RESEARCH CENTER
Bordeaux - Sud-Ouest

FIELD

Activity Report 2018

Section Dissemination

Edition: 2019-03-07

AUCTUS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

Within the Human Systems Integration DAS of the AESE Pole (see expertise section), a daily workshop has been organized the 9/11/2018 at Agen Agropole. The title of the workshop was: “Comment l’IA peut-elle améliorer l’interaction homme-machine?”. Jean-Marc Salotti and David Daney participated to the organization of the workshop. Jean-Marc Salotti presented a talk entitled: “Introduction aux concepts de l’intelligence artificielle”.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- David Daney co-organized the international workshop *“Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics* at IROS 2018, Madrid.

10.1.2.2. Member of the Conference Program Committees

- IROS 2018 (IEEE/RSJ International Conference on Intelligent Robots and Systems) [Vincent Padois, associate editor]
- ICRA 2019 (IEEE/RAS International Conference on Robotics and Automation) [Vincent Padois, associate editor]

10.1.2.3. Reviewer

- ICRA 2019 (2019 IEEE International Conference on Robotics and Automation) [Vincent Padois, David Daney]
- IROS 2018 (IEEE/RSJ International Conference on Intelligent Robots and Systems) [David Daney, Vincent Padois]
- Humanoids 2018 (IEEE-RAS International Conference on Humanoid Robots) [Ganna Pugach]
- International Symposium on Experimental Robotics 2018 [Vincent Padois]

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- Mechanism and Machine Theory [David Daney]
- Acta Astronautica [Jean-Marc Salotti]
- International Journal of Human Factors Modelling and Simulation [Jean-Marc Salotti]
- behavioral Brain Research [Jean-Marc Salotti]
- Frontiers in Robotics and Artificial Intelligence [Vincent Padois]
- International Journal of Humanoid Robotics [Vincent Padois]
- Robotics and Automation Letters [Vincent Padois]

10.1.4. Invited Talks

- Sylvain Pion gave a talk entitled “The Arithmetic Toolbox in CGAL” at the iRRAM-MPFR-MPC Developers Meeting, in Dagstuhl, Germany on April 18-20, 2018, organized by Paul Zimmermann.

- Jean-Marc Salotti gave a talk at the 18th European Mars Conference that took place in La-Chaux-de-Fonds, Suisse, August 26th to 28th 2018. The title of his conference was “European Mars mission architecture using an enhanced Ariane launcher”.
- Vincent Padois gave a talk entitled “Human-Robot Physical Interaction – Various considerations on collaborative robotics with control in mind” at the 2nd School on Robotics and Social Interactions, in Moliets-et-Maâ, France on October, the 3rd 2018, organized by Ghiles Mostafaoui.
- Vincent Padois gave a talk entitled “GT7 on Humanoid Robotics - An overview of activities in 2017-2018 and some perspectives” at the national biennial meeting of the “Groupement de recherche en Robotique”, in Paris, France on November, the 22nd 2018.

10.1.5. Leadership within the Scientific Community

Vincent Padois is, together with Olivier Stasse from LAAS, the co-animator of GT7 "Humanoid Robotics" of the CNRS “Groupement de Recherche en Robotique” (GDR). The role of animator consists in organizing regular workshops in humanoid robotics with the members of the French research community in this domain. It also consists in reporting strategic elements to the GDR in order to better organize the structure of research in Robotics in France.

10.1.6. Scientific Expertise

Jean-Marc Salotti and David Daney are official animators of the Humans Systems Interactions AESE DAS (Strategic Activities Domain of the Aerospace Valley Pole), which gathers all regional actors concerned with human factors, human systems interactions, and collaborative robotics mainly in the aerospace sector, but not limited to that domain. At least 2 daily workshops are organized each year for the members of the group in order to focus on a specific issue. Jean-Marc Salotti and David Daney are also solicited to examine regional projects linked to the DAS in order to provide advice and eventually to participate to the labelling process of the pole.

10.1.7. Research Administration

Sylvain Pion represents the Auctus team in the CUMI-R (Comité des Utilisateurs des Moyens Informatiques) committee of Inria Bordeaux.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Jean-Marc Salotti, Intelligence Artificielle, 103,5h éqTD, M1, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France

Master: Jean-Marc Salotti, Facteurs Humains et Ingénierie Cognitique, 15h éqTD, M1, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France

Master: Jean-Marc Salotti, Interactions Hommes Robots, 15h éqTD, M2, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France. In this course, all students have practical works involving cobotic systems: programming NAOs and UR3 (Universal Robots) and testing an exoskeleton.

Master: David Daney, Interactions Hommes Robots, 3h éqTD, M2, Ecole Nationale Supérieure de Cognitique / Bordeaux INP, France.

Master: David Daney, Mathématiques pour la robotique, 24h éqTD, M2, Enseirb/Ensc, Bordeaux INP, France.

Master: Vincent Padois, Literature review - What, Why and How?, 20h éqTD, M2, Enseirb/Ensc, Bordeaux INP, France.

10.2.2. Supervision

Defended PhD

- Aurélien Massein, “Conception d’environnement instrumenté pour la veille à la personne”, Université Côte d’Azur, 2018/11/22

PhD in progress:

- Nassim Benhabib (Inria / Région NA – Woobot project), “Méthodologie de conception et de commande d’un système robotique collaboratif pour assister et sécuriser les gestes d’un opérateur”, November 2018 – , David Daney and Vincent Padois
- Nicolas Simonazzi (CIFRE Orange), “Analyse comportementale et détection des émotions dans le cadre de l’utilisation de chat-bots en ligne”, May 2018 –, Jean-Marc Salotti
- Olfa Jema (Cotutelle Université de Sousse, Tunisie), “Analyse du mouvement humain”, December 2017 –, Lotfi Romdhane, Sami Bennour, David Daney
- Pierre Laguillaumie (Thèse laboratoire PPRIME), “Méthodologie pour la mise en œuvre d’un robot collaboratif de nouvelle génération prenant en compte la sécurité et le confort biomécanique de l’opérateur en situation de travail”, March 2018 – , Jean-Pierre Gazeau and Vincent Padois

10.2.3. Juries

Vincent Padois:

- PhD jury of Thomas Flayols, Examinator, “Exploitation du Retour en Force Pour l’Estimation et le Contrôle des Robots Marcheurs”, Université Fédérale de Toulouse Midi-Pyrénées, 2018/10/12
- PhD jury of David Busson, Reviewer, “Gestion de manipulateurs mobiles et redondants en environnement contraint et dynamique”, École Nationale Supérieure d’Arts et Métiers, 2018/11/26
- PhD jury of Lucas Joseph, Thesis advisor, “An energetic approach to safety in robotic manipulation”, Sorbonne Université, 2018/12/07
- PhD jury of Philipp Schlehuber-Caissier, Thesis advisor, “Contributions to robotic control design with formal stability and safety guarantees”, Sorbonne Université, 2018/12/14
- PhD jury of Florian Golemo, Examinor, “How to Train Your Robot – New Environments for Robotic Training and New Methods for Transferring Policies from the Simulator to the Real Robot”, Université de Bordeaux, 2018/12/19

David Daney:

- PhD jury of Baptiste Bush, Examinator, “Optimization techniques for an ergonomic human-robot interaction”, Université de Bordeaux, 2018/02/27
- PhD jury of Joshua Kevin Pickard, Reviewer, “Analysis and Synthesis Methods for the Appropriate Design of Parallel Mechanisms”, University of New Brunswick, Canada, 2018/03/29
- PhD jury of Aurelien Massein, Thesis advisor, “Conception d’environnement instrumenté pour la veille à la personne”, Université Côte d’Azur, 2018/11/22
- PhD jury of Oriane Dermy, Reviewer, “Prédiction du mouvement humain pour la robotique collaborative: du geste accompagné au mouvement corps entier”, Université de Lorraine, 2018/12/17
- PhD jury of Adrien Koessler, Invited, “Contribution à l’agrandissement de l’espace de travail opérationnel des robots parallèles”, Université Clermont Auvergne, 2018/12/19

10.3. Popularization

10.3.1. Articles and contents

- Jean-Marc Salotti published an article entitled “La robotique humanoïde”, published in Questions Internationales [8]. It briefly describes the main issues and trends in humanoid robotics. Questions Internationales is a journal from La Documentation Française, which is a brand of the “Direction de l’Information Légale et Administrative”, under the direction of the Central Administration of the French Prime Minister.
- David Daney was interviewed regarding the collaboration of Auctus with AIO on the Numii project [10], [11].

