontologies", Master 2 in bioinformatics, Univ. Rennes 1

Master: O. Dameron, 10h, "Internship", Master 2 in bioinformatics, Univ. Rennes 1

Master: C. Belleannée, 20h, "Internship", Master 1 Computer Sciences, Univ. Rennes 1, France

Master: M. Louarn, Informatique Médicale Avancée, 2h, M1 Médecine, Univ. Rennes 1, France.

Master: M. Louarn, Object-oriented programming, 25h, M2 bioinformatique et génomique, Univ. Rennes 1, France.

Master: A. Siegel, Integrative and Systems biology, 25h, M2, Univ. Rennes 1, France.

Doctorat: A. Siegel, Reasoning over biological systems with large-scale and incomplete data, 3h, Thematic Research School on "advances in Systems & Synthetic Biology", Evry'18.

10.2.4. Supervision

PhD : Clémence Frioux, *Investigating host-microbiota cooperation with gap-filling optimization problems.*, started in Oct. 2015, defended on Nov. 19 2018, supervised by A. Siegel [11].

PhD in progress : Yann Rivault, *Analyse de trajectoires de soins à partir de bases de données médico-administratives : apport d'un enrichissement pas des connaissances biomédicales issues du Web des Données*, started in Oct. 2015, defense expected 28th January 2019, supervised by O. Dameron and N. Lemeur.

PhD in progress : Lucas Bourneuf, *Justifiable graph decomposition to assist biological network understanding*, started in Oct. 2016, supervised by J. Nicolas.

PhD in progress : Hugo Talibart, *Learning grammars with long-distance correlations on proteins*, started in Nov. 2017, supervised by F. Coste and J. Nicolas.

PhD in progress : Mael Conan, *Predictive approach to assess the genotoxicity of environmental contaminants during liver fibrosis*, started in Oct. 2017, supervised by S. Langouet and A. Siegel.

PhD in progress: Marine Louarn, *Intégration de données génomiques massives et hétérogènes, application aux mutations non-codantes dans le lymphome folliculaire*, started in Oct. 2017, supervised by A. Siegel, T. Fest (CHU) and O. Dameron.

PhD in progress : Méline Wery, *Methodology development in disease treatment projects.* , started in Oct. 2017, supervised by O. Dameron, C. Bettembourg (Sanofi) and A. Siegel.

PhD in progress : Nicolas Guillaudeux, *Comparer des structures de gènes pour la prédiction de transcrits isoformes codants et non-codants*, started in Oct. 2018, supervised by O. Dameron, C. Belleannée and S. Blanquart.

PhD in progress : Pierre Vignet, *Identification et conception expérimentale de nouveaux agents thérapeutiques à partir d'un modèle informatique des réseaux d'influence du TGF-β dans les pathologies hépatiques chroniques* , started in Dec. 2018, supervised by N. Théret and A. Siegel.

10.2.5. Juries

- *Referee of Ph-D thesis*. C. Biane, Univ Paris Saclay [A. Siegel]. A. Bonnafoux, ENS Lyon [A. Siegel]. B. Miraglio, Univ Nice [A. Siegel]. G Personeni, Univ. Lorraine [O. Dameron].
- *Member of Ph-D thesis juries*. C. Marchet, Univ Rennes [A. Siegel]. M. Pichene, Univ. Rennes [A. Siegel].
- *Refererr of habilitation thesis juries*. A. Baudot, Univ. Marseille.
- *Member of medicine doctorate juries* A. El Matoutat [O. Dameron].

10.2.6. Interns

- Internship, from Jan 2018 until Jun 2018. Supervised by I. Vigalatti and O. Dameron. Student: Guillaume Alviset. Subject: Selecting SPARQL endpoints for faster processing of federated queries.

- Internship, from Jan 2018 until Jun 2018. Supervised by A. Siegel. Student: Aurelien Cornet. Subject: Inférence de réseaux biologiques multi-échelles.

- Internship, from Apr 2018 until Jul 2018. Supervised by A. Siegel, F. Legeai and J. Bobe. Student: Clara Delahaye. Subject: Intégration des réseaux géniques de Oryzias latipes impliqués dans la fécondité et régulés par le microARN-202-5p.

- Internship, from Apr 2018 until Jul 2018. Supervised by A. Siegel and R. Munoz. Student: Emile Dumont. Subject: Reconstruction du réseau métabolique de bactéries cellulolytiques du rumen : exploration des voies de dégradation de la cellulose et de l'hémicellulose.

- Internship, from Jan 2018 until Jun 2018. Supervised by C. Frioux. Student: Enora Fremy. Subject: Etude du potentiel de coopération métabolique entre hôte et microbiote à l'échelle fonctionnelle.

- Internship, from Jan 2018 until Jun 2018. Supervised by C. Belleannée and S. Blanquart. Student: Nicolas Guillaudeux. Subject: Prédiction de transcriptome : analyse comparative multi-gènes, orthologues.

- Internship, from Apr 2018 until Jul 2018. Supervised by J. Got. Student: Teo Lemane. Subject: Curation du réseau métabolique de T. Lutea via des méthodes hétérogènes.

- Internship, from Jan 2018 until Jul 2018. Supervised by N. Théret, J. Nicolas and L. Bourneuf. Student: Linh Chi Nguyen. Subject: Compression of large interaction graphs for the identification of protein modules in the extracellular matrix.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Science en Cour[t]s (*http://sciences-en-courts.fr/*) Many of our on-going and former Ph-D students (M.Wery, L. Bourneuf, A. Antoine-Lorquin, C. Bettembourg, J. Coquet, V. Delannée, G. Garet, S. Prigent) have been heavily involved in the organization of a local Popularization Festival where Ph.D. students explain their thesis via short movies. The movies are presented to a professional jury composed of artists and scientists, and of high-school students. Previous years films can be viewed on the festival web-site [More details]

10.3.2. Interventions

- "J'peux pas j'ai informatique", Welcoming of high-school students to leverage stereotypes about computer sciences, Apr. 2018 [A. Siegel]

- Atelier Google Numerics, Rennes, table ronde *Enseigner le code dès le plus jeune âge*, Oct. 2018 [A. Siegel]

- "Rencontre des jeunes mathématiciennes", ENS Rennes, 2-days workshop for high-school girl students in mathematics. Introduction to gender stereotypes in mathematics, Nov. 2018 [A. Siegel]

10.3.3. Creation of media or tools for science outreach

- Le Language comme inspiration [youtube link] [H. Talibart]
- Les aventuriers du remède perdu [youtube link] [M. Louarn and M. Wery]

EASE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- Local Arrangement Chair, AdHoc Now 2018, F. Weis

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- PC member of AdHoc Now 2018, F. Weis
- PC member of VTC 2018, ICIN 2018, AdHoc Now 2018, ICON 2018, JM. Bonnin

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

- Mobile Networks and Applications, IEEE transactions on Mobile Computing, Simulation Modeling Practice and Theory, Computer Standards & Interfaces, an international journal on Engineering Science and Technology, JM. Bonnin

9.1.4. Invited Talks

- Invited talk at Mairie de Paris (June 2018): "Open Environment: Coopération par interactions locales", C. Couturier
- Invited talk at Inria/INRA Workshop (Feb. 2018), "Environnements auto descriptifs : une approche alternative pour l'IoT", P. Couderc
- Invited in a round table at IoT World (March 22, Paris) : "Voitures connectées : quels défis technologiques pour la mobilité urbaine?", JM. Bonnin
- Invited talk at IoT Tunisia workshop (April 26, Tunis), JM. Bonnin
- Keynote Speech at IoT Tunisia forum (April 27, Tunis): "L'IoT au service de la mobilité", JM. Bonnin
- Invited at a round table (May 24, Rennes) in the "Cybersécurité des Véhicules Autonomes et Connectés" workshop organized by Id4Car, JM. Bonnin
- Invited talk at summer school "Cooperative Interacting Vehicles" (September 2018, Loire Valley, France) : "Communication for cooperation", JM. Bonnin
- Invited talk at Automotive 2018 (October 18, Versailles), JM. Bonnin
- Invited lecture at Department of Electrical Engineering and Postgraduate Program in Electrical Engineering, Faculty of Engineering Udayana University (October 24, Bali) : "Autonomous Vehicle in the Smart City Ecosystem", JM. Bonnin
- Keynote speech at ICSGTEIS'2018 (October 25, Bali) : "Smart City: A Digital Mobility (R) Evolution", JM. Bonnin

9.1.5. Scientific Expertise

- Head of the scientific committee of InOut 2018, JM. Bonnin
- Member of the scientific council of the GIS ITS, JM. Bonnin
- Member of the scientific council the Id4Car cluster, JM. Bonnin

- Scientific advisor of the YoGoKo startup, JM. Bonnin
- Co-head of "the pole Digital Society of the MSHB" (Maison des Sciences de l'Homme de Bretagne), JM. Bonnin
- Project evaluation for ANR, Belgium, Quebec, Id4Car, BPI, JM. Bonnin
- Expert for CSV board of "Pôle Images et Réseaux", projects reviewing and selection, strategic roadmap definition, P. Couderc

9.1.6. Research Administration

- Head of the Networks, Telecommunication and service department at IRISA, JM. Bonnin
- Member for the IRISA Laboratory Council, JM. Bonnin
- Member of the scientific council of ECAM (Engineering school), JM. Bonnin

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- L2/L3: network computing (lectures, tutorials, labs), 250 hours, F. Weis, Univ. Rennes 1
- Master 2: Wireless LANs, F. Weis, 30 hours, M2, IMT Atlantique
- Master 2: Pervasive computing and IoT system architectures, 4 hours+48 hours including project supervision, P. Couderc, Univ. Rennes 1
- Master 1: Network programming (lectures, tutorial, labs), 78 hours, Y. Maurel, Univ. Rennes 1
- L3/M2: network communications protocol for building automation (lectures, labs), 80 hours, Y. Maurel
- Master 2: Software engineering (lectures, tutorial, labs), 82 hours, Y. Maurel
- Master 2 : Mobility management in the Internet, JM. Bonnin, IMT Atlantique
- Master 2 Smart Mobility : Communications for ITS, JM. Bonnin, IMT Atlantique
- Master 2 IoT: Smart City, JM. Bonnin, ENSI Tunis
- Continuous training: Communications for Autonomous and Cooperative vehicle, Communications for ITS, JM. Bonnin, IMT Atlantique
- Master 1: Network programming (lab and project), 72 hours, C. Couturier, IMT Atlantique
- Master 1: IP networks (lectures, tutorial), 24 hours, C. Couturier, IMT Atlantique
- Master 2: Enterprise Network Design, 12 hours, C. Couturier, IMT Atlantique
- Master 2: Bid to Call for Tender, 12 hours, C. Couturier, IMT Atlantique
- Master 2: Supervision of the Networking and Telecom curriculum of FIP3A, C. Couturier, IMT Atlantique
- Master 2: Tools for cloud computing , 18 hours, C. Couturier, IMT Atlantique

9.2.2. Supervision

PhD: Zaineb Lioune, "Une Architecture pour des Services e-Santé évolutifs dans le cadre des Maisons Intelligentes", Frédéric Weis, Tayeb Lemlouna (UR1) and Philippe Roose (University of Pau), Defended on June 30, 2018

PhD: Steve Muller, "Risk Monitoring and Intrusion Detection for Industrial Control Systems", Jean-Marie Bonnin, co-supervision with Y. Le Traon at University of Luxembourg, defneded on March 26, 2018

PhD: Saad El Jaouhari, "A secure design of WoT services for Smart Cities", Jean-Marie Bonnin, co-supervision with IRISA OCIF group, defended on Dec. 13, 2018

PhD in progress: Indra Ngurah, Car-based Data Collection for Low Energy Devices (Car-based DC4LED), May 2016, Jean-Marie Bonnin

PhD in progress: Christophe Couturier, "Frugal networking for cooperative autonomy", Nov. 2016, Jean-Marie Bonnin

PhD in progress: Alexandre Rio, "Modélisation des activités de site consommateur d'énergie", Octobre 2016, Olivier Barais (UR1) and Yoann Maurel

PhD in progress: Rodrigo Silva, "Mécanisme de décision multi-critères pour le placement de flux en environnement hétérogène et changeant", Nov. 2015, Jean-Marie Bonnin

PhD in progress: Nejm Frigui, "Maintenance autonomique du réseau programmable d'accès optiques de très haut débit", Jan. 2016, Jean-Marie Bonnin

9.2.3. Juries

PhD: Rania Ben Hadj, "Gestion des conflits dans une plateforme ubiquitaire orientée services", Univ. Grenoble, F. Weis, referee, April 2018

PhD: Rania Ben Hadj, "Gestion des conflits dans une plateforme ubiquitaire orientée services", Univ. Grenoble, Y. Maurel, examiner, April 2018

PhD: Mouna Gassara, "Proactive Security in new Generations of Wireless Networks", National Engineering School of Sfax, Tunisia, Jean-Marie Bonnin, referee, Nov. 2018

PhD: Mourad Lesious, "Highlight and Execute Suspicious Paths in Android Malware", IMT Atlantique, examiner, Dec. 2018

HDR: Emmanuel Bertin, "La transformation numérique des télécoms : synthèse et perspectives", Université Paris-Sorbonne, referee, Feb. 2019

HDR: Sonia Mettali Gammar, "Approches pour le routage dans les réseaux 802.11 et les réseaux orientés contenus", referee, Dec. 2018

FLUMINANCE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- J. Erhel organized with J-R. de Dreuzy (OSUR), T. Le Borgne (OSUR) and G. Pichot (Inria) the international conference CWMR (Saint-Malo, France, June 2018).
- J. Erhel organized with T. Faney (IFPEN) and A. Michel (IFPEN) a workshop on reactive transport (Paris, France, February 2018).
- E. Mémin organized the national colloquium on data assimilation (Rennes, september 2018).

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Jocelyne Erhel

- international advisory committee of the parallel CFD conferences (Indianapolis, USA, May 2018).
- program committee of the workshop Visualization in Environmental Sciences 2018 (co-event of EuroVis)
- scientific committee of the conference JEMP (Nantes, October 2018)
- Scientific Committee of the workshop "Parallel solution methods for systems arising from PDEs" (Marseille, september 2019)

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Jocelyne Erhel

- member of the editorial board of ETNA.
- member of the editorial board of ESAIM:Proceedings and Surveys.

Etienne Mémin

- Associate editor for the Int. Journal of Computer Vision (IJCV)
- Associate editor for the Image and Vision Computing Journal (IVC)

9.1.3.2. Reviewer - Reviewing Activities

Jocelyne Erhel: Reviewer for the journals Computational Geosciences, Software X, Parallel Computing
Dominique Heitz: Reviewer for Exp. in Fluids, Fire Technologies
Etienne Mémin: Reviewer for Tellus-A, Journ. of Fluid Mech., Im. Vis. Comp., Exp. in Fluids, Journ. of Comp. Phys.
Gilles Tissot: Reviewer for Journal of Sound and Vibration, Fluid Dynamics Research.

9.1.4. Invited Talks

Werner Bauer

- Gung Ho Network Meeting, UK, July 2018

Jocelyne Erhel

- Workshop on analysis, Rennes, France, January
- Scientific Days of Inria, Bordeaux, France, June

Dominique Heitz

- CCFTL 2018, Dourdan, France, September 17-21, 2018. Keynote lecture
- Active Flow and Combustion Control 2018, TU Berlin, Germany, September 19-21, 2018. Keynote lecture

Roger Lewandowski

- Colloquium Virginia Tech (mars 2018)
- Colloquium Pisa (Novembre 2018)
- Kolmogorov Days in Évry 2018, September 26-28, 2018, Évry , France.

Etienne Mémin

- Classical and Modern Results in Nonlinear Filtering and Applications, Imperial College London, November 2018, GB.
- ECCM - ECFD 2018 - 6th European Conference on Computational Mechanics - 7th European Conference on Computational Fluid Dynamics. Glasgow, GB.
- In Particle methods and data assimilation, Imperial College London, May 2018, GB.

9.1.5. *Leadership within the Scientific Community*

- J. Erhel is scientific coordinator of the website Interstices (since June 2012). https://interstices.info.

9.1.6. *Scientific Expertise*

- J. Erhel is a member of the scientific council of IFPEN, since April 2016.

9.1.7. *Research Administration*

Jocelyne Erhel

- correspondent of Maison de la Simulation for Inria Rennes.
- correspondent of AMIES for Inria Rennes, from September 2015.
- member of the maths thesis committee of IRMAR, from January 2017.

Dominique Heitz

- Responsible of the Irstea ACTA Team
- Member of Pôle Cristal scientific council
- Member of Irstea OPAALE research unit Executive Committee
- Member of Irstea center of Rennes Executive Committee

Roger Lewandowski

- Président du Comité de liaison du groupe GAMNI-SMAI
- Président of the Blaise Pascal award jury
- Président of GAMNI-SMAI PhD thesis award
- Corresponding person of the SMAI in Rennes
- Responsible of the group "Mathematical modeling" of IRMAR
- Member of the scientific council of IRMAR,
- Member of Mathematical teaching council of U. Rennes I
- Member of the scientific council of the Henri Lebesgue Centre

Etienne Mémin
- Member of the scientific council of LEFE-MANU action of CNRS INSU
- Member of the comity GAMNI-SMAI

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Jocelyne Erhel, Optimisation, 24h, niveau L3, ENSAI Rennes

Licence : Dominique Heitz, Mécanique des fluides, 30h, niveau L2 INSA Rennes

Master: Jocelyne Erhel, arithmétique flottante, 4h, niveau M1, INSA Rennes

Master : Dominique Heitz, Mécanique des fluides, 25h, niveau M1, Dep GMA INSA Rennes

Master: Roger Lewandowski, Euler and the Navier-Stokes equations, M2, master « fondamental mathematics ».

Master : Etienne Mémin, Analyse du mouvement, Master Informatique, 15h, niveau M2, Université de Rennes 1.

Master : Etienne Mémin, Vision par ordinateur , 15h, niveau M2, ESIR Université de Rennes 1.

Master : Gilles Tissot, mathematics for acoustics, 20h, niveau M1, Université du Mans.

9.2.2. Supervision

PhD in progress: Pierre-Marie Gibert, University of Lyon, October 2015, co-advisors D. Tromeur-Dervout and Jocelyne Erhel.

PhD in progress: Bastien Hamlat, University of Rennes 1, October 2016, co-advisors Jocelyne Erhel and A. Michel.

PhD in progress : Benoit Pinier, Scale similarity and uncertainty for Ocean-Atmosphere coupled models, started October 2014, supervisors: Roger Lewandowski, Etienne Mémin

PhD in progress : Pranav Chandamouli, Turbulent complex flows reconstruction via data assimilation in large eddy models, started October 2015, Dominique Heitz, Etienne Mémin.

PhD in progress : Romain Schuster, Large-scale fluid motion estimation, started October 2016, Dominique Heitz, Etienne Mémin.

PhD in progress : Long Li, Data assimilation and stochastic transport for the upper ocean dynamics, started November 2017, Etienne Mémin.

PhD in progress : Yacine Ben Ali, Variational assimilation of RANS models for wind engineering, started November 2017, Dominique Heitz, Etienne Mémin, Gilles Tissot.

PhD in progress : Dinh Duong Nguyen, Regular and singular solutions of Navier-Stokes equations with eddy viscosity, started September 2017 , Roger Lewandowski.

PhD in progress : Robin Billard, Modelling of non-conventional perforated acoustic liners, Université du Mans, started December 2017, Gilles Tissot.

9.2.3. Juries

Johan Carlier
- Kevin Chatelain, PhD, Polytech'Orléans, (examinateur)

Jocelyne Erhel
- Jérôme Carrayrou, HdR, Univ. Strasbourg (examinatrice)
- Nicolas Peton, PhD, Univ. Paris (rapporteur)
- Samuel Corre, PhD, INSA Rennes (examinatrice)
- G. Moreau, PhD, Univ. Lyon (examinatrice)

Dominique Heitz

- Jianhua Fan, PhD, INSA de Rennes (Rapporteur).

Roger Lewandowski

- Charles Pelletier, PhD Univ. Grenoble Alpes(Rapporteur)

Etienne Mémin

- Pranav Chandramouli, PhD U. Rennes I (Examinateur)
- Musaab Khalid, PhD U. Rennes I (Examinateur),

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

Jocelyne Erhel

- member of the Inria local committee for health and safety (référent chercheur) 2016-2018.
- member of the Inria administrative commission (CAP) for researchers, from January 2016.
- member of the Inria national committee for secondment, 2016.

Etienne Mémin

- Responsible of the "Commission Développement Technologique" Inria Rennes
- Member of the "Commission Personnel" Inria-IRISA Rennes

9.3.2. Education

Jocelyne Erhel

- présidente du jury du rallye de mathématiques du CNED, since 2017.

9.3.3. Interventions

Jocelyne Erhel

- talk about melting ice caps, general public, Musée des Arts et Métiers, March 2018.
- talk about spreading epidemics, stage de collégiens, January and February 2018.
- contribution to website redesign of Interstices, 2017-2018.

9.3.4. Creation of media or tools for science outreach

Jocelyne Erhel

- scientific coordinator of the website Interstices (since June 2012).
- contribution to website redesign of Interstices, 2017-2018.

GALLINETTE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- N. Tabareau has co-organized (with Matthieu Sozeau) the Coq Workshop as part of FLoC 2018.
- A. Mahboubi has co-chaired (with Jeremy Avigad) the ITP 2018 conference, part of FLoC 2018.

8.1.1.2. Member of the Organizing Committees

- A. Mahboubi has co-organized (with Andrej Bauer, Martin Escardó and Peter Le Fanu Lumsdaine) the Dagsthul seminar 19341, Formalization of Mathematics in Type Theory.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- A. Mahboubi has served in the FLoC 2018 Program Committee and Workshops Committee.

8.1.2.2. Member of the Conference Program Committees

- N. Tabareau has been a member of the program committee of FSCD'18 and ICFP'18 (External Review Committee).
- A. Mahboubi has been a member of the program committee of the CPP 2018 and CICM 2018 conferences, and of the TYPES 2018 and HOTT/UF 2018 workshops.

8.1.2.3. Reviewer

- N. Tabareau has served as an external reviewer for MFCS'18, WoLLIC'18.
- A. Mahboubi has served as external reviewer for the post-proceedings of TYPES 2017.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- A. Mahboubi is a member of the editorial board of the Journal of Automated Reasoning.
- A. Mahboubi is associate editor of the Progress in Computer Science and Applied Logic series.

8.1.3.2. Reviewer - Reviewing Activities

- A. Mahboubi has served as reviewer for the Journal of Automated Reasoning, and for the Annals of Mathematics and Artifical Intelligence.
- G. Munch-Maccagnoni has served as reviewer for the Journal of Automated Reasoning, and for Logical Methods in Computer Science.

8.1.4. Invited Talks

- A. Mahboubi has given an invited talk at the conference in honour of Thomas C. Hales on the occasion of his 60th birthday.
- A. Mahboubi has given an invited course at the Journées Nationales du Calcul Formel 2018.
- A. Mahboubi has given an invited course at the 19th Journées Louis Antoine.
- A. Mahboubi and G. Munch-Maccagnoni have given invited talks in the seminar organized by Xavier Leroy at the Collège de France in December.
- G. Munch-Maccagnoni has given an invited talk at the Journées Inaugurales du GT Scalp in November.

- G. Munch-Maccagnoni has given an invited talk at the seminar of the Celtique team in Rennes in October.
- G. Munch-Maccagnoni has given an invited talk at the seminar of the Gallium team in Paris in June.
- G. Munch-Maccagnoni has given an invited talk at the Logic and Semantics seminar at the University of Cambridge in June.

8.1.5. Leadership within the Scientific Community

- A. Mahboubi is a member of the scientific committee of the GdR Informatique-Mathématiques.
- A. Mahboubi is MC member for the COST Action CA15123 EUTypes, and a member of the core managment group of the project. She is leading the working group "Type-Theoretic Tools".

8.1.6. Research Administration

- A. Mahboubi has served in the Inria commitee examining the "Candidatures en détachements".
- A. Mahboubi has served as internal examiner in the jury of two "Maître de conférence" positions at Université de Nantes.
- A. Mahboubi has served in the jury of an assistant professor position in computer science at Stockholm University (Sweden).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence : Julien Cohen, Discrete Mathematics, 48h, L1 (IUT Informatique), IUT Nantes, France

Licence : Object oriented programming, 32h, L3 (Ingineering school), Polytech Nantes, France

Master : Functional programming, 18h, M1 (Ingineering school), Polytech Nantes, France

Master : Tools for softaware engineering (proof, test, code management), 20h, M1 (Ingineering school), Polytech Nantes, France

Licence : Rémi Douence, Object Oriented Programming Project, 45h, L1 (apprenticeship), IMT-Atlantique, Nantes, France

Licence : Rémi Douence, Object Oriented Design and Programming, 25h , L3 (engineers), IMT-Atlantique, Nantes, France

Licence : Hervé Grall, Object Oriented Design and Programming, 25h , L3 (engineers), IMT-Atlantique, Nantes, France

Licence : Rémi Douence, Data Structures and Algorithms, 20h , L2 (engineers), IMT-Atlantique, Nantes, France

Licence : Rémi Douence, GUI, 20h, L2 (engineers), IMT-Atlantique, Nantes, France

Licence, Master : Hervé Grall, Modularity and Typing, 40h, L3 and M1, IMT-Atlantique, Nantes, France

Licence : Guilhem Jaber, Computer Tools for Science, 36h, L1, Université de Nantes France

Licence : Guilhem Jaber, Computer Architecure, 36h, L3, Université de Nantes France

Master : Hervé Grall, Service-oriented Computing, 40h, M1 and M2, IMT-Atlantique, Nantes, France

Master : Rémi Douence, Functional Programming with Haskell, 20h, M1 (engineers), IMT-Atlantique, Nantes, France

Master : Rémi Douence, Functional Programming with Haskell, 20h, M1 (apprenticeship), IMT-Atlantique, Nantes, France

Master : Rémi Douence, Introduction to scientific research in computer science (Project: an Haskell interpreter in Java), 45h, M2 (apprenticeship), IMT-Atlantique, Nantes, France

Master : Hervé Grall, Research Project - Certified Programming in Coq, 90h (1/3 supervised), M1 and M2, IMT-Atlantique, Nantes, France

Master : Nicolas Tabareau, Homotopy Type Theory, 24h, M2 LMFI, Université Paris Diderot, France

Master : Guilhem Jaber, Verification and Formal Proofs, 18h, M1, Université de Nantes, France

8.2.2. Supervision

PhD : Simon Boulier, Extending Type Theory with Syntactical Models, IMT Altantique, 29 Nov 2018, advisor: Nicolas Tabareau

PhD in progress : Antoine Allioux, Coherent Structures in Dependent Type Theory and Higher Category Theory, Université Paris Diderot, advisors: Yves Guiraud and Matthieu Sozeau

PhD in progress : Gaetan Gilbert, A new foundation for the Coq proof assistant based on the insight of Homotopy Type Theory, IMT Atlantique, advisors: Matthieu Sozeau and Nicolas Tabareau

PhD in progress : Ambroise Lafont,Towards an unbiased approach to specify, implement, and prove properties on programming languages, IMT Atlantique, advisors: Tom Hirschowitz and Nicolas Tabareau

PhD in progress: Xavier Montillet, Rewriting theory for effects and dependent types, Univ Nantes, advisors: Guillaume Munch-Maccagnoni and Nicolas Tabareau

PhD in progress: Théo Winterhalter, Extending the flexibility of the universe hierarchy in type theory, Univ Nantes, advisors: Matthieu Sozeau and Nicolas Tabareau

PhD in progress: Igor Zhirkov, Certified Refactoring of C in the Coq proof assistant, advisors: Rémi Douence and Julien Cohen.

PhD in progress: Joachim Hotonnier, Deep Specification for Domain-Specific Modelling, advisors: Gerson Sunye (Naomod team), Massimo Tisi (Naomod team), Hervé Grall

8.2.3. Juries

- A. Mahboubi has served as reviewer for the PhD of Andrea Gabrielli, defended October 22nd at Università di Firenze.
- A. Mahboubi has served as external member on the PhD jury of Pierre Boutry, defended November 13th at Université de Strasbourg.
- A. Mahboubi has served as external member on the PhD jury of Simon Boulier, defended November 29th at IMT Atlantique.
- A. Mahboubi has served as external member on the PhD jury of Boris Djalal, defended December 3rd at IMT Atlantique.
- J. Cohen has served as external member on the PhD jury of Thibaut Girka, defended July 3rd at Université Paris Diderot.

8.3. Popularization

8.3.1. Interventions

- A. Mahboubi is working with composer Alessandro Bossetti and students of the professional high-school Lycée Michelet, on a project "Art and Mathematics", supported by the Athenor theater.

GENSCALE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

- JOBIM 2018: French symposium of Bioinformatics [P. Peterlongo]
- 2018 IEEE International Conference on Bioinformatics and Biomedicine [D. Lavenier]
- 9th International Workshop on Biological Knowledge Discovery from Big Data [D. Lavenier]
- International Work-Conference on Bioinformatics and Biomedical Engineering [D. Lavenier]
- 11th International Conference on Bioinformatics and Computational Biology (BICOB-2019) [R. Andonov]

10.1.1.2. Reviewer

- RECOMB 2018 [P. Peterlongo]
- SEQBIO 2018 [P. Peterlongo]
- RCAM 2018 [P. Peterlongo]
- ECCB 2018 [P. Peterlongo]

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

- Bioinformatics [P. Peterlongo, D. Lavenier]
- BMC Bioinformatics [D. Lavenier]
- BMC Genomics [D. Lavenier, F. Legeai]
- Briefing in Bioinformatics [D. Lavenier]
- Current Bioinformatics [D. Lavenier]
- IEEE/ACM Transactions on Computational Biology and Bioinformatics [D. Lavenier]
- Nature Scientific Reports [F. Legeai]

10.1.3. Invited Talks

- C. Marchet, *A highly scalable data structure for read similarity computation and its application to marine holobionts*, EEB group meeting, Brussels (Belgium), July 8th 2018
- C. Marchet, *CARNAC-LR: clustering genes expressed variants from long read RNA sequencing*, team TIBS seminar, Rouen (France), February 27 2018
- P. Peterlongo, *DiscoSnp++, de novo Variant predictions*, Tara Oceans Polar Circle Consortium, Paris (France), January 2018
- P. Peterlongo, *Extract information from short metagenomic reads*, Workshop GDR GE Rennes, 4e colloque Génomique environnementale, October 2018.
- D. Lavenier, *GenScale and its life science interactions*, bioinformatics workshop, IFREMER, June 2018

10.1.4. Leadership within the Scientific Community

- P. Peterlongo. member of the Scientific Advisory Board of the GDR BIM (National Research Group in Biology, Informatic and Mathematic)

- C. Lemaitre. Animator of the Sequence Algorithms axis (seqBIM GT) of the GDR BIM (National Research Group in Biology, Informatics and Mathematics)
- F. Legeai. Animator of the INRA Center for Computerized Information Treatment "BBRIC".

10.1.5. Scientific Expertise

- Expert for the MEI (International Expertise Mission), French Research Ministry [D. Lavenier]
- Member of the Scientific Council of BioGenOuest [D. Lavenier]
- Member of the Scientific Council of the Computational Biology Institute of Montpellier [D. Lavenier]
- Member of the Scientific Council of Agrocampus Ouest (Institute for life, food and horticultural sciences and landscaping) [J. Nicolas]
- Chapter "Artificial Intelligence and Bioinformatics" to appear in 2019 in the 3-volume book "A Guided Tour of Artificial Intelligence Research", H. Prade, P. Marquis and O. Papini eds, Elsevier. [35]

10.1.6. Research Administration

- Member of the CoNRS, section 06, [D. Lavenier]
- Member of the CoNRS, section 51, [D. Lavenier]
- Corresponding member of COERLE (Inria Operational Committee for the assesment of Legal and Ethical risks) [J. Nicolas]
- Member of the steering committee of the INRA BIPAA Platform (BioInformatics Platform for Agro-ecosystems Arthropods) [D. Lavenier]
- Member of the steering committee of The GenOuest Platform (Bioinformatics Resource Center BioGenOuest) [D. Lavenier]
- Scientific Advisor of The GenOuest Platform (Bioinformatics Resource Center BioGenOuest) [J. Nicolas]
- Representative of the environnemental axis of UMR IRISA [C. Lemaitre]
- AGOS first secretary [P. Peterlongo]
- Organisation of the weekly seminar "Symbiose" [P. Peterlongo]
- In charge of the bachelor's degree in the computer science department of University of Rennes 1 (90 students) [R. Andonov]
- Member of the Council of Administration of ISTIC [R. Andonov]
- Representative of non-permanent members in the Inria Rennes center commitee [S. Letort]

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : R. Andonov, Graph Algorithms, 60h, L3, Univ. Rennes 1, France.

Licence : W. Delage, J. Gautier, Biostatistic, 60 h, L2, Univ. Rennes 1, France.

Licence : W. Delage, Bioinformatics, 8 h , L2, Univ. Rennes 1, France.

Licence : K. Da Silva, Algorithms and Complexity, 36 h, L3, ENSAI, Rennes, France.

Master : R. Andonov, S. Francois, Operational research, 82h, M1 Miage, Univ. Rennes 1, France.

Master : L. Lecompte, Python for ecologists, 24h, M1, Univ. Rennes 1, France.

Master : L. Lecompte, P. Peterlongo, Algorithms on Sequences, 52h, M2, Univ. Rennes 1, France.

Master : C. Guyomar, statistical learning, 32h, M1, Univ. Rennes, France.

Master : P. Peterlongo, Experimental Bioinformactics, 24h, M1, ENS Rennes, France.

Master : F. Legeai, RNA-Seq, Metagenomics and Variant discovery, 12h, M2, AgroCampusOuest, National Superior School Of Agronomy, Rennes, France.

Master : R. Andonov, Advanced Algorithmics, 25h, Univ. Rennes 1, France.

Master : D. Lavenier, Memory Efficient Algorithms for Big Data, Engineering School, ESIR, Rennes

Training : C. Lemaitre, P. Peterlongo, GATB Programming Day, 8h (April 18), Paris, France.

10.2.2. Supervision

PhD : C. Guyomar, Bioinformatic tools and applications for metagenomics of bacterial communities associated to insects, Univ Rennes, 07/12/2018, J.C. Simon, C. Mougel, C. Lemaitre. [8]

PhD : C. Marchet, Nouvelles méthodologies pour l'assemblage de données de séquençage polymorphes, Univ Rennes, 20/09/2018, P. Peterlongo. [9]

PhD in progress : S. François, Combinatorial Optimization Approaches for Bioinformatics, 01/10/2016, R. Andonov.

PhD in progress : L. Lecompte, Structural Variant detection in long-read sequencing data, 01/09/2017, D. Lavenier and C. Lemaitre.

PhD in progress : W. Delage, De novo local assembly approaches for the detection of complex genomic variations in rare diseases, 01/10/2017, J. Thévenon and C. Lemaitre.

PhD in progress: K. da Silva, METACATALOGUE: un nouveau cadre pour l'exploration de données de séquençage du microbiote intestinal, 01/10/2018, M. Berland, N. Pons and P. Peterlongo.

PhD in progress: R. Kar, Assembly and annotation of heterozygous insect genomes, 15/08/2018, F. Legeai, D. Tagu and P. Peterlongo.

PhD in progress: G. Siekaniec, Caractérisation différentielle de souches d'espèces bactériennes, 01/10/2018, E. Roux and J. Nicolas.

10.2.3. Juries

- *Member of Habilitation thesis jury*. Thomas Bruls, Univ. Paris-Saclay [D. Lavenier]
- *Member of Ph-D thesis juries*. Yoann Seelheuthner, University Paris-Saclay [C. Lemaitre].
- *Referee of Ph-D thesis*. Antoine Recanati, ENS Paris [D. Lavenier], Nicolas Dierckxsens, Univ. Libre de Bruxelle [D. Lavenier], Chadi Saad, Univ. Lille [J. Nicolas], Florian Plaza Oñate, INRA MetaGenoPolis [P. Peterlongo]
- *Member of Ph-D thesis committee*. Chi Nguyen Lam, Univ. Brest [D. Lavenier], Benjamin Churcheward, Univ. Nantes [D. Lavenier], Guillaume Gautreau, CEA, Genoscope [P. Peterlongo], Victor Gaborit, Univ. Nantes [P. Peterlongo], Afaf Saaid, Univ. Paris Saclay, Ecole Polytechnique [P. Peterlongo], Magali Dancette, Univ. Claude Bernard Lyon 1 [P. Peterlongo]

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Member of the Interstice editorial board [P. Peterlongo]

10.3.2. Interventions

- In educational institutions : Participation to operation "A la découverte de la recherche" in high schools [P. Peterlongo]

10.3.3. Creation of media or tools for science outreach

- Short Movie "Les mutations génétiques, des événements spontanés à la thérapie génique", presented at Sciences en Courts, a local contest of popularization short movies made by PhD students (http://sciences-en-courts.fr/) [L. Lecompte, W. Delage].

HYBRID Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- Anatole Lécuyer was Member of the organization committee of IEEE VR 2018 (Tutorials, Best Paper Award Committee).
- Ferran Argelaguet was Member of the organization committee of IEEE VR 2018 (Workshops).
- Maud Marchal was Program Chair of IEEE Virtual Reality and 3D User Interfaces Conference Papers (IEEE VR 2018).

10.1.1.2. Member of the Conference Program Committees

- Ferran Argelaguet was Member of the conference program committee of IEEE VR 2018, IEEE ISMAR 2018 (International Symposium on Mixed and Augmented Reality) and of EuroVR 2018.
- Maud Marchal was Member of the conference program committee of Eurographics 2018, the best paper committee of "Journées Françaises de l'Informatique Graphique" 2018, and the best Phd award committee of GDR-IGRV/EGFR/AFRV.
- Jean-Marie Normand was Member of the conference program committee of IEEE VR 2018, IEEE AIVR 2018 (International Conference on Artificial Intelligence and Virtual Reality) and of AH 2018 (International Conference on Augmented Human).

10.1.1.3. Reviewer

- Ferran Argelaguet was Reviewer for IEEE VRST 2018, ACM CHI 2018, EuroHaptics 2018.
- Maud Marchal was Reviewer for Eurographics 2018, ACM Siggraph Asia 2018, ACM UIST 2018, Eurohaptics 2018, IEEE Haptic Symposium 2018, IEEE ICRA 2018, IHM 2018.
- Valérie Gouranton was Reviewer for IEEE VR 2018 Conference Track, IEEE VR 2018 Journal Track, CHI 2018.
- Guillaume Moreau was Reviewer for IEEE ISMAR 2018, ACM UIST 2018.
- Jean-Marie Normand was Reviewer for IEEE AIVR 2018, AH 2018, IEEE ISMAR 2018, IEEE VR 2018 Journal Track, IEEE VR 2018 Conference Track.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Anatole Lécuyer is Associate Editor of the IEEE Transactions on Visualization and Computer Graphics, Frontiers in Virtual Environments, and Presence journals. He was also Guest Editor of IEEE Computer Graphics and Applications Special Issue on "Virtual and Augmented Reality", and Guest Editor of Frontiers in Virtual Environments Special Topics on "Brain-Computer Interfaces and VR/AR".
- Ferran Argelaguet is Review Editor of Frontiers in Virtual Environments.
- Maud Marchal is Review Editor of Frontiers in Virtual Environments.
- Jean-Marie Normand is Review Editor of Frontiers in Virtual Environments.

10.1.2.2. Reviewer - Reviewing Activities

- Ferran Argelaguet was Reviewer for IEEE Transactions on Visualization and Computer Graphics, IEEE Computer Graphics and Applications.

- Guillaume Moreau was reviewer for Computers & Graphics, IEEE Transactions on Visualization and Computer Graphics, Frontiers in Virtual Environments.
- Jean-Marie Normand was Reviewer for Computer Animation and Virtual Worlds.

10.1.3. Invited Talks

- Anatole Lécuyer was invited as Keynote Speaker at the BIOSTEC Conference (Funchal, Portugal, Jan. 2018), and as Invited Speaker at HAPTICS Workshop (IEEE VR 2018, Reutlingen, Germany, Mar. 2018) and at "Journée BioVR" (IRIT, Toulouse, France, Oct. 2018).
- Maud Marchal was invited to give a lecture at the Young Researchers' day (Journée jeunes chercheurs) of the "Journées de l'Informatique Graphique 2018 (j·FIG 2018)" (Poitiers, France, Nov. 2018).
- Guillaume Moreau was invited to Sino-French Symposium on Virtual Reality (Chengdu, China, Aug. 2018).
- Jean-Marie Normand was invited to give a lecture at the Young Researchers' day (Journée jeunes chercheurs) of the "Journées de la Réalité Virtuelle 2018 (j·RV 2018)" (Evry, France, Oct. 2018).
- Bruno Arnaldi was invited to give a lecture at the "Journée scientifique - systèmes intelligents : immersion et interaction" at Heudiasic Lab (UMR 7253) at Compiègne in December 2018.

10.1.4. Leadership within the Scientific Community

- Ronan Gaugne is Member of the Selection and Validation Committee for the French cluster "Pôle Images et Réseaux", and of the Consortium 3D of TGIR HumaNum.
- Valérie Gouranton is Member of the Executive Committee of AFRV (French Association for Virtual Reality). She was also Member of the organization of a French Seminar on Archaeology with Inrap, in Rennes, June 2018.
- Maud Marchal is Member of the Executive Committee of Eurographics French Chapter.
- Guillaume Moreau is Member of the Steering Committee of IEEE ISMAR Conference.

10.1.5. Scientific Expertise

- Guillaume Moreau is Member of ANSES (National Health Agency) Working Group on the "sanitary effects of Virtual, Mixed and Augmented Reality". He is also Member of the HCERES (Higher Education and Research Evaluation Council) Committee of the SAMOVAR lab.

10.1.6. Research Administration

- Bruno Arnaldi is Deputy Director of IRISA, and co-Head of the Scientific Council of University of Rennes (ENS Rennes, ENSC Rennes, IEP Rennes, INSA Rennes, University Rennes 1, and University Rennes 2).
- Maud Marchal is Co-Head of the Master of "Research in Computer Science" (SIF) at University Rennes 1.
- Valérie Gouranton is Head of cross-cutting Axis "Art, Heritage & Culture" at IRISA Laboratory.
- Jean-Marie Normand is Head of the Minor "Virtual Reality" at ECN.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Anatole Lécuyer:

Master MNRV: "Haptic Interaction", 9h, M2, ENSAM, Laval, FR

Master SIBM: "Haptic and Brain-Computer Interfaces", 4.5h, M2, University of Rennes 1, FR

Master CN: "Haptic Interaction and Brain-Computer Interfaces", 9h, M1 and M2, University of Rennes 2, FR

Master SIF: "Pseudo-Haptics and Brain-Computer Interfaces", 6h, M2, University of Rennes 1, FR

Bruno Arnaldi:

  Master INSA Rennes: "VRI: Virtual Reality and Multi-Sensory Interaction Course", 4h, M2, INSA Rennes, FR

  Master INSA Rennes: "CG: Computer Graphics", 10h, M2, INSA Rennes, FR

  Master INSA Rennes: "Virtual Reality", courses 6h, projects 16h, M1 and M2, INSA Rennes, FR

  Master INSA Rennes: Projects on "Virtual Reality", 20h, M1, INSA Rennes, FR

Ferran Argelaguet:

  Master STS Informatique: "Techniques d'Interaction Avancées", 26h, M2, ISTIC, University of Rennes 1, FR

  Master SIF: "Virtual Reality and Multi-Sensory Interaction", 8h, M2, University of Rennes 1, FR

  Master SIF: "Data Mining and Visualization", 2h, M2, University of Rennes 1, FR

Maud Marchal:

  Master of Research in Computer Science: "Haptic rendering and physically-based simulation", 4h, M2, University of Rennes 1, FR

  Master INSA Rennes: "Computer Graphics", 26h, M1 and responsible of this lecture, INSA Rennes, FR

Valérie Gouranton:

  Licence: "Introduction to Virtual Reality", 22h, L2 and responsible of this lecture, INSA Rennes, FR

  Licence: Project on "Virtual Reality", 16h, L3 and responsible of this lecture, INSA Rennes, FR

Ronan Gaugne:

  INSA Rennes: Projects on "Virtual Reality", 41h, L3/M1/M2, Insa Rennes, FR

  Master Digital Creation: "Virtual Reality", 9h, M1, University of Rennes 2, FR

Guillaume Moreau:

  Dean of studies, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "C++ Programming for VR", 30h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Fundamentals of Virtual Reality", 6h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Computer Graphics", 4h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Advanced Software Development", 20h, M1/M2, Ecole Centrale de Nantes, FR

  Computer Science Major, "Discrete Mathematics", 10h, M1/M2, Ecole Centrale de Nantes, FR

Jean-Marie Normand:

  Virtual Reality Major, "Computer Graphics", 24h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Fundamentals of Virtual Reality", 14h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Computer Vision and Augmented Reality", 24h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Advanced Concepts", 24h, M1/M2, Ecole Centrale de Nantes, FR

  Virtual Reality Major, "Projects on Virtual Reality", 20h, M1/M2, Ecole Centrale de Nantes, FR

10.2.2. Supervision

10.2.2.1. PhD (defended)

- Gwendal Le Moulec, "Model-driven Virtual Reality applications synthesis", Defended in September 2018, Supervised by Valérie Gouranton, Bruno Arnaldi and Arnaud Blouin (Diverse, Inria)
- Guillaume Cortes, "Contribution to the study of projection-based systems for industrial applications in mixed reality", Defended in October 2018, Supervised by Anatole Lécuyer and Eric Marchand (Lagadic, Inria)
- Anne-Solène Dris-Kerdreux, "Concept et modèle d'intégration des IFC en tant qu'environnement virtuel interactif", Defended in October 2018, Supervised by Valérie Gouranton and Bruno Arnaldi
- Antoine Costes, "Contribution to the study of the haptic enhancement of images on touchscreens", Defended in November 2018, Supervised by Anatole Lécuyer, Philippe Guillotel (Technicolor), Fabien Danieau (Technicolor) and Ferran Argelaguet

10.2.2.2. PhD (in progress)

- Hakim Si-Mohammed, "BCI and HCI", Started in October 2016, Supervised by Anatole Lécuyer, Géry Casiez (Mjolnir, Inria), Nicolas Roussel (Mjolnir, Inria) and Ferran Argelaguet
- Hadrien Gurnel, "Assistance robotisée d'insertion d'aiguille par comanipulation", Started in October 2016, Supervised by Alexandre Krupa (Rainbow, Inria) and Maud Marchal
- Rebecca Fribourg, "Perception and interaction with and via avatars", Started in September 2017, Supervised by Ferran Argelaguet, Ludovic Hoyet (Mimetic, Inria) and Anatole Lécuyer
- Guillaume Bataille, "Natural interactions with IoT using VR/AR", Started in October 2017, Supervised by Valérie Gouranton, Danielle Pelé (Orange Labs) and Bruno Arnaldi
- Xavier de Tinguy, "Haptic manipulation in virtual environments", Started in September 2017, Supervised by Maud Marchal, Claudio Pacchierotti (Rainbow, Inria) and Anatole Lécuyer
- Flavien Lécuyer, "Interactive digital introspection methods for archeology", Started in September 2017, Supervised by Valérie Gouranton, Grégor Marchand (CNRS) and Bruno Arnaldi
- Etienne Peillard, "Improving Perception and Interaction in Augmented Reality", Started in October 2017, Supervised by Guillaume Moreau, Ferran Argelaguet, Anatole Lécuyer and Jean-Marie Normand
- Antonin Bernardin, "Interactive physically-based simulation of dexterous manipulation for robot understanding", Started in September 2017, Supervised by Maud Marchal and Christian Duriez (Defrost, Inria)
- Romain Lagneau, "Data-driven models for dexterous manipulation of robots", Started in Septembre 2017, Supervised by Maud Marchal and Alexandre Krupa (Rainbow, Inria)
- Romain Terrier, "Presence of self and others in a collaborative virtual environment", Started in October 2017, Supervised by Valérie Gouranton, Thomas Boggini (b<>com) and Bruno Arnaldi
- Mathis Fleury, "Neurofeedback based on fMRI and EEG", Started in November 2017, Supervised by Anatole Lécuyer and Christian Barillot (Visages, Inria)
- Tiffany Luong, "Affective VR: acquisition, modelling, and exploitation of affective states in virtual reality", Started in February 2018, Supervised by Anatole Lécuyer, Marc Diverrez (b<>com), Ferran Argelaguet
- Hugo Brument, "Towards user-adapted interaction techniques based on human locomotion laws for navigating in virtual environments", Started in October 2018, Supervised by Ferran Argelaguet, Maud Marchal and Anne-Hélène Olivier (MimeTIC, Inria)
- Diane Dewez, "Avatar-Based Interaction in Virtual Reality", Started in October 2018, Supervised by Anatole Lécuyer, Ferran Argelaguet and Ludovic Hoyet (MimeTIC)
- Gerard Gallagher, "Mid-air haptics", Started in October 2018, Supervised by Maud Marchal, Anatole Lécuyer and Claudio Pacchierotti (Rainbow, Inria)

- Victor Rodrigo Mercado Garcia, "Encountered-type haptics", Started in October 2018, Supervised by Maud Marchal and Anatole Lécuyer
- Guillaume Vaillant, "Outdoor wheelchair assisted navigation: reality versus virtuality", Started in November 2018, Supervised by Valérie Gouranton and Marie Babel (Rainbow, Inria)

10.2.3. Juries

- Anatole Lécuyer was president of the PhD committee for Pierre Bourdin (Univ. Barcelona, Spain). He was also external reviewer for the HDR of Antonio Capobianco (Univ. Strasbourg).
- Maud Marchal was an external reviewer for the PhD defenses of Karolina Golec (Univ. Lyon 1), Farzan Kalantari (Univ. Lille 1), Michael Traoré (Univ. Toulouse), Gaelle Fiard (Univ. Grenoble Alpes). She was a member of the PhD defenses of Alma Cantu (IMT Atlantique), Valentin Rousselet (Univ. Toulouse) and Firas Abi Farraj (Univ. Rennes 1).
- Guillaume Moreau was external reviewer for the PhD defense of Adrien Arnaud (LIMSI), president of the committee for Guillaume Cortes (Hybrid). He was also external reviewer for the HDR of Jean-Yves Didier (IBISC).

10.3. Popularization

As a salient action in 2018, Hybrid could organize a **press conference** on the topic of "Neurofeedback" in Paris (November 14th), which ended up with numerous media coverages (radio, press, etc).

10.3.1. Articles and contents

- "Autour de la question" (07/18) Radio France International: interview of Valérie Gouranton, Ronan Gaugne and Théophane Nicolas on "cultural heritage applications in VR/AR"
- "Sciences Ouest" (11/18) : interview of Anatole Lécuyer about "Neurofeedback"
- "Journal de 7h30" (11/18) France Inter radio : interview of Anatole Lécuyer about "Neurofeedback"
- "Sciences Ouest" (10/18): interview of Maud Marchal for "Epreuve par 7".

10.3.2. Interventions

- Technoférence du Pôle Images et Réseaux (Rennes, 02/18): co-organization by Ronan Gaugne, presentation from Maud Marchal on haptic in VR, demonstrations in Immersia.
- "Journées Science et Musique 2018" (Rennes, 10/18): co-organization of this event, and presentation of several demos of the team.
- Press Conference on "Neurofeedback" (Paris, 11/18): co-organization of this event, and presentation from Anatole Lécuyer, followed by several media coverages.

<p align="center">**HYCOMES Project-Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

- Albert Benveniste has served on the Programme Committee of the American Modelica Conference 2018.

- Benoît Caillaud has served on the Steering and Programme Committees of the ACSD'18 conference.

- Khalil Ghorbal has served on the Programme Committee of the Japanese Modelica Conference 2018.

9.1.1.2. Reviewer

- Benoî Caillaud has reviewed papers for the following conferences : ACSD'18,

- Khalil Ghorbal has reviewed papers for the following conferences : Japanese Modelica Conference 2018,

9.1.2. Leadership within the Scientific Community

Albert Benveniste has given a lecture on the Signal synchronous language at Collège de France [9], hosted by Gérard Berry, in the realm of his chair in Computer Science.

9.1.3. Scientific Expertise

- Albert Benveniste is president of the Scientific Council of Orange and member of the Scientific Council of Safran. He has also evaluated grant proposals submitted to the European Research Council.

- Benoît Caillaud has evaluated a grant proposal submitted to the European Research Council. As an Evaluation Committee member, he has served on several Inria hiring and promotion committees (in particular, Senior Researcher at a national level and Junior Researcher in Lillle).

9.1.4. Research Administration

- Albert Benveniste is member of the Burex (Executive Bureau) of the Cominlabs Labex [0].

- Benoît Caillaud is in charge of the IPL ModeliScale [0] national initiative funded by Inria. He is also head of the Programming Languages & Software Engineering department [0] of IRISA.

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[0]https://cominlabs.u-bretagneloire.fr/governance
[0]https://team.inria.fr/modeliscale/
[0]http://www.irisa.fr/en/departments/d4-language-and-software-engineering

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Khalil Ghorbal, *Analyse et Conception Formelles*, M1, (chargé de TD), 22h EqTD, University Rennes 1 and ENS Rennes, France

Master : Khalil Ghorbal, Solvers Principle and Architectures, M2, (enseignant principal), 30h EqTD, ENS Rennes, France

Master : Khalil Ghorbal, Modeling Physics with Differential-Algebraic Equations, M2, (enseignant principal), 25h EqTD, Ecole Polytechnique, Palaiseau, France

9.2.2. Supervision

PhD: Christelle Kozaily, Structural analysis of nonsmooth dynamical systems, university of Rennes 1, co-supervised by Vincent Acary (Tripop [0] team at Inria Grenoble), Benoît Caillaud and Kahlil Ghorbal, started October 2018.

PhD: Aurélien Lamercerie, Formal analysis of cyber-physical systems requirements expressed in natural language, university of Rennes 1, co-supervised by par Benoît Caillaud et Annie Forêt (SemLIS [0] team of IRISA), started December 2017.

9.2.3. Juries

Benoît Caillaud has been external examiner of Nikolaos Kekatos' PhD, defended at the University of Grenoble Alpes in December 2018. He has also served on the jury of Etienne André's habilitation, defended in June 2018 at University Paris 13.

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[0] https://team.inria.fr/tripop/
[0] https://www.-semlis.irisa.fr

<h1 style="text-align:center; color:red">I4S Project-Team</h1>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Conference Program Committees
J.Dumoulin is

- member of the scientific committee of the GI Division (Geosciences Instrumentation and Data Systems) of EGU (European Geosciences Union) for infrastructure instrumentation and monitoring since April 2013. (http://www.egu.eu/gi/structure/)
- member of the scientific committee of QIRT (quantitative Infrared Thermography) since February 2014 (http://www.qirt.org/)
- organizer and co-chair of a session at EGU 2018 (http://www.egu2018.eu/).

Q. Zhang is

- member of the international program commitee of the 18th IFAC Symposium SYSID that will take place in Stockholm, Sweden, July 9-11, 2018.
- member of the international program commitee of the 10th IFAC Symposium SAFEPROCESS that will take place in Warsaw, Poland, 29-31 August 2018.
- member of IFAC Technical Committee on Modelling, Identification and Signal Processing.
- member of IFAC Technical Committee on Fault Detection, Supervision and Safety of Technical Processes.
- member of IFAC Technical Committee on Adaptive and Learning Systems.

L. Mevel is

- member of the EWSHM scientific committee.
- member of the IOMAC scientific committee.

V. Le Cam is

- member of the IWSHM scientific committee.
- head and general secretary of the EWSHM scientific committee.
- session chairman for EWSHM 2018 in Manchester, UK.

M. Doehler is

- member of IFAC Technical Committee on Modelling, Identification, and Signal Processing.
- member of the IOMAC scientific committee.

8.1.1.2. Reviewer

Q. Zhang was reviewer for CDC 2018, ACC 2019.

M. Doehler was reviewer for SYSID 2018, SAFEPROCESS 2018 and ACC 2019.

J. Dumoulin was reviewer for EGU2018, QIRT2018 and SFT 2018

L. Mevel was reviewer for SAFEPROCESS 2018 and SYSID 2018

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

L. Mevel is member of the editorial board of the journal Mathematical Problems in Engineering, and of the journal Shock and Vibration.

Q. Zhang is member of the editorial board of the journal of Intelligent Industrial Systems.

J. Dumoulin is member of the editorial board of the journal Quantitative Infrared Thermography, and of the journal Geoscientific Instrumentation and Data Systems.

8.1.2.2. Reviewer - Reviewing Activities

L. Mevel was reviewer for Mechanical Systems and Signal Processing, journal of Sound And Vibration, Sensors

M. Doehler was reviewer for Mechanical Systems and Signal Processing, Journal of Sound and Vibration, Journal of Civil Structural Health Monitoring, Engineering Structures.

J. Dumoulin was reviewer for Quantitative Infrared Thermography Journal, GI Journal (EGU), SFT conference, Engineering Geology, International Journal of Pavement Research and Technology, Remote sensing of environment, Structural Health Monitoring, Composites Structures

F. Gillot was reviewer for Structural and Multidisciplinary Optimization, Applied Mathematical Modelling, Shock and Vibration, Applied Sciences, Lubricants

8.1.3. Invited Talks

M. Doehler, "Détection de changements dans des modèles physiques pour la surveillance vibratoire en génie civil", GdR ISIS, Paris on March 15th 2018.

L. Mevel, "Données, SHM et analyse statistique", SHM France meeting, Saclay, France on March 15th 2018.

L. Mevel presented a talk "Localisation de défaut dans les structures mécaniques à partir de mesures vibratoires." at Polytec Blois, on October 11th 2018.

J. Dumoulin presented a talk "Review on past to present achievements in Non Destructive Testing by active infrared thermography and current prospects" at International School of Quantum Electronics, Progress in Photoacoustic and Photothermal Phenomena: Focus on BIOMEDICAL, NANOSCALE, NDE and Thermophysical phenomena and technologies, 6-12 September 2018, Erice, Italie.

L. Ibos, T-T. Ha, V. Feuillet, S. Thebault, K. Zibouche, R. Bouchie, J. Weaytens, Z. Djatouti, **J. Dumoulin**, V. Le Sant, « Problématique de l'estimation de la résistance thermique de parois courantes de bâtiments par thermographie infrarouge : apport et limitations de la réduction de modèles », Journée thématique de la Société Française de Thermique (SFT) sur « Méthodes inverses et thermique du bâtiment: réduction et identification de modèles », Paris, 2 Mai 2018.

8.1.4. Leadership within the Scientific Community

V. Le Cam organized the 1st SHM France meeting in Saclay on MArch 15th 2018, together with CEA and Precend.

8.1.5. Scientific Expertise

V. Le Cam was involved in an expertise dealing with electromagnetic susceptibility of axle detectors for National French Railway Company (SNCF).

8.1.6. Research Administration

V. Le Cam is member of the scientific council of WEN (West Electronic Network) since 2014, which is a cluster of about 200 companies, academics and research laboratories active in electronics. During 2017, he has been involved amongst others in meetings and selection of R&D projects, PhD and post-doc funding, international mobility.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

J. Dumoulin

- Licence Professionnelle TAM : thermographie infrarouge active, 12h, Université Paris-Est, France
- Master 2 MMMRI (Maintenance et Maîtrise des Risques Industriels), contrôle non destructif par thermographie infrarouge active, 24h, Université Paris-Est, France
- Master 2 ITII, BTP, module Maintenance et réhabilitation des ouvrages, Transferts thermiques dans les Structures : Des principes physiques à l'application sur site réel, 12 h, Ecole Centrale de Nantes(ECN), France.
- Technical Skills Training for Master 2, PhD and Post-Doctoral on InfraRed Thermography : Industrial case studies IRT, at 1st Annual General Meeting of On Duty project, 5th June 2018, 1h30, Laval University, Québec, Canada.

V. Le Cam

- Master 2 Civil engineering, Structural Monitoring, 4h, Université de Nantes, France
- Licence 3 Professional SEICOM, 3h of theoretical lessons and 20H of practical lessons on Embedded and Smart Systems, Université de Nantes, France
- ESEO, 16h, practical lessons on embedded and smart systems under Linux, France
- Master 2 Electrical Engineering (GEII), 4h on electronic systems and Structural Monitoring, Université Bretagne Sud, France

M. Doehler

- Cycle préparatoire intégré, STPI, mathématiques, 48h TD, INSA Rennes, France

X. Chapeleau

- Licence Pro Mesures physiques, Mesures optiques, 15h, IUT de St Nazaire, Université de Nantes, France

T. Toullier

- Master 1, TP Capteurs (12h), contrôle, commandes, École Centrale de Nantes, France
- Foundation Master, TD Programming and Data Analysis (14h), École Centrale de Nantes, France

F. Gillot

- Master 1, Conception optimale robuste de systèmes mécaniques (10h), École Centrale de Lyon, France
- Master 1, Dynamique des systèmes biologiques humains (4h), École Centrale de Lyon, France
- Formation initiale des ingénieurs de l'École Centrale de Lyon, TP, TD, BE, niveau L3, (50h), France

8.2.2. Supervision

PhD : Antoine Bassil, *Fibre-optic sensor for fatigue monitoring*, D. Leduc, O. Abraham and X. Chapeleau. Ecole doctorale SPIGA, Université de Nantes, since November 2016.

PhD : Bian Xong, *Vibration analysis by video image processing for civil engineering structure monitoring*, Q. Zhang, V. Balthazar. Ecole doctorale MathsTIC, Université de Rennes 1, since October 2018.

Ludovic Gavérina post-doctoral project on in-situ measurement of thermal resistance of building envelopes, J. Dumoulin, march 2017- february 2019.

PhD : Nicolas Le Touz. *Design and study of positive energy transport infrastructures: from thermo-mechanical modeling to the optimization of such energy systems* J. Dumoulin. Ecole Centrale Nantes (ECN), defended in November 2018.

PhD : Thibaud Toullier. *Simultaneous characterization of the radiative properties and temperatures of envelopes of structures in natural environment by multispectral infrared thermography* L. Mevel, J. Dumoulin and M. Doehler. Ecole doctorale MathSTIC, Université de Rennes 1, since November 2016.

PhD : Eva Viefhues, *Statistical damage localization for civil structures*, L. Mevel and M. Doehler. Ecole doctorale MathSTIC, Université de Rennes 1, since November 2016.

PhD : David Pallier, *Sensor Enhancement to Augmented Usage and Reliability*, S. Pillement, IETR, V. Le Cam, Ecole doctorale MathSTIC

PhD : Alexander Mendler, *Vibration-based structural health monitoring of road bridges*, C. Ventura and M. Doehler. University of British Columbia, Vancouver, Canada, since September 2018.

8.2.3. *Juries*

Q. Zhang participated in the PhD jury of Kokou Langueh on December 6th, 2018 at Centrale Lille.
J. Dumoulin participated in the PhD jury of Lei Lei on July 16th, 2018 at Laval University Québec.
F. Gillot participated in the PhD jury of Melaine Desvaux on July 9th, 2018 at ENS Rennes.
L. Mevel participated in the PhD jury of Martin D. Ulriksen on April 20th, 2018 in Aalborg.

8.3. Popularization

J. Dumoulin presented a talk on "Surveillance thermique long terme" at Blue Day event organized by the Pole Mer Bretagne Atlantique on "Maintenance des infrastructures / Instrumentation / Suivi en service / durée de vie et prolongation / nouvelles agressions" , Brest, November 14th, France.