10.3.2. Education

- Collaboration with IUT Angoulème. A delegation of professors from IUT Angoulème, GEII Department, came to visit us on December 4, in order to benefit from our expertise on the use of UR3 (Universal Robots) for teaching activities.

10.3.3. Interventions

- Unithé ou café, Inria Bordeaux, February 26: Anna Pugach gave a presentation: “Le textile intelligent”
- Journée portes ouvertes, 10 ans Inria Bordeaux, September 27: Vincent Padois gave demonstrations on collaborative robotics with the Panda robot
- Village des Sciences, Cap Sciences, Bordeaux, October 13: Jean-Marc Salotti animated a movie/debate: “Un robot peut-il partager vos émotions?”
- Village des Sciences, Cap Sciences, Bordeaux, October 14: Vincent Padois and David Daney gave demonstrations on collaborative robotics with the Panda robot
- ENSC inauguration, November 30: Nassim Benhabib gave demonstrations on collaborative robotics with the Panda robot

CAGIRE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Member [RM] of the steering committee of the Special Interest Group "Turbulence Modelling" (SIG-15) of ERCOFTAC (European Research COmmittee for Flow, Turbulence and Combustion) that organizes a series of international workshops dedicated to cross-comparisons of the results of turbulence models and experimental/DNS databases. Organization of the next workshop to be held at the Jožef Stefan Institute in Ljubljana, Slovenia in 2019.
- Scientific chair of the mini-symposium on Hybrid RANS/LES methods of the Fluids Engineering Division Summer Meeting(FEDSM) of ASME held in Montreal in 2018 [RM].

10.1.1.2. Member of the Organizing Committees

- Organizer and scientific chair of the mini-symposium on numerical schemes for compressible flows at low Mach number at CANUM 2018 [JJ].

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Intl Symp. Turbulence, Heat and Mass Transfer [RM]

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Visualization of Mechanical Processes [PB]
- Advisory Board of International Journal of Heat and Fluid Flow [RM]
- Advisory Board of Flow, Turbulence and Combustion [RM]

10.1.3.2. Reviewer - Reviewing Activities

During 2018, the team members reviewed 22 papers for the following journals:

- Aerospace Science and Technology (3) [PB]
- AIAA Journal (2) [PB,RM]
- Computational Thermal Sciences (1) [PB]
- Computers and Fluids (3) [RM,VP(2)]
- Energy and Buildings (1) [PB]
- Flow, Turbulence and Combustion (3) [RM]
- International Journal of Heat and Fluid flow (1) [RM]
- International Journal of Heat and Mass Transfer (2) [PB]
- Journal of Buildings Engineering (1) [PB]
- Journal of Petroleum Science and Engineering (1) [PB]
- Journal of Scientific Computing (1) [VP]
- Nuclear Engineering and Design (1) [RM]
- Physics of Fluids (1) [RM]
- Theoretical and Computational Fluid Dynamics (1) [RM]

10.1.4. Invited Talks

- P. Bruel [18]
- R. Manceau [10]

10.1.5. Research Administration

- Co-responsible for the organisation of the LMAP seminar of Mathematics and their Applications [JJ].
- Member of the LMAP council [JJ, PB].
- Member of the IPRA research federation scientific council [RM].

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : [JJ], Research and innovation, 1h50, L1, Université de Pau et des Pays de l'Adour, Pau, France.

Licence : [JJ], Descriptive statistical, 24h, L1 - MIASHS, Université de Pau et des Pays de l'Adour, Pau, France.

Licence : [JJ], Scientific computing, 19h, L2 - Informatic, Université de Pau et des Pays de l'Adour, Pau, France.

Master : [JJ], Data analysis, 68h25, M1 - GP, Université de Pau et des Pays de l'Adour, Pau, France.

Master : [JJ], Tools for scientific computing, 48h75, M1 - MMS-MSID, Université de Pau et des Pays de l'Adour, Pau, France.

Master : [JJ,VP], Finite volume methods for hyperbolic systems, 52h50, M2 - MMS , Université de Pau et des Pays de l'Adour, Pau, France.

Master : "Turbulence modelling" (in English), 27h30, M2 - International Master program Turbulence, Université de Poitiers/Ecole centrale de Lille, France. [RM]

Eng. 3 : "Industrial codes for CFD" (in English), 12h30, 3rd year of engineering school (M2), ENSMA, Poitiers, France. [RM]

Eng. 3 : "Advanced physics–Turbulence modelling for CFD", 16h, 3rd year of engineering school (M2), ENSGTI, France. [RM]

10.2.2. Supervision

- PhD in progress : Puneeth Bikkanahally Muni Reddy, "Modelling turbulent flows in natural convection regimes using hybrid RANS-LES approaches, UPPA, October 2018, Rémi Manceau.
- PhD in progress : Gaëtan Mangeon, "Advanced modelling of heat transfer for industrial configurations with or without accounting of the solid wall", UPPA, February 2017, Rémi Manceau.
- PhD in progress : Vladimir Duffal, "Hybrid RANS/LES modelling for unsteady loadings in turbulent flows", UPPA, November 2017, Rémi Manceau.
- PhD in progress : Hassan Al Afailal: "3D simulation of non-reactive internal aerodynamics of spark-ignition engines using an hybrid RANS/LES method", September 2017, Rémi Manceau.
- PhD in progress Saad Jameel : "Turbulence modelling in the mixed and natural convection regimes in the context of automotive applications", UPPA, February 2017, Rémi Manceau.
- PhD in progress : Gustave Sporschill, "Amélioration des modèles pour la turbulence. Applications à la prédiction des écoulements aérodynamiques", UPPA, May 2018, Rémi Manceau.

10.2.3. Juries

The participation in the following thesis juries is noted ("referee" in a French doctoral thesis jury is more or less equivalent to an external opponent in an Anglo-Saxon like PhD jury):

- François Delassaux, "Modélisation instationnaire de l'aérodynamique externe automobile", Conservatoire National des Arts et Métiers, 20 December 2018. Supervisor: I. Mortazavi [RM, Referee]
- Loïc Jecker, "Prévision de la transition bypass à l'aide d'un modèle à énergie cinétique laminaire basé sur la dynamique des modes de Klebanoff", ONERA, 15 November 2018. Supervisor: G. Casalis [RM, Referee]
- PhD: R. Bizzari "Modélisation aérodynamique et thermique des plaques multiperforées en LES", Université de Toulouse, France, 5 November 2018. Supervisors: T. Poinsot and A. Dauptain. [PB]
- PhD: D. Maestro "Large eddy simulation of the interactions between flames and thermal phenomena : application to wall heat transfer and combustion control" Université de Toulouse, France, 27 September 2018. Supervisors: T. Poinsot et G. Staffelbach. [PB, Referee]
- Cédric Uribe, "Développement d'une approche ZDES à deux équations de transport et application turbomachines", Sorbonne Université/ONERA, 24 September 2018. Supervisor: G. Gerolymos [RM, Referee]
- PhD: Valentin Bonnifet, "Prédiction du phénomène de tremblement sur un profil d'aile avec une approche LES de type PANS-RSM", Sorbonne Université, 19 September 2018. Supervisor: I. Vallet [RM, Referee]
- PhD: F. Guillois "Simulation d'une zone de mélange turbulente issue de l'instabilité de Richtmyer-Meshkov à l'aide d'un modèle à fonction de densité de probabilité – Analyse du transport de l'énergie turbulente", Université de Lyon, France, 7 September 2018. Supervisors: S. Simoëns and V.A. Sabel'nikov. [PB, Referee]
- PhD: Q. Douasbin "Acoustic waves in combustion devices : interactions with flames and boundary conditions", Université de Toulouse, France, 30 March 2018. Supervisors: T. Poinsot and L. Selle. [PB, Referee]
- PhD: B. P. Trevisan "Estudo experimental da interaçao turbulênca, combustão e acústica aplicada a motores aeroespaciais", INPE, São José dos Campos, Brazil, 28 February 2018. Supervisor: W.M.C. Dourado. [PB]

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Vincent Perrier is a member of the CUMI-R.
- Vincent Perrier is a member of the CDT, in charge of the evaluation of software projects at the Inria Bordeaux center.
- Vincent Perrier is an elected member of the CLHSCT.
- Vincent Perrier is an elected member of the Inria evaluation committee. [0]
- Vincent Perrier is a member of the CT3-Num committee of Pau University, in charge of managing the computing resources and projects at Pau University.