J. Dumoulin presented the COP21 solar hybrid road demonstrator at Loire- Atlantique event : "Inventons la route de demain", journées enseignements et perspectives, Fay de Bretagne, November 5th, France.

J. Dumoulin presented a talk "Routes à énergie positive" at Escales Génie Civil, Saint-Nazaire, November 22nd, France.

8.3.1. *Internal or external Inria responsibilities*

L. Mevel is member of CLHSCT committee in Rennes.

L. Mevel is member of Comité de centre committee in Rennes.

M. Doehler is member of Comité de centre committee in Rennes.

8.3.2. *Interventions*

M. Doehler participated to Journée de la science on October 5th 2018.

8.3.3. *Creation of media or tools for science outreach*

A damage localization mockup has been developed and installed in the showroom of Inria Rennes [43]. It has been the support of I4S presence during the Fête de la Science on october 5th, where several highschool classes were introduced to physics and statistics by means of our demonstration mock-up.

KERDATA Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Luc Bougé: Chair of the Steering Committee of the Euro-Par Series of conferences since August 2017.

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

Alexandru Costan:

– Program Co-Chair of the ScienceCloud 2018 international workshop held in conjunction with ACM HPDC 2018, Tucson, AZ, USA.

8.1.2.2. Member of the Conference Program Committees

Gabriel Antoniu: ACM HPDC 2018, IEEE IPDPS 2018, ACM/IEEE SC'18: Papers Committee, Posters Committee, Best Poster Award and Student Research Competition Committee, IEEE CSE-2018, BDA 2018.

Alexandru Costan: IEEE/ACM SC'18 (Posters and ACM Student Research Competition), ACM/IEEE CCGrid 2018, IEEE Cluster 2018, IEEE/ACM UCC 2018, ARMS-CC 2018 workshop (held in conjunction with PODC 2018), IEEE Big Data 2018, IEEE CSE 2018, MLDS 2018, EBDMA 2018.

Pedro Silva: ScienceCloud 2018 Workshop – Co-located with ACM HPDC 2018.

8.1.2.3. Reviewer

Alexandru Costan: ACM HPDC 2018, IEEE/ACM SC 2018, IEEE IPDPS 2018

Pedro Silva: IEEE Big Data, IEEE Cloud 2018, IEEE Cluster, IEEE CCGrid 2018, ACM HPDC 2018, IEEE/ACM SC 2018.

8.1.3. Journals

8.1.3.1. Member of the Editorial Boards

Gabriel Antoniu: Future Generation Computer Systems: Special Issue on Mobile, hybrid, and heterogeneous clouds for cyberinfrastructures (Guest Editor); Special Issue on Resource Management for Big Data Platforms (Guest Editor).

8.1.3.2. Reviewer - Reviewing Activities

Alexandru Costan: IEEE Transactions on Parallel and Distributed Systems, Future Generation Computer Systems, Concurrency and Computation Practice and Experience, IEEE Transactions on Cloud Computing, IEEE Transactions on Big Data.

8.1.4. Invited Talks

Gabriel Antoniu and Alexandru Costan: Huawei European Research Center, Munich, January 2018. *Low-latency Storage for Stream Data*.

Gabriel Antoniu:

– First workshop of the BDEC2 workshop series, Bloomington, November 2018. *The Sigma Data Processing Architecture: Leveraging Future Data for Extreme-Scale Data Analytics to Enable High-Precision Decisions*.

- 8th workshop of the Joint Laboratory for Extreme-Scale Computing (JLESC), Barcelona, April 2018. *HPC-Big Data convergence at the processing level: a vision.*
- Sintef, Oslo, October 2018: *HPC-Big Data convergence at the processing level: a vision.*

8.1.5. Leadership within the Scientific Community

Gabriel Antoniu:

International lab management *Vice Executive Director of JLESC* for Inria. JLESC is the Joint Inria-Illinois-ANL-BSC-JSC-RIKEN/AICS Laboratory for Extreme-Scale Computing. Within JLESC, he also serves as a *Topic Leader* for Data storage, I/O and in situ processing for Inria.

Team management *Head of the KerData Project-Team* (Inria-ENS Rennes-INSA Rennes).

International Associate Team management Leader of the Data@Exascale Associate Team with Argonne National Lab (2013–2018).

PI of a collaborative research project with industry : Huawei Technologies, HIRP program(Huawei Innovative Research Project Program, 2016-2018).

Technology development project management Coordinator of the Damaris ADT project (2016–2018), to be continued with the Damaris 2 ADT project (2019–2021).

Luc Bougé: Vice-President of the *French Society for Informatics* (*Société informatique de France*, SIF), in charge of Teaching.

Alexandru Costan: Leader of the *Smart Cities* Working Group within the BigStorage H2020 ETN project.

8.1.6. Scientific Expertise

Luc Bougé: Member of the jury for the *Agrégation de mathématiques* and the *CAPES of mathématiques*. These national committees select permanent mathematics teachers for secondary schools and high-schools, respectively.

8.2. Teaching, Supervision, Juries

8.2.1. Teaching

Gabriel Antoniu

- Master (Engineering Degree, 5th year): Big Data, 24 hours (lectures), M2 level, ENSAI (*École nationale supérieure de la statistique et de l'analyse de l'information*), Bruz, France.
- Master: Scalable Distributed Systems, 12 hours (lectures), M1 level, SDS Module, EIT ICT Labs Master School, France.
- Master: Infrastructures for Big Data, 12 hours (lectures), M2 level, IBD Module, SIF Master Program, University of Rennes, France.
- Master: Cloud Computing and Big Data, 10 hours (lectures), M2 level, Cloud Module, MIAGE Master Program, University of Rennes, France.

Luc Bougé

- Bachelor: Introduction to programming concepts, 36 hours (lectures), L3 level, Informatics program, ENS Rennes, France.
- Bachelor: Introduction to scientific research, 24 hours. Research center visits, individual research project supervised by local researchers, student seminars, summer internships, etc.
- Master Program, Rennes: Invited presentation to the M2 students about *Preparing your applications after your PhD* (November 2018); *Informatics as a scientific activity: Toward a responsible research* (November 2018).

Alexandru Costan
– Bachelor: Software Engineering and Java Programming, 28 hours (lab sessions), L3, INSA Rennes.
– Bachelor: Databases, 68 hours (lectures and lab sessions), L2, INSA Rennes, France.
– Bachelor: Practical case studies, 24 hours (project), L3, INSA Rennes.
– Master: Big Data Storage and Processing, 28h hours (lectures, lab sessions), M1, INSA Rennes.
– Master: Algorithms for Big Data, 28 hours (lectures, lab sessions), M2, INSA Rennes.
– Master: Big Data Project, 28 hours (project), M2, INSA Rennes.

Pedro Silva
– Master: Algorithms for Big Data, 4 hours (lectures), M2, INSA Rennes.
– Master: Algorithms for Big Data, 6 hours (lab sessions), M2, INSA Rennes.

8.2.2. Supervision

8.2.2.1. PhD completed this year

Pierre Matri: *Tyr: Storage-Based HPC and Big Data Convergence Using Transactional Blobs*, Universidad Politécnica de Madrid, defended June 10, 2018, co-advised by María Pérez (Universidad Politécnica de Madrid) and Gabriel Antoniu.

Mohammed-Yacine Taleb: *Energy-impact of data consistency management in Clouds and Beyond* [15], ENS Rennes, defended on October 2, 2018, co-advised by Gabriel Antoniu and Toni Cortés (Barcelona Supercomputing Center).

Ovidiu-Cristian Marcu: *Efficient data transfer and streaming strategies for workflow-based Big Data processing*, INSA Rennes, defended on December 18, 2018, co-advised by Alexandru Costan and Gabriel Antoniu.

8.2.2.2. PhD in progress

Nathanaël Cheriere: *Resource Management and Scheduling for Big Data Applications in Large-scale Systems*, thesis started in September 2016, co-advised by Gabriel Antoniu and Matthieu Dorier.

Paul Le Noac'h: *Workflow Data Management as a Service for Multi-Site Applications*, thesis started in November 2016, co-advised by Alexandru Costan and Luc Bougé.

8.2.3. Juries

Gabriel Antoniu:
Barcelona Supercomputing Center STAR Postdoctoral Programme: Member of the evaluation panel in 2018 (30 applications reviewed).
PhD juries: Referee for 3 PhD juries for PhD defenses at Barcelona Supercomputing Center, Université de Grenoble and UPMC, Paris.

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

Gabriel Antoniu:
Big Data Value Association: Inria representative in the working group on HPC-Big Data convergence since 2018.
ETP4HPC: Inria representative in the working group on HPC-Big Data convergence since 2018.

Luc Bougé: Co-ordinator between ENS Rennes and the Inria Research Center and the IRISA laboratory.

Alexandru Costan:
– In charge of internships at the Computer Science Department of INSA Rennes.
– In charge of the organization of the IRISA D1 Department Seminars.

8.3.2. Articles and contents

HDF5 Blog: Invited blog article explaining how Damaris can support HDF5-based storage.

LACODAM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- General co-chair (E. Fromont) of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD'19, http://www.ecmlpkdd2019.org/)
- Journal-track co-chair (E. Fromont) of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD'18) (http://www.ecmlpkdd2018.org/)
- Organization co-chair (T. Guyet) of the technical track "Geoinformatic analytics" of the 34rd ACM/SIGAPP Symposium On Applied Computing (https://gia.sciencesconf.org/)
- Organization co-chair (T. Guyet) of the 3nd ECML/PKDD Workshop on Advanced Analytics and Learning on Temporal Data @ ECML (https://project.inria.fr/aaldt18/)
- Organization chair (T. Guyet) of GAST workshop at EGC 2018 (https://gt-gast.irisa.fr/)
- Organization chair and program committee member (L. Galárraga) of the AIMLAI workshop (https://project.inria.fr/aimlai/) that will take place at EGC 2019.
- Organization of the first workshop of the Data Mining axis of the #DigitAg project (A. Termier)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Senior PC member of the Symposium on Intelligent Data Analysis 2018 (E. Fromont)
- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases 2018 (E. Fromont, T. Guyet)
- AAAI Conference on Artificial Intelligence 2018 (T. Guyet)
- International Conference on Data Mining (ICDM) 2018 (A. Termier)
- International Joint Conference on Artificial Intelligence (IJCAI) 2018 (A. Termier)
- International Conference on Information Management and Big Data (SimBig) 2018 (T. Guyet)
- International Symposium on Computing and Networking (CANDAR) 2018 (A. Termier)
- Extraction et Gestion de Connaissances (EGC) 2018 (T. Guyet, A. Termier)
- Conférence Nationale en Intelligence Artificielle (CNIA) 2018 (T. Guyet, A. Termier)
- Conférence Française en Photogramétrie et Télédétection (CFPT) 2018 (T. Guyet)

10.1.2.2. Reviewer

- Conference on Information and Knowledge Management (CIKM) 2018 (L. Galárraga)
- Conference on Practice of Knowledge Discovery in Databases (PKDD) 2018 (L. Galárraga)
- Conference on Very Large Databases (VLDB) 2018, demo track (L. Galárraga)
- Extended Semantic Web Conference (ESWC) 2018, demo track (L. Galárraga)
- The Web Conference (WWW) 2018 (L. Galárraga)
- International Workshop on the Web and Databases (WebDB) 2018 (L. Galárraga)
- Symposium on Theoretical Aspects of Computer Science (STACS) 2019, (A. Termier)

- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD) 2018 (A. Termier)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Machine Learning journal for the ECMLPKDD 2018 special issue (E. Fromont)
- Data Mining journal for the ECMLPKDD 2018 special issue (E. Fromont)
- Revue d'Intelligence Artificielle (RIA, T. Guyet)

10.1.3.2. Reviewer - Reviewing Activities

- Remote Sensing (T. Guyet)
- Journal of Biomedical Informatics (T. Guyet)
- Journal of Machine Learning (T. Guyet)
- Artificial Intelligence Review (T. Guyet, L. Galárraga)
- Annals of Mathematics and Artificial Intelligence (T. Guyet)
- Data Mining and Knowledge Discovery (L. Galárraga, A. Termier)
- Information Systems (L. Galárraga)

10.1.4. Invited Talks

- Invited to the Dagstuhl Seminar 18401 on "Automating Data Science", Germany (E. Fromont and A. Termier)
- Invited talk for the IA^2 (Autumn school) organized by the GDR IA. (E. Fromont)
- Invited talk for the Labex Henri Lebesgue at Technicolor, Rennes. (E. Fromont)
- Invited talk for the "Transfer Learning: From Theory to Applications" summer school in Cachan. (E. Fromont)
- Invited talk for the conference "Brain Hack", Rennes. (E. Fromont)
- Invited talk for the Machine Learning Meetup, Rennes. (E. Fromont)
- Invited talks by ONERA, LAAS, Strasbourg University (T. Guyet)
- Keynote talk at CITT 2018 (International Conference on Technology Trends), Universidad Técnica de Babahoyo, Ecuador (L. Galárraga)

10.1.5. Scientific Expertise

- Member of an ANR (CE 23) evaluation committee (E. Fromont)
- Working group initiated by ALLISTENE about a Research Infrastructure for AI in France. It was proposed in the "Villani report" under the name GENIAL (Grand Equipement National pour l'Intelligence Artificielle)
- Evaluation of an ERC proposal (A. Termier)
- Evaluation of a project proposal for Université Catholique de Louvain (A. Termier)
- Evaluation of projects proposals for ANR (T. Guyet: 3 projects, A. Termier: 1 project)
- Evaluation of a project proposal for Pays de Loire Region (A. Termier)
- Audit of the AI activities of a major French industrial group with a group of Inria experts (A. Termier)

10.1.6. Research Administration

- Elected (college A) at IRISA research institute scientific council (E. Fromont)
- Nominated at the scientific council of the "Fondation Blaise Pascal", dedicated to scientific mediation (E. Fromont)

- Co-chair of the national evaluation committee of INRA Engineers (section Mathematics and Informatics) (T. Guyet)
- Member of INRA (National Agronomy Institute) Scientific Committee (A. Termier)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Some members of the project-team LACODAM are also faculty members and are actively involved in computer science teaching programs in ISTIC, INSA and Agrocampus-Ouest. Besides these usual teachings LACODAM is involved in the following programs:

1. Master 2 IL, CCN: Option Machine Learning, Istic, University of Rennes 1, 32h (E. Fromont)
2. Master 2 DMV Module: Data Mining and Visualization, 13h, M2, Istic, University of Rennes 1 (A. Termier)
3. Master 1 SIF: Option IA, Istic, 20h University of Rennes 1 (A. Termier, E. Fromont)
4. Master 2 DataViz with R 10h, Computer Science for BigData 30h, Master Datascience, Agrocampus Ouest Rennes (Louis Bonneau, C. Largouët)
5. Master 1 Scientific Programming, Data Management, Agrocampus Ouest Rennes (C. Largouët)
6. INSA 4 Project Interpretability of Time series Machine Learning algorithms. (L. Rozé, M. Guillemé)

10.2.2. Supervision

PhD defended in 2018: Yann Dauxais, "Query-language for Care-pathway Mining and Analysis", 01/02/2015, D. Gross-Amblard, T. Guyet, A. Happe

PhD defended in 2018: Clément Gautrais, "Mining Massive Data from Client Purchases", 01/10/2015, A. Termier, P. Cellier, T. Guyet and R. Quiniou

PhD defended in 2018: Romain Deville, "Fouille de Grilles Spatio-temporelles Appliquée à la Classification d'Images et à l'Analyse d'Automates Cellulaires", 30/05/2018, E. Fromont, C. Solnon (Lyon), B. Jeudy (Saint-Etienne).

PhD in progress: Maël Guillemé, "New Data Mining Approaches for Improving Energy Consumption in Factories", 03/10/2016, L. Rozé, V. Masson, A. Termier

PhD in progress: Maël Gueguen, "Improving the Performance and Energy Efficiency of Complex Heterogeneous Manycore Architectures with On-chip Data Mining", 01/11/2016, O. Sentieys, A. Termier

PhD in progress: Alban Siffer, "Data Mining Approaches for Cyber Attack Detection", 03/2016, P-A Fouque, A. Termier, C. Largouët.

PhD in progress: Colin Leverger, "Cluster Resources Optimization Through Forecasting and Management of Metric Time Series", 01/10/2017, T. Guyet, S. Malinowski, R. Marguerie, A. Termier

PhD in progress: Raphaël Gauthier, "Modelling of Nutrient Utilization and Precision Feeding of Lactating Sows", 01/11/2017, C. Largouët, J.-Y. Dourmad

PhD in progress: Kévin Fauvel, "Using Data mining Techniques for Improving Dairy Management", 01/10/2017, V. Masson, A. Termier, P. Faverdin

PhD in progress: Anh Duong Nguyen, "Compression Based Pattern Mining", 01/03/2018, R. Gaudel, P. Cellier, A. Termier

PhD in progress: Johanne Bakalara, "Temporal Model of Care pathway to Query Medico-administrative Databases", 01/10/2018, T. Dameron O., Oger E., Guyet, S. A. Happe

PhD in progress: Erwan Bourrand, "Interactive Data Mining for Root Cause Analysis of Performance Issues in Networks", 03/12/2018, L. Galárraga, E. Fromont, A. Termier

PhD in progress: Heng Zhang, "Deep Learning on Multimodal Data for the Supervision of Sensitive Sites", 03/12/2018, E. Fromont, S. Lefevre

PhD in progress: Yichang Wang, "Interpretable Shapelet for Anomaly Detection in Time Series", 15/04/2018, E. Fromont, S. Malinowski, R. Tavenard, R. Emonet

10.2.3. *Juries*

- PHD defenses (E. Fromont): Jean Ogier, Paris (reviewer); Maxime Chabert, Lyon (committee member); Wissam Siblini, Nantes (committee member, president); Michaël Blot, Paris (committee member, president); Nicolas Audebert, Paris (committee member, president); Hoang Viet Tuan Nguyen, Annecy (reviewer); Soufiane Belharbi, Rouen (reviewer); Romain Deville, Lyon (supervisor); Bastien Moysset, Lyon (reviewer); Géraud Le Falher, Lille (committee member).

- Reviewer for the HDR defense of Claude Pasquier (Univ. Nice), defended on 20/09/2018 (A. Termier)

- Examiner for the HDR defense of Marc Plantevit (Univ. Lyon 1), defended on 14/12/2018 (A. Termier)

- Committee member for the PhD defense of Clément Gautrais (Univ. Rennes), defended on 16/10/2018 (A. Termier, T. Guyet, R. Quiniou)

- Committee member for the PhD defense of Yann Dauxais (Univ. Rennes), defended on 13/04/2018 (T. Guyet)

- Member of the hiring committee for Lille MCF27-0076, Paris-Sud PR27-0122, Saint-Etienne TSE MCF27-511 as president (E. Fromont)

- Member of the INRA research hiring committee on 25/04/2018 (MIA/INRA) (T. Guyet)

- Member of the associate professor hiring committee on 23/04/2018 (LERIA/Univ. Angers) (T. Guyet)

- Member of the associate professor hiring committee MCF0942 of Polytech Nancy (A. Termier)

- Thesis advisory committee member:
    - T. Guyet: Caglayan Tuna (UBS)
    - A. Termier: Mathilde Chen (INRA), Lucas Bourneuf (Univ. Rennes)

10.3. Popularization

10.3.1. *Interventions*

- Public debate on Artificial Intelligence at Café des Champs-Libres, Rennes (E. Fromont)

- Radio C-LAB, invited to the "Mars 2081" show on AI. (E. Fromont)

- Invited member to the focus group "Transition numérique et pratiques de recherche et d'enseignement en agriculture, alimentation, environnement et sciences vétérinaires à l'échéance 2040" (T. Guyet)

- Intervention at the Pint of Science 2018 event, topic: Artificial Intelligence and Data Science (A. Termier)

- Invited talk at "Matinale Rennes Atalante", Rennes (A. Termier, 22/12/2018) [0].

- Invited talk at Lacroix-Sofrel industrial group (A. Termier)

- Invited talk at the kickoff the OpenLab PSA-Inria, where Lacodam if actively involved (A. Termier)

- Invited talk at the conference *IN'Sciences "Big data : comment combiner intelligence artificielle et gestion de données ?"* (L. Galárraga, chaired by L. Rozé)

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[0]Video: http://www.rennes-atalante.fr/actualites-technopole/captations-matinales-rennes-atalante/2018/visionnez-la-matinale.html

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

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

- LinkMedia organized the joint conferences CORIA - TALN in Rennes, May 2018, including several workshops and a hackathon on Fake News detection. Full program: https://project.inria.fr/coriataln2018/fr/.
- Guillaume Gravier and Vincent Claveau organized a special conference about "IA and media" in the framework of the European Cyber Week in Nov 2018, Rennes. Full program: https://www.european-cyber-week.eu/medias-ia-et-cyber.html

9.1.1.1. General Chair, Scientific Chair

- Laurent Amsaleg is general co-chair of ACM Intl. Conf. on Multimedia 2019.
- Guillaume Gravier is technical program co-chair for ACM Intl. Conf. on Multimedia 2019.
- Vincent Claveau was general chair of CORIA-TALN 2018.

9.1.1.2. Member of the Organizing Committees

- Guillaume Gravier was special session co-chair for IEEE Intl. Conf. on Content-Based Multimedia Indexing 2018
- Simon Malinowski was member of the Organizing Committee of the AALTD 18 Workshop (co-located with ECML-PKDD 18)
- Ewa Kijak was publication chair for IEEE Intl. Conf. on Content-Based Multimedia Indexing 2018

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- Vincent Claveau and Pascale Sébillot were program chairs of TALN 2018.
- Anne-Lyse Minard was demo chair of CORIA-TALN 2018.

9.1.2.2. Member of the Conference Program Committees

- Laurent Amsaleg was a PC member of: Extraction et Gestion de Connaissances, European Signal Processing Conference, ACM International Conference on Multimedia Retrieval, Multimedia Modeling, Content-Based Multimedia Indexing, IEEE International Conference on Multimedia & Expo, International Conference on Similarity Search and Applications, Multimedia Information Retrieval and Applications.
- Guillaume Gravier was a PC member of: ACM International Conference on Multimedia, ACM International Conference on Multimedia Retrieval, IEEE International Conference on Multimedia & Expo, European Conference on Information Retrieval, International Symposium on Multimedia, International Conference on Multimedia Modeling
- Simon Malinowski was a PC member of: Advanced analytics and Learning on Temporal Data 2018
- Vincent Claveau was a PC member of: European Conference on Information Retrieval (ECIR), Computational Linguistics (CoLing), International Conference in Artificial Intelligence (IJCAI), International Conference on MultiMedia Modeling (MMM), EMNLP (demo), ACL (demo), HumaNum workshop with EGC, TexMine workshop with EGC, DeFT workshop with TALN.
- Miaojing Shi was a PC member of: International Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Image Processing, Applications and Systems (IPAS), Asian Conference on Computer Vision (ACCV).

- Ewa Kijak was a PC member of: ACM International Conference on Multimedia, IEEE Intl. Conf. on Content-Based Multimedia Indexing
- Yannis Avrithis was a PC member of: IEEE Intl. Conf. on Computer Vision and Pattern Recognition (CVPR), European Conference on Computer Vision (ECCV).
- Teddy Furon was a PC member of: IEEE Workshop on Information Forensics and Security, IEEE International Conference on Image Processing, International Conference on Similarity Search and Applications.
- Pascale Sébillot was a PC member of: AAAI Conf. on Artificial Intelligence, European Conference on Information Retrieval (ECIR), International Joint Conference on Artificial Intelligence and European Conference on Artificial Intelligence (IJCAI-ECAI), Language Resources and Evaluation Conference (LREC), Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL HLT).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Laurent Amsaleg was guest editor for the special issue of the Information Systems Journal, best papers from the SISAP 2016 conference.
- Laurent Amsaleg was guest editor for the special issue of the Information Systems Journal, best papers from the SISAP 2017 conference.
- Guillaume Gravier is associate editor of IEEE Trans. on Multimedia
- Vincent Claveau is Chief Editor of the ISTE journal RIDoWS
- Vincent Claveau is member of the editorial board of the journal Traitement Automatique des Langues (TAL)
- Christian Raymond is member of the Editorial board of the journal Discours
- Pascale Sébillot is editor of the Journal Traitement Automatique des Langues.
- Pascale Sébillot is member of the editorial board of the Journal Traitement Automatique des Langues.

9.1.3.2. Reviewer - Reviewing Activities

- Laurent Amsaleg was a reviewer for: IEEE Transactions on Information Forensics and Security, ACM Transactions on Information Systems.
- Christian Raymond was a reviewer for: Multimedia Tools and Applications
- Vincent Claveau was a reviewer for: Multimedia Tools and Applications, Technique et Sciences Informatiques, Traitement Automatique des Langues
- Miaojing Shi was a reviewer for: IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Image Processing, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Multimedia
- Yannis Avrithis was a reviewer for: IEEE Transactions on Pattern Analysis and Machine Intelligence
- Teddy Furon was a reviewer for: IEEE Transactions on Information Forensics and Security, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, MDPI Entropy Journal.
- Pascale Sébillot reviewed for Traitement Automatique des Langues.

9.1.4. Invited Talks

- Miaojing Shi gave an invited talk at Shanghai Jiaotong University, Shanghai.
- Miaojing Shi gave an invited talk at Tongji University, Shanghai.
- Miaojing Shi gave an invited keynote at FranceIsAI 2018, Oct 17-19, Paris.

9.1.5. Leadership within the Scientific Community

- Laurent Amsaleg is a member of the Steering Committee of SISAP for the 2016-2020 term
- Guillaume Gravier is member of the Community Council of the Mediaeval Multimedia Evaluation series
- Guillaume Gravier coordinated the answer to the call "Institut inter disciplinaire de l'IA" for Rennes.
- Guillaume Gravier was president of the Scientific Evaluation Committee of the National Research Agency for the theme 'Knowledge, data, content, big data - AI'
- Guillaume Gravier is a member of the scientific committee of the preGDR Traitement Automatique des Langues
- Vincent Claveau is a deputy head of the GdR CNRS MaDICS http://www.madics.fr
- Vincent Claveau is the finance head of ARIA http://www.asso-aria.org
- Pascale Sébillot is a member of the permanent steering committee of Conf. Francophone en Traitement Automatique des Langues Naturelles.
- Pascale Sébillot is a member of the committee of leaders of the preGDR Traitement Automatique des Langues reflection axes (in charge of the Intermodality and Multimodality axis (with B. Favre, LIS Marseille)).

9.1.6. Scientific Expertise

- Miaojing Shi was expert evaluator for the French National Research Agency (ANR).

9.1.7. Research Administration

- Guillaume Gravier is deputy director of Institut de Recherche en Informatique et Systèmes Aléatoires (IRISA, UMR 6074)
- Guillaume Gravier is a member of the Board of the technology cluster Images & Réseaux.
- Guillaume Gravier is a member of the Board of the Comité des Projets of Inria - Rennes Bretagne Atlantique.
- Pascale Sébillot is a member of the Conseil National des Universités 27th section (computer science).
- Pascale Sébillot is the director of the Computer Science Laboratory, INSA Rennes.
- Pascale Sébillot is the deputy director of the Scientific Advisory Committee of IRISA UMR 6074.
- Pascale Sébillot is a member of the theses advisory committee of the MathSTIC doctoral school.
- Pascale Sébillot is a member of the board of the MathSTIC doctoral school.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Laurent Amsaleg & Teddy Furon, Indexation multimédia, 10h, L3-cours invité, ENS Rennes, France

Licence: Laurent Amsaleg, Bases de données avancées, 2h, L3-option génie mathématique, INSA Rennes, France

Licence: Guillaume Gravier, Probability and statistics, 16h, L3, INSA Rennes, France

Licence: Guillaume Gravier, Natural Language Processing, 12h, L3 & M1, INSA Rennes, France

Engineering school: Vincent Claveau, Machine Learning, 16h, 3rd year, INSA Rennes, France

Engineering school: Vincent Claveau, Information Retrieval, 10h, 3rd year, ENSSAT Lannion, France

Master: Vincent Claveau, Information Retrieval, 10h, M2 MIAGE, Univ. Rennes, France

Master: Laurent Amsaleg, Bases de données avancées, 25h, M2, INSA Rennes, France

Master: Guillaume Gravier, Data analysis and probabilistic modeling, 30h, M2, University Rennes 1, France

Master: Simon Malinowski, Méthodes de prédiction, 32h, M2 Miage, Univ. Rennes

Master: Simon Malinowski, Apprentissage automatique, 24h, M2 Miage, Univ. Rennes

Master: Simon Malinowski, Fouille de données symboliques, 12h, M2 Miage, Univ. Rennes

Master: Christian Raymond, Dialogue, 4H, M2 SIF, Univ. Rennes

Master: Ewa Kijak, Image processing, 67h, M1, ESIR, France

Master: Ewa Kijak, Supervised machine learning, 15h, M2R, University Rennes 1, France

Master: Ewa Kijak, Supervised machine learning, 15h, M2, University Rennes 1, France

Master: Ewa Kijak, Image classification, 45h, M1, ESIR, France

Master: Ewa Kijak, Image indexing, 17h, M2, University Rennes 1, France

Master: Ewa Kijak, Indexing and multimedia databases, 15h, M2, ENSSAT, France

Master: Ewa Kijak, Computer vision, 22h, M2, ESIR, France

Master: Yannis Avrithis, Deep learning for vision, 20h, M2 SIF, France

Master: Teddy Furon, Rare event simulations, 20h, M2 option génie mathématique, INSA, France

Master: Pascale Sébillot, Natural Language Programming, 6h, M1, INSA Rennes, France

9.2.2. Supervision

PhD in progress: Hanwei Zhang, Deep Learning in Adversarial Contexts, October 2017, Laurent Amsaleg, Yannis Avrithis, Teddy Furon & Ewa Kijak

PhD in progress: Marzieh Gheisari-Khorasgani, Secure identification in the Internet of Things, January 2018, Laurent Amsaleg & Teddy Furon

PhD in progress: Cédric Maigrot, Détection de fausses informations dans les réseaux sociaux, October 2015, Laurent Amsaleg, Vincent Claveau & Ewa Kijak

PhD in progress: Ricardo Carlini-Sperandio, Unsupervised motif mining in multimedia time series, August 2015, Laurent Amsaleg & Guillaume Gravier

PhD in progress: Antoine Perquin, Universal speech synthesis through embeddings of massive heterogeneous data, October 2017, Laurent Amsaleg, Gwénolé Lecorvé & Damien Lolive (with Expression, IRISA team)

PhD in progress: Tong Xue, Visualization and collaborative analysis of document collections and extracted knowledge for data journalism, October 2018, Laurent Amsaleg & Anastasia Bezerianos

PhD in progress: Mathieu Laroze, Active learning on adaptive representations for object detection in high-resolution imaging, started June 2016, Romain Dambreville, Chloe Friguet, Ewa Kijak and Sebastien Lefevre (with OBELIX, IRISA team)

PhD in progress: Mikail Demirdelen, User-adapted multi-document multimedia synthesis, started Oct. 2016, Guillaume Gravier & Pascale Sébillot

PhD in progress: Cheikh Brahim El Vaigh, Incremental content to data linking leveraging ontological knowledge in data journalism, started Oct. 2017, Guillaume Gravier, Pascale Sébillot and François Goasdoué (with CEDAR, Inria team)

PhD in progress: Cyrielle Mallart, Incremental dynamic construction of knowledge bases from text mining, started Dec. 2018, Guillaume Gravier & Pascale Sébillot (with Ouest-France)

PhD in progress: Oriane Siméoni, Invariance and supervision in visual learning, started Oct. 2016, Yannis Avrithis & Guillaume Gravier

PhD in progress: Zhaohui Yang, learning visual models with minimal human supervision, Jan. 2018, Miaojing Shi & Yannis Avrithis & Chao Xu (Peking University, Beijing)

PhD in progress: Feng Xiong, Perception and self-learning of service robot in dynamic scenarios. Nov. 2019, Miaojing Shi & Qijun Chen (Tongji University, Shanghai)

PhD in progress: Yann Lifchitz, Few shot learning for object recognition in aerial images. Started Mar. 2018, Yannis Avrithis, Sylvaine Picard (Safran) and Andrei Bursuc (Valeo).

9.2.3. Juries

Laurent Amsaleg

- PhD, reviewer, André Belchior Mourão, *Towards an Architecture for Efficient Distributed Search of Multimodal Information*, Universidade Nova de Lisboa, April 2018.

Ewa Kijak

- PhD, member, Himalaya Jain, *Learning compact representations for large scale image search*, University Rennes 1, June 2018.

Guillaume Gravier

- HDR, reviewer, Anthony Larcher, Le Mans Université, Déc. 2018.
- PhD, reviewer, Sébastien Delecraz, Aix-Marseille Université, Dec. 2018.

Teddy Furon

- PhD, member, Dimche Kostadinov, *Nonlinear Transform Learning: Model, Applications, and Algorithms*

Pascale Sébillot

- PhD, member, Alexandre Bérard, Université Grenoble Alpes, June 2018.
- PhD, president, Caroline Langlet, Télécom ParisTech, Sept. 2018.

Vincent Claveau was reviewer for the mid-term PhD auditions of Anna Koroleva, LIMSI, Christopher Norman, LIMSI, Zheng Zhang, LIMSI.

9.3. Popularization

9.3.1. Articles and contents

- Interviews in order to popularize: Guillaume Gravier was interviewed on AI technology for Sciences Ouest
- Vincent Claveau gave interviews about Fake News detection in the following journals: Stratégies 06/06/2018 and 12/10/2018, LCI.fr 8/06/2018, Le Monde.fr 24/05/2018, Sciences Ouest n363, Sciences et Avenir 30/05/2018 and xx/12/2018, 01net n894
- Ewa Kijak was interviewed by LeTemps.ch

9.3.2. Interventions

- Public exhibitions: Vincent Claveau and Guillaume Gravier presented at Futur.e.s
- Vincent Claveau participated in a press conference organized by the CNRS in May 2018
- Vincent Claveau gave an invited talk about NLP and fake news at the Forum des sciences cognitives in Nancy
- Vincent Claveau was heard at the French National Assembly by the parliamentary group *Économie numérique de la donnée, de la connaissance et de l'intelligence artificielle*
- Miaojing Shi was invited for a panel discussion about *China is AI: perspective on the booming Chinese AI ecosystem* at FranceIsAI, Oct 2018, Paris.
- Miaojing Shi was invited to the 2nd Edition of the Purple Night organized by the France China Committee in order to value the Franco-Chinese cooperation.

9.3.3. Internal action

- Regional events: Guillaume Gravier was invited conferencer on AI for Café des Sciences (general public audience, ∼100 pers.)

9.3.4. Creation of media or tools for science outreach

- Cédric Maigrot and Vincent Claveau participated to the educational video from Cité des Sciences about Fake News detection https://bit.ly/2Rz7MAp

MIMETIC Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Anne-Hélène Olivier, Workshop VHCIE 2018, IEEE VR 2018, Reutlingen, Germany, March 2018
- Anne-Hélène Olivier, Workshop "walkers behaviour: from analysis to applications", Rennes, June 2018, broadcasted as a Webinar for the International Society of Posture and Gait Research.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Ludovic Hoyet: Animation & Simulation Area Program Chair, International Conference on Computer Graphics Theory and Applications 2019, Prague, Czech Republic, Feb. 2019

Anne-Hélène Olivier: co-chair of the IEEE VR 2019 Conference paper track, Osaka, Japan.

10.1.2.2. Member of the Conference Program Committees

Ludovic Hoyet, ACM Motion in Games MIG 2018, Cyprus, Nov. 2018

Ludovic Hoyet, ACM Symposium on Applied Perception 2018, Vancouver, Canada, Aug. 2018

Ludovic Hoyet, ACM Siggraph Asia Courses 2018, Tokyo, Japan, Deb. 2018

Anne-Hélène Olivier, ACM Motion in Games MIG 2018, Cyprus, Nov. 2018

Anne-Hélène Olivier, Euro-VR 2018 London, UK, October 2018.

Franck Multon, ACM Motion in Games MIG 2018, Cyprus, Nov. 2018

Franck Multon, Computer Animation and Social Agents 2018, Beijing, May 2018

Marc Christie, ACM Motion in Games 2018, Cyprus, Nov. 2018

Marc Christie, ACM TVX 2018, Seoul, June. 2018

Richard Kulpa, International Conference on Computer Graphics Theory and Applications (GRAPP), 2018

10.1.2.3. Reviewer

Ludovic Hoyet, ACM Siggraph 2018, IEEE VR 2019, Artificial Intelligence and Virtual Reality

Anne-Hélène Olivier, IEEE VR 2019 TVCG Conference paper, ACM VRST 2018, IEEE International Conference on Automatic Face and Gesture Recognition

Richard Kulpa, IEEE VR, ACM CHI (Computer Human Interface), Computer & Graphics

Franck Multon, IEEE VR 2019, Pacific Graphics 2018

Marc Christie, ACM Siggraph, ACM Siggraph Asia, ACM CHI, Eurographics

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Franck Multon, Presence, MIT Press
- Franck Multon, Computer Animation and Virtual Worlds CAVW, John Wiley
- Antonio Mucherino, Guest Editor of Optimization Letters, Springer
- Armel Crétual, Editorial board of Journal of Electromyography and Kinesiology
- Marc Christie, Associate Editor of the Visual Computer

10.1.3.2. Reviewer - Reviewing Activities

Franck Multon, Medical & Biological Engineering & Computing, Applied Ergonomics, IEEE Journal of Biomedical and Health Informatics, International Journal of Industrial and Operations Research, Human Movement Sciences

Ludovic Hoyet, IEEE Transactions on Visualization and Computer Graphics, Computers & Graphics, Computer Graphics Forum, ACM Transactions on Applied Perception

Anne-Hélène Olivier, Gait and Posture, Human Movement Science, TVCG, CAG, Transactions on Neural Systems & Rehabilitation Engineering, VIRE

Antonio Mucherino, Journal of Global Optimization, Springer, Discrete Applied Mathematics, Elsevier

Armel Crétual, ACM Transactions on Graphics, Clinical Biomechanics, IEEE Robotics and Automation Letters

Richard Kulpa, PlosOne, Journal of Sport Science, Human Movement Science, Sports Medicine, Journal of Sports Engineering and Technology, International Journal of Sports Science & Coaching,

Marc Christie, IEEE TVCG, The Visual Computer, CGF

Charles Pontonnier, Applied Ergonomics, Multibody System Dynamics

10.1.4. Invited Talks

Anne-Hélène Olivier, IFSTTAR Marne la Vallée, March 2018

Ludovic Hoyet, IFSTTAR Marne la Vallée, March 2018

Charles Pontonnier, EMC2 Institute, Matinale "Opérateur du futur", November 2018

Marc Christie, ACM TVX, Seoul, Korea, 2018

Marc Christie, Beijing Film Academy, Beijing, China, October 2018

Marc Christie, ChinaVR, Qingdao, China, October 2018

Franck Multon, Université Reims Champagne Ardennes, July 2018

Franck Multon, Université Paris Sud, July 2018

10.1.5. Scientific Expertise

Franck Multon, ANR expert, member of the ANR CPDS 4 "Santé Bien-être" through the Allistene national Alliance to design the next ANR call for projects,

Armel Crétual, ANR expert (TecSan)

10.1.6. Research Administration

Franck Multon is member of the University Rennes2 Research steering committee "commission recherche", and Academic Council "CAC"

Franck Multon is coordinator of Inria national initiative "Sport @ Inria" in relation with the French Ministry of Sports, and the French Ministry of Research, for Olympic Games 2024

Ludovic Hoyet is an elected member of the Board of Managers for the French Computer Graphics Association (Association Française d'Informatique Graphique) since Oct. 2017

Georges Dumont is president of the elected group at scientific council of École Normale Supérieure de Rennes, member of the scientific council of École Normale Supérieure de Rennes

Georges Dumont is scientific head of Immerstar platforms (Immersia + Immermove) jointly for Inria and Irisa Partners

Richard Kulpa is member of the University Rennes2 Research steering committee "commission recherche", Academic Council "CAC" and Committee of International Affairs "CAI"il "CAC",

Benoit Bideau is director of the M2S Lab

Fabrice Lamarche is an elected member of the CNU (French National Cuoncil of Universities).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Franck Multon, co-leader of the IEAP Master (1 and 2) "Ingénierie et Ergonomie de l'Activité Physique", STAPS, University Rennes2, France

Master : Franck Multon, "Santé et Performance au Travail : étude de cas", leader of the module, 30H, Master 1 M2S, University Rennes2, France

Master : Franck Multon, "Analyse Biomécanique de la Performance Motrice", leader of the module, 30H, Master 1 M2S, University Rennes2, France

Master: Charles Pontonnier, "Analytical Mechanics" , 40H (M1), École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Design and control of legged robots", 38H (M1), École Spéciale Militaire de Saint-Cyr Coëtquidan, France

Master: Charles Pontonnier, "Simulation of multibody system dynamics", 34H (M1), École Normale Supérieure de Rennes, France

Master: Charles Pontonnier, "oral preparation to agregation competitive exam", 18H (M2), École Normale Supérieure de Rennes, France

Master : Georges Dumont, Responsible of the second year of the master Engineering of complex systems, École Normale Supérieure de Rennes and Rennes 1 University, France

Master : Georges Dumont, Mechanical simulation in Virtual reality, 36H, Master Engineering of complex systems and Mechatronics, Rennes 1 University and École Normale Supérieure de Rennes, France

Master : Georges Dumont, Mechanics of deformable systems, 40H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, oral preparation to agregation competitive exam, 20H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Vibrations in Mechanics, 10H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Multibody Dynamics, 9H, Master FE, École Normale Supérieure de Rennes, France

Master : Georges Dumont, Finite Element method, 12H, Master FE, École Normale Supérieure de Rennes, France

Master : Ludovic Hoyet, Motion for Animation and Robotics, 9h, University Rennes 1, France

Master : Ludovic Hoyet, Motion Analysis and Gesture Recognition, 12h, INSA Rennes, France

Master : Ludovic Hoyet, Réalité Virtuelle pour l'Analyse Ergonomique, Master Ingénierie et Ergonomie des Activités Physique, 21h, University Rennes 2, France

Master : Anne-Hélène Olivier, "Biostatstiques", 7H, Master 2 APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Evaluation fonctionnelle des pathologies motrices", 9H Master 2 APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Maladie neurodégénératives : aspects biomécaniques", 2H Master 1 APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Biostatstiques", 7H, Master 1 EOPS, University Rennes2, France

Master : Anne-Hélène Olivier, "Méthodologie", 4H, Master 1 EOPS/APPCM, University Rennes2, France

Master : Anne-Hélène Olivier, "Contrôle moteur : Boucle perceptivo-motrice", 3H, Master 1IEAP, Université Rennes 2, France

Master: Antonio Mucherino, "Programmation Parallèle", M1 en Informatique, 16H, University of Rennes, France

Master: Fabrice Lamarche, "Compilation pour l'image numérique", 29h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Synthèse d'images", 12h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Synthèse d'images avancée", 28h, Master 1, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Modélisation Animation Rendu", 36h, Master 2, ISTIC, University of Rennes 1, France

Master: Fabrice Lamarche, "Jeux vidéo", 26h, Master 2, ESIR, University of Rennes 1, France

Master: Fabrice Lamarche, "Motion for Animation and Robotics", 9h, Master 2 SIF, ISTIC, University of Rennes 1, France.

Master : Armel Crétual, "Méthodologie", leader of the module, 20H, Master 1 M2S, University Rennes2, France

Master : Armel Crétual, "Biostatstiques", leader of the module, 30H, Master 2 M2S, University Rennes2, France

Master : Richard Kulpa, "Boucle analyse-modélisation-simulation du mouvement", 27h, leader of the module, Master 2, Université Rennes 2, France

Master : Richard Kulpa, "Méthodes numériques d'analyse du geste", 27h, leader of the module, Master 2, Université Rennes 2, France

Master : Richard Kulpa, "Cinématique inverse", 3h, leader of the module, Master 2, Université Rennes 2, France

Master: Marc Christie, "Multimedia Mobile", Master 2, leader of the module, 32h, Computer Science, University of Rennes 1, France

Master: Marc Christie, "Projet Industriel Transverse", Master 2, 32h, leader of the module, Computer Science, University of Rennes 1, France

Licence : Franck Multon, "Ergonomie du poste de travail", Licence STAPS L2 & L3, University Rennes2, France

Licence : Anne-Hélène Olivier, "Analyse cinématique du mouvement", 100H , Licence 1, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Anatomie fonctionnelle", 7H , Licence 1, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Effort et efficience", 12H , Licence 2, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Locomotion et handicap", 12H , Licence 3, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Biomécanique spécifique aux APA", 8H , Licence 3, University Rennes 2, France

Licence : Anne-Hélène Olivier, "Biomécanique du viellissement", 12H , Licence 3, University Rennes 2, France

Licence: Antonio Mucherino, "Informatique 1", 80H, L1, University of Rennes, France

Licence: Charles Pontonnier, "Serial robotics", 34H (L3), École Normale Supérieure de Rennes, France

Licence: Fabrice Lamarche, "Initiation à l'algorithmique et à la programmation", 56h, License 3, ESIR, University of Rennes 1, France

License: Fabrice Lamarche, "Programmation en C++", 46h, License 3, ESIR, University of Rennes 1, France

Licence: Fabrice Lamarche, "IMA", 24h, License 3, ENS Rennes, ISTIC, University of Rennes 1, France

Licence : Armel Crétual, "Analyse cinématique du mouvement", 100H, Licence 1, University Rennes 2, France

Licence : Richard Kulpa, "Biomécanique (dynamique en translation et rotation)", 48h, Licence 2, Université Rennes 2, France

Licence : Richard Kulpa, "Méthodes numériques d'analyse du geste", 48h, Licence 3, Université Rennes 2, France

Licence : Richard Kulpa, "Statistiques et informatique", 15h, Licence 3, Université Rennes 2, France

Licence : Marc Christie, "Programmation Impérative 1", leader of the module, University of Rennes 1, France

10.2.2. Supervision

PhD in progress (beginning september 2017): Simon Hilt, Haptique Biofidèle pour l'Interaction en réalité virtuelle, Ecole normale supérieure, Georges Dumont& Charles Pontonnier

PhD in progress (beginning september 2017): Pierre Puchaud, Développement d'un modèle musculo-squelettique générique du soldat en vue du support de son activité physique, Ecole normale supérieure, Charles Pontonnier& Nicolas Bideau & Georges Dumont

PhD in progress: Diane Dewez, Avatar-Based Interaction in Virtual Reality, Oct. 2018, Ferran Argelaguet & Ludovic Hoyet & Anatole Lécuyer

PhD in progress: Rebecca Fribourg, Enhancing Avatars in Virtual Reality through Control, Interactions and Feedback, Sept. 2017, Ferran Argelaguet & Ludovic Hoyet & Anatole Lécuyer

PhD in progress: Florian Berton, Design of a virtual reality platform for studying immersion and behaviours in aggressive crowds, Nov. 2017, Ludovic Hoyet & Anne-Hélène Olivier & Julien Petré

PhD in progress: Benjamin Niay, A framework for synthezing personalised human motions from motion capture data and perceptual information, Oct. 2018, Ludovic Hoyet & Anne-Hélène Olivier & Julien Petré

PhD in progress: Hugo Brument, Toward user-adapted interactions techniques based on human locomotion laws for navigating in virtual environments, Oct. 2018, Ferran Argelaguet & Anne-Hélène Olivier & Maud Marchal.

PhD in progress: Carole Puil, Impact d'une stimulation plantaire orthétique sur la posture d'individus sains et posturalement déficients au cours de la station debout, et lors de la marche, Oct. 2018, Armel Crétual & Anne-Hélène Olivier.

PhD in progress: Amaury Louarn, A topology-driven approach to retargeting of filmic style in 3D environments, University of Rennes 1, Oct. 2017, Marc Christie & Fabrice Lamarche & Franck Multon

PhD in progress: Wang Xi, Towards Robust SLAM technologies, University of Rennes 1, Oct. 2018, Marc Christie & Eric Marchand

PhD in progress: Florence Gaillard, Evaluation en situation écologique des capacités fonctionnelles des membres supérieurs d'enfants hémiplégiques, University Rennes 2, decembre 2015, Armel Crétual & Isabelle Bonan

PhD in progress: Karim Jamal, Les effets des stimulations sensorielles par vibration sur les perturbations posturales secondaires à des troubles de la cognition spatiale après un Accident vasculaire Cérébrale, University Rennes 2, septembre 2016, Isabelle Bonan & Armel Crétual

PhD in progress: Lyse Leclercq, Intérêt dans les activités physiques du rétablissement de la fonction inertielle des membres supérieurs en cas d'amputation ou d'atrophie, University Rennes 2, septembre 2017, Armel Crétual

PhD defended in October 2018: Sean D. Lynch, Perception visuelle du mouvement humain dans les interactions lors de tâches locomotrices, M2S - University Rennes 2, septembre 2015, Anne-Hélène Olivier & Richard Kulpa

PhD in progress: Pierre Touzard, Suivi longitudinal du service de jeunes joueurs de tennis élite : identification biomécanique des facteurs de performance et de risque de blessures, University Rennes 2, septembre 2014, Benoit Bideau & Richard Kulpa & Caroline Martin

PhD defended in July 2018: Yacine Said Bouhalia, Approche transversale pour l?analyse et la reconnaissance de gestes 2D et 3D, INSA of Rennes, septembre 2015, Richard Kulpa & Franck Multon & Eric Anquetil

PhD in progress: Charles Faure, Stratégies coopératives et compétitives dans des tâches d'interactions physiques multiples, Université Rennes 2 - ENS Rennes, septembre 2016, Benoit Bideau & Richard Kulpa

PhD in progress: Théo Perrin, Evaluation de l?influence des feedbacks sur la capacité d?apprentissage dans le cadre d?interactions complexes entre joueurs et influence de ces feedbacks en fonction de l?activité sportive, Université Rennes 2 - ENS Rennes, septembre 2017, Benoit Bideau & Richard Kulpa

PhD in progress: Jean Basset, Realistic Pose Motion Transfer, Inria, October 2018, Franck Multon & Edmond Boyer

PhD in progress: Olfa Haj Mamhoud, Monitoring de l'efficience gestuelle d'opérateurs sur postes de travail, University Rennes2, September 2018, Franck Multon & Georges Dumont & Charles Pontonnier

PhD in progress: Hiep Tuan Pham, Heterogeneous data fusion for safeguarding of cultural heritage of dance, University of Reims Champagne Ardennes, October 2018, Celine Loscos & Franck Multon

10.2.3. *Juries*

PhD: 2018, Marien Couvertier, Identification des paramètres inertiels segmentaires humains, Université de Poitiers. 2018 december 18st, Georges Dumont Rapporteur.

PhD: 2018, Jing Chang, Évaluation des riques de troubles musculo-squelettiques liés au travail basée sur OpenSim, École centrales de Nantes, 2018 november 30, Georges Dumont, Rapporteur.

PhD: 2018, David Desseauve, Pour une meilleure compréhension du rôle des positions d'accouchement en mécanique obstétricale: Analyse biomécanique des postures segmentaires, Université de Poitiers, Armel Crétual, Rapporteur

HDR: 2018, Antonio Mucherino, On the Discretization of Distance Geometry: Theory, Algorithms and Applications, 2018 July, Franck Multon, Examinateur

HDR: 2018, Hazem Wannous, Towards Understanding Human Behavior by Time-Series Analysis of 3D Motion, Universite Lille, 2018 December 5, Franck Multon, President

PhD: 2018, Margarita Khokhlova, Evaluation clinique de la démarche à partir de données 3D, Universite Bourgogne, 2018 November 19, Franck Multon, Rapporteur

PhD: 2018, Martin Bossard, Visual perception of selfmotion: the relative contribution of viewpoint oscillation to the perception of distance travelled, Aix-Marseille Université, 2018 October, Richard Kulpa, Président

Adrien Verhulst, Étude de Faisabilité d'Études Consommateurs d'Achat de Fruits et Légumes « Moches » dans un Supermarché Virtuel, Ecole Centrale de Nantes, Franck Multon, 2018 July 4, Examinateur

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Franck Multon is coordinator of Inria national initiative "Sport Inria" in relation with the French Ministry of Sports, and the French Ministry of Research, for Olympic Games 2024

10.3.2. Articles and contents

Co-author of a book dedicated to undergraduate STAPS students, Elsevier Health Sciences, Sept. 2018. « STAPS: anatomie, physiologie, neurosciences et biomécanique » (P Delamarche, F Multon, T Horrut, V Nougier). Author of the chapter entitled « Biomécanique de la performance motrice » (47 pages).

Book chapter "Réalité virtuelle au service du sport" in a book "Corps et Sport" dedicated to general public, pages 148–164, Editions de la Martinière, 2018.

Book chapter "The democratization of VR-AR" in a book "Virtual Reality and Augmented Reality: Myths and Realities" dedicated to general public, pages 73-123, ISTE Ltd, 2018.

Book chapter "Vers une démocratisation de la RV-RA ?" in a book "Réalité virtuelle et réalité augmentée" dedicated to general public, pages 95-141, ISTE Ltd, 2018.

10.3.3. Interventions

Richard Kulpa was member of the scientific committee for temporary exhibition (1000m2) entitled "Corps et Sport" in "Cité des sciences et de l'industrie", Octobre 16th 2018 to January 5th 2019. The idea is to propose a new approach of sports ti the wide public audience.

MINGUS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- F. Castella organized the workshop "Multiscale numerical methods", Saint-Malo, december 13-15 2017. [15 participants]
- P. Chartier, M. Lemou and F. Méhats organized the MOONRISE Workshop on "Numerical methods for multi-scale PDEs", Institut d'études scientifiques de Cargèse, Cargèse, France, September 3th-7th, 2018.
- P. Chartier, N. Crouseilles, M. Lemou and F. Méhats organized the workshop Henri Lebesgue Center on "Geometric and multi-scale methods for kinetic equations", Rennes, June 12th-15th, 2018.
- A. Crestetto organized the "journée d'analyse Rennes-Nantes", january 2018, ENS Rennes.
- A. Crestetto organized the workshop Henri Lebesgue Center on "mathematical models in health sciences".
- N. Crouseilles co-organized the weekly seminar "Mathematic and applications", ENS Rennes.
- A. Debussche organized the workshop on Stochastic partial differential equations, may 2018, CIRM, Marseille, France.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- N. Crouseilles was member of the scientific committee of the SMAI-2019 conference organized by the university of Nantes.
- E. Faou was head of organization of the semester *scientific computing* sponsored by the Labex Lebesgue (2 international summer schools, 7 workshops and international conferences), january-july 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- P. Chartier is member of the editorial committee of Mathematical Modelling and Numerical Analysis (M2AN).
- A. Debussche is editor in chief of Stochastic Partial Differential Equations: analysis and computations (2013-).
- A. Debussche is associate editor of Differential and Integral Equations (2002-2018).
- A. Debussche is associate editor of Potential Analysis (2011-2018).
- A. Debussche is associate editor of ESAIM:PROC (2012-).
- A. Debussche is associate editor of Journal of Evolution Equation (2014-).
- A. Debussche is associate editor of Applied Mathematics & Optimization (2014-).
- A. Debussche is associate editor of SIAM JUQ (2017-).
- A. Debussche is member of the editorial board of the collection "Mathématiques & Applications de la SMAI", Springer.
- M. Lemou is member of the editorial committee of "Communications in Mathematical Sciences" (CMS).

10.1.3.2. Reviewer - Reviewing Activities

The members of the IPSO team are reviewers for almost all the journals in which they publish (SIAM, JCP, CPDE, CMP, ARMA, JSP, JSC, JMAA, ANM, JCAM, NMPDE, Numer. Math., · · ·)

10.1.4. Invited Talks

- J. Bernier: invited speaker at the workshop "dynamics of Hamiltonian PDEs", february 2018, La Thuile, Italy.

- J. Bernier: invited speaker at the workshop "NABUCO", february 2018, Toulouse, France.

- P. Chartier: invited speaker at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Application, July 5 - July 9, 2018 Taipei, Taiwan.

- A. Crestetto: invited speaker at the conference ABPDEIII, august 2018, Lille, France.

- A. Crestetto: invited speaker at the workshop on "Numerical Methods for Multiscale PDEs", september 2018, Cargèse, France.

- N. Crouseilles: invited talk at the Workshop Numerical Aspects of Hyperbolic Balance Laws and Related Problems, University of Ferrara, Italy, April 2018.

- N. Crouseilles: invited talk at the "Journée Scientifique Inria", june 27-28, Bordeaux, France.

- N. Crouseilles: invited speaker at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Application, July 5 - July 9, 2018 Taipei, Taiwan.

- N. Crouseilles: invited speaker at the worskhop "Integrating the Integrators for Nonlinear Evolution Equations: from Analysis to Numerical Methods, High-Performance-Computing and Applications", december 2018, BIRS, Banff, Canada.

- A. Desbussche: invited speaker "Aziz lecture", university of Maryland, april 2018, USA.

- A. Desbussche: invited speaker at the "school on PDEs", Riemann international school of mathematics, july 2018, Varese, Italy.

- E. Faou: invited plenary speaker at the conference on "Mathematics of Wave Phenomena", august 2018, KIT Karlsruhe, Germany.

- E. Faou: invited speaker at the worskhop "Integrating the Integrators for Nonlinear Evolution Equations: from Analysis to Numerical Methods, High-Performance-Computing and Applications", december 2018, BIRS, Banff, Canada.

- M. Lemou: invited speaker at the 12th AIMS Conference on Dynamical Systems, Differential Equations and Application, July 5 - July 9, 2018 Taipei, Taiwan.

- M. Lemou: invited speaker at the Ki-Net Conference on "Mathematical and Numerical Aspects of Quantum Dynamics", June 19-21, 2018. CSCAMM, University of Maryland, USA.

- M. Lemou: invited speaker at "Premier Congrès Franco-Marocain de Mathématiques Appliquées", april 16-20 2018, Marrakech, Maroc.

- F. Méhats: invited talk at the Workshop Numerical Aspects of Hyperbolic Balance Laws and Related Problems, University of Ferrara, Italy, April 2018.

- F. Méhats: 7 hours mini course on Averaging Techniques, Colloque Inter' Actions, Lyon, May 2018.

- F. Méhats: talk at the day Space-Time Multiscale Methods (Atelier MePhy), Paris, June 2018.

- F. Méhats: talk at the University of Wisconsin, October 2018.

- F. Méhats: talk at a workshop on dispersive equations, October 2018.

- G. Morel: invited speaker at the Numkin workshop, october 2018, Max Planck Institute, Garching, Germany.

- P. Navaro: invited speaker at the CANUM 2018, France.

- P. Navaro: invited speaker at the IPL meeting, France.

- P. Navaro: invited speaker at the Finist'R meeting, France.

- X. Zhao: invited speaker at the workshop on "Numerics for cosmology - the Schrödinger method", may 22nd-25th 2018, WPI Vienna, Austria.

- X. Zhao: invited speaker at the workshop on "weak turbulence, kinetic problems and related", july 14-15 2018, Wuhan university, China.
- X. Zhao: invited speaker at the "Forum on modern challenges in modelling and numerics", july 20th-21st 2018, Beijing CSRC, China.
- X. Zhao: invited speaker at the "Modern Numerics on Nonlinear Wave and Dispersive Equations and Related Problems", august 8th-9th 2018, Chengdu university, China.
- X. Zhao: invited speaker at the Numkin workshop, october 2018, Max Planck Institute, Garching, Germany.
- X. Zhao: invited speaker at the workshop on "Numerical Methods for Multiscale PDEs", september 2018, Cargèse, France.

10.1.5. Scientific Expertise

- P. Chartier was member of the hiring committee CR2-Inria (Bordeaux).
- P. Chartier was member of the hiring committee the Inria promotion committee (DR1-DR0).
- A. Crestetto was member of the hiring committee AGPR-2018, ENS Rennes, France.
- A. Crestetto was the vice-head of the hiring committee of the MCF position, university of Nantes, France.
- A. Debussche was reviewer for Austrian Science Fundation (FWF).
- E. Faou is the member of the CNU 26.
- E. Faou was member of the hiring committee of the professor position, university of Dijon, France.

10.1.6. Research Administration

- F. Castella was member of the evaluation HCERES committee of the MICS laboratory (Centrale-Supélec).
- P. Chartier is the vice-head of science (DSA) of the Rennes Inria-Center until the end of 2018,
- P. Chartier is member of the national evaluation committee (CE) of Inria until the end of 2018.
- P. Chartier is member of the direction committee (ED) of the Rennes Inria-Center until the end of 2018
- P. Chartier is member of the G6-committee (bureau of the direction committee) Inria-Rennes-Bretagne-Atlantique center until the end of 2018.
- A. Crestetto is member of the mathematics department council, university of Nantes.
- A. Crestetto is member of the scientific council of the sciences unity, university of Nantes.
- A. Crestetto is the SMAI correspondent for the mathematics laboratory of Nantes.
- N. Crouseilles is member of the scientific council of ENS Rennes.
- N. Crouseilles is member of the mathematic laboratory (IRMAR) council.
- N. Crouseilles is member of the Fédération de Fusion council (University of Rennes representative).
- A. Debussche is member of the scientific council of the Fédération Denis Poisson.
- A. Debussche is member of the administrative council of ENS Paris-Saclay.
- A. Debussche if scientific vice-deputy and international relations of ENS Rennes.
- A. Debussche is vice-head ot the Centre Henri Lebesgue.
- A. Debussche is vice-head of the Lebesgue agency for Mathematic and Innovation.
- E. Faou is the AMIES correspondent for Inria Bretagne Atlantique.
- E. Faou is member of the scientific council of the Pôle Universitaire Léonard de Vinci.
- M. Lemou is the head of the IRMAR team "Analyse numérique" composed of 48 members.
- M. Lemou is member of the scientific council of ENS Rennes.

- M. Lemou is member of the scientific council of the LABEX Lebesgue.
- P. Navaro is member of the national network "calcul" http://calcul.math.cnrs.fr. This network is well known for interdisciplinarity of CNRS dedicated to technological aspects of scientific computing (programming, optimization, architectures, · · ·).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence:

- P. Chartier: lecture "Ordinary differential equations" of the first year (Licence) of the Magistère, Ecole Normale Supérieure de Rennes (24 hours).
- N. Crouseilles: lecture on "Numerical methods" of L3, ENS Rennes (30h).

Master:

- F. Castella: lecture on "Numerical methods" of M1, University of Rennes 1 (50 hours).
- P. Chartier: lecture on "Numerical methods for kinetic equations" of the third year (M2) of the Magistère, University of Rennes 1 (12 hours).
- A. Crestetto: lecture on "Numerical methods for incompressible fluids" of M2, university of Nantes (62h).
- N. Crouseilles: lecture on "Numerical methods for PDEs" of M1, ENS Rennes (30h).
- E. Faou: lecture on "numerical integration of Hamiltonian PDEs" of M2, university of Rennes 1 (30h).
- M. Lemou: lecture on "elliptic PDEs" of the second year (M1) of the Magistère, University of Rennes 1 (36 hours).
- M. Lemou: lecture on "fundamental tools for PDEs" of the third year (M2) of the Magistère, University of Rennes 1 (12 hours).
- M. Lemou: lecture on "Numerical tools for kinetic equations" of the third year (M2) of the Magistère, University of Rennes 1 (12 hours).
- P. Navaro: lecture on "numerical tools for Big Data", master, university of Rennes 2.
- P. Navaro: lecture on "Python programming", master, ENSAI.

Doctorat:

- F. Casas: lecture for PhD students " A (very) Short Introduction to Geometric Numerical Integration and Splitting Methods", (4h).