10.3.2. Interventions

- «Forum des Métiers» organized by Collège Pierre Emmanuel, Pau (64), France, 9 February 2018. A stand was manned during one day with the objective of explaining the activity of researcher to an audience of middle school students. [PB]
- «Savoir en Partage», organized by Lacq Odyssée. [PB [22], JJ and VP [27], [24], RM [29], [28]]
- «Café des Sciences». [PB [23], JJ, RM [30], VP [25]]
- «Fête de la Science - Journée Portes Ouvertes Centre Inria BSO», Talence, France, 13 October 2018. [PB]
- «10 ans du centre Inria BSO: célébration de 10 ans de recherche et de transfert», Talence, France, 28 September 2018. [JJ and VP]

10.3.3. Creation of media or tools for science outreach

- «Science on tourne». [PB, JJ, RM, VP]

  http://www.cestdanslaire.fr/fr/page/science-on-tourne

[0] https://www.inria.fr/en/institute/organisation/committees/evaluation-committee

CARDAMOM 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

Mathieu Colin is a member of the scientific committee of the JEF day's.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Mathieu Colin is a member of the board of the journal Applications and Applied Mathematics: An International Journal (AAM)
- P.M. Congedo is Editor of Mathematics and Computers in Simulation, MATCOM (Elsevier)
- Mario Ricchiuto is member of the editorial board of *Computers & Fluids (Elsevier)*, and of *Water Waves: An interdisciplinary journal (Springer)*

10.1.2.2. Reviewer - Reviewing Activities

We reviewed papers for top international journals in the main scientific themes of the team : Journal of Computational Physics, Optimization and Engineering, Computer Methods in Applied Mechanics and Engineering, International Journal of Numerical Methods in Fluids, Physics of Fluids, Journal of Marine Science and Technology, Engineering Applications of Computational Fluid Mechanics, Computers and Fluids, Computational and Applied Mathematics, Communications in Computational Physics, Coastal Engineering Journal, Journal of Hydraulic Research, International Journal of Modelling and Simulation in Engineering Aircraft Engineering and Aerospace Technology, International Journal of Computational Fluid Dynamics, Applications and applied mathematics : An international journal, Discrete and Continuous Dynamical Systems - Series A, Electronic Journal of Differential Equations, Calculus of Variations and Partial Differential Equations, Nonlinear Analysis: Modelling and Control, Advanced Nonlinear Studies, Communications on Pure and Applied Analysis, Communications in Computational Physics, Nonlinearity, Applications and Applied Mathematics: An International Journal, Journal of Differential Equations, Analysis and Mathematical Physics.

10.1.3. Invited Talks

Mario Ricchiuto has give a plenary talk at the 2018 edition of the Melosh Medal award, held at Duke University in April 2018.

10.1.4. Research Administration

Mario Ricchiuto is member of the "bureau du comité des projets" of the Inria BSO center, as representative of the theme *Modelling, High-Performance Computing and Parallel Architecture*.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- License: Héloïse Beaugendre, Encadrement de projets sur la modélisation de la portance, 20h, L3, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, TD C++, 52h, M1, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Calcul Haute Performance (OpenMP-MPI), 40h, M1, ENSEIRB-MATMÉCA et Université de Bordeaux, France
- Master : Héloïse Beaugendre, Responsable de filière de 3ème année, 15h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Calcul parallèle (MPI), 39h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Encadrement de projets de la filière Calcul Haute Performance, 14h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Co-organisatrice du Hackathon, Inria, PlaFRIM et CATIE sont organisateurs sur Bordeaux du Hacakathon GENCI, France
- Master : Héloïse Beaugendre, Encadrement de projets sur la modélisation de la pyrolyse, 20h, M1, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre , Projet fin d'études, 4h, M2, ENSEIRB-MATMÉCA, FRANCE
- Master: Mario Ricchiuto, Multi-Physics, 36hETD in the last year of the ENSEIRB-MATMÉCA school
- Post-Graduate: Mario Ricchiuto, Modelling of free surface flows, 12hETD post-graduate level short-course at Duke University
- Master : Mathieu Colin : Integration, M1, 54h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : Fortran 90, M1, 44h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : PDE, M1, 30h, University of Bordeaux, FRANCE
- Master : Mathieu Colin : Analysis, L1, 47h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : projet professionnel and internship responsibility : 15 h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : Encadrement de projets TER, 20h, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin : responsable relation entreprise formation en alternance ENSEIRB-MATMECA (30h)
- Master : Mathieu Colin : suivi d'apprenti en entreprise (28h).

10.2.2. Supervision

Lin Xi, Asymptotic modelling of incompressible reactive flows in self-healing composites, defended in October 2018.

Bosi, Umberto, ALE spectral element Boussinesq modelling of wave energy converters, started in November 2015.

Cortesi Andrea, Predictive numerical simulation for rebuilding freestream conditions in atmospheric entry flows, defented in March 2018

Aurore Fallourd, Modeling and Simulation of inflight de-icing systems, Started in October 2016.

Francois Sanson, Uncertainty propagation in a system of codes, started in February 2016.

Nassim Razaaly, Robust optimization of ORC systems, started in February 2016.

Mickael Rivier, Optimization under uncertainties of complex systems, started in May 2017.

Elie Solai, Efficient virtual prototyping of the EVE expander using robust multi-fidelity optimization,started in October 2018

Sixtine Michel, Parallel Coastal flood simulations using adaptive high order schemes with re-meshing and mesh deformation, PhD started in November 2018

10.2.3. Juries

Mario Ricchiuto has contributed to the following theses defense:

- Stephane Glockner: HDR U. de Bordeaux, June 2018 (as reviewer)
- Xi Lin: PhD U. Bordeaux, October 2018 (as examiner)
- Evi Noviani: PhD U. de Poitiers, November 2018 (as president of the jury)
- Kevin Pons: PhD U. de Toulon, December 2018 (as reviewer)
- Paola Bacigaluppi: PhD Zurich University, December 2018 (as reviewer)

Mathieu Colin has contributed to the following theses defense :

- Xi Lin: PhD U. Bordeaux, October 2018 (as director)

10.3. Popularization

10.3.1. Interventions

- Héloïse Beaugendre has co-organized (with PlaFRIM and CATIE) the Bordeaux session of the HPC hackathon sponsored by GENCI. This coding competition is open to students and young reserachers and has taken place at the Inria BOS center in December (for more information see `https://www.inria.fr/centre/bordeaux/agenda/hackathon-du-hpc-genci`)
- Algiane Froehly (Mmg-Consortium) and Mario Ricchiuto have set up and animated the CARDAMOM stand during the event "Fête des 10 Ans", held on September 27th, and celebrating the 10 years of the Inria BSO center

CARMEN Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Selection

8.1.1.1. Chair of Conference Program Committees

N. Zemzemi organized a mini-symposium "inverse problems in cardiac electrophysiology" at the PICOF conference (Inverse Problems, Control and Shape Optimization conference), which was held at the American University of Beirut, Lebanon, June 18–20, 2018.