10.2.2. Supervision

PhD: M. Fontaine, Modèles mathématiques de type HMF : stabilité et méthodes numériques autour d'états staionnaires, ENS Rennes, july 13th, advisors: M. Lemou and F. Méhats.

PhD: M. jugal Nguepedja Nankep, Modélisation stochastique de systèmes biologiques multi-échelles et inhomogènes en espace, ENS Rennes, march 22th, advisor: A. Debussche.

PhD in progress: J. Bernier, Mathematical and numerical anaysis of nonlinear transport equations, started in september 2016, advisors: N. Crouseilles and E. Faou.

PhD in progress: A. Rosello, "Approximation-diffusion pour des équations cinétiques pour les modèles de type spray", started in september 2016, advisors: A. Debussche and J. Vovelle (CNRS, Lyon).

PhD in progress: J. Massot, "Modélisation et simulation de plasmas chauds", started in october 2018, advisors: A. Crestetto (Nantes) and N. Crouseilles.

PhD in progress: L. Trémant, "Méthodes d'analyse asymptotique et d'approximation numérique de modèles dissipatifs multi-échelles : EDO à variété centrale et modèles cinétiques", started in october 2018, advisors: P. Chartier and M. Lemou.

10.2.3. Juries

- F. Castella: reviewer of the thesis and member of the PhD committee of P. Terrier (university of Paris Est and CEA).
- A. Crestetto: member of the PhD committee of the thesis of M. Stauffert (university of Versailles).
- N. Crouseilles: reviewer of the thesis and member of the PhD comittee of N. Bouzat (university of Strasbourg, Inria and CEA).
- N. Crouseilles: member of the PhD comittee of M. Malo (ENS Rennes).
- A. Debussche: reviewer of the HDR and member of the HDR committee of G. Dujardin (Inria, university of Lille).
- A. Debussche: member of the PhD committee of M. Tomasevic (university of Nice).
- A. Debussche: member of the PhD committee of P. Tsatsoulis (university of Warwick).
- E. Faou: reviewer of the thesis and member of the PhD committee of M.-S. Dupuy (university of Paris Diderot).
- E. Faou: member of the HDR committee of G. Dujardin (Inria, university of Lille).

10.3. Popularization

10.3.1. Interventions

- A. Crestetto: talks on "traffic flows" in several educational institutions within the framework of "Essentielles", university of Nantes.
- N. Crouseilles: welcoming of two schoolchildren at IRMAR laboratory.
- N. Crouseilles: welcoming of a student within the framework of the modulus "visit a researcher" (3 meetings).

10.3.2. Internal action

- P. Navaro: Python training (3 days) at the CNRS delegation of Lille, april 2018.
- P. Navaro: Python training (3 days) for the Rennes DSI, june 2018.

MYRIADS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Guillaume Pierre was General Chair of the 19th ACM/IFIP Middleware conference which took place on December 10-14th 2018 in Rennes. The event attracted more than 200 participants (a record number for this conference), including 70% from abroad.

10.1.1.2. Member of the Organizing Committees

- Anne-Cécile Orgerie was a member of the Organizing Committee of the 3rd GDR RSD and ASF Winter School on Distributed Systems and Networks.
- Anne-Cécile Orgerie was a member of the Organizing Committee of the E3-RSD Research school for early stage researchers on Energy Efficiency of Networks and Distributed Systems.
- Maryse Fouché and Julie Montégu were members of the organizing committee of ACM/IFIP Middleware 2018.
- Anne-Cécile Orgerie was Student activities co-chair for ACM/IFIP Middleware 2018.
- Christine Morin was Sponsor chair for ACM/IFIP Middleware 2018.
- Benjamin Camus was Publicity co-chair and Web and social media chair for ACM/IFIP Middleware 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Anne-Cécile Orgerie was Co-chair of the Track on Cluster and Cloud Computing for Euro-Par 2018.
- Anne-Cécile Orgerie was Co-chair of the Special Track on Big Data/Smart Cities and IoT for IEEE BigData Congress 2018.
- Guillaume Pierre was vice-PC chair of the short paper track at the IEEE ICDCS 2018 conference.

10.1.2.2. Member of the Conference Program Committees

- Anne-Cécile Orgerie was a member of the Workshop committee and Poster committee at ACM/IEEE Supercomputing Conference 2018 (SC'18).
- Anne-Cécile Orgerie was a member of the program committee for IEEE Cluster Conference 2018.
- Cédric Tedeschi was a member of the program committee for ICCS 2018.
- Cédric Tedeschi was a member of the program committee for ICWS 2018.
- Cédric Tedeschi was a member of the program committee for Compas 2018.
- Cédric Tedeschi was a member of the program committee for SBAC-PAD 2018.
- Cédric Tedeschi was a member of the program committee for IEEE CSE 2018.
- Guillaume Pierre was a member of the program committee for ICACNI 2018.
- Guillaume Pierre was a member of the program committee for ISORC 2018.
- Guillaume Pierre was a member of the program committee for CloudCom 2018.
- Guillaume Pierre was a member of the program committee for IEEE/ACM UCC 2018.
- Guillaume Pierre was a member of the program committee for mF2C 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE ISPDC'2018.

- Nikos Parlavantzas was a member of the program committee for Euro-Par 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE/ACM UCC 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE CloudCom 2018.
- Nikos Parlavantzas was a member of the program committee for IEEE CSE 2018.
- Nikos Parlavantzas was a member of the program committee for CrossCloud 18.
- Nikos Parlavantzas was a member of the program committee for VHPC'18.
- Nikos Parlavantzas was a member of the program committee for CLOSER 2018.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- Nikos Parlavantzas served as a reviewer for IEEE Computer.
- Nikos Parlavantzas served as a reviewer for JSS.

10.1.4. Invited Talks

- Anne-Cécile Orgerie gave a presentation Entretiens Jacques Cartier, Lyon, France, November 12, 2018.
- Anne-Cécile Orgerie gave a keynote at GreenDays@Toulouse, Toulouse, France, July 3, 2018.
- Anne-Cécile Orgerie gave a seminar organized by France Stratégie, Paris, France, March 13, 2018.
- Guillaume Pierre gave an invited talk at the Fog Placement meeting, Grenoble, June 19-20th 2018.
- Guillaume Pierre gave a keynote at the Journées Cloud, Troyes, September 12-13th 2018.
- Martin Quinson gave a presentation at the spring school "Algorithmique et programmation" for secondary teachers, Luminy, May 11th 2018.
- Martin Quinson gave a presentation to the seminar of the "Large Scale System" department of IRISA, Rennes, November 23th 2018.
- Martin Quinson gave a presentation to the seminar of the DGD-T of Inria, Rennes, October 18th 2018.

10.1.5. Leadership within the Scientific Community

- Anne-Cécile Orgerie is co-chair of the Green axis of the CNRS GDR RSD (Network and Distributed Systems working group).
- Anne-Cécile Orgerie is vice-chair of the ASF: the French chapter of ACM SIGOPS.
- Cédric Tedeschi is member of the steering committee of the Compas conference.

10.1.6. Scientific Expertise

- Jean-Louis Pazat is the coordinator of experts in Information Technology for the evaluation of international bilateral collaborations at the ministry of research and education.

10.1.7. Research Administration

- Anne-Cécile Orgerie is an officer (chargée de mission) for the IRISA cross-cutting axis on Green IT.
- Martin Quinson is the leader of the "Large Scale Systems" department of IRISA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

License: Jean-Louis Pazat, Introduction à la programmation, L1, Département STPI, INSA de Rennes.

License: Guillaume Pierre, Systèmes Informatiques, L3 MIAGE, Univ. Rennes 1.

License: Guillaume Pierre, Systèmes d'exploitation, L3 Informatique, Univ. Rennes 1.

License: Jean-Louis Pazat, Calcul Hautes Performances, Département Informatique L3, Insa Rennes.

License: Jean-Louis Pazat, Calcul Hautes Performances, Département Mathematiques L3, Insa Rennes.

Licence: Martin Quinson, Architecture et Systèmes, 60 hETD, L3 Informatique, ENS Rennes.

Licence: Martin Quinson, Pedagogy, 15 hETD, L3 Informatique, ENS Rennes.

Master: Anne-Cécile Orgerie, Cloud & Big Data, 30 hETD, M1, ENS Rennes.

Master: Anne-Cécile Orgerie, Green ICT, 4.5 hETD, M2, Telecom SudParis Evry.

Master: Anne-Cécile Orgerie, Green ICT,3 hETD, M2, ENSSAT Lannion.

Master: Anne-Cécile Orgerie, Green ICT, 22.5 hETD, M2, IMT-Atlantique Nantes.

Master: Cédric Tedeschi, Concurrency in Systems and Networks, M1, Univ. Rennes 1.

Master: Cédric Tedeschi, Service Technology, M1, Univ. Rennes 1.

Master: Cédric Tedeschi, Parallel Programming, M1, Univ. Rennes 1.

Master: Guillaume Pierre, Distributed Systems, M1, Univ. Rennes 1.

Master: Guillaume Pierre, Service technology, M1, Univ. Rennes 1.

Master: Guillaume Pierre, Techniques de développement pour le cloud, M2, Univ. Rennes 1.

Master: Guillaume Pierre, Advanced Cloud Infrastructures, M2, Univ. Rennes 1.

Master: Jean-Louis Pazat, Parallel Computing, M1 Département Informatique Insa Rennes.

Master: Jean-Louis Pazat, Internet Of Things, M1 & M2 Département Informatique Insa Rennes.

Master: Nikos Parlavantzas, Clouds, M1, INSA Rennes.

Master: Nikos Parlavantzas, Performance Evaluation, M1, INSA Rennes.

Master: Nikos Parlavantzas, Project in Large-Scale Systems, M2, INSA Rennes.

Master: Nikos Parlavantzas, Big Data and Applications, M1, INSA Rennes.

Master: Martin Quinson, Préparation à l'Agrégation de Science Industrielle (Programming and Software Engineering, 20h ETD; Operating Systems and C programming, 20 hETD; Networking, 20h ETD), ENS Rennes.

Master: Martin Quinson, Scientific Outreach, M2, 30 hEDT, ENS Rennes.

10.2.2. Supervision

PhD: Issam Rais, Multi criteria scheduling for large scale High Performance Computing environments, defended on September 28th, 2018, Anne-Cécile Orgerie, Anne Benoit (ROMA), Laurent Lefèvre (Avalon).

PhD: David Guyon, Supporting energy-awareness for cloud users, defended on December 7th, 2018, Anne-Cécile Orgerie, Christine Morin.

PhD in progress: Paulo Rodrigues De Souza Junior, "fog computing service roaming techniques", started in December 2018, advised by Guillaume Pierre and Daniele Miorandi.

PhD in progress: Davaadorj Battulga, "Scalable data pipelines for fog computing applications", started in September 2018, advised by Cédric Tedeschi and Daniele Miorandi.

PhD in progress: Mulugeta Tamiru, "Automatic optimization of autonomous management systems", started in September 2018, advised by Guillaume Pierre and Erik Elmroth.

PhD in progress: Mozhdeh Farhadi, "Fog computing-enabled IoT situation-aware services", started in June 2018, advised by Guillaume Pierre and Daniele Miorandi.

PhD in progress: Hamidreza Arkian, "Stream processing operator placement", started in June 2018, advised by Guillaume Pierre and Erik Elmroth.

PhD in progress: Mehdi Belkhiria, Dynamic Stream Processing for Maritime Traffic Surveillance, started in December 2017, advised by Cédric Tedeschi.

PhD in progress (*co-tutelle*): Yasmina Bouizem, Energy-efficient, fault-tolerance mechanisms for containerized cloud applications, started in December 2017, Didi Fedoua (Tlemcen University, Algeria), Djawida Dib (Tlemcen University, Algeria), Christine Morin, Nikos Parlavantzas.

PhD in progress: Ali Jawad Fahs, "Decentralized Fog Computing Infrastructure Control", started in October 2017, Guillaume Pierre.

PhD in progress: Clément El Baz, Reactive security monitoring in clouds, started in October 2017, Louis Rilling, Christine Morin.

PhD in progress: Loic Guegan, Simulating Internet of Things, started in October 2017, advised by Martin Quinson and Anne-Cécile Orgerie.

PhD in progress: The Anh Pham, Dynamic Formal Verification of High Performance Runtimes and Applications, started in November 2016, Martin Quinson, Thierry Jéron.

PhD in progress: Arif Ahmed, "Scalable Decentralized Edge Cloud Infrastructures", started in October 2016, Guillaume Pierre.

PhD in progress: Baptiste Goupille-Lescar, Designing agile, distributed cyber-physical systems with advanced collaboration capabilities, started in January 2016, Eric Lenormand (Thales), Christine Morin, Nikos Parlavantzas.

PhD in progress: Pernelle Mensah, Security policy adaptation driven by risk evaluation in modern communication infrastructures, started in December 2015, Samuel Dubus (Alcatel-Lucent), Christine Morin, Guillaume Piolle (Cidre), Eric Totel (Cidre).

PhD in progress: Genc Tato, Locality-aware Lazy Overlay Networks for WANS, started in December 2015, Marin Bertier, Cédric Tedeschi.

PhD in progress: Amir Teshome, Definition and enforcement of Service-Level Agreements for Cloud security monitoring, started in October 2015, Louis Rilling, Christine Morin.

PhD in progress: Bruno Stevant, Resource allocation strategies for service distribution at the Internet edge to optimize end-to-end latency, started in December 2014 (part-time), Jean-Louis Pazat.

10.2.3. Juries

- Anne-Cécile Orgerie was preliminary examiner (equivalent to external reviewer) for the PhD of Kashif Khan, Aalto University, Finland, March 2018.
- Guillaume Pierre was an external reviewer in the PhD committee of Alejandro Tomsic, Sorbonne Université, April 20th 2018.
- Guillaume Pierre chaired the PhD committee of Yacine Taleb, Univ. Rennes 1, October 2nd 2018.
- Guillaume Pierre was a member in the PhD committee of David Guyon, Univ. Rennes 1, December 7th 2018.
- Guillaume Pierre was an external reviewer in the PhD committee of Ye Xia, Université Grenoble Alpes, December 17th 2018.

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Martin Quinson is on the scientific board of the Blaise Pascal foundation, boosting the scientific outreach in the domains of Maths and Computer Science.

10.3.2. Articles and contents

- Anne-Cécile Orgerie participated to the radio program La methode scientifique by Nicolas Martin with Jean-Marc Jancovici, France Culture, October 17, 2018.

- Anne-Cécile Orgerie was interviewed by Agnes Rougier, Radio France Internationale, September 26, 2018.

- Anne-Cécile Orgerie was interviewed by Laure Cailloce for the Journal of CNRS, May 2018.

10.3.3. Education

- L codent L créent - An outreach program to send PhD students to teach Python to middle school students in 8 sessions of 45 minutes. Tassadit Bouadi (Univ. Rennes 1), Camille Maumet (VisAGeS) and Anne-Cécile Orgerie (Myriads) are coordinating the local version of this program, initiated in Lille. The first session in Rennes is planned for April 2019. The program is currently supported by: Fondation Blaise Pascal, ED MathSTIC, Inria and Fondation Rennes 1.

- Anne-Cécile is a member of the Jury for the Agrégation de Sciences Industrielles, an examination for future secondary teachers of engineering

- Martin Quinson is a trainer for the Agrégation de Sciences Industrielles.

- Martin Quinson is in charge of a M2 lecture on scientific vulgarization at ENS Rennes. The students are asked to come up with new activities (or improve existing ones) on their research field.

- Martin Quinson was a trainer during the SIF summer school on "Scientific Vulgarization in Computer Science", held in Toulouse, June 6th-8th 2018.

10.3.4. Interventions

- Anne-Cécile Orgerie and Martin Quinson participated in the organization of a day for middle school student to deconstruct computer science-related stereotypes http://emergences.inria.fr/2018/newsletter-n53/l53-informaticiennes.

- Martin Quinson presented various unplugged activities to primary and secondary students over the year.

- Anne-Cécile Orgerie and Martin Quinson hosted 2 secondary students during one week (17th-21th december 2018).

10.3.5. Creation of media or tools for science outreach

- Martin Quinson initiated a new unplugged activity with Philippe Marquet (EPI Dreampal – Lille) and Corentin Ferry (student at ENS Rennes) called M999 to explain the internal behavior of a CPU. This activity is still to be tested live with pupils.

- Martin Quinson helped the M2 students of ENS Rennes to create or improve unplugged activities on their research topics. Activities on Classification, Image Reconstruction, Modeling, Cryptographic Protocols, Map-Reduce or Verifications are still incubating at this point.

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PACAP 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

Isabelle Puaut is General Chair of the 2018 IEEE Real-Time Systems Symposium (RTSS), held in Nashville, Tennessee (USA) in December 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Sylvain Collange was PC member of DATE 2018 and Compas'2018.
- Pierre Michaud was a member of the program committees of the ICCD 2018 and HPCA 2019 conferences.
- Isabelle Puaut was a member of the program committee of the Euromicro Conference on Real Time Systems (ECRTS) 2018 and 2019, IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS) 2018.
- Isabelle Puaut was a member of the program committee of the "Real-Time and (Networked) Embedded Systems" track of IEEE ETFA 2019.
- Isabelle Puaut was a member of the program committee of the 26th International Conference on Real-Time Networks and Systems, held in Poitiers, October 2018.
- Isabelle Puaut was a member of the program committee of the 18th Workshop on Worst-Case Execution Time Analysis (WCET 2018), held in Barcelona, Spain, July 2018.
- Erven Rohou was a member of the program committee of the International Symposium on Code Generation and Optimization (CGO) 2019.
- Erven Rohou was a member of the program committee of the following international workshops: Euro-EDUPAR, ANDARE, REV-A.
- André Seznec was a member of the ICCD 2018 program committee.

10.1.2.2. Reviewer

Members of PACAP routinely review submissions to numerous international conferences and events.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Isabelle Puaut is Associate Editor of IEEE Transactions on Computers (IEEE TC) and Springer International Journal of Time-Critical Computing Systems.
- André Seznec is a member of the editorial boards of IEEE Micro and ACM Transactions on Architecture and Compiler Optimization.

10.1.3.2. Reviewer - Reviewing Activities

Members of PACAP routinely review submissions to numerous international journals.

10.1.4. Invited Talks

Members of the PACAP team were invited to present their activity at the RISC-V seminar organized by CEA Grenoble.

André Seznec was an invited speaker at the PER' 18 workshop in Gothenburg, Sweden, May 2018.

André Seznec was an invited speaker at the WOS'18 workshop in Rennes December 2018.

10.1.5. Leadership within the Scientific Community

Isabelle Puaut is member of the steering committee of RTNS (Real-Time Networks and Systems).

Isabelle Puaut is member of the steering committee of the Worst Case Execution Time (WCET) workshop, held in conjunction with the Euromicro Conference on Real Time Systems (ECRTS).

Isabelle Puaut is member of the steering committee of the Euromicro Conference on Real Time Systems (ECRTS).

10.1.6. Research Administration

Sylvain Collange is a member of the CUMIR (*Commission "Utilisateurs des moyens informatiques Recherche"*).

Isabelle Puaut is member of the Research Council (*Commission Recherche*) of the Université de Rennes 1. She is member of the working group "Habilitation à Diriger des Recherches".

Isabelle Puaut is member of the board of directors (*Conseil d'Administration*) of ISTIC (computer science and electrical engineering departement of Université de Rennes 1).

André Seznec is an elected member of the Administration Council of Inria.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence: D. Hardy, Real-time systems, 68 hours, L3, Université de Rennes 1, France
- Master: D. Hardy, Operating systems, 53 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Operating systems: concepts and system programming under Linux (SEL), 75 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Operating systems kernels (NOY), 30 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Real-time systems, 55 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Research-oriented student project, 24 hours, M1, Université de Rennes 1, France
- Master: I. Puaut, Optimizing and Parallelizing Compilers (OPC), 9 hours, M2, Université de Rennes 1, France
- Master: I. Puaut, Writing of scientific publications, 9 hours, M2 and PhD students, Université de Rennes 1, France
- Master: A. Seznec, Advanced Design and Architectures, 12 hours, M2 SIF, Université de Rennes 1.
- Master: S. Collange, Parallel Programming, 22 hours, M1, Université de Rennes 1, France
- Master: S. Collange, GPU programming, 32 hours, M2, ESIR, France
- Master: S. Collange, Advanced computer architecture, 4 hours, M2, Université de Rennes 1, France
- Master: S. Collange, Advanced CUDA programming, 8 hours, M2, Sorbonne Universités, France

10.2.2. Supervision

PhD: Viet Anh Nguyen, Worst-Case Execution Time (WCET) Estimation for Many-core Architectures, Université de Rennes 1, Feb 2018, advisors I. Puaut (50 %) and D. Hardy (50 %)

Benjamin Rouxel, Code optimizations for WCET calculation on many-core platforms, Dec 2018, advisors I. Puaut (70 %) and S. Derrien from the CAIRN group (30 %).

PhD : Rabab Bouziane, Software-level Analysis and Optimization to Mitigate the Cost of Write Operations on Non-Volatile Memories, Université de Rennes 1, Dec 2018, advisors E. Rohou (70 %) et A. Gamatié from LIRMM (30 %)

PhD : Simon Rokicki, Accélération matérielle pour la traduction dynamique de programmes binaires, Université de Rennes 1, 17 Dec 2018, advisors S. Derrien from CAIRN (70 %) et E. Rohou (30 %)

PhD in progress : Kévin Le Bon, Dynamic Binary Analysis and Optimization for Cyber-Security, started Dec 2018, advisors E. Rohou (30 %), G. Hiet from CIDRE (35 %), F. Tronel from CIDRE (35 %)

PhD in progress : Bahram Yarahmadi, Compiler Optimizations and Worst-Case Energy Consumption, started Feb 2018, advisor E. Rohou

PhD in progress: Arif Ali Ana-Pparakkal, *Dynamic Function Specialization*, Université de Rennes 1, started Feb 2015, advisor E. Rohou

PhD in progress: Kleovoulos Kalaitzidis, Ultrawide Issue Superscalar Processors, Université de Rennes 1, started Dec 2016, advisor A. Seznec

PhD in progress: Niloofar Charmchi, Hardware prefetching and related issues, Université de Rennes 1, started Jan 2017, advisor A. Seznec and S. Collange

PhD in progress: Daniel Rodrigues Carvalho, Towards a compressed memory hierarchy, Université de Rennes 1, started Oct 2017, advisor A. Seznec

10.2.3. Juries

Isabelle Puaut was a member of the following hiring committees (comités de sélection):
- assistant professor position at Université de Rennes 1 on cybersecurity.
- assistant professor at Université de Bretagne Occidentale on cybersecurity in real-time systems
- assistant professor at Université de Nantes on software and hardware for embedded systems

Erven Rohou was a *special expert* for admittance of A. Jimborean as Associate Professor (Swedish *docent*) in Computer Science (Uppsala, Sweden).

Isabelle Puaut was a member of the following committees:
- Mohamed Said Mosli Bouksiaa, Performance variation considered helpful, Université de Paris Saclay, April 2018 (jury member)
- Risat Mahmud Pathan, Design and analysis of real-time parallel and distributed systems. Chalmers University of Technology, Sweden, Oavlönad Docent, Swedish equivalent to HdR, external reviewer.

Erven Rohou was a member of the following committees:
- Antoine Faravelon, Acceleration of memory accesses in Dynamic Binary translation, Université Grenoble Alpes, Oct 2018 (reviewer).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Erven Rohou is "correspondant scientifique des relations internationales" for Inria Rennes Bretagne Atlantique. As such he is a member of the Inria COST GTRI (Groupe de Travail "Relations Internationales").

10.3.2. Articles and contents

PACAP contributed to Inria's white book on cybersecurity.

10.3.3. Education

Erven Rohou was invited to present the life of a researcher in computer science to middle school students (*Collège de Cesson-Sévigné*)

10.3.4. Interventions

We welcomed a student, grade of 3e (middle-school), for her 3-day observation stay to discover the daily life of researchers in computer science.

PANAMA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

- Rémi Gribonval, the scientific organizer of the 13th Peyresq summer school in signal and image processing, jointly organized in July 2018 by GRETSI and GDR ISIS.
- Rémi Gribonval, scientific and organization board of the Conference on Deep Learning: from Theory to Applications organized in the framework of the LABEX Centre Henri Lebesgue, Rennes, September 4-6 2018.
- Valentin Gillot and Romain Lebarbenchon, event coordinators of the 2018 Science and Music Day (Journée Science et Musique) organized by IRISA.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Nancy Bertin and Frédéric Bimbot, coordinators of the Science and Music Young Researcher Award (Prix Jeune Chercheur Science et Musique).
- Rémi Gribonval and Frédéric Bimbot, scientific coordinators of the Science and Music Day (Journée Science et Musique) organized by IRISA.

10.1.2.2. Member of the Conference Program Committees

- Antoine Deleforge, Area Chair in Bayesian Inference for the 14th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA 2018).
- Nancy, Area Chair in Sparsity-related Methods for the 14th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA 2018).
- Nancy, member of the program committee of the Journées d'Informatique Musicale (JIM 2018, Amiens, France).
- Rémi Gribonval, member of the program committee of the GRETSI.

10.1.2.3. Organization of special sessions

- Antoine Deleforge, organizer and co-chair with Ivan Dokmanic and Robin Schleibler of a special session on "Geometry-Aware Auditory Scene Analysis" at ICASSP 2018, Calgary, Canada.
- Antoine Deleforge, organizer and co-chair with Angélique Drémeau of a special session on "Advances in Phase Retrieval and Applications" at LVA/ICA 2018, Guildford, UK.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Frédéric Bimbot appointed as Editor-in-Chief of the international journal *Speech Communication*.
- Rémi Gribonval, Associate Editor of the international journal *Constructive Approximation*.

10.1.4. Invited Talks

- Frédéric Bimbot, JIM 2018 (Journées d'Informatique Musicale) in Amiens, France.
- Frédéric Bimbot, JEP 2018 (Journées d'Etudes sur la Parole), in Aix-en-Provence, France.
- Rémi Gribonval, Oberwolfach workshop on Applied Harmonic Analysis and Data Processing, March 25-31 2018, in Oberwolfach, Germany.

- Rémi Gribonval, CM+X workshop on Inverse Problems and Machine Learning, Feb 8-11 2018, in Caltech, Los Angeles, USA.
- Nancy Bertin, JJCAAS (Journées Jeunes Chercheurs en Audition, Acoustique musicale et Signal audio), June 6-8 2018, in Brest, France.

10.1.5. Scientific Expertise

- Rémi Gribonval, vice-president of the Scientific Advisory Board of the Acoustics Research Institute from the Austrian Academy of Sciences in Vienna.
- Frédéric Bimbot, member of the International Advisory Council of ISCA (International Speech Communication Association).
- Frédéric Bimbot, member of the ANR Expert Scientific Committee n°38, dedicated to the Digital Revolution and its relations to Knowledge and Culture.
- Rémi Gribonval, member of the EURASIP Special Area Team (SAT) on Signal and Data Analytics for Machine Learning (SiG-DML) since 2015.
- Antoine Deleforge, member of the IEEE Audio and Acoustic Signal Processing Technical Committee.

10.1.6. Research Administration

- Frédéric Bimbot, Head of the "Digital Signals and Images, Robotics" department in IRISA (UMR 6074) until June 2018.
- Rémi Gribonval, member of the organization committee of the 2019 GDR ISIS / GRETSI / Club EAA thesis prize in signal and image processing.

10.2. Teaching - Supervision - Juries

Master : N. Bertin, "Vocal and Audio Interactions", 4 hours, M2, Université Rennes 1, France.

Master : N. Bertin, "Fundamentals of Signal Processing", 24 hours, M1, Ecole Normale Supérieure (ENS) de Bretagne, Rennes, France.

Master : N. Bertin, "Foundations of Smart Sensing", 9 hours, M2, Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes, France.

Master : N. Bertin, "Sparsity in Signal and Image Processing", 12 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Master : R. Gribonval, "High dimensional statistical learning", 12 hours, M2, Université Rennes 1, France.

Master: R. Gribonval, coordination of the HDL module "High dimensional statistical learning" within the SIF M2, 20 hours, Université Rennes 1, France.

Master : R. Gribonval, "Sparsity in Signal and Image Processing", 8 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Master : R. Gribonval, coordination of the module "Sparsity in Signal and Image Processing", 48 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Bachelor : A. Deleforge, "Discovery of selected topics in audio signal processing research", 6 hours, L3, École Supérieure de Réalisation Audiovisuelle (ESRA), France.

Master : A. Deleforge, "Sparsity in Signal and Image Processing", 4 hours, M2, Institut National des Sciences Appliquées (INSA) de Rennes, France.

Master : A. Deleforge, "Vocal and Audio Interaction", 6 hours, M2, Université Rennes 1, France.

Master : F. Bimbot, coordination of the VAI module "Vocal and Acoustic Interactions" within the SIF M2, 20 hours, Université de Rennes 1, France

10.3. Popularization

10.3.1. Journée Science et Musique (JSM 2018)

Participants: Valentin Gillot, Romain Lebarbenchon, Rémi Gribonval, Nancy Bertin, Frédéric Bimbot, Ewen Camberlein, Stéphanie Lemaile, Corentin Louboutin, Antoine Chatalic, Clément Gaultier, Cássio Fraga Dantas, Diego Di Carlo.

with contributions and support from: Valérie Gouranton, Ronan Gaugne, Florian Nouviale, Evelyne Orain, Agnès Cottais, Catherine Jacques-Orban and many more.

PANAMA coordinated the organization of a public event called "Journée Science et Musique" ("Music and Science Day"). This yearly event organized by the METISS/ PANAMA Team since 2011 aims at sharing with the wide audience the latest innovations and research projects in music. The motivation for hosting this event is to explain and promote the technology behind audio-processing that people face in their daily lives. The event is free to everyone and people have the possibility to attend talks by selected speakers or meet numerous experts that demonstrate current projects in which people can interactively participate. Edition 2018 hosted approximately 500 visitors and was a partner of the "Festival des Sciences" and "Festival Maintenant" in Rennes.

10.3.2. 250th Anniversary of Joseph Fourier's birth

Participants: Nancy Bertin, Frédéric Bimbot, Antoine Deleforge, Rémi Gribonval.

PANAMA has been involved in the *Comité Fourier 250* by participating to, and triggering interest for the 250th Anniversary of Joseph Fourier's birth, in the framework of *Commémorations Nationales* for the year 2018. In particular, Frédéric Bimbot has been invited to give a talk at the JEP 2018 on Fourier's heritage in Speech Processing, and the *Journée Science et Musique 2018* (see above) has included a conference where Fourier's Transform was introduced and called for to explain concepts relating to music perception.

10.3.3. Articles and contents

Rémi Gribonval wrote an article published online on Interstices [47]

RAINBOW Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Marie Babel was the General Chair of the 2018 IROS Workshop on "Assistance and Service Robotics in a Human Environment", Madrid, Spain, co-organized by Fabio Morbidi (MIS, Université Picardie Jules Verne), Francis Colas (Inria Nancy), David Daney (Inria Bordeaux) and Samer Mohammed (LISSI, Universié of Paris-Est Creteil).

- Marie Babel was the Scientific Chair and the General co-Chair of the workshop "Robots d'assistance, handicap et vie quotidienne" organized in Inria Rennes on December 7th 2018.