8.1.1.2. Member of the Conference Program Committees

M. Potse: track chair (modeling) for *International Congress of Electrocardiology*, Chiba, Japan, June 2018.

8.1.1.3. Reviewer

M. Potse, Y. Coudière: reviewers for *Computing in Cardiology*, Maastricht, The Netherlands, September 2018.

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

M. Potse: associate editor of *Frontiers in Cardiac Electrophysiology*.

M. Potse: section editor (Electrocardiology and Computing), *Journal of Electrocardiology*.

8.1.2.2. Reviewer - Reviewing Activities

L. Weynans: Computers and Fluids, Multiscale Modeling and Simulation

M. Potse: Heart Rhythm, Medical & Biological Engineering & Computing, Journal of Electrocardiology, Frontiers in Computational Physiology and Medicine, Mathematical Biosciences, American Journal of Physiology.

Y. Coudière: Journal of computational and applied mathematics, PLOS ONE, SMAI Journal of Computational Mathematics

N. Zemzemi: Inverse Problems, Europace, Inverse Problems in Science and Engineering, Mathematical Modelling of Natural phenomena.

M. Bendahmane: Afrika Matematika, Journal of Computational and Applied Mathematics, Journal of Theoretical Biology.

8.1.3. Invited Talks

L. Weynans. "Local Lubrication Model for Ellipsoidal Particles within an Incompressible Navier-Stokes Flow." Pre-meeting of the Fifth International Workshop on Modeling, Analysis, Simulations, and Applications of Inter-Facial Dynamics and FSI Problems (IMA-FSI), Chinese Academy of Sciences, Bejing.

L. Weynans. "Super-convergence of the gradient for the Shortley-Weller method." Fifth International Workshop on Modeling, Analysis, Simulations, and Applications of Inter-Facial Dynamics and FSI Problems (IMA-FSI), Chinese Academy of Sciences, Sanya, China, June 2018

M. Bendahmane, "Mathematical analysis and numerical simulation of optimal control in cardiac models." ENSA d'Essaouira, Université Cadi Ayyad, Morocco, April 2018.

M. Bendahmane, "Recent progress on Inverse problems in Electrocardiology." Université Cadi Ayyad, Morocco, December 2018.

M. Potse, “The lead field: modern applications of a classic.” International Congress of Electrocardiology, Chiba, Japan, june 2018.

Y. Coudière, “Modeling the propagation of cardiac action potential in hearts with structural heterogeneities.” 18ème Journée “Calcul scientifique et modélisation mathématique” aux journées scientifiques de l’Université d’Amiens, https://www.u-picardie.fr/recherche/presentation/actualites/18eme-journee-calcul-scientifique-et-modelisation-mathematique–514070.kjsp

Y. Coudière, “Modeling the propagation of cardiac action potential in hearts with structural heterogeneities.” INdAM Workshop “Mathematical and Numerical Modeling of the Cardiovascular System,” Roma, April 16–19, 2018 Istituto Nazionale di Alta Matematica (INdAM) http://www-dimat.unipv.it/workshoproma/

Y. Coudière, “Modeling the propagation of cardiac action potential in hearts with structural heterogeneities.” QBIO2018 – Quantitative Biomedicine in Health and Disease, Bilbao, February 28th-March 1st, 2018. https://wp.bcamath.org/qbio/

Y. Coudière, “Simulation numérique en électrocardiologie.” 2ième Edition “Rencontre Santé Civilo-Militaire du Sud-Ouest,” 27 March 2018. https://sante.u-bordeaux.fr/Actualites/2eme-Edition-Rencontre-Sante-Civilo-Militaire-du-Sud-Ouest

N. Zemzemi gave a talk "Inverse problems in cardiac electrophysiology" at the LIRIMA evaluation seminar 18 and 19 september 2018,

8.1.4. Leadership within the Scientific Community

M. Potse: council member of the International Society of Electrocardiology.

Y. Coudière: committee member HCERES for the evaluation of the UMMISCO lab (http://www.ummisco.fr/) 27–28 February, 2018.

Y. Coudière: recruitment committee ATER, IUT de Bordeaux, May 2018

Y. Coudière: special recruitment committee for a permanent contract (LRU) for J. Bayer.

L. Weynans: local correspondent for SMAI.

N. Zemzemi: recruitment committee of permanent research scientists at Inria Bordeaux Sud-Ouest 2018.

8.1.5. Research Administration

L. Weynans: member of the “Conseil du département Sciences et Technologies” of Bordeaux University.

Y. Coudière: Scientific responsibility of the IMB (CNRS UMR 5251) team “Calcul Scientifique et Modélisation,” ~ 60 persons.

N. Zemzemi: Administration of the Inria associated team Epicard.

M. Leguèbe: co-organization of team “Calcul Scientifique et Modélisation” seminar (IMB, Université de Bordeaux).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

A. Karaoui, Initiation à l’informatique, 34h, L1 Université de Bordeaux, France

A. Gérard, TD Analyse Numérique, 48h, ENSEIRB-Matmeca, Bordeaux, France

A. Gérard, Équations différentielles, 20h, ENSEIRB-Matmeca, Bordeaux, France

A. Gérard, TP Programming in C++, 48h, ENSEIRB-Matmeca, Bordeaux, France

M. Leguèbe, Utilisation de plateforme industrielle pour le calcul intensif, 16h, M1, Université de Bordeaux, France

L. Weynans, Cours Programmation avancée pour le calcul scientifique, 24h, L3, Université de Bordeaux, France

L. Weynans, Introduction Analyse Numérique, 24h, L3, Université de Bordeaux, France

L. Weynans, Linear Algebra, L1, Université de Bordeaux, France

L. Weynans, encadrement de projets 1ère année Matmeca, 25h, L1, Université de Bordeaux, France

L. Weynans, TD approximation of partial differential equations, M1, Université de Bordeaux, France

L. Weynans, integration and rational fractions, 1st year prepa INP

N. Zemzemi, Optimisation et statistiques, 80h, ESSCA Bordeaux, France

N. Zemzemi, Computational modeling in medicine, 8h, PhD, Université de Bordeaux, France

N. Zemzemi, Modelling and numerical methods in cardiac electrophysiology, 14h, doctoral school, department of mathematics Puebla, Mexico,

M. Bendahmane, Algèbre Linéaire, CM/TD 36h, L2, Université de Bordeaux, France

M. Bendahmane, Fonctions de plusieurs variables et optimisation, TD 33h, L2, Université de Bordeaux, France

M. Bendahmane, Neurosciences computationnelles applications à l'ingénierie, CM/TD 30h, M2, Université de Bordeaux, France

M. Bendahmane, Séries et intégrales multiples, CM 27h, L2, Université de Bordeaux, France

M. Bendahmane, Séries et intégrales multiples, TD 25h, L2, Université de Bordeaux, France

M. Bendahmane, Mise à niveau L2, TD, 12h L2, Université de Bordeaux, France

M. Bendahmane, Neuropsychologie et Psychophysiologie, CM 7h L3, Université de Bordeaux, France

M. Bendahmane, Neuropsychologie et Psychophysiologie, TD 8h L3, Université de Bordeaux, France

Y. Coudière, GTA, 12h, L3, Université de Bordeaux, France

Y. Coudière, utilisation de plateforme de calcul intensif, 28h, M1, Université de Bordeaux, France

Y. Coudière, Éléments finis avancés, 36h, M2, Université de Bordeaux, France

Y. Coudière, Projets longs, 20h, INP-MATH

Y. Coudière, Enseignement scientifique Médecine, 4h, L2, Université de Bordeaux, France

Y. Coudière, responsible for Licence and Masters teaching at the Mathematics department, Université de Bordeaux, France

8.2.2. Supervision

PhD thesis, P-E. Bécue, "Modélisation et simulation de l'électrophysiologie cardiaque à l'échelle microscopique." Université de Bordeaux, 5 December 2018, supervised by Y. Coudière.

8.2.3. Juries

Y. Coudière: jury member for HDR, L. Weynans, "Prise en compte précise de géométries complexes pour l'approximation d'EDP sur grilles cartésiennes et leur simulation en calcul parallèle," Université de Bordeaux, 4 December 2018.

L. Weynans, M. Potse: jury members for PhD thesis of P-E. Bécue, "Modélisation et simulation de l'électrophysiologie cardiaque à l'échelle microscopique." Université de Bordeaux, 5 December 2018, supervised by Y. Coudière.

Y. Coudière, jury member (rapporteur) for the PhD thesis of S. Corre, Insa de Rennes, 19 October 2018.

8.3. Popularization

8.3.1. Internal or external Inria responsibilities

- L. Weynans is responsible for the communication (*Chargé de communication*) of the IMB
- Exhibit at the open days on the occasion of the 10-years anniversary of the Inria center Bordeaux Sud-Ouest.

8.3.2. Interventions

L. Weynans:

- Organization of the day “Filles et Maths, une équation lumineuse”
- Several presentations for high-school students about scientific computing

CQFD Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Chair of Conference Program Committees

F. Dufour is the chair of the Program Committee of the SIAM Conference on Control and Its Applications (CT19) in Pittsburgh, USA, 2019.

9.1.1.2. Member of the Conference Program Committees

J. Anselmi has been a member of the technical program committee of the following international conference VALUETOOLS 2018.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

P. Del Moral is an associate editor for the journal Stochastic Analysis and Applications since 2001.

P. Del Moral is an associate editor for the journal Revista de Matematica: Teoria y aplicaciones since 2009.

P. Del Moral is an associate editor for the journal Applied Mathematics and Optimization since 2009.

F. Dufour is corresponding editor of the SIAM Journal of Control and Optimization since 2018. F. Dufour is associate editor of the journal Applied Mathematics & Optimization (AMO) since 2018. F. Dufour is associate editor of the journal Stochastics: An International Journal of Probability and Stochastic Processes since 2018.

F. Dufour is the representative of the SIAM activity group in control and system theory for the journal SIAM News since 2014.

J. Saracco is an associate editor of the journal Case Studies in Business, Industry and Government Statistics (CSBIGS) since 2006.

9.1.2.2. Reviewer - Reviewing Activities

All the members of CQFD are regular reviewers for several international journals and conferences in applied probability, statistics and operations research.

9.1.3. Invited Talks

In March 2018, Jonatha Anselmi was invited to give a talk on load balancing for parallel systems at the Inria team Polaris (Grenoble).

François Dufour was invited to give a talk during the IMA Conference on Stochastic Control, Computational Methods, and Applications at University of Minnesota, May 2018.

François Dufour was invited to give a talk during the Symposium on Optimal Stopping, Rice University, Houston, Texas, June 2018.

9.1.4. Scientific Expertise

J. Saracco is elected member of the council of the *Société Française de Statistique* (SFdS, French Statistical Society).

9.1.5. Research Administration

J. Saracco is deputy director of IMB (Institut de Mathématiques de Bordeaux, UMR CNRS 5251) since 2015.

M. Chavent is member of the national evaluation committee of Inria.

M. Chavent and Pierrick Legrand are members of the council of the Institut de Mathématique de Bordeaux.

F. Dufour has been the coordinator for the Inria evaluation of the theme "Stochastic Approaches"

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : J. Anselmi, Probabilités et statistiques, 20 heures, L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, filière Télécommunications, France.
- Licence : J. Anselmi, Probabilités et statistiques, 16 heures, L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, filière Electronique, France.
- Licence : J. Anselmi, Probabilités et statistiques, 48 heures, niveau L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, filière Mathématique et Mécanique, France.
- Licence : F. Dufour, Probabilités et statistiques, 70h, first year of école ENSEIRB-MATMECA, Institut Polytechnique de Bordeaux, France.
- Master : F. Dufour, Méthodes numériques pour la fiabilité, 36h, third year of école ENSEIRB-MATMECA, Institut Polytechnique de Bordeaux, France.

9.2.2. Supervision

- PhD completed : Alizé Geeraert, Contrôle optimal des processus Markoviens déterministes par morceaux et application à la maintenance, University of Bordeaux, supervised by B. de Saporta and F. Dufour (defense in October 2018).
- PhD in progress : Tiffany Cherchi, “Automated optimal fleet management policy for airborne equipment”, Montpellier University, since 2017, supervised by B. De Saporta and F. Dufour.

FLOWERS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- PY. Oudeyer has been general co-chair (with J. Gottlieb, A. Shankar and P. Zurn) of the international conference "Curiosity: Emerging Sciences and Educational Innovations" at University of Pennsylvania, US, gathering researchers from multiple disciplines (neuroscience, psychology, artificial intelligence, HCI, robotics, philosophy, education) around the topic of curiosity, learning and education. https://www.sp2.upenn.edu/sp2-event/curiosity-emerging-sciences-and-educational-innovations.
- PY Oudeyer has been vice-chair of the IEEE CIS Technical Committee on Cognitive and Developmental Systems.

10.1.2. Scientific Events Selection

10.1.2.1. Conference Reviewer

- N. Diaz Rodriguez was reviewer for ICSC18 (International Conf. on Semantic Computing) and Artificial Intelligence and Knowledge Engineering Conference (IEEE AIKE 2018)
- O. Sigaud was reviewer for NIPS, ICLR and ICML 2018

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- PY. Oudeyer was associate editor of IEEE Transactions on CDS and Frontiers in Neurorobotics.

10.1.3.2. Reviewer - Reviewing Activities

- David Filliat was reviewer for Frontiers in Robotics and AI
- N. Diaz Rodriguez was reviewer for: Transactions on Emerging Telecommunications Technologies, Knowledge-Based Systems, Robotics and Autonomous Systems, IEEE Robotics & Automation Magazine, IEEE Transactions on Cognitive and Developmental Systems.
- PY Oudeyer was reviewer for Cognitive Science, Child Development Perspectives and Nature Scientific Reports.

10.1.4. Invited Talks

- David Filliat gave an invited presentation at 'Journées Robotique et IA' in PFIA18, on July 5th, 2018.
- PY Oudeyer, "Apprentissage autonome développemental et modèles du développement cognitif chez l'enfant", Paris, Académie des Sciences, Oct. 2018.
- PY Oudeyer, "Developmental Autonomous Learning: Can a Machine Learn like a Child?", Académie des Technologies, Paris, Oct. 2018
- PY Oudeyer, "Computational Theories of Curiosity-driven Learning: Cognitive Science and AI", Exploring Curiosity conference, Amsterdam, Nov. 2018.
- PY Oudeyer, "Developmental Autonomous Learning: Artificial Intelligence and Cognitive Sciences", Univ. Columbia, NY, Oct. 2018.
- PY Oudeyer, "Le projet KidLearn: motivations intrinsèques, apprentissage et edTech", Rectorat de l'Académie de Bordeaux, Bordeaux, Jan. 2018.

- PY Oudeyer, "Computational Theories of Curiosity-driven Development", Multidisciplinary Developmental Dynamics conference (ETF 18), University of East Anglia, UK, June 2018.
- PY Oudeyer, "Developmental Autonomous Learning: AI, Cognitive Science and Educational Technologies", joint lab Inria and Microsoft Research event, Paris, june 2018.
- PY Oudeyer, "Developmental Autonomous Learning: AI, Cognitive Science and Educational Technologies", Ubisoft, Paris, June 2018.
- PY Oudeyer, "Developmental Autonomous Learning: AI, Cognitive Science and Educational Technologies", Summer School on Human-Robot Interaction, Animatas project, Paris, sept. 2018.
- PY. Oudeyer, "Developmental exploration and active learning", Cloud Temple event on AI and machine learning, Paris, january 2018.
- PY Oudeyer, "From models of curiosity-driven learning to applications in Personalized eLearning technologies", international conference "Curiosity: Emerging Sciences and Educational Innovations" at University of Pennsylvania, US, Dec. 2018.
- PY Oudeyer, "Computational Theories of Curiosity-driven Learning", Symposium on the Biology of Decision Making (SBDM 2018), Ecole Normale Supérieure, Paris, june 2018.
- N. Diaz Rodriguez gave an invited talk at Inria Flowers Deep RL workshop 4/4/2018, Research seminar on State representation learning for robotics control at JRC Sevilla European Commission, Spain, 23 April 2018 [0]
- N. Diaz Rodriguez gave an invited talk at Satellite workshop 24 May 2018 @ Sorbonne Université on Learning and decision-making at the interface between Neuroscience, Artificial Intelligence and Robotics. http://sbdm2018.isir.upmc.fr/index.php?perma=1520611011

10.1.5. Leadership within the Scientific Community

- PY. Oudeyer has been editor of the IEEE CIS Newsletter on Cognitive and Developmental systems, organizing two interdisciplinary dialogs, see https://openlab-flowers.inria.fr/t/ieee-cis-newsletter-on-cognitive-and-developmental-systems/129.