10.1.1.2. Member of the Organizing Committees

- Paolo Robuffo Girodano co-organized with P. Salaris (Inria Sophia-Antipolis) and R. Spica (Stanford University) the workshop "The interplay between optimal estimation for improved action and optimal action for improved estimation" at the 2018 International Conference on Robotics and Automation, Brisbane, Australia

- Paolo Robuffo Girodano is Area Chair for RSS 2019 and Program Chair for MRS 2019

- Claudio Pacchierotti was the Publicity Chair of the Asiahaptics conference held in Songdo, Republic of Korea. He was also Award Co-Chair (Best Poster), and Session Co-Chair at Eurohaptics, Pisa, Italy. He also co-organized the Cross-Cutting Challenge "Expanding sensory interactions: the path to intelligent clothes and objects able to change the way we communicate with the world"' at the IEEE Haptics Symposium, San Francisco, USA. Finally, he co-organized the workshop on 'Haptic-enabled shared control of robotic systems: a compromise between teleoperation and autonomy" at IROS in Madrid, Spain and the workshop on "Wearable and portable haptics for VR and AR" at IEEE VR in Reutlingen, Germany.

- François Chaumette organized the tutorial on Vision-based Robot Control at the 2018 International Conference on Robotics and Automation, Brisbane, Australia. (https://team.inria.fr/rainbow/en/icra18-tutorial-vbrc)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Claudio Pacchierotti: Eurohaptics (Associate Editor)

- Paolo Robuffo Giordano: ICRA 2019 (Associate Editor)

- Eric Marchand: Orasis 2018

- François Chaumette: ICRA 2019 (Associate Editor)

- Alexandre Krupa: BioRob 2018 (Editor)

- Julien Pettré: IEEE VR 2019

10.1.2.2. Reviewer

- Claudio Pacchierotti: HAPTICS 2018, Eurohapics 2018, ICRA 2018, IROS 2018, also Senior Reviewer for IEEE Robotics & Automation Society Young Reviewers Program (from 2016)

- Alexandre Krupa: IROS 2018 (1), ICRA 2019 (1)

- Paolo Robuffo Giordano: RSS 2018 (4), ICRA 2019 (2), ECC 2019 (1)

- Marie Babel: ICRA 2018 (1), SMC 2018 (2), IROS 2018 (2), ICRA 2019 (3)
- Vincent Drevelle: IROS 2018 (2), ICRA 2019 (1), AIM 2018 (1)
- Eric Marchand: IROS 2018 (1), ICRA 2018 (2), ICRA 2019 (2)
- François Chaumette: IROS 2018 (1), CDC 2018 (1)
- Julien Pettré: ACM SIGGRAPH 2018 (1), ACM SIGGRAPH Asia 2018 (1), Eurographics 2019 (1), IEEE VR 2019 (6)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Paolo Robuffo Giordano is Associate Editor for the IEEE Transactions on Robotics
- Paolo Robuffo Giordano is Guest Editor for the Special Issue on "Multi-Robot and Multi-Agent Systems" in Autonomous Robots, 2018
- Claudio Pacchierotti has been Guest Associate Editor of the IEEE Transactions on Haptics for the Special Issue on Wearable and Hand-held Haptics.
- Alexandre Krupa is Associate Editors of the IEEE Robotics and Automation Letters.
- Eric Marchand was an Associate Editor of IEEE Robotics and Automation Letters (RA-L) (till august 2018)
- Eric Marchand is a Senior Editor of IEEE Robotics and Automation Letters (RA-L) (from august 2018)
- Eric Marchand is an Editor for Interstices)i(
- François Chaumette: Senior Editor of the IEEE Trans. on Robotics, Editorial Board of the Int. Journal of Robotics Research, Founding Senior Editor of the IEEE Robotics and Automation Letters till June 2018, Editorial Board of the Springer Tracts in Advanced Robotics, and Board Member of the Springer Encyclopedia of Robotics.

10.1.3.2. Reviewer - Reviewing Activities

- Claudio Pacchierotti: JMRR (2), TOH (7), THMS (1), TIM (1), RAL (5), TBME (3), TMECH (1), IJMRCAS (1), IJCARS (1), Plos One (1), Journal of Engineering in Medicine (3), Wiley Interdisciplinary Reviews: Cognitive Science (2), Mechatronics (1), IJHCI (4), Advanced Robotics (1), International Journal of Advanced Robotic Systems (2), Endoscopy International Open (2), Frontiers in Robotics and AI (1)
- Paolo Robuffo Giordano: IEEE TRO (1), IEEE T-CYB (1), IEEE TCST (2), IEEE RAL (3), IJRR (1), IJC (1), AURO (1)
- Eric Marchand: CVIU (1)
- François Chaumette: IEEE TIE (4), IEEE RA-L (2)
- Julien Pettré: Graphical Models (1), Frontiers in Robotics and AI (1), IEEE TVCG (1)

10.1.4. Invited Talks

- Paolo Robuffo Giordano:
  - "Human-assisted robotics". H. H. Bülthoff's Farewell Symposium - Flies, Men and Machines: A Scientific Adventure, Tübingen, Germany, August 2018
  - "Blending Human Assistance and Local Autonomy for Advanced Telemanipulation". IROS 2018 Workshop on Haptic-enabled shared control of robotic systems: a compromise between teleoperation and autonomy, October 2018 [47]
  - "Formation Control and Localization with Onboard Sensing and Local Communication". IROS 2018 Workshop on Multi-Robot Perception- Driven Control and Planning, October 2018 [48]

- "Physical Interpretation of Rigidity for Bearing Formations", Second Workshop "Rigidity Theory for Multi-Agent Systems meets Parallel Robotics", Nantes, France

- Claudio Pacchierotti:

  - "Our wearable haptics experience: story, insights, and open questions" Workshop "User-Centered Methods in Human-Robot Interaction" at IROS Conference, Madrid, Spain, 2018.

  - "Haptic feedback and robotic procedures" 10th Annual meeting on Robotic Gynaecological Surgery of the Society of European Robotic Gyneacological Surgery (SERGS), Milan, Italy, 2018.

  - "Cutaneous haptic feedback in robotic medical procedures." Presentation to Titan Medical Inc., Strasbourg, France, 2018.

  - "Wearable haptics for virtual and augmented reality: applications in the entertainment and robotic fields" Robotics Research Jam Sessions at the University of Pisa, Pisa, Italy, 2018.

  - "Wearable fingertip haptics for mixed reality." University of Aarhus, Herning, Denmark, 2018.

  - "Haptic feedback in robotic procedures: current work and perspectives." Congress of the Society of Endometriosis and Uterine Disorders, Florence, Italy, 2018.

  - "The future of haptic feedback in robotic procedures." Beyond Gynecologic Surgery conference, Clermont-Ferrant, France, 2018.

  - "Wearable fingertip haptics for Virtual Reality." Workshop on "Wearable and portable haptics for VR and AR", IEEE International Conference on Virtual Reality (VR), Reutlingen, Germany, 2018.

- François Chaumette:

  - "Visual servoing with and without image processing", 1st Symposium on Intelligent Robots: Autonomy and Vision, Abu-Dhabi, March 2018 [46]

  - "Geometric and photometric vision-based robot control: modeling approach", ICRA 2018 Tutorial on Vision-based Robot Control, Brisbane, May 2018 [45]

  - "Geometric and end-to-end visual servoing", Plenary talk at IEEE Int. Conf. on CY-BER Technology in Automation, Control, and Intelligent Systems, Tianjin, China, July 2018 [44]

- Fabien Spindler

  - "Vision-based robot control with ViSP", ICRA 2018 Tutorial on Vision-based Robot Control, Brisbane, May 2018 [49]

10.1.5. Leadership within the Scientific Community

- Claudio Pacchierotti is the Chair of the IEEE Technical Committee on Haptics, and Secretary of the Eurohaptics Society.

- François Chaumette is a 2016-2018 elected member of the Administrative Committee of the IEEE Robotics and Automation Society. He is also a nominated member of the Scientific Council of the CNRS INS2I, a member of the Scientific Council of RTE Vedecom, and a founding member of the Scientific Council of the "GdR Robotique".

10.1.6. Scientific Expertise

- Alexandre Krupa was reviewer of an ANR project (Generic project call 2018)

- Paolo Robuffo Giordano was reviewer for evaluating proposals of the ANR (French National Research Agency), NWO (Netherlands Organisation for Scientific Research), SNSF (Swiss National Science Foundation), MIUR (Italian National Research Agency)

- Marie Babel served as an expert for the International Mission of the French Research Ministry (MEIRIES) - Campus France
- Vincent Drevelle has been reviewer of an ANR ASTRID project
- François Chaumette served as member of IEEE RAS Pioneer Award Evaluation Panel and IEEE RAS Awards Evaluation Panel. He was a panel member of the 2018 ICREA Academia program (similar to IUF for Catalonia). He was also involved in the evaluation of a research proposal submitted to the Research Foundation of Flanders.

10.1.7. Research Administration

- Alexandre Krupa is a member of the CUMIR ("Commission des Utilisateurs des Moyens Informatiques pour la Recherche") of Inria Rennes-Bretagne Atlantique. Alexandre Krupa also serves as Inria representative (correspondent) at the IRT Jules Verne.
- Eric Marchand served as secretary in the board of the "Association Française pour la Reconnaissance et l'interprétation des Formes" (AFRIF). He was also in charge of the Irisa Ph.D. students in the committee in charge of all the temporary recruitments ("Commission Personnel") at Inria Rennes-Bretagne Atlantique and Irisa (till september 2018). He is in the board of the "Ecole doctorale Matisse". He is the head of "Digital Signals and Images, Robotics" department at IRISA (from june 2018).
- François Chaumette serves as the president of the committee in charge of all the temporary recruitments ("Commission Personnel") at Inria Rennes-Bretagne Atlantique and IRISA. He is also a member of the Head team of Inria Rennes-Bretagne Atlantique, and of the Scientific Steering Committee (COSS) of IRISA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Marie Babel:

Master INSA2: "Robotics", 26 hours, M1, INSA Rennes

Master INSA1: "Architecture", 30 hours, L3, INSA Rennes

Master INSA2: "Computer science project", 30 hours, M1, INSA Rennes

Master INSA1: "Practical studies", 16 hours, M1, INSA Rennes

Master INSA2: "Image analysis", 18 hours, M1, INSA Rennes

Master INSA1: "Remedial math courses", 50 hours, L3, INSA Rennes

François Chaumette:

Master SISEA: "", 12 hours, M2, Université de Rennes 1

Master ENS: "Visual servoing", 6 hours, M1, Ecole Nationale Supérieure de Rennes

Master ESIR3: "Visual servoing", 8 hours, M2, Ecole supérieure d'ingénieurs de Rennes

Vincent Drevelle:

Master ESIR2: "Real-time systems and RTOS", 24 hours, M1, Esir Rennes

Master ILA: "Terrain information systems", 30 hours, M2, Université de Rennes 1

Master Info: "Artificial intelligence", 20 hours, M1, Université de Rennes 1

Licence Info: "Computer systems architecture", 22 hours, L1, Université de Rennes 1

Master Elec: "Electronics project", 8 hours, M1, Université de Rennes 1

Portail Info-Elec: "Discovering programming and electronics", 14 hours, L1, Université de Rennes 1

Licence Miage: "Computer programming", 78 hours, L3, Université de Rennes 1

Master Elec: "Instrumentation, localization, GPS", 4 hours, M2, Université de Rennes 1

Master Elec: "Multisensor data fusion", 20 hours, M2, Université de Rennes 1

Master IL: "Mobile robotics", 32 hours, M2, Université de Rennes 1

Alexandre Krupa:

    Master SIBM (Signals and Images in Biology and Medicine): "Medical robotics guided from images", 4.5 hours, M2, Université de Rennes 1, Brest and Angers

    Master FIP TIC-Santé: "Ultrasound visual servoing", 6 hours, M2, Télécom Physique Strasbourg

    Master INSA1: "Programmation Informatique", 42 hours, INSA Rennes

    Master ESIR3: "Ultrasound visual servoing", 9 hours, M2, Esir Rennes

Eric Marchand:

    Master Esir2: "Colorimetry", 24 hours, M1, Esir Rennes

    Master Esir2: "Computer vision: geometry", 24 hours, M1, Esir Rennes

    Master Esir3: "Special effects", 24 hours, M2, Esir Rennes

    Master Esir3: "Computer vision: tracking and recognition", 24 hours, M2, Esir Rennes

    Master MRI: "Computer vision", 24 hours, M2, Université de Rennes 1

    Master ENS: "Computer vision", 16 hours, M2, ENS Rennes

    Master MIA: "Augmented reality", 4 hours, M2, Université de Rennes 1

Julien Pettré:

    Master SIF: "Motion for Animation and Robotics", 6 hours, Unviersité de Rennes 1

    Master Artificial Intelligence and Advanced Visual Computing: "Advanced 3D graphics", 3 hours, Ecole Polytechnique

10.2.2. Supervision

- Ph.D. in progress: Quentin Delamare, "Algorithmes d'estimation et de commande pour des quadrirotors en interaction physique avec l'environnement", started in September 2016, supervised by Paolo Robuffo Giordano and Antonio Franchi (LAAS)

- Ph.D. in progress: Rahaf Rahal, "Mixed tactile-force feedback for safe and intuitive robotic teleoperation", started in October 2017, supervised by Paolo Robuffo Giordano and Claudio Pacchierotti

- Ph.D. in progress: Alexander Oliva, "Coupling Vision and Force for Robotic Manipulation", started in October 2018, supervised by François Chaumette and Paolo Robuffo Giordano

- Ph.D. in progress: Axel Lopez Gandia, "Data assimilation for synthetic vision-based crowd simulation algorithms", started in October 2016, supervised by Julien Pettré and François Chaumette

- Ph.D. in progress: Zane Zake (IRT Jules Verne), "Visual servoing for cable-driven parallel robots", started in January 2018, supervised by Stéphane Caro (LS2N) and François Chaumette

- Ph.D. in progress: Xavier De Tinguy de la Giroulière, "Conception de techniques d'interaction multisensorielles pour la manipulation dextre d'objets en réalité virtuelle", started in September 2017, supervised by Maud Marchal, Anatole Lécuyer (Hybrid group) and Claudio Pacchierotti

- Ph.D. in progress: Gerard Gallagher, "Haptic-enabled interaction techniques for Mixed Reality applications", started in October 2018, supervised by Maud Marchal, Anatole Lécuyer (Hybrid group) and Claudio Pacchierotti

- Ph.D. in progress: Hadrien Gurnel "Haptic guidance of a biopsy needle", started in October 2016, supervised by Alexandre Krupa, Maud Marchal (Hybrid team) and Laurent Launay (IRT b<>com)

- Ph.D. in progress: Agniva Sengupta, "Localization and characterization of objects with unknown shapes", started in January 2017, supervised by Alexandre Krupa and Eric Marchand

- Ph.D. in progress: Romain Lagneau (Hybrid team), "Data-driven models for detexterous manipulation of robots", started in October 2017, supervised by Alexandre Krupa and Maud Marchal (Hybrid team)

- Ph.D. in progress: Guillaume Vailland, "Outdoor wheelchair assisted navigation: reality versus virtuality", started in November 2018, supervised by Marie Babel and Valérie Gouranton (Hybrid team)

- Ph.D. in progress: Salma Jiddi, "Photometric Registration of Indoor Real Scenes using an RGB-D Camera with Application to Mixed Reality", to be defended in January 2019, supervised by Eric Marchand

- Ph.D. in progress: Ide-Flore Kenmogne "Localisation ensembliste de drones á l'aide de mèthodes par intervalles", to be defended in January 2019, supervised by Eric Marchand and Vincent Drevelle

- Ph.D. in progress: Xi Wang "Robustness of Visual SLAM techniques to light changing conditions", started in September 2018, supervised by Eric Marchand and Marc Christie

- Ph.D. in progress: Agniva Sengupta "", to be defended in January 2020, supervised by Eric Marchand and Alexandre Krupa

- Ph.D. in progress: Nicolas Le Borgne, "Contrôle partagé et navigation assistée d'un fauteuil roulant en extérieur", started in October 2017, supervised by Marie Babel

- Ph.D. in progress: Aline Baudry, "Contribution à la modélisation des fauteuils roulants pour l'amélioration de leur navigation en mode semi-autonome", started in October 2016, supervised by Marie Babel and Sylvain Guégan (Mechanical Engineering Dpt/LGCGM at Insa Rennes)

- Ph.D. in progress: Axel Lopez, "Character navigation based on optical flow", started in October 2016, supervised by François Chaumette and Julien Pettré

- Ph.D. in progress: Javad Amirian, "Crowd motion prediction for robot navigation in dense crowds", started in January 2018, supervised by Jean-Bernard Hayet and Julien Pettré

- Ph.D. in progress: Fabien Grzeskowiak, "Crowd simulation for testing robot navigation in dense crowds", started in October 2018, supervised by Marie Babel and Julien Pettré

- Ph.D. in progress: Florian Berton, "Gaze analysis for crowd behaviours study", started in October 2017, supervised by Anne-Hélène Olivier, Ludovic Hoyet and Julien Pettré

- Ph.D. defended: Pedro Patlan-Rosales, "A robotic control framework for quantitative ultrasound elastography", defended in January 2018, supervised by Alexandre Krupa [5]

- Ph.D. defended: Lesley-Ann Duflot, "Direct visual servoing using shearlet and wavelet transforms of the image", defended in July 2018, supervised by Alexandre Krupa and Brahim Tamadazte (Minarob group at FEMTO-ST, Besanon) [4]

- Ph.D. defended: Fabrizio Schiano, "Bearing-based Localization and Control for Multiple Quadrotor UAVs", defended in January 2018, supervised by P. Robuffo Giordano [7]

- Ph.D. defended: Louise Devigne, "Low-cost robotic solutions for safe assisted power wheelchair navigation: towards a contribution to neurological rehabilitation", defended in December 2018, supervised by Marie Babel and Philippe Gallien (Pôle Saint Hélier)

- Ph.D. defended: Quentin Bateux, "Going further with direct visual servoing", defended in January 2018, supervised by Eric Marchand [2]

- Ph.D. defended: Guillaume Cortes, "Contribution to the study of projection-based systems for industrial applications in mixed reality", defended in October 2018, supervised by Eric Marchand and Anatole Lécuyer [Hybrid]

- Ph.D. defended: Firas Abi Farraj, "Contributions to Shared Control Architectures for Advanced Telemanipulation", defended in December 2018, supervised by Paolo Robuffo Giordano [1]

- Ph.D. defended: Bryan Penin "Contributions to optimal and reactive vision-based trajectory generation for a quadrotor UAV", defended in December 2018, supervised by Paolo Robuffo Giordano and François Chaumette [6]

10.2.3. Juries

- Claudio Pacchierotti: Lucia Schiatti (Ph.D., member, IIT, Genova, Italy), Matteo Rossi (Ph.D., member, Univ. Pisa, Pisa, Italy)

- Alexandre Krupa: Yinoussa Adagolodjo (Ph.D., reviewer, Univ. de Strasbourg, ICube)

- Paolo Robuffo Giordano: Nicolas Staub (Ph.D., member, LAAS-CNRS), Fabrizio Boriero (Ph.D., reviewer, Univ. Verona, Italy)

- Marie Babel: Francesco Barbosa Anda (Ph.D., member, LAAS, Toulouse), Dinh Nguyen Van (PH.D., member, UPMC, Paris.

- Eric Marchand: Alexandre Morgand, (PhD, reviewer, univ. Clermont Auvergne) ; Sudhanya Chatterjee, (Ph.D. president, univ. de Rennes 1) ; Musaab Khalid, (Ph.D. president, Irstea Lyon) ; Romain Brégier, (Ph.D. president, INPG) ; Bogdan Khomutenko, (Ph.D. president, École centrale de Nantes) ; Lesley-Ann Duflot, (Ph.D. president, univ. de Rennes 1) ; Pedro Patlan-Rosales, (Ph.D. president, univ. de Rennes 1) ;

- François Chaumette: Davide Nicolis (Ph.D., Politecnico di Milano, reviewer), Marco Ferro (Ph.D., Univ La Sapienza, Roma, reviewer), Firas Abi-Farraj (Ph.D., president, Univ de Rennes 1)

- Julien Pettré: Pierre Fernbach (Ph.D. member, Univ. Toulouse Paul Sabatier, Laas)

10.3. Popularization

- Due to the visibility of our experimental platforms, the team is often requested to present its research activities to students, researchers or industry. Our panel of demonstrations allows us to highlight recent results concerning the positioning of an ultrasound probe by visual servoing, grasping and dual arm manipulation by Romeo, vision-based shared control using our haptic device for object manipulation, the control of a fleet of quadrotors, vision-based detection and tracking for space navigation in a rendezvous context, the semi-autonomous navigation of a wheelchair, and augmented reality applications. Some of these demonstrations are available as videos on VispTeam YouTube channel (https://www.youtube.com/user/VispTeam/videos).

- In October Firas Abi Farraj, Marco Aggravi, Claudio Pacchierotti and Fabien Spindler attended to the "Maker Fair" even in Rome (https://2018.makerfairerome.eu/it/) presenting various vision-based and shared control robotic demonstrations with Viper and Franka arms and haptic devices.

- Eric Marchand is an editor for Interstices)i(

10.3.1. Interventions

- Marie Babel participated to the Science Festival in October 2018 and animated an interactive animation session for general public organized in Acigné, France

- Solenne Fortun participated to the Tech'in Vitré forum with an interview in March 2018.

- Marie Babel animated an interactive session organized in INSA Rennes about "Women in Sciences" on December 19th, 2018 for female students.

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

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. General Chair, Scientific Chair

- Charles Kervrann is co-General Chair (with R. Ober, Texas A&M), and head of the organizing committee of the "Quantitative BioImaging" (QBI'2019) conference (350 attendees, Rennes, January 2019).

10.1.1.2. Member of the Organizing Committees

- Charles Kervrann was the organizer of a mini-symposium at the SIAM Image Science conference (June, Bologna, Italy).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Charles Kervrann: Associated Editor for the ISBI'2018 conference, member of the scientific committee of the JIONC workshop (GdR Ondes, since 2014).
- Patrick Bouthemy: Associate Editor for the ISBI'2019 conference.

10.1.2.2. Reviewer

- Charles Kervrann: reviewer for ISBI'2018 and ISBI'2019.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Charles Kervrann is Associate Editor of the IEEE Signal Processing Letters journal.
- Patrick Bouthemy is co-editor in chief of the open access journal Frontiers in ICT, specialty Computer Image Analysis.

10.1.3.2. Reviewer - Reviewing Activities

- Charles Kervrann: IEEE Signal Processing Letters, Bioinformatics, J. Mathematical Imaging and Vision, Nature Communications.
- Patrick Bouthemy: IEEE Signal Processing Letters, Computer Vision and Image Understanding, IEEE Transactions on Circuits and Systems for Video Technology.

10.1.4. Invited Talks

- Charles Kervrann: Invited talk at the "Reverse Problems in Reconstructing Single Cell Molecular Dynamics" workshop (October, Pisa, Italy), at the GdR ImaBio-MIV Days (November, IGBMC Strasbourg), at the BioGenOuest General Meeting (December, La Gacilly); Invited seminars at Institut Pasteur (February, Paris), Institut Curie CNRS-UMR 144 (June, Paris), European Molecular Biology Laboratory - EMBL (November, Heidelberg, Germany).

10.1.5. Leadership within the Scientific Community

- Charles Kervrann is member of the executive board of the GdR MIV/ImaBio (2588 - Microscopie Fonctionnelle du Vivant) CNRS.
- Patrick Bouthemy is member of the board of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes).

10.1.6. Scientific Expertise

- Charles Kervrann was expert for the national project evaluation in the framework of DIM ELICIT Institut Pasteur - Région Ile-de-France in 2018.

10.1.7. Research Administration

- Charles Kervrann is member of the executive board of the project committee of the Inria Rennes - Bretagne Atlantique centre since 2010. He is Co-head of the "BioImage Informatics" node (ANR France-BioImaging project http://france-bioimaging.org/), National Research Infrastructure for Biology and Health) since 2011.

- Patrick Bouthemy has been head of Excellence Lab (Labex) CominLabs (http://www.cominlabs.ueb. eu) since April 2014. He is deputy member of the board of directors and member of the selection and validation committee of the Images & Réseaux competitivity cluster (http://images-et-reseaux. com/). He is the Inria representative in the steering committee of the DGA-Inria collaboration. He is member of the board of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes), and member of the Research Committee of IMT Atlantique.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Charles Kervrann:

- Engineer Degree: Genomics and Informatics, 4.5 hours, Ecole Nationale Supérieure des Mines de Paris.

- Master: From Bioimage Processing to BioImage Informatics, 5 hours, coordinator of the module (30 hours), Master 2 Research IRIV, Telecom-Physique Strasbourg and University of Strasbourg.

- Master: Geometric Modeling for Shapes and Images, 6 hours, Master 2 Research SISEA, University of Rennes 1.

- Engineer Degree and Master 2 Statistics and Mathematics: Statistical Models and Image Analysis, 37 hours + 15 hours (TP, Emmanuel Moebel), 3rd year, Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes.

Patrick Bouthemy:

- Master: Analysis of Image Sequences, 18 hours, Master 2 Research SISEA, ISTIC & University of Rennes 1.

- Master: Video Indexing, 3 hours, Master 2 Research Computer Science, ISTIC & University of Rennes 1.

- Engineer Degree and Master 2 Research IRIV: Motion Analysis, 12 hours, Telecom-Physique Strasbourg & University of Strasbourg.

10.2.2. Supervision

- Emmanuel Moebel, new strategies for the nonambiguous identification and enumeration of macromolecules in cryo-electron tomograms, started in November 2015, supervised by Charles Kervrann.

- Ancageorgiana Caranfil, data assimilation methods for cell division mechanisms and molecule trafficking analysis, started in December 2016, supervised by Charles Kervrann and Yann Le Cunff.

- Sandeep Manandhar, optical flow methods for 3D fluorescence imaging, started in October 2016, supervised by Patrick Bouthemy and Charles Kervrann.

- Yunjiao Lu, intracellular dynamics and super-resolution imaging: analysis of bacteria wall at the molecular scale, started in October 2017, supervised by Charles Kervrann and Rut Carballido-Lopez.

- Antoine Salomon, statistical aggregation for image analysis in fluorescence microscopy and super-resolution, started in November 2017, supervised by Charles Kervrann.
- Léo Maczyta, motion saliency in video sequences, started in October 2017, supervised by Patrick Bouthemy and Olivier Lemeur.

10.2.3. Juries

Referee/Reviewer of HdR thesis: Michèle Gouiffès (University of Paris-Sud)[P. Bouthemy]

Referee/Reviewer of PhD thesis: Yves Michels (University of Strasbourg, supervised by M. Tajine) [C. Kervrann], Anne-Sophie Macé (University of Paris Descartes, supervised by L. Moisan) [C. Kervrann].

President of PhD thesis jury: F. Deslandes (INRA, supervised by B. Laroche)[P. Bouthemy].

External examiner in international labs: Felix Zhou (PhD thesis, University of Oxford, supervised by Prof. X. Lu and J. Rittscher)[P. Bouthemy]

<p align="center" style="color:red">**SIMSMART Team**</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- F. Cérou and M. Rousset have been the main organizer and scientific manager of the Workshop Simulation and probability: recent trends (5-8 June, Rennes) within the Thematic Semester 2018 of Labex Lebesgue.

- V.Monbet has organized a Workshop in Rennes "Fonctional Data Analysis 2018", Oct. 24-26, 2018, https://perso.univ-rennes1.fr/valerie.monbet/FDA2018/PEPS_FDA2018_Workshop.html.

- V.Monbet has organized a Workshop in Rennes on Statistics in Meteorology, Nov. 28-30 2018, https://spatiotempmeteo.sciencesconf.org/.

9.1.1.2. Member of the Organizing Committees

Cédric Herzet was part of the Conference Program Committee of the iTwist'18 Workshop

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

François Le Gland has given

- a 2nd year course on introduction to stochastic differential equations, at INSA (institut national des sciences appliquées) Rennes, within the GM/AROM (risk analysis, optimization and modeling) major in mathematical engineering,

- a 3rd year course on Bayesian filtering and particle approximation, at ENSTA (école nationale supérieure de techniques avancées), Palaiseau, within the statistics and control module,

- a 3rd year course on linear and nonlinear filtering, at ENSAI (école nationale de la statistique et de l'analyse de l'information), Ker Lann, within the statistical engineering track,

- a course on Kalman filtering and hidden Markov models, at université de Rennes 1, within the SISEA (signal, image, systèmes embarqués, automatique, école doctorale MATISSE) track of the master in electronical engineering and telecommunications,

- and a 3rd year course on hidden Markov models, at Télécom Bretagne, aka IMT Atlantique, Brest.

Cédric Herzet has given

- a Master course at INSA Rennes, option Génie Mathématique, cours de Parcimonie en traitement du signal et des images.

- a Master course at Ensai Rennes, Master international "Smart Data" , cours "Foundations of Smart Sensing".

9.2.2. PhDs of the team members

- Defended PhD: Kersane Zoubert–Ousseni, CEA LETI, Grenoble. Subject: Off–line indoor navigation [1], supported by a CEA grant, with Christophe Villien (CEA LETI, Grenoble) as co-advisor. From Dec 2014 to Apr 2018. This PhD is related to our applicative/transfer activity on filtering.

- In progress: Thi Tuyet Trang Chau, IRMAR Rennes 1 University. Subject: new statistical methods for missing-data imputation and non-parametric state-space modeling, supported by Labex Lebesgue and Brittany Council, with Pierre Ailliot (UBO) as co-advisor. Since Oct 2015. This PhD is related to Objective 3.

- In progress: Audrey Cuillery, Inria rennes. Subject: Bayesian tracking from raw data, supported by a CIFRE grant from Naval Group (DCNS) Research, with Dann Laneuville (Naval Group) as co-advisor. Since May 2016. This PhD is related to our applicative/transfer activity on filtering.

- In progress: Audrey Poterie, IRMAR and INSA Rennes. Subject: extension of learning methods to grouped variables, supported by a French Research Ministry grant, with Jean-François Dupuy (INSA) and Laurent Rouvière (Rennes 2) as co-advisors. Since Oct 2015. This PhD is related to Objective 3.

- In progress: Yushun Xu, LAMA, Paris-Est University. Subject: Variance reduction and Langevin processes, supported by a French Research Ministry grant, with Pierre-André Zitt (LAMA) as a co-advisor. Since Sept 2015. This PhD is related to Objective 1 and Application 1.

- Starting: Gabriel Jouan, IRMAR, Rennes. Subject: parametric and non-parametric weather forecast corrections from catalogs of weather data records, supported by a CIFRE grant of Scalian Alyotech, with Soulvan Monnier (Scalian Alyothech) as co–advisor. Starting 2018. This PhD is related to our applicative/transfer activity, as well as to Objective 2 and Objective 3.

C. Herzet is the co-supervisor of two PhDs, one with Frédéric Champagnat (Onera, Palaiseau), and one with Charles Vanwynsberghe (ENSTA Bretagne) and Alexandre Baussard (IUT de Troyes).

9.2.3. Juries

- François Le Gland has been a member of the PhD defense committee of Nicolas Merlinge (université Paris Sud and Coventry University, advisers : Hélène Piet–Lahanier and James Brusey).

- Cédric Herzet has been a member of the PhD defense committee of Quentin Denoyelle, « Theoretical and Numerical Analysis of Super-Resolution without Grid », Paris-Dauphine, Thesis director : Gabriel Peyré.