10.1.6. Scientific Expertise

- PY. Oudeyer has been a reviewer for the European Commission (FET program).
- D. Filliat has been a member of the ANR ASTRID evaluation comittee.
- N. Diaz Rodriguez has been external expert reviewer for ANR-JST CREST IS 2018 program.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

ENSEIRB, 12h, Robotics project (Thibault Desprez)

IUT Informatique, 64h, IUT Informatique Bordeaux (Rémy Portelas).

Master: Robotique Mobile, 21 heures. M2, ENSTA - ParisTech (David Filliat).

Master: Perception pour la Robotique, 6 heures. M2, ENSTA - ParisTech (David Filliat).

Master: Perception pour la robotique, 12 heures. M2 Systemes Avances et Robotique, Sorbonnes University (David Filliat)

Master: Perception pour la Robotique Développementale, 3 hours, CogMaster (David Filliat)

Master: IN104 Projet Informatique, 20 h. TD (N. Diaz Rodriguez).

Master: IA301 (Telecom ParisTech): Logics and Symbolic Artificial Intelligence, 9h (N. Diaz Rodriguez)

[0] https://ec.europa.eu/jrc/communities/community/event/research-seminar-natalia-diaz-rodriguez-ensta-paris-state-representation-learning

Master: ROB313: Computer vision for autonomous systems, 8.5 h TD (Perception pour les Systèmes Autonomes, N. Diaz Rodriguez)

Master: Cours de robotique développementale, option robot, ENSEIRB (2h), PY. Oudeyer

10.2.2. Supervision

PhD in progress: Rémy Portelas, Intrinsically Motivated Goal Exploration in Open-Ended Worlds (Minecraft) (superv. P-Y. Oudeyer)

PhD in progress: Cédric Colas, Algorithms for Intrinsically Motivated Goal Exploration (superv. P-Y. Oudeyer)

PhD in progress: Sébastien Forestier, Models of curiosity-driven learning of tool use and speech development, started in sept. 2015 (superv. P-Y. Oudeyer)

PhD in progress: Thibault Desprez, Design and study of the impact of educational robotic kits in computer science education, started in dec. 2016 (superv. P-Y. Oudeyer)

PhD completed in 2018: Benjamin Clement, Intelligent Tutoring Systems, started oct 2015 (superv. Manuel Lopes and Pierre-Yves Oudeyer).

PhD completed in 2018: William Schueller, Study of the impact of active learning and teaching in naming games dynamics, started in sept. 2015 (superv. P-Y. Oudeyer)

PhD completed in 2018: Florian Golemo, Design and study of policy learning and Sim2Real transfer algorithms for robotics (superv. Pierre-Yves Oudeyer and Aaron Courville)

PhD completed: Baptiste Busch, Interactive Learning, started oct 2014 (superv. Manuel Lopes).

PhD completed in 2018: Alexandra Delmas, Auto-Apprentissage Auto-Adaptable pour la compliance au traitement, started oct 2014 (superv. Hélène Sauzéon and Pierre-Yves Oudeyer).

PhD completed in 2018: Adrien Matricon : Task dependent visual feature selection for optimising and generalizing robotics skills (superv. David Filliat, Pierre-Yves Oudeyer), defended June, 11th, 2018.

PhD in progress: José Magno Mendes Filho, Planning and control of an autonomous AGV in environment shared with humans, started Oct. 2015 (superv. David Filliat and Eric Lucet (CEA))

PhD in progress: Timothée Lesort, Incremental Deep Learning for Detection and Classification in a Robotic Context. started june 2017 (superv. David Filliat and Jean-Francois Goudou (THALES)).

PhD in progress: Vyshakh Palli Thazha, Data fusion for autonomous vehicles. started sept 2017 (superv. David Filliat and Hervé Illy (Renault)).

PhD in progress: Florence Carton, Exploration of reinforcement learning algorithms for drone visual perception and control started dec 2017 (superv. David Filliat and Jaonary Rabarisoa (CEA)).

PhD in progress: Hugo Caselles-Dupré, Incremental learning for sensori-motor control started june 2018 (superv. David Filliat and Michael Garcia-Ortiz (Softbank Robotics)).

10.2.3. Juries

David Filliat was in the PhD jury of François de la Bourdonnaye (18/12/18, Rapporteur), Arnaud Tanguy (28/11/18, Rapporteur), Dinesh Atchuthan (23/10/18, Examinateur), Zhan Wang (19/10/18, Examinateur), Quentin Bateux (12/02/18, Examinateur), Clément Delgrange (reviewer).

David Filliat was in the Hdr jury of Sylvain Argentieri (06/12/18, Rapporteur)

PY Oudeyer was in the PhD jury of Héloise Thero (ENS Paris, examiner), Matthieu Geisert (Univ. Toulouse, reviewer), Konstantinos Chatzilygeroudis (Univ. Lorraine, reviewer), Clément Delgrange (Univ. Dijon, examiner).

Thibault Desprez was in the internship jury at Enseirb Bordeaux in October 2018.

10.3. Popularization

10.3.1. Teaching and Education

10.3.1.1. Inirobot

IniRobot (a project done in collaboration with EPFL/Mobsya) aims to create, evaluate and disseminate a pedagogical kit which uses Thymio robot, an open-source and low cost robot, for teaching computer science and robotics.

IniRobot Project aims to produce and diffuse a pedagogical kit for teachers and animators, to help them and to train them directly or by the way of external structures. The aim of the kit is to initiate children to computer science and robotics. The kit provides a micro-world for learning, and takes an inquiry-based educational approach, where kids are led to construct their understanding through practicing an active investigation methodology within teams. See https://dm1r.inria.fr/ or http://www.inirobot.fr.

Deployment: After 4 years of activity, IniRobot is used by more than 3000 adults, 30 000 children in France. Inirobot is also used in higher education, for example in Master 2 "Neurosciences, human and animal cognition" at the Paul Sabatier University in Toulouse. Inirobot is additionally used to train the management and elected officials of the Bordeaux metropolitan area (20 people). The digital mediators of the 8 Inria centers are trained to Inirobot and use it in their activities.

The project continues to be carried out in main collaboration with the LSRO Laboratory from EPFL (Lausanne) and others collaborations such as the French National Education/Rectorat d'Aquitaine, the Canopé Educational Network, the ESPE (teacher's school) Aquitaine, the ESPE Martinique, the ESPE Poitiers and the National Directorate of Digital Education.

Created pedagogical documents and resources:

- The inirobot pedagogical kit [83]: This pedagogical booklet provides activities scenarized as missions to do. An updated version of the Inirobot pedagogical kit is available at: https://dm1r.inria.fr/uploads/default/original/1X/70037bdd5c290e48c7ec4cb4f26f0e426a4b4cf6.pdf. Another pedagogical booklet has been also created by three pedagogical advisers for primary school, with pedagogical instructions and aims, under our supervision. The new pedagogical kit,"Inirobot Scolaire, Langages et robotique", which extends Inirobot to a full primary school approach is available at http://tice33.ac-bordeaux.fr/Ecolien/ASTEP/tabid/5953/language/fr-FR/Default.aspx
- Inirobot website and forum: https://dm1r.inria.fr/ or http://www.inirobot.fr On this website, teachers, animators and general public can download documents, exchange about their use of inirobot's kit.

Inirobot activities are used by several projects: Dossier 123 codez from Main à la Pâte Fundation, Classcode project, ...

10.3.1.2. MOOC Thymio

Didier Roy played a central role in the design and making of The MOOC Thymio, released in october 2018, in collaboration with Inria Learning Lab and EPFL (Lausanne, Switzerland), on FUN platform and edX EPFL Platform), use Inirobot activities to teach how to use Thymio robot in education. Web: https://www.fun-mooc.fr/courses/course-v1:inria+41017+session01/about

10.3.1.3. Poppy Education

As part of the Poppy Education project, thanks the robotic platform Poppy we created pedagogical kits open-source and low cost for teaching computer science and robotics. It is designed to help young people to take ownership with concepts and technologies of the digital world.

The Pedagogical kits includes robots and pedagogical resources. They have been co-created directly with users (mainly high schools teachers) and evaluated in real life by experiments in classrooms [120].
The activities were designed with the visual programming language Snap! (Scratch like) and Python, but some are in Java / Processing (thanks the robot API you can use the language of your choice).

Most activities are using the robot Poppy Ergo Jr, but some use Poppy Torso (mostly in higher school because of its cost) and Poppy Humanoid (in kinder-garden for dance projects) :

- The Poppy Ergo Jr robot is a small and low cost 6-degree-of-freedom robot arm. It consists of simple shapes which can be easily 3D printed. It has several 3D printed tools extending its capabilities (there are currently the lampshade, the gripper and a pen holder but you can design new ones). They are assembled via rivets which can be removed and added very quickly with the OLLO tool. Each motor has LEDs on (8 different color can be activated). The electronic card (raspberry Pi) is visible next to the robot, that allow to manipulate, and plug extra sensors.

- The Poppy Torso robot is an open-source humanoid robot torso which can be installed easily on tabletops. More affordable than the robot Poppy Humanoid, it is an ideal medium to learn science, technology, engineering and mathematics.

We continued to improve the robots functionalities and you can see below the resources we created :

- A website have been created to present the project and to share all resources and activities. https://www.poppy-education.org/
- To complete the pedagogical booklet [119] that provides guided activities and small challenges to become familiar with Poppy Ergo Jr robot and the Programming language Snap! (https://drive.google.com/file/d/0B2jV8VX-lQHwTUxXZjF3OGxHVGM/view) we provided a list of Education projects. Educational projects have been written for each activity carried out and tested in class. So each projects have its own web page including resources allowing any other teacher to carry out the activity (description, pedagogical sheet, photos / videos, pupil's sheet, teacher's sheet with correction etc.). Their is now 32 activities documented available on Poppy Education website.

You can see the activities on this links (in french):

- Introduction to Ergo Jr and Snap! : https://www.poppy-education.org/activites/initiation-ergo-jr-et-snap
- Ergo Jr and Python tutorials : https://www.poppy-education.org/activites/tuto-python-robot-ergojr
- High-school levels : www.poppy-education.org/activites/activites-lycee
- Middle-school level : www.poppy-education.org/activites/activites-college
- Primary Schools level : https://www.poppy-education.org/activites/activites-primaire/
- Demonstrations (just videos to show the possibilities) : https://www.poppy-education.org/activites/demos/
- We continued to improve the documentation of the robotic platform Poppy (https://docs.poppy-project.org/en/) and the documentation has been translated into French (https://docs.poppy-project.org/fr/.
- A FAQ have been written with the most frequents questions to help users: https://www.poppy-education.org/aide/
- New activities on Poppy Education website and forum.
- New section : Activities with Python.
- Improvements in the Resources page of the Poppy Education website.

10.3.2. Talks and Hands-on

- Thibault Desprez, December 2018 at Inria Bordeaux, welcomed three students from middle-school during two days to discover the working environment and to introduce them to robotics.
- Thibault Desprez, Inria Bordeaux open day, November 2018, exhibition stand to present Poppy Education and Poppy robots
- Thibault Desprez, National Meeting of Educational Robotics, October 2018 at ifé ENS Lyon, two talk to present Poppy robots kits in school.
- Thibault Desprez, National Meeting of Educational Robotics, October 2018 at ifé ENS Lyon, exhibition stand to present Poppy Station and Poppy robots.
- Thibault Desprez, Théo Segonds, Fête de la science (Inria Bordeaux Sud-Ouest), October 2018, 4 programming workshop in 2 days (with middle school students) using Snap! and the robot Poppy Ergo Jr.
- Thibault Desprez, Meet-up & Educate, October 2018 at INP Bordeaux, exhibition stand to student recruitment for a project on Poppy robots.
- Thibault Desprez, PI space inauguration, July 2018 at ESPE Mérignac, exhibition stand to present Poppy Station and Poppy robots.
- Thibault Desprez, Bordeaux Geek Festival, May 2018, Parc expo, Talk about societal problem on robotics.
- Thiabult Desprez, Usine Végétale inauguration, May 2018 at Le Fieu, exhibition stand to present Poppy Education and Poppy robots in rural zone.
- Thibault Desprez, Connect'thouars, April 2018 at Talence, Workshops to initiate in programming.
- Thibault Desprez, Didapro 7, February 2018 at HEP Vaud, Lausanne, talk to present the article : "Poppy Ergo Jr : un kit robotique au coeur du dispositif Poppy Éducation"
- Thibault Desprez, Théo Segonds, Fondation Main à la pate, February 2018 at Paris, Two days to train a group of teachers to robotics and programmation with Poppy Ergo Jr robot.
- Thibault Desprez, e-Fran seminar, January 2018 at Minister of Higher Education, Research and Innovation, poster to present my thesis.
- Théo Segonds. Poppy Ergo Jr Workshop at CERN (Geneve). Construction and programming of the robotic arm Poppy Ergo Jr.
- Théo Segonds. Scientae Robotica, Lausanne. Poppy Ergo Jr Workshop. Construction and programming of the robotic arm Poppy Ergo Jr.
- Benjamin Clement and Alexandra Delmas, EdTech days, may 2018. Presentation of kidlearn and kidbreath projects.
- Theo Segonds, Didier Roy. PLAIRE Festival in Evian with Poppy exhibition during 2 days.
- Alexandra Delmas, Didier Roy. Forum Educavox in Bordeaux. Presentation of kidlearn and kidbreath projects.
- Didier Roy. R2T2 Richter event, remote robotics programming, in caribbean islands, in collaboration with EPFL.
- Didier Roy. Inria Scientific Days, presentation of educational projects in Flowers Team.
- Stephanie Noirpoudre. Poppy Education présent à la journée EIDOS 65 : Le forum des pratiques numériques pour l'éducation. Description and feedback of the 9th edition of the EIDOS 65 day (the digital practice forum for education).
- PY Oudeyer mentored students from College de Cadillac for their robotics project (2 days), march 2018.
- PY Oudeyer gave a talk "Intelligence artificielle: un outil pour nous aider à mieux comprendre l'intelligence naturelle?" at Collège Cadillac, Gironde, may 2018.

- PY Oudeyer gave a talk "Intelligence artificielle: apprentissage automatique et sciences cognitives" at a training event for members of Bordeaux Metropole political and decision staff, Nov. 2018.
- PY Oudeyer gave a talk "Intelligence artificielle: apprentissage automatique et sciences cognitives" at Université de Tous les Savoirs, Arcachon, janv. 2018.

10.3.3. Popularizing inside Inria

- Théo Segonds and Thibault Desprez. Poppy Ergo Jr training for Inria Scientific Mediation members.
- Inria National Scientific Mediation Seminar: Presentation by Stéphanie Noirpoudre and Théo Segonds of Poppy Ergo Jr, and workshop.
- Sébastien Forestier made a presentation on models of curiosity-driven development at Unithé ou Café.

10.3.4. Innovation and transfer

- Since 1 september 2017 until february 2019, PerPoppy and Poppy Station Projects : D. Roy, P.-Y. Oudeyer. These projects aim to perpetuate the Poppy robot ecosystem by creating an external structure from outside Inria, with various partners. After the Poppy Robot Project, the Poppy Education Project has ended and Poppy Station structure is born. Many exchanges have already taken place with potential partners such as the EPFL, the ENSAM network, the «Ligue de l'Enseignement», Génération Robots, the French Institute of Education, several academies, the direction of digital education of the Ministry of Education, ... PerPoppy is the project which is building the new structure, and Poppy Station is the name of the new structure. Poppy Station, which includes Poppy robot ecosystem (hardware, software, community) from the beginning, is a place of excellence to build future educational robots and to design pedagogical activities to teach computer science, robotics and Artificial Intelligence. https://www.poppystation.org

10.3.5. Internal or external Inria responsibilities

D. Roy is member of the Class'code team (Inria is member of the consortium of this project) https://pixees.fr/classcode/accueil/. Class'code is a blended formation for teachers and animators who aim to initate young people to computer science and robotics. D. Roy has in charge the robotics module of the project.

D. Roy is adviser of the organization of computer science exhibition in "Palais de la découverte" which has begun on 2018 March. He helps for robotics part.

D. Roy is member of the team "Education en Scène" which organize educational activities with robotics in Bordeaux Digital City.

D. Roy is member of the scientific committee of "Learning Computer Science at School" project in Canton de Vaud (Switzerland).

D. Roy is member of the Robocup Junior French committee, an international robotics challenge http://rcj.robocup.org/.

D. Roy is member of the scientific committee of "Ludovia CH" Conference which will be held in Yverdon (Switzerland) on 2019 March.

D. Roy is project co-leader of MOOC Thymio, in collaboration with EPFL and Inria Learning Lab. The aim of this MOOC is to propose to teachers a training on basics of computer science, using the robotic platform Thymio.

D. Roy is associate member of the EPFL "LEARN" center.

PY. Oudeyer continued to be the PI of the Poppy Education project.

PY. Oudeyer was scientific mentor for stiudents of College de Cadillac, within the program "Main à la pâte" of Maison des Sciences.

10.3.6. Articles and contents

- Adrien Laversanne-Finot wrote a blog post on "Discovery of independently controllable features through autonomous goal setting", https://openlab-flowers.inria.fr/t/discovery-of-independently-controllable-features-through-autonomous-goal-setting/494
- Cédric Colas wrote a blog post on "How Many Random Seeds Should I Use? Statistical Power Analysis in (Deep) Reinforcement Learning Experiments", https://openlab-flowers.inria.fr/t/how-many-random-seeds-should-i-use-statistical-power-analysis-in-deep-reinforcement-learning-experiments/457
- Cédric Colas wrote a blog post on "Bootstrapping Deep RL with population-based diversity search"
- PY Oudeyer was interviewed for an article of **The Economist** on curiosity-driven learning, http://www.pyoudeyer.com/TheEconomist2018.pdf
- PY Oudeyer was interviewed for an article of **Scientific American** on curiosity-driven learning, http://www.pyoudeyer.com/IntelligentMachinesThatLearnLikeChildren-Scientific%20American2018.pdf
- PY Oudeyer was interviewed for an article of **MIT Technology Review** on curiosity-driven learning, http://www.pyoudeyer.com/may17MITTechnology%20Review.pdf

GEOSTAT Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- K. Daoudi is Special Session Chair for the The 9th International Symposium on Signal, Image, Video and Communications ISIVC 2018, link.
- H. Yahia is Publication Chair for the The 9th International Symposium on Signal, Image, Video and Communications ISIVC 2018, link.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- H. Yahia is Review Editor for the journal Fronteirs in Physiology (Fractal Physiology).
- H. Yahia is Guest Editor of Springer Nature, Special Issue on Marine Information Technology, Volume 19, Issue 8, August 2018.

10.1.3. Invited Talks

- Seminars: K. Daoudi gave a seminar in July 2018 at FORTH in Greece. Title: "Speech-based differential diagnosis of Parkinsonism".

10.1.4. Scientific Expertise

- H. Yahia has been expert for the CNRS Momentum call.

10.2. Popularization

- C. Sakka, A. Zebadua, N. Brodu and H. Yahia have been participating in the demonstration made by I2s company during the Celebration of the 10 years of the center and presenting results of the demosaicing method applied to digital images.

10.2.1. Interventions

- GEOSTAT has been participating to the 10 years Inria celebration, in the form of a demonstration with I2S company.

HIEPACS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

L. Giraud was member of the SIAM Conference of parallel processing in scientific computing, March 2018, Tokyo, Japan and the 10th International Workshop on Parallel Matrix Algorithms and Applications PMAA'18, June 2018, Zurich, Switzerland.

9.1.1.2. Chair of Conference Program Committees

A. Guermouche was the vice-chair of the Architechture track for the 25th IEEE International conference on High Performance Computing, Data, and Analytics HIPC'18, December 2018, Bengaluru, India.

9.1.1.3. Member of the Conference Program Committees

HiPC'18 (A. Guermouche, L. Giraud), ICPP'18 (E. Agullo), IEEE PDP'18 (J. Roman), IPDPS'18 (O. Coulaud), PDSEC'18 (O. Coulaud, M. Faverge, L. Giraud), COMPAS'18 (P. Ramet), SBAC-PAD'18 (M. Faverge).

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- E. Agullo and L. Giraud were guest editor of the special issue of Parallel Computing dedicated to PMAA'16 [4].
- L. Giraud is member of the editorial board of the SIAM Journal on Scientific Computing (SISC) and SIAM Journal on Matrix Analysis and Applications (SIMAX).

9.1.2.2. Reviewer - Reviewing Activities

The members of the HIEPACS project have performed reviewing for the following list of journals: Computing and Fluid, International Journal of Antennas and Propagation, Parallel Computing, SIAM J. Matrix Analysis and Applications, SIAM J. Scientific Computing, Journal of Parallel and Distributed Computing, IEEE Transactions on Parallel and Distributed Systems, ACM Transactions on Mathematical Software, ACM Computational and Mathematical Methods, International Journal of High Performance Computing Applications, Journal Of Computational Science.

The members of the HIEPACS project have performed reviewing for the following list of conferences (additionally to PC): Europar'18, IPDPS'19, SC'18.

9.1.3. Scientific Expertise

- Luc Giraud is member of the board on Modelisation, Simulation and data analysis of the Competitiveness Cluster for Aeronautics, Space and Embedded Systems. He also acted as an expert for The Israel Science Foundation, on the Individual Research Grants and for the Czech Science Foundation, the main public funding agency in the Czech Republic supporting all areas of basic research.
- Pierre Ramet is "Scientific Expert" at the CEA-DAM CESTA since Oct. 2015.
- Jean Roman is member of the "Scientific Board" of the CEA-DAM. As representative of Inria, he is member of the board of ETP4HPC (European Technology Platform for High Performance Computing), of the French Information Group for PRACE, of the French Working Group for EuroHPC, of the Technical Group of GENCI and of the Scientific Advisory Board of the Maison de la Simulation.

9.1.4. Research Administration

- Emmanuel Agullo and Luc Giraud are the scientific correspondents of the European and International partnership for Inria Bordeaux Sud-Ouest.
- Olivier Coulaud is the scientific manager of the PLAFRIM platform for Inria Bordeaux Sud-Ouest.
- Jean Roman is a member of the Direction for Science at Inria : he is the Deputy Scientific Director of the Inria research domain entitled *Applied Mathematics, Computation and Simulation* and is in charge at the national level of the Inria activities concerning High Performance Computing.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Undergraduate level/Licence

- A. Esnard: System programming 36h, Computer architecture 40h, Network 23h at Bordeaux University.
- M. Faverge: Programming environment