<p style="text-align:center">**SIROCCO 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

- C. Guillemot was tutorial co-chair of IEEE Int. Conf. on Image Processing (ICIP, Athens, 2018)

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- C. Guillemot has been a member of the international program committee of PCS 2018, ACIVS 2018, VISAP 2018, ICIP 2018
- T. Maugey was publicity chair and member of the technical program committee of the Graph Signal Processing workshop at EPFL (Switzerland) (2018) and area chair of IEEE-VCIP 2018
- A. Roumy has been a member of the technical program committees of the CVPR 2018 workshop on New Trends in Image Restoration and Enhancement (NTIRE), of the ICC 2018 workshop on Promises and Challenges of Machine Learning in Communication Networks (ML4COM), and of the ICT 2018 conference.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- C. Guillemot is senior area editor of the IEEE Trans. on Image Processing
- C. Guillemot is associate editor of the International Journal on Mathematical Imaging and Vision
- A. Roumy is associate editor of the Springer Annals of Telecommunications.
- A. Roumy is associate editor of the IEEE Trans. on Image Processing (since Nov. 2018)

10.1.4. Invited Talks

- C. Guillemot gave a keynote talk on light fields image processing at COmpression and REpresentation of Audio-visual Signals (CORESA), Poitiers, 14 Nov. 2018.
- C. Guillemot gave an IEEE Distinguished lecture, Computational light field imaging, invited by the Croatian and Slovenian IEEE signal processing chapter, at Ljubljana (23rd Oct. 2018) and Zagreb (24th. Oct. 2018).
- C. Guillemot gave a lecture at the IEEE signal processing summer school at Midsweden University, Sundvall, Sweden, May 2018.
- C. Guillemot gave a seminar at KTH on light field image processing, 23rd March 2018
- C. Guillemot gave an IEEE Distinguished lecture invited by the Italian IEEE signal processing chapter, Cavalese, 22 Jan. 2018
- Thomas Maugey gave a seminar at ENS-Rennes on Free Viewpoint Television, April 2018.
- A. Roumy gave a talk on Source coding under massive random access: theory and applications, at ENSEA, Cergy-Pontoise, April 2018.
- A. Roumy gave a talk on Source coding under massive random access: theory and applications, at INSA, Lyon, Sept. 2018.
- A. Roumy gave a talk on universal compression of images, at EPFL, Dec. 2018.

10.1.5. Leadership within the Scientific Community

- C. Guillemot is member of the IEEE IVMSP technical committee
- C. Guillemot is senior member of the steering committee of IEEE Trans. on Multimedia (2016-2018).
- C. Guillemot has been appointed member of the IEEE Signal Processing Society Nominations and Appointments Committee for a two-year term (2018-2019).
- A. Roumy is a member of the Executive board of the National Research group in Image and Signal Processing (GRETSI).
- A. Roumy is Local Liaison for the European Association for Signal Processing (EURASIP).

10.1.6. Research Administration

- C. Guillemot is a member of Inria evaluation committee
- C. Guillemot is member of the "bureau du Comité des Projets"
- C. Guillemot has served as a member of the selection committee of an Assistant Prof. at Telecom ParisTech (Jan. 2018)
- L. Guillo is a member of the technological development and technology transfer committee at Inria Rennes.
- A. Roumy served as a jury member for the selection of Inria CR (researcher) candidates, Inria, Rennes, France, 2018.
- A. Roumy is a member of the technological development and technology transfer committee at Inria Rennes.
- A. Roumy is a member of the Inria Joint Administrative Committee (CAP commission administrative paritaire).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: C. Guillemot, Image and video compression, 10 hours, and advanced video processing, 4 hours, M2 SISEA, Univ. of Rennes 1, France.
- Undergraduate: L. Guillo, course of 35 hours on Functional immutable programming, 1st year of Mathematiques, Informatique, Electronique, mathematique-Economie" (MIEE), Univ. of Rennes 1
- Undergraduate: L. Guillo, talk about agility and software development, 3rd year, ENS Rennes.
- Master: T. Maugey, course on 3D models in a module on advanced video, 4 hours, M2 SISEA, Univ. of Rennes 1, France.
- Master: T. Maugey, course on Representation, editing and perception of digital images, 12 hours, M2 SIF, Univ. of Rennes 1, France.
- Engineering degree: A. Roumy, Sparse methods in image and signal processing, 13 hours, INSA Rennes, 5th year, Mathematical engineering, France.
- Master: A. Roumy, Foundations of smart sensing, 18 hours, ENSAI, Master of Science in Statistics for Smart Data, France.
- Master: A. Roumy, High dimensional statistical learning, 9 hours, University Rennes 1, SIF Master, France.
- Master: A. Roumy, Information theory, 15 hours, University Rennes 1, SIF master, France.

10.2.2. Juries

- C. Guillemot has been member of the PhD committees of:
  - D. Liu, KTH, Stockholm, March 2018

- K. Reuze, INSA, Rennes, Nov. 2018
- S. Ferdowsi, Univ. Geneva, Dec. 2018
- Thomas Maugey has been member of the jury of the PhD committee of:
  - Renata Khasanova, EPFL, Dec. 2018

10.3. Popularization

- C. Guillemot and A. Roumy participated in the editorial board of a series of articles, towards a general audience, on Fourier, in the context of his 250th birth anniversary (2018)

STACK Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- A. Lebre has co-organized the 1st edition of the SILECS (Grid'5000/FIT) School, Nice, April 2018 (50 persons).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- H. Coullon was the chair of the IEEE Big Data Congress 2018 "Quality of Big Data Services" track.
- S. Ibrahim was the program chair of the IEEE Big Data Congress 2018.
- S. Ibrahim was the program co-chair of the International workshop on the Convergence of Extreme Scale Computing and Big Data Analysis (CEBDA 2018), co-located with IPDPS'18, Vancouver, Canada, May 2018.
- S. Ibrahim was the track co-chair for the "Big data management and scalable storage technologies track" of the 6th International Conference on Emerging Internet, Data and Web Technologies (EIDWT 2018).
- A. Lebre was the chair of the System Software track at SBAC-PAD'18.

10.1.2.2. Member of the Conference Program Committees

- H. Coullon was a member of the program committees of CloudCom'18, ICCS'18, ScalCom'18, CIoT'18.
- S. Ibrahim was a member of the program committees of SC'18, CCGrid'18, ICA3PP'18, IPCCC'18, SCA'18, CloudCom'18, Trust-Com'18, Innovate-Data'18, PDSW-DISCS@SC'18, WAC-18@HPDC'18, HPBDC@IPDPS'18.
- A. Lebre was a member of the program committees of IC2E'18, CCGRID'18, ICFEC'18,CloudCom'18, and the Vancouver OpenStack summit.
- T. Ledoux was a member of the program committees of the conference Compas'18 and Cross-Cloud'18@EuroSys, Greens'18@ICSE workshops.
- M. Südholt was a member of the program committees of CloudCom'18, ProWeb'18, ICICS'18, SBAC-PAD'18, and COP'18.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- A. Lebre is an Associate Editor of the IEEE Transactions on BigData
- S. Ibrahim is a Guest Editor of Springer FGCS Journal – Special Issue on the Convergence of Extreme Scale Computing and Big Data Analysis.
- M. Südholt is an Associate Editor of the journal Programming (Springer).

10.1.3.2. Reviewer - Reviewing Activities

- H. Coullon has been a reviewer for the Future Generation Computer Systems journal
- H. Coullon has been a reviewer for the following conferences: IPDPS'18, CCGrid'18.
- A. Lebre has been a reviewer for the Future Generation Computer Systems journal.

- T. Ledoux has been a reviewer for the following journals: Journal of Systems Architecture - Elsevier; Future Generation Computer Systems.

- S. Ibrahim has been a reviewer for the following journals: Journal of Parallel and Distributed Computing, Future Generation Computer Systems, IEEE Internet of Things, Computer Networks, and Big Data Research.

- J.-M. Menaud has been a reviewer for IEEE Transactions on Parallel and Distributed Systems

10.1.4. Invited Talks

- H. Coullon has been invited to present a talk at the Northern Arizona University, USA, September 2018: "Performance, Software engineering and verification: a wining combination for HPC and Utility computing?".

- H. Coullon has been invited to present a talk at Irisa 68NQRT seminar, Rennes, France: "Toward efficient and safe deployment and reconfiguration of distributed software".

- H. Coullon has been invited to present a talk at the Languages, Compilation, and Semantics LIP Seminar in Lyon, France: "Toward efficient and safe deployment and reconfiguration of distributed software".

- R.A. Cherrueau has been invited to present a talk at the "Opérations France Grille" workshop on "Edge Computing Infrastructure with OpenStack"

- M. Südholt has been invited to present a talk at the French Institute of Bioinformatics (IFB) on "Compositional security and privacy for biomedical analyses using shared genetic data."

- M. Südholt has been invited to present a talk at the IMT Cybersecurity day on "Privacy and sharing of genomic data."

- J.-M. Menaud has been invited to present a talk at the IMT Energy and IoT day on "Energy Management on Cloud/Edge Computing"

10.1.5. Scientific Expertise

- A. Lebre has been the chair of the OpenStack "Fog/Edge/Massively Distributed Clouds" Special Interest Group until May 2018 (further information at: https://wiki.openstack.org/wiki/Massively_Distributed_Clouds).

- A. Lebre is a member of the scientific committe of the Inria - Nokia/Bell Labs.

10.1.6. Research Administration

- S. Ibrahim is the co-coordinator of the international Master's program in Cloud Computing and Services at University of Rennes 1.

- S. Ibrahim was a member of Grid'5000 Sites Committee – Responsible for the Rennes site till April 2018.

- A. Lebre is a member of the executive committee of the GDR CNRS RSD "Réseau et Système distribué" and Co-leader of the transversal action Virtualization and Clouds of this GDR since 2015.

- A. Lebre is a member of the executive and architect committees of the Grid'5000 GIS (Groupement d'intérêt scientifique).

- A. Lebre is a member of the executive committee of the <I/O> Lab, a joint lab between Inria and Orange Labs.

- T. Ledoux is the head of the apprenticeship program in Software Engineering FIL (http://www.imt-atlantique.fr/formation/ingenieur-par-apprentissage/ingenieurs-specialite-ingenierie-logicielle). This 3-year program leads to the award of a Master degree in Software Engineering from the IMT Atlantique.

- J.-M. Menaud is the organizer of "Pôle Science du Logiciel et des Systèmes Distribués" in Laboratoire des Sciences du Numérique à Nantes (LS2N) since June 2015.

- J. Noyé is deputy head of the Automation, Production and Computer Sciences department of IMT Atlantique.

10.2. Teaching - Supervision - Juries

10.2.1. Supervision

- HdR : Thomas Ledoux, "Reconfiguration dynamique d'architectures logicielles : des métaclasses aux « nuages verts »", Université de Nantes, defended on July 2018, the 17th.
- PhD: Bastien Confais, co-director: A. Lebre, director: B. Parrein (RIO, LS2N Nantes), "Conception d'un système de partage de données adapté aà un environnement de Fog Computing ", defended on July 2018, the 10th.
- Phd: Mohamed Abderrahim (Orange CIFRE), director: A. Lebre, ""Conception d'un système de supervision programmable et reconfigurable pour une infrastructure informatique et réseau répartie", defended on Dec 2018, the 19th.
- PhD: Mohammad Mahdi Bazm: codirectors: Mario Südholt, J-M. Menaud.
- PhD: Maxime Belair, director: J-M. Menaud.
- PhD: Emile Cadorel, director: advisor: H. Coullon, director: J-M. Menaud.
- PhD: Fatima-zahra Boujdad, director: Mario Südholt.
- PhD: Maverick Chardet, advisor: H. Coullon, director: A. Lebre.
- PhD: David Espinel (Orange CIFRE), director: A. Lebre.
- PhD: Yewan Wang, director: J-M. Menaud.
- PhD: Thuy-Linh NGuyen, director: A. Lebre
- PhD: Dimitri Saingre, advisor: T. Ledoux, director: J-M. Menaud.
- PhD: Jad Darrous, advisor: S. Ibrahim, director: C. Perez (Avalon)
- Postdoc: Thomas Lambert, advisor: S. Ibrahim.
- Postdoc: Jonathan Pastor, advisor: J-M. Menaud.
- Postdoc: Alexandre Van Kempen, advisor: A. Lebre.

10.2.2. Juries

- H. Coullon was a reviewer of the PhD of Stéphanie Challita, "Inferring Models from Cloud APIs and Reasoning over Them: A Tooled and Formal Approach", University of Lille, Inria Lille-Nord Europe, France, Dec. 21 2018.
- H. Coullon was a reviewer of the PhD of Gustavo Sousa, "A Software Product Lines-Based Approach for the Setup and Adaptation of Multi-Cloud Environments", University of Lille, France, June 5 2018.
- J.-M. Menaud was a member of the PhD committee of David Guyon (Dec. 7, 2018) "Supporting Energy-awareness for Cloud Users", UBL, Dec 2018.
- S. Ibrahim was reviewer of the PhD of Paul Hermann Lensing, "Direct Lookup and Hash-Based Metadata Placement - Impact on Architecture, Performance and Scalability of Local and Distributed File Systems", Universitat Politecnica de Catalunya Barcelona, Spain, Oct. 10 2018.
- A. Lebre was a member of the PhD Committee of Xia Yé, "Combining Heuristics for Optimizing and Scaling the Placement of IoT Applications in the Fog", University of Grenoble, Dec 2018.
- T. Ledoux was reviewer of the PhD of Yahya Al-Dhuraibi, "Flexible Framework for Elasticity in Cloud Computing", Univ. Lille, December 2018

10.3. Popularization

- J.-M. Menaud, Online publication http://www.lemondeinformatique.fr: *L'IMT Atlantique veut réduire le coût des calculs lourds*.
- J.-M. Menaud, Online publication http://www.mtom-mag.com: *Le projet HYDDA, développer une plateforme innovante, associant Cloud et HPC*.
- J.-M. Menaud, Online publication http://www.agence-api.fr: *L'Institut Mines-Telecom Atlantique monte une plateforme cloud et HPC*.

SUMO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Éric Badouel was the General Chair of CARI 2018, Stellenbosch, South Africa.
- Hervé Marchand is a member of the IFAC Technical Committees (TC 1.3 on Discrete Event and Hybrid Systems) since 2005. Hervé Marchand is a member of the steering committee of MSR (modélisation de systèmes réactifs) since 2012 and became the president of this steering committee in November 2017;
- Nathalie Bertrand and Nicolas Markey are members of the steering committee of the Summer School MOVEP (*Modélisation et Vérification des Processus Parallèles*).

10.1.1.2. Member of the Organizing Committees

Nicolas Markey coorganized the 6th Workshop SR 2018 (Oxford, 7-8 july 2018).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Hervé Marchand served on the Program Committee of WODES 2018
- Éric Badouel was member of the program committees of VECOS 2018, ATAED 2018, CARI 2018, ICTAC 2018.s
- Loïc Hélouët was member of the program Comitee of ACSD'2018.
- Thierry Jéron served on the Program Committees of the following international conferences: SAC-SVT 2018, TAP 2018.
- Nathalie Bertrand was a member of the PC of the following international events: FoSSaCS'18, ICALP'18, Highlights'18, MoRe'18 and RP'18.
- Ocan Sankur was a member of the PC of FORMATS'18 and SYNT'18.

10.1.2.2. Reviewer

In 2018, members of SUMO reviewed submissions for following conferences: VECOS, ATAED, CARI, ICTAC, CONCUR, SOFSEM, FOCS, ATVA, VMCAI, ICALP, SAC-SVT, TAP, ACSD, MFCS, STACS, WODES, HSCC, FSTTCS, CSL, AAMAS, TACAS, FoSSaCS, LICS, PODC, MORE, RP.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Éric Badouel is co-editor-in-Chief of ARIMA Journal.

10.1.3.2. Reviewer - Reviewing Activities

In 2018, members of SUMO reviewed submissions for following journals: Automatica, Fundamenta Informaticae, Information and Computation, The Scientific Annals of Computer Science, Science of Computer Programming, ACM Transactions on Computational Logic, ACM Transactions on Embedded Computing Systems, Journal of Systems and Software, Mathematical Review (MathSciNet), Journal of Discrete Event Dynamical Systems, Formal Methods in System Design, Software Testing, Verification and Reliability, Journal of Logic and Computation, IEEE Transactions on Automatic Control, PLoS one, Performance Evaluation, Artificial Intelligence, Journal of Logic and Algebraic Methods in Programming, Logical Methods in Computer Science, ACM Transactions on Modeling and Computer Simulation, Journal of Systems and Software.

10.1.4. Invited Talks

Loïc Hélouët was invited to give a talk at IIT Delhi on hyperlogics on November 2018.

10.1.5. Leadership within the Scientific Community

Nathalie Bertrand is the co-head of the *Groupe de Travail Verif* (together with Pierre-Alain Reynier (LIS, Marseille)) which is a part of *GDR Informatique Mathématique (GDR-IM)*.

10.1.6. Scientific Expertise

- Eric Badouel was member of the jury discerning the Ibni Prize.
- Thierry Jéron was a reviewer for ANR.
- Blaise Genest was a reviewer for Austrian Academy of Sciences.
- Nathalie Bertrand was a reviewer for Thelam Fundand FWO (Belgium).
- Éric Fabre was a reviewer for the Ministry of Research, in the "Credit Impot Recherche" initiative.

10.1.7. Research Administration

- Éric Fabre is the co-director (with Olivier Audouin, Nokia) of the joint lab of Nokia Bell Labs France and Inria. The lab has been running for 9 years and started in Nov. 2017 its 3rd phase of joint research teams. A series of 6 new just started in 2017, for a duration of 4 years. They cover topics like network virtualization, network management, information theory, (distributed) machine learning, network security. SUMO is involved in the joint team SAPIENS.
- Loïc Hélouët is a representative of researchers in the Comité de Centre of Inria Rennes. He is also part of the bureau of the Comité de Centre, leads a working group of the comité and contributes to another. In 2018, he joined the COST-GTRI, who is in charge of evaluation of international programs such as Inria associated teams. He is the principal investigator for the french side of the EQUAVE associated team. He leads the P22 projects with Alstom Transport and is responsible for Workpackage 2 of the Headwork ANR project.
- Hervé Marchand is chairman of the *Comission des utilisateurs des moyens informatiques* (CUMI) in Rennes and member of the *Action de développement technologique*(ADT) commission in Rennes.
- Thierry Jéron is a Member Committee Substitute for COST IC1402 ARVI (Runtime Verification beyond Monitoring). He is a member of the IFIP Working Group 10.2 on Embedded Systems. He is a member of the *Comité d'orientation scientifique* (COS) Prospective of Irisa Rennes and a member of the Comité de Centre of Inria Rennes. Since 2016 he is *référent chercheur* for the Inria-Rennes research center.
- Nathalie Bertrand is elected member of the Conseil National des Universités, section 27 (computer science).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Nathalie Bertrand, Advanced Algorithms (ALGO2), 20h, L3, Univ Rennes 1, France;

Licence: Nathalie Bertrand, Theory of Rational Languages (THLR), 26h, EPITA 2nd year, Rennes, France.

Licence: Loïc Hélouët, JAVA and algorithms, L2, 40h, INSA de Rennes, France.

Licence: Loïc Hélouët, Practical studies (development of a small project), 8h, INSA de Rennes, France.

Master: Loïc Hélouët, Algorithms, 2h, Agrégation, ENS Rennes, France;

Master: Nicolas Markey, Verification of Complex Systems (CSV), 10h, M2, Univ Rennes 1, France;

Master: Nicolas Markey, Algorithms, 14h, Agrégation, ENS Rennes, France;

Master : Nathalie Bertrand, Language Theory; Algorithms, 20h, Agrégation, ENS Rennes, France;

Master: Ocan Sankur, Verification of Complex Systems (CSV), 10h, M2, Univ Rennes 1, France;

Master: Ocan Sankur, *Travaux pratiques*, Analyse et Conception Formelle (ACF), 22h, M1, Univ Rennes 1, France;

Master: Éric Fabre, Models and Algorithms for Distributed Systems (MADS), 10h, M2, Univ Rennes 1, France;

Master: Éric Fabre Information Theory, 15h, M1, ENS Rennes, France.

10.2.2. Supervision

- PhD: Matthieu Pichené, Multi-level analysis in computational system biology : the case of HeLa cells under apoptosis treatment [2], Univ. Rennes 1. The defense took place on June 25, 2018, and was supervised by Blaise Genest.

- PhD: Engel Lefaucheux, Controlling information in probabilistic systems [1], Univ. Rennes 1. The defence took place on September 24, 2018, and was supervised by Nathalie Bertrand and Serge Haddad (ENS Paris-Saclay).

- PhD in progress: Hugo Bazille, Information flows in quantitative dynamic systems, started oct. 2016, Blaise Genest and Éric Fabre.

- PhD in progress: Sihem Cherrared, Diagnosis of multi-tenant programmable networks, started Dec. 2016, Éric Fabre, Gregor Goessler (Inria, Spades) and Sofiane Imadali (Orange).

- PhD in progress: Emily Clement, Verification and synthesis of control systems: efficiency and robustnes, started Dec. 2018, supervised by Thierry Jéron, Nicolas Markey, and David Mentré (Mitsubishi Electric)

- PhD in progress: Rodrigue Djeumen Djatcha, Collaborative Model for Urban Crowdsourcing, University of Douala, Cameroon, supervised by Éric Badouel.

- PhD in progress: Erij Elmajed, Diagnosis of reconfigurable systems, started March 2017, Éric Fabre and Armen Aghasaryan (Nokia).

- PhD in progress: Léo Henry, Optimal test-case generation with game theory, started Oct. 2018, supervised by Thierry Jéron and Nicolas Markey.

- PhD in progress: Karim Kecir, Régulation et robustesse des systèmes ferroviaires urbains, defense planned on the 1st semester 2019, supervised by Loïc Hélouët and Pierre Dersin (Alstom).

- PhD in progress: Anirban Majumdar, Games for distributed networks: models and algorithms, ENS Paris Saclay, France, supervised by Nathalie Bertrand and Patricia Bouyer.

- PhD in progress: Rituraj Singh, Data-centric Workflows for Crowdsourcing Applications, defense planned on February 2021, supervised by Loïc Hélouët.

- PhD in progress: Robert Fondze Jr Nsaibirni, A Guarded Attribute Grammar Based Model for User Centered, Distributed, and Collaborative Case Management – Case of the Disease Surveillance Process, University of Yaoundé, Cameroon, supervised by Éric Badouel.

- PhD in progress: The Anh Pham, Dynamic Formal Verification of High Performance Runtimes and Applications, started Nov. 2016, supervised by Thierry Jéron and Martin Quinson (Myriads, Inria Rennes).

- PhD in progress: Arthur Queffelec, Tradeoff between Robustness and Optimality in Strategic Reasoning, started Nov. 2018, supervised by Ocan Sankur and François Schwarzentruber (Logica, Irisa).

- PhD in progress: Victor Roussanaly, Efficient verification of timed systems, started Sep. 2017, supervised by Nicolas Markey and Ocan Sankur.

- PhD in progress: Suman Sadhukhan, Modelling and parameterized verification of mobile networks, started Oct. 2018, supervised by Nathalie Bertrand, Nicolas Markey, Ocan Sankur.

10.2.2.1. Master Students

- Ocan Sankur co-supervised the master's thesis (M2) of Arthur Queffelec.

- Thierry Jéron and Nicolas Markey supervised the master's thesis (M2) of Léo Henry.

- Nathalie Bertrand, Loïc Hélouët and Ocan Sankur supervised a training period (3 h/week during 6 months) for a group of master 1 students. The topic was application of model checking to assess the performance of regulation algorithms.

- Loïc Hélouët supervised the internship of master student Flavia Palmieri.

10.2.2.2. Other Internships

- L3 Intership of Mélanie Bratulic, supervised by Sophie Pinchinat (Logica, Irisa) and Thierry Jéron.

10.2.3. Juries

10.2.3.1. PhD Defenses

- Loïc Hélouët was an examiner in the PhD defense of Yann Duplouy, Ecole Normale Supérieure Paris-Saclay, November 2018.

- Thierry Jéron was a reviewer for the PhD thesis of Antoine EL HOKAYEM, Univ. Grenoble, December 2018.

- Nicolas Markey was a reviewer for the PhD thesis of Benedikt Brütsch (Decembre 20, 2018, Aachen, Germany; PhD student of Wolfgang Thomas); a reviewer for the PhD thesis of Petr Bezděk (on March 9, 2018, Masaryk University, Brno, Czech Republic; PhD student of Ivana Černá); and a reviewer for the PhD thesis of Nicola Gigante (January 2019, Udine, Italy; PhD student of Angelo Montanari).

- Nathalie Bertrand was an examiner for the PhD thesis of Philipp Schlehuber-Caissier, Sorbonne Université, December, 14 2018; a reviewer for the PhD thesis of Ľuboš Korenčiak, Masaryk University (Czech Republic), April 2018; and an examiner for the PhD thesis of Othmane Rezine, Uppsala University, January, 12 2018.

10.2.3.2. Other Juries

- Nathalie Bertrand was in the hiring committee for CRCN positions at Inria Rennes Bretagne Atlantique in 2018. She was also in the hiring committee for a Maitre de conférences position at Université Paris-Est Créteil in spring 2018.

10.2.4. Books

Nicolas Markey co-authored the chapter on *Model Checking Real-Time Systems* in the book *Handbook of Model Checking* [29].

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Éric Badouel is the co-director (with Moussa Lo, UGB, Saint-Louis du Sénégal) of LIRIMA, the Inria International Lab for Africa. He is scientific officer for the African and Middle-East region at Inria DPEI (European and International Partnership Department). He is member of the executive board of GIS SARIMA.

10.3.2. Articles and contents

- Ocan Sankur published an article on formal verification for the Turkish Academy of Sciences: "How to verify computer systems on which our lives depend" on Nov. 2018.

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

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of Conference Steering Committees

- Olivier Zendra is a founder and a member of the Steering Committee of ICOOOLPS (International Workshop on Implementation, Compilation, Optimization of OO Languages, Programs and Systems)

10.1.1.2. Chair of Conference Program Committees

- Olivier Zendra was co-chair of the Program Committee and the Organizing Committee of the 13th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems (ICOOOLPS 2018)

10.1.1.3. Member of the Conference Program Committees

- Stefano Sebastio was a PC member of IEEE SOCA 2018 and ICORES 2019
- Annelie Heuser was PC member of TCHES 2018, CARDIS 2018, PROOFS 2018, KANGACRYPT 2018.

10.1.1.4. Reviewer

- Stefano Sebastio was a reviewer for ICORES 2019, IEEE SOCA 2018, CRiSIS 2018, COORDINATION 2018, MeTRiD satellite workshop of ETAPS 2018

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

- Stefano Sebastio was a reviewer for EJOR (European Journal of Operational Research), OptimLett (Optimization Letters), JCST (Journal of Computer Science and Technology), IJCC (International Journal of Cloud Computing), IJDSN (International Journal of Distributed Sensor Networks)

10.1.3. Scientific Expertise

- Olivier Zendra is a CIR expert for the MENESR.
- Olivier Zendra participated to the CRHC and CRCN national juries for Inria as a member of Inria's evaluation committee.
- Olivier Zendra participated to a MCF recruiting committee for IUT de Vannes.
- Olivier Zendra is a member of the editorial board and co-author of the "HiPEAC 2019 Vision"
- Olivier Zendra is a member of Inria's evaluation committee.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Eduard Baranov: Master Méthodes d'analyse de risques, M2, Université de Bretagne Sud, France
- Tania Richmond: ENS Ker Lan.

10.2.2. Supervision

- PhD in progress: Christophe Genevey Metat (Rennes 1): , October 2018, Jean-Marc Jezequel, Benoit Gerard, Annelie Heuser and Clementine Maurice

- PhD in progress : Olivier Descourbe, On Code Obfuscation, October 2016, Axel Legay and Fabrizio Biondi.

- PhD in progress : Alexandre Gonsalvez, On Obfuscation via crypto primitives, April 2016, Axel Legay and Caroline Fontaine.

- PhD in progress : Nisrine Jafri (Rennes1), On fault Injection detection with MC of Binary code, December 2015, Axel Legay and Jean-Louis Lanet.

- PhD in progress : Routa Moussaileb, From Data Signature to Behavior Analysis, 2017, Nora Cuppens and Jean-Louis Lanet

- PhD in progress : Tristan Ninet (Rennes 1), Vérification formelle d'une implémentation de la pile protocolaire IKEv2, December 2016, Axel Legay, Romaric Maillard and Olivier Zendra

- PhD in progress: Lamine Nouredine (Rennes1); Developing new packing detection techniques to stop malware propagation, November 2017, Axel Legay and Annelie Heuser.

- PhD in progress : Aurélien Palisse, Observabilité de codes hostiles, 2015, Jean-Louis Lanet

- PhD in progress: Emmanuel Tacheau (Rennes1); Analyse et détection de malwares au moyen de méthodes d'analyse symbolique, September 2017, Axel Legay, Fabrizio Biondi, Alain Fiocco.

- PhD in progress : Aurélien Trulla, Caractérisation de malware Android par suivi de flux d'information et nouvelles techniques d'évasion, 2016, Valerie Viet Triem Tong and Jean-Louis Lanet

- PhD in progress: Alexander Zhdanov (Rennes 1): Modular Automated Syntactic Signature Extraction (MASSE), December 2017, Axel Legay, Fabrizio Biondi, François Déchelle and Olivier Zendra.

10.2.3. Juries

- Annelie Heuser was a referee for the PhD defense of Eleonora Cagli (CEA - Commissariat à l'Energie atomique et aux Energies alternatives, Grenoble)

- Annelie Heuser was a referee for the PhD defense of Damien Marion (Telecom ParisTech, CIFRE with Secure-IC)

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

Jean-Pierre Talpin served as Finance Chair and Local Organizer of the 16th J16th ACM-IEEE conference on methods and models for system design in Beijing, China (http://memocode.irisa.fr/2018) and its 1st embedded workshop on formal methods in China's industry.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Jean-Pierre Talpin served the program committee of:

- LCTES'18, 21th. ACM SIGPLAN-SIGBED Conference on Languages, Compilers, and Tools for Embedded Systems
- SAC'19, 34rd. ACM SIGAPP Symposium on Applied Computing
- SCOPES'18, 21th. International Workshop on Software and Compilers for Embedded Systems

10.1.2.2. Reviewer

Thierry Gautier reviewed articles for *IEEE Access* and *Science of Computer Programming*.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Jean-Pierre Talpin is Associate Editor with the ACM Transactions for Embedded Computing Systems (TECS).

10.1.3.2. Reviewer - Reviewing Activities

Thierry Gautier reviewed articles for *IEEE Access* and *Science of Computer Programming*.

10.1.4. Invited Talks

Jean-Pierre Talpin gave a keynote entitled "Refinement types for system design" at the Symposium on Dependable Software Engineering (SETTA'17) in Changsha, October 25.

Thierry Gautier and Albert Benveniste gave a seminar on "The Signal synchronous language: the principles beyond the language and how to exploit and extend them", in March 2018 at the Collège de France, in Gérard Berry's 2017-2018 lecture course (https://www.college-de-france.fr/site/gerard-berry/seminar-2018-03-07-17h30.htm).

10.1.5. Expertise

Jean-Pierre Talpin served as vice-president of CES 25 (Computer Science Evaluation Committee) of ANR.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Jean-Pierre Talpin gave a seminar at Beihang Science Park on June 11th , at ISCAS on May 2nd and on June 14th, and at Beida (PKU) on December 7th. Jean-Pierre Talpin gave an introductory course on model-checking at Nankai University, May 7-8th.

10.2.2. Supervision

Jean-Pierre Talpin co-supervises the PhD Theses of Simon Lunel, Liangcong Zhang, Jean-Joseph Marty and Lucas Franceschino

10.2.3. Juries

Jean-Pierre Talpin served as reviewer at the HDR Thesis defense of Katell Morin, entitled "Assertions and hardware design", which took place at TIMA, Grenoble, on November 15.

Jean-Pierre Talpin served as reviewer at the PhD Thesis defense of Guillaume Plassan, entitled "Conclusive formal verification of clock domain crossing properties", which took place at TIMA, Grenoble, on March 28.

VISAGES Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- MS workshop: https://project.inria.fr/msworkshop2018/, Jan 30-31, London, UK (Claire Cury).
- Brainhack Global Rennes 2018: https://brainhack.irisa.fr, May 25-26, Rennes, France (Camille Maumet).
- Christian Barillot is member of the Board of Directors of IPMI conference series (Information Processing in Medical Imaging)

10.1.1.2. Member of the Organizing Committees

- Brainhack Global Rennes 2018: https://brainhack.irisa.fr, May 25-26, Rennes, France (Julie Coloigner, Olivier Commowick, Claire Cury, Mathis Fleury, Armelle Mozziconacci, Édith Blin).
- MS workshop: https://project.inria.fr/msworkshop2018/, Jan 30-31, London, UK (Christian Barillot).
- ARSEP workshop on multiple sclerosis, Feb 2, ICM (Elise Bannier, Anne Kerbrat).
- Official launching ceremony of Neurinfo new MR scanner, Nov 27, CCP, Rennes (Elise Bannier, Isabelle Corouge in collaboration with Inria and University of Rennes 1).
- Jean-Luc Anton, Elise Bannier, Marie Chupin, Gabriela Hossu, Irène Tropres created in 2016 an academic network for multicenter mutual aid in MRI called REMI. The network gathers over 150 members from nearly 80 different research and clinical sites. Pluri-annual meetings are organised and a website (https://remi.network/) allows members to share expertise, observations and questions. Different themes are discussed : Quality Assurance, Devices, Sequences, Good clinical practices, Data preprocessing, Data management and a preclinical theme was added this year. This initiative is supported by France Life Imaging. An issue of the french magazine for MR tech dedidated to research was published in September 2018 and also describes the REMI among other initiatives : http://new.afppe.com/le-n278-de-septembre-est-en-ligne-sur-la-mediatheque. REMI meetings, March 27 and Oct 9, ICM, Paris (Elise Bannier).

10.1.1.3. Program Participant

- Organizer of the project "A deep learning playground", Brainhack Global Rennes 2018: https://brainhack.irisa.fr, May 25-26, Rennes, France (Francesca Galassi).
- Session moderator "3T versus 7T", SFNR, March 21, Paris, France (Elise Bannier).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Christian Barillot was area chair of IEEE-ISBI 2018 and SPIE Medical Imaging 2018
- Scientific commitee of SFRMBM 2019, bi-annual congress that will be help in Strasbourg in March 2019 https://sfrmbm2019.sciencesconf.org/ (Elise Bannier).
- Neuroinformatics 2019: http://neuroinformatics2019.org/, Sept. 1-2, Warsaw, Poland (Camille Maumet).

10.1.2.2. Reviewer

- International Symposium on Medical Information Processing and Analysis: ISBI (Julie Coloigner, Olivier Commowick, Pierre Maurel, Emmanuel Caruyer)
- International Symposium on Medical Information Processing and Analysis: SIPAIM (Julie Coloigner)
- MICCAI (Olivier Commowick, Francesca Galassi)
- Annual congress of the Organisation of Human Brain Mapping (Camille Maumet)
- African Conference on Research in Computer Science and Applied Mathematics (CARI) (Pierre Maurel)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Christian Barillot is Editor-in-Chief of Frontiers in ICT: Computer Image Analysis.
- Christian Barillot is member of Editorial Boards of Medical Image Analysis, Current Medical Imaging Reviews, ISRN Signal Processing
- Camille Maumet is member of Editorial Boards of Neuroinformatics

10.1.3.2. Reviewer - Reviewing Activities

- Journal of Alzheimer's disease (Claire Cury)
- NeuroImage (Olivier Commowick, Pierre Maurel, Camille Maumet, Christian Barillot)
- NeuroImage: Clinical (Julie Coloigner, Christian Barillot)
- IEEE TMI (Olivier Commowick)
- IEEE Biomedical Engineering (Christian Barillot)
- Med Image Anal (Olivier Commowick, Emmanuel Caruyer, Christian Barillot)
- Magn Reson Med (Emmanuel Caruyer)
- Med Phys (Emmanuel Caruyer)
- Nature Scientific Data (Christian Barillot)

10.1.4. Invited Talks

- Barillot, C., "Defining and evaluating imaging markers for multiple sclerosis". Workshop on Machine Learning in Radiology (MLRad 2018). CHUV - Siemens, Lausanne.
- Barillot, C., "Nouveaux enjeux, nouvelles techniques d'imagerie pour analyser le système nerveux", École Recherche Translationnelle en Neurosciences. ITMO NNP - AVIESAN, Bordeaux.
- Barillot, C., "Medical image analysis and integration". Workshop on "Artificial Intelligence in Health Grand Challenge". AI Singapore, Singapore.
- C. Barillot and O.Commowick. "Objective Evaluation of Multiple Sclerosis Lesion Segmentation using a Data Management and Processing Infrastructure" - Journées françaises de radiologie (JFR 2018) - Paris (Oct 2018) [19]
- Christian Barillot, Michel Dojat, Michael Kain. "France Life Imaging and the transversal node for Information Analysis and Management (IAM)". Journées françaises de radiologie (JFR 2018) - Paris (Oct 2018) [18]
- Michael Kain. "Solutions de gestion des données d'imagerie : exemples avec Shanoir, Archimed et Cati-DB". Journées françaises de radiologie (JFR 2018) - Paris (Oct 2018) [20]
- O. Commowick. "OFSEP and FLI infrastructure for the organisation of the international challenge on MS lesions segmentation". MS workshop, London (January 2018)
- O. Commowick. "Objective Evaluation of Multiple Sclerosis Lesion Segmentation using a Data Management and Processing Infrastructure". France Life Imaging workshop - Orsay (March 2018)

- O. Commowick "Towards Multiple Sclerosis Lesions Segmentation Transfer to the Clinics: Methods and Evaluation". Gdr ISIS - Paris (March 2018)

- In the context of the EMISEP project on MS and spinal cord imaging and in order to discuss further collaboration, Anne Kerbrat, Benoit Combès and Elise Bannier visited the CEMEREM in Marseille on Monday and gave a talk " Characterisation of spinal cord involvement in early RRMS patients using MRI" (October 22st)

- C. Maumet "Tools and standards to make neuroimaging derived data reusable", Keynote at Neuroinformatics 2018, Montreal, Canada, August 2018 [21].

- Yao Chi and Christian Barillot "Infrastructures pour le traitement et la gestion de données d'imagerie biologique et médicale", 6ème Forum de l'Institut de Psychiatrie, Amiens, September 2018.

10.1.5. Leadership within the Scientific Community

- Chair-elect of the international OHBM Open Science Special Interest Group (Camille Maumet)

- Member of the international working group on data sharing in neuroimaging of the International Neuroinformatics Coordinating Facility (Camille Maumet)

- Member (by invitation) of Aperture, an international new online publishing plateform for the OHBM community, in the "workflow working group" led by Peter Bandettini (Camille Maumet).

- Member (by selection) of the "comité de la science ouverte", a national initiative to foster open science in France, in the "open and free software working group" led by Roberto Di Cosmo (Camille Maumet).

- Mentor (by selection) of the international training "Mozilla Open leaders" led by Abigail Cabunoc Mayes (Camille Maumet).

- Member (by selection) of the "Bio Imaging and Signal Processing" (BISP) Technical Committee of the IEEE Signal Processing Society (Emmanuel Caruyer).

- Gilles Edan was elected Fellow of the European Academy of Neurologie. Member of the EAN teaching committee in 2015

- Christian Barillot is member of the Scientific Council of the INS2I [0] Institute of CNRS since 2011 and is Chairman of the Board since 2015

- Christian Barillot is member of the C3N committee (CNRS)

- Christian Barillot is member of the scientific board of "GIS France Grilles"

- Christian Barillot is member of the scientific board of the Neuroscience and psychiatry institute of AVIESAN

10.1.6. Scientific Expertise

- Expertise as a reviewer for "Agence Nationale de la Recherche" (ANR) (Emmanuel Caruyer)

- Expertise as a reviewer for the Comité Français d'Évaluation de la Coopération Scientifique et Universitaire avec le Brésil (Christian Barillot)

- Expertise as a reviewer for the Israel Science Foundation (Christian Barillot)

- Expertise as a reviewer for the Research Council KU Leuven (Christian Barillot)

- Expertise as a reviewer for the Swiss National Science Foundation (Christian Barillot)

- Expertise as a reviewer for the "European Research Council" for the starting grant call (Christian Barillot)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

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[0] http://csins2i.irisa.fr

ESIR: Cédric Meurée, Algorithms and Complexity, 28h, M1, École Supérieure d'Ingénieur de Rennes (ESIR), France

ESIR: Benoit Combès, Statistiques, 12h, M1, École Supérieure d'Ingénieur de Rennes (ESIR), France

Master Molecular and Cellular biology/Master Bioinformatics/Master Fundamental and Applied Microbiology: Corentin Vallée, Machine Learning, 64h, M1, Univ. Rennes, France

L2 informatique: Raphaël Truffet, Génie Logiciel, 24h, L2, ISTIC, France

ESIR: Pierre Maurel, General image processing (60h), Algorithmics and complexity (60h), Medical imaging (60h), École Supérieure d'Ingénieur de Rennes (ESIR).

ENS Rennes: Pierre Maurel, Introduction to image processing (24h)

Licence SIF: Emmanuel Caruyer, Algorithms, 30h, L3, ENS Rennes, France.

Master 2 "Troubles de la Cognition et du Langage": Pierre-Yves Jonin, Introduction aux méthodes de neuroimagerie pour la recherche en neuropsychologie (3h) Master 2. Université de Poitiers, France.

Master 2 "Troubles de la Cognition et du Langage": Pierre-Yves Jonin, Evaluation neuropsychologique à visée diagnostique. Le cas des syndromes démentiels. Master 2 (2 x 6h) Université de Poitiers, France.

Medicine (4th & 5th year) UE Psychologie et Neurobiologie: Pierre-Yves Jonin,L'exploration neuropsychologique des maladies neurologiques et psychiatriques. 4ème & 5ème année de médecine (4h), Université de Brest, France.

Master 2 Neurosciences Cliniques: Pierre-Yves Jonin, Neurosciences cognitives de la mémoire humaine. Master 2. 3 heures. Université de Rennes 1, France.

Licence 3 de Psychologie: Pierre-Yves Jonin, Les syndromes neuropsychologiques. L3, (16h) Université de Rennes 2, France

Licence 3 de Psychologie: Pierre-Yves Jonin, L'approche neuropsychologique du handicap chez les patients cérébro-lésés. Licence 3. Université de Rennes 2.

Master 2 "Handicap et troubles du développement": Pierre-Yves Jonin, Evaluation neuropsychologique à visée diagnostique. Le cas des syndromes démentiels. Master 2. 2 x 6 heures. Université de Rennes 2.

Master 2 "Handicap et troubles du développement".: Pierre-Yves Jonin, Méthodologie de la recherche clinique. Master 2. 3 heures. Université de Rennes 2.

Master 2 "Psychologie, mention Neuropsychologie": Pierre-Yves Jonin, Méthodologie clinique et principes de l'évaluation neuropsychologique à visée diagnostique. Master 2. 3h30. Université de Savoie.

L2 biologie: Antoine Legouhy, Bio-statistques 34h, L2, Univ. Rennes 1, France.

M1 mathématiques: Antoine Legouhy, Optimisation 12h, M1, Univ. Rennes 1, France.

IUT GEA: Mathis Fleury, Mathématiques; 64h (3 months); Licence; IUT Saint-Malo, France.

L1 INF1: Francesca Galassi, Programming in Java (TD : 20h, TP : 20h), L1, ISTIC University of Rennes 1, France.

L2 PO: Francesca Galassi, Object Oriented Programming in Java (TP : 20h), L2, ISTIC University of Rennes 1.

Master SISEA: Benoit Combès, Méthodes statistiques pour l'image 10h, M2, Univ. Rennes 1, France.

Master SIBM, M2, University of Angers-Brest-Rennes, France.

- Christian Barillot (Plenary: 12h), responsible for one semester.
- Jean-Yves Gauvrit, Coordinator for the Master
- Olivier Commowick (Plenary: 6h).

- Quentin Duché, "Traitements des données d'IRM fonctionnelle" (Plenary: 1h).
- Isabelle Corouge, "Bio-marqueurs d'imagerie et IRM metabolique et fonctionnelle" (Plenary: 3h).
- Camille Maumet, "Imaging processing pipelines" (Plenary: 3h).
- Élise Bannier, "IRM fonctionnelle BOLD" (Plenary: 3h).
- Emmanuel Caruyer, "Introduction to diffusion MRI" (Plenary: 3h).
- Benoit Combès, "Méthodes statistiques pour le traitement d'image" (Plenary: 3h).

10.2.2. Supervision

10.2.2.1. PhD & HdR

PhD in progress : Antoine Legouhy, "Longitudinal brain altas creation, application to development studies", CNRS, from Nov 2016, Christian Barillot, François Rousseau, Olivier Commowick.

PhD in progress: Cédric Meurée, "Quantitative Analysis Of Arterial Spin Labeling MRI For Robust Parametric Information Of Perfusion Maps", Inria / Siemens, from Mar 2014, Christian Barillot, Pierre Maurel.

PhD: Sudhanya Chatterjee, "Gaining insights into brain tissues using multi-compartment T2 relaxometry models", Inria, defended on Dec 5, 2018, Christian Barillot, Olivier Commowick, Jean-Christophe Ferré, Simon Warfield.

PhD in progress : Corentin Vallée, "Joint estimation of neuronal activation, resting-state and basal metabolism from Arterial Spin Labeling", Univ. Rennes, from Nov 2016, Christian Barillot, Isabelle Corouge, Pierre Maurel.

PhD in progress : Anne-Claire Binter, "Étude des effets possibles des expositions prénatales à des neurotoxiques (solvants organiques et insecticides organophosphorés) sur le fonctionnement du cerveau de l'enfant évalués par imagerie cérébrale (Cohorte Pélagie)", Univ. Rennes, from Janv 2017, Fabienne Pelé, Cécile Chevrier, Elise Bannier.

PhD in progress : Xavier Rolland, "Modeling analytic variability in brain imaging", CNRS, from Oct 2018, Christian Barillot, Camille Maumet.

PhD in progress : Raphaël Truffet, "Compressed sensing for microstructure-enabled diffusion MRI", Univ. Rennes / ENS Rennes, from Oct 2018, Christian Barillot, Emmanuel Caruyer.

PhD: Maia Proisy, "Étude de la perfusion cérébrale par Arterial Spin Labeling en IRM à 1.5T chez le nouveau-né et l'enfant", Univ. Rennes/CHRU Rennes, defended on Dec 12, 2018, Jean-Christophe Ferré.

PhD: Anne Kerbrat Univ. Rennes/CHRU Rennes, defended on Oct 24, 2018, Gilles Edan

10.2.2.2. Other supervisions

Master student: Solene Tarride, "Deep learning for segmentation of MS lesions from multimodal MRI", Apr-Oct 2018, Francesca Galassi.

10.2.3. Juries

- Gilles Edan, Jean-Christophe Ferre, Christian Barillot. PhD committee: Anne Kerbrat, Univ. Rennes, Rennes; October 24, 2018.
- Jean-Christophe Ferre, Christian Barillot. PhD committee: Maia Proisy, Univ. Rennes, Rennes; December 12, 2018.
- Jean-Christophe Ferre, Christian Barillot. PhD committee: Jean-Marie Batail, Univ. Rennes, Rennes; December 15, 2018.
- Olivier Commowick, Christian Barillot. PhD committee: Sudhanya Chatterjee, Inria, Rennes; December 5, 2018.

- Isabelle Corouge, PhD thesis in medicine committee: Christophe Paya, Univ. Rennes, Rennes; June 25, 2018.

- Isabelle Corouge, PhD mid-term committee (CSI) : Cédric Meurée, Rennes; May 2018.

- Élise Bannier, PhD mid-term committee (CSI) : Haykel Snoussi, Rennes; May 2018.

- Élise Bannier, PhD mid-term committee (CSI) : Louis Marage, Rennes; July 2018.

- Emmanuel Caruyer, PhD mid-term committee (CSI) : Sudhanya Chatterjee, Rennes; June 2018.

- Christian Barillot, PhD committee: Gaetan Galisot, Tours Université Tours, March 21, 2018

- Christian Barillot, PhD review: Pauline Bezivin-Frere, Orsay Université Paris X, July 4, 2018

- Christian Barillot, Chairman PhD committee: Mayela Toledo, Rennes Université Rennes 1, May 23, 2018

10.3. Popularization

10.3.1. Press

- Isabelle Bonan and Christian Barillot did present the activity of Neurofeedback in Visages during a press conference in Paris on November 14th, 2018 organized by Inria. Press reports have been issued from this conference : France Inter morning news, Usbek et Rica (https://usbeketrica.com/article/le-xxieme-siecle-sera-celui-du-cerveau), and Egora (https://www.egora.fr/actus-medicales/neurologie/43575-l-interface-cerveau-ordinateur-efficace-dans-le-traitement-de).

- Article in "Sciences Ouest" on "*Un miroir intelligent pour entraîner son cerveau*" https://www.espace-sciences.org/sciences-ouest/366/dossier/un-miroir-intelligent-pour-entrainer-son-cerveau, Nov. 2018

10.3.2. Film

A film presenting the Neurinfo imaging facility was recorded by Inria for the official launching ceremony of the new 3T Prisma scanner and further use for general communication about Neurinfo. Reports on local press: Ouest-france (https://www.ouest-france.fr/bretagne/rennes-35000/video-une-irm-ultra-puissante-pour-faire-avancer-la-recherche-rennes-6095044) and TV-Rennes (https://www.tvr.bzh/programmes/tvr-soir-1543339500).

10.3.3. Articles and contents

- Camille Maumet: Blog post "Open science working group on scientific software" http://blog.camillemaumet.com/posts/12, November, personal website.

- Elise Bannier: Blog post "Village des sciences 2018" https://team.inria.fr/visages/village-des-sciences-2018/, October, VisAGeS blog.

- Camille Maumet: Blog post "Extending BIDS to fMRI analyses" http://blog.camillemaumet.com/posts/11, October, personal website.

- Olivier Commowick: Blog post: "Anima scripts release" https://team.inria.fr/visages/anima-scripts-release/, September, VisAGeS blog.

- Camille Maumet: Blog post "Collaborative AFNI projects at DC code convergence" http://blog.camillemaumet.com/posts/10, September, personal website.

- Camille Maumet: Blog post "Meeting Montreal neuroinformatics community at the INCF congress and hackathon" http://blog.camillemaumet.com/posts/9, August, personal website.

- Camille Maumet: Blog post "Mentoring for Mozilla Open Leaders" http://blog.camillemaumet.com/posts/8, August, personal website.

- Camille Maumet with Claire Cury: Blog post "Interview: Let's organise a Brainhack!" https://team.inria.fr/visages/interview-lets-organise-a-brainhack/, July, VisAGeS blog.

- Camille Maumet with Elise Bannier: Blog post "Interview: Participating in my first hackathon at Brainhack Rennes 2018" https://team.inria.fr/visages/participating-in-my-first-hackathon-at-brainhack-rennes-2018/, July, VisAGeS blog.

- Camille Maumet: Blog post "OHBM 2018: first remotely-attended conference" http://blog.camillemaumet.com/posts/7, June, personal website.

- Camille Maumet: Blog post "Sprinting with bio-imagers and how I learnt about NEUBIAS, EuBI, Elixir and tried out myBinder!" http://blog.camillemaumet.com/posts/6, May, personal website.

- Olivier Commowick: Blog post "Anima v3.0 release" https://team.inria.fr/visages/anima-v3-0-release/, March, VisAGeS blog.

- Claire Cury: Blog post "Workshop Multiple Sclerosis 2018 (UCL, Inria)" https://team.inria.fr/visages/workshop-multiple-sclerosis-2018-ucl-inria/, April, VisAGeS blog.

- Olivier Commowick: Blog post "Brainhack Rennes 2018 (April 25-26)" https://team.inria.fr/visages/brainhack-rennes-2018-april-25-26/, March, VisAGeS blog.

- Olivier Commowick: Blog post "medInria 3.0 available" https://team.inria.fr/visages/medinria-3-0-available/, March, VisAGeS blog.

10.3.4. Education

- L codent L créent - An outreach program to send PhD students to teach Python to middle school students in 8 sessions of 45 minutes. Tassadit Bouadi (Univ. Rennes 1), Camille Maumet (VisAGeS) and Anne-Cecile Orgerie (Myriads) are coordinating the local version of this program, initiated in Lille. The first session in Rennes is planned for April 2019. The program is currently supported by: Fondation Blaise Pascal, ED MathSTIC, Inria and Fondation Rennes 1.

10.3.5. Interventions

10.3.5.1. National brain week: "Semaine du Cerveau"

- Giulia Lioi: Talk "Lire dans son cerveau grâce au neurofeedback EEG, c'est mieux bouger", March 14, Warpzone, Rennes, France.

- Mathis Fleury: Bar en (neuro) sciences; May 14-16; Presentation of the Neurofeedback and demonstration of a EEG based Neurofeedback with a motor imagery paradigm.

10.3.5.2. National science week: "Village des sciences"

Visages took part in the Village des Sciences 2018, opening the Neurinfo platform to 45 middle school students (Oct 5) and 120 visitors from the general public (Oct 6-7), Oct 5-7, Rennes, France. https://www.univ-rennes1.fr/evenements/20072018/village-des-sciences-2018-visites-guidees-de-laboratoires-pour-les-scolaires, https://team.inria.fr/visages/members-area/projects/village-des-science-2018/. The event was coordinated by Julien Le Bonheur from the University of Rennes, and Elise Bannier coordinated the contribution of Neurinfo/Visages. We covered 4 themes:

- Giulia Lioi, Mathis Fleury, Simon Butet, Pauline Rolland: Neurofeedback EEG

- Pierre Maurel, Charlélie Erhart, Antoine Legouhy, Corentin Vallée, Francesca Galassi, Julie Coloigner: Image processing with MedInria

- Isabelle Corouge, Catherine Guillemot, Emmanuel Caruyer, Elise Bannier, Benjamin Parat: Brain and MRI

- Quentin Duché, Florian Chapelain, Virginie Dardier: Functional MRI

10.3.5.3. Other interventions

- Pierre-Yves Jonin: Series of 6 talks on neuropsychology, Universités du Temps Libre de Bretagne, Jan-Dec, Rennes, France.
- Pierre-Yves Jonin: Talk "La mémoire humaine, comment la conserver, quand s'inquiéter", Bien Vieillir en Ille-et-Vilaine, June, Rennes, France.
- Mathis Fleury: Talk "Qu'est ce qu'un doctorant ?"Journée des métiers IUT rennes - , Nov 16, IUT Rennes, France.
- Camille Maumet: Talk to middle school students (around 100) "La neuroinformatique", PRNB, April, Rennes, France.
- Olivier Commowick: Presentation of research done in VisAGeS on medical image processing and of the MedInria software, Journée LOGIN, Nov 27, Grenoble, France.

10.3.6. Creation of media or tools for science outreach

- Launching of a Twitter account for the VisAGeS team (Camille Maumet) and setup on the VisAGeS website (Olivier Commowick) http://twitter.com/visages_inria. Tweets by lab members (Quentin Duché, Christian Barillot)
- Development of the VisAGeS blog and writing of blog posts (Camille Maumet, Olivier Commowick, Claire Cury, Elise Bannier).

WIDE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

François Taïani served as Co-Organizer of the 8th Inria/Technicolor Workshop On Systems (WOS8), Rennes, France, December 2018.

François Taïani served as Communication Chair of the 19th ACM/IFIP/Usenix International Conference on Middleware (Middleware), Rennes, France, December 2018.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

François Taïani served as PC Co-Chair of the 2nd Workshop on Scalable and Resilient Infrastructures for Distributed Ledgers (SERIAL), Rennes, France, December 2018.

François Taïani served as PC Co-Chair of the 6th Edition of The International Conference on NETworked sYStems (NETYS), Essaouira, Morocco, May 2018.

9.1.2.2. Member of the Conference Program Committees

Pierre-Louis Roman served on the PC of the 16th IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC), Athens, Greece, August 2018.

Pierre-Louis Roman served on the PC of the 15th International Symposium on Pervasive Systems, Algorithms and Networks (I-SPAN), Yichang, China, October 2018.

Pierre-Louis Roman served on the PC of the 8th IEEE International Symposium on Cloud and Service Computing (SC2), Paris, France, November 2018.

Pierre-Louis Roman served on the PC of the 11th IEEE International Conference on Service-Oriented Computing and Applications (SOCA), Paris, France, November 2018.

Davide Frey served of the PC of the Industry Track of the 2018 ACM/IFIP International Middleware Conference, Rennes, France, December 2018.

Davide Frey served on the PC of the 18th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS), 2018.

François Taïani served on the PC of the 19th ACM/IFIP/Usenix International Conference on Middleware (Middleware), Rennes, France, December 2018.

François Taïani served on the PC of the 38th IEEE International Conference on Distributed Computing Systems (ICDCS), in the Dependability Track track, Vienna, Austria, July 2018.

François Taïani served on the PC of the Conférence d'informatique en Parallélisme, Architecture et Système (Compas), Toulouse, France, July 2018.

François Taïani served on the PC of The 48th IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Luxembourg, June 2018.

George Giakkoupis served on the PC of he 22nd International Conference on Principles of Distributed Systems (OPODIS), Hong Kong, December 2018.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing Activities

Anaïs Durand was a reviewer for Theoretical Computer Science (TCS).

Davide Frey was a reviewer for IEEE Transactions on Parallel and Distributed Systems (TPDS).

François Taïani was a reviewer for Journal of Systems Architecture (JSA, Elsevier).

George Giakkoupis was a reviewer for Journal of the ACM (JACM).

George Giakkoupis was a reviewer for Algorithmica (ALGO).

George Giakkoupis was a reviewer for ACM Transactions on Parallel Computing (TOPC).

George Giakkoupis was a reviewer for Theoretical Computer Science (TCS).

9.1.4. Invited Talks

Pierre-Louis Roman. Shortcutting the Bitcoin verification process for your smartphone. EPFL, Lausanne, Switzerland, 1 November 2018.

Pierre-Louis Roman. Shortcutting the Bitcoin verification process for your smartphone. Master Workshop Layer 1 Solutions, Amsterdam, The Netherlands, 18 November 2018.

Anaïs Durand. Contention-Related Crash Failures. Descartes ANR project meeting, IRIF, Université Paris Diderot, Paris, France, 1 October, 2018.

François Taïani. Possible Future Careers after the PhD. Nantes Plenary Meeting and Training School, BigStorage European Training Network (ETN), Nantes, France, 25-28 June 2018.

François Taïani. Pleiades: Distributed Structural Invariants at Scale. Delyss/Whisper Inria Team Retrait, Saint-Valéry, France, 18-20 June 2018.

François Taïani. Pleiades: Distributed Structural Invariants at Scale. Plenary Meeting of the Dionasys Project, Saint-Jacut, France, 23 May 2018.

François Taïani. Being Prepared in a Sparse World: The Case of KNN Graph Construction. EPFL, Lausanne, Switzerland, January 2018.

George Giakkoupis. Random binary search trees with concurrent insertions. Theory Seminar, Technion, Haifa, Israel, 31 October 2018.

George Giakkoupis. Random binary search trees with concurrent insertions. Randomized Algorithms Seminar, University of Cambridge, UK, 2 August 2018.

George Giakkoupis. Random binary search trees with concurrent insertions. ART-Oberseminar, University of Hamburg, Germany, 19 July 2018.

9.1.5. Leadership within the Scientific Community

François Taïani has been a member of the Steering Committee of IFIP WG 6.1 International Conference on Distributed Applications and Interoperable Systems (DAIS) since 2013.

François Taïani served on the award committee of the Prix de thèse Gilles Kahn 2018, sponsored by the French Science Academy (Académie des Sciences), and awarded by the French Informatics Society (SiF).

Michel Raynal has been Adjunct Professor at the Polytechnic University of Hong Kong since 2013.

Michel Raynal has been a member of the Executive board of the SIF (Société d'Informatique Française) since 2013.

Michel Raynal is European representative at the IEEE Technical Committee on distributed computing.

9.1.6. Research Administration

Davide Frey is Correspondant Scientifique Europe at the DPEI for Inria Rennes

Davide Frey is an associate member of the COST-GTRI of Inria.

François Taïani has been a member of the Scientific Orientation Committee (COS) of IRISA (UMR 6074) since 2013.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Olivier Ruas, Spe-Info2, 26h, L1, Université de Rennes 1, France

Licence: Olivier Ruas, Programmation Web, 6h, L2, Université de Rennes 1, France

Master: Davide Frey, Programming Technologies for the Cloud, 28h, M2, Univ. Rennes I, France.

Master: Davide Frey, Scalable Distributed Systems, 10h, M1, EIT/ICT Labs Master School, Univ. Rennes I, France.

Master: Davide Frey, Big-Data Storage and Processing Infrastructures, 10h, M2-SIF, Univ. Rennes I, France.

Master: Davide Frey, Cloud Computing, 6h, M2-MIAGE, Univ. Rennes I, France.

Master: Davide Frey, Distributed Systems, 12h, ENSAI Rennes, France.

Master: George Giakkoupis, Systèmes Répartis, 9h (Spring), ENSAI Rennes, France.

Master: George Giakkoupis, Systèmes Répartis, 9h (Fall), ENSAI Rennes, France.

Engineering School: François Taïani, Synchronization and Parallel Programming, 62h, 2nd year of Engineering School (M1), ESIR / Univ. Rennes I, France.

Engineering School: François Taïani, Distributed Systems, 24h, 3rd year of Engineering School (M2), ESIR / Univ. Rennes I, France.

Engineering School: François Taïani, Parallel Algorithms for Big Data, 24h, 3rd year of Engineering School (M2), ESIR / Univ. Rennes I, France.

Engineering School: François Taïani, Introduction to Operating Systems, 24h, 1st year of Engineering School (L3), ESIR / Univ. Rennes I, France.

9.2.2. Supervision

PhD: Pierre-Louis Roman, Exploring Heterogeneity in Loosely Consistent Decentralized Data Replication [12], University of Rennes 1, 18 December 2018, François Taïani and Davide Frey.

PhD: Simon Bouget, Towards a Holistic Construction of Opportunistic Large-Scale Distributed Systems [11], University of Rennes 1, 20 September 2018, François Taïani and David Bromberg.

PhD: Olivier Ruas, The Many Faces of Approximation in KNN Graph Computation [13], University of Rennes 1, 17 December 2018, François Taïani and Anne-Marie Kermarrec (Mediego).

PhD in progress: Quentin Dufour, BBDA - Browser Based Data Analytics, January 2018, David Bromberg and Davide Frey.

PhD in progress: Amaury Bouchra Pilet, Robust and Lightweight Overlay Management for Decentralized Learning, University of Rennes 1, September 2018, David Bromberg and Davide Frey.

PhD in progress: Loïck Bonniot, Distributed Troubleshooting of Edge-Compute Functions, University of Rennes 1, François Taïani and Christoph Neumann (Technicolor).

PhD in progress: Hayk Saribekyan, Randomized Algorithms for Distributed Information Dissemination, University of Cambridge, UK, George Giakkoupis and Thomas Sauerwald (Cambridge).

9.2.3. Juries

François Taïani was a reviewer for Rhicheek Patra's PhD thesis: Towards Scalable Personalization, EPFL (Switzerland), 16 January 2018

François Taïani was a reviewer for Raluca Halalaï's PhD thesis: On Reducing Latency in Geo-Distributed Systems through State Partitioning and Caching, Univ. Neuchâtel (Switzerland), 14 May 2018.

François Taïani was a reviewer for William Excoffon's PhD thesis: Résilience des systèmes informatiques adaptatifs : Modélisation, analyse et quantification, Institut National Polytechnique de Toulouse, LAAS, 8 June 2018.

François Taïani was a reviewer for Wenjie Zheng's PhD thesis: A Distributed Frank-Wolfe Framework for Trace Norm Minimization via the Bulk Synchronous Parallel Model, Sorbonne Université, 13 June 2018.

George Giakkoupis was a reviewer for Rémi Varloot's PhD thesis: Dynamic Network Formation. École Polytechnique, Paris, 1 June 2018.

9.3. Popularization

Pierre-Louis Roman gave an invited talk at the E-novation Convention organized by The Notaries of Brittany, Rennes, 12 November 2018. Title: Blockchains, Distributed Ledgers, and their Utility for Notaries (talk in French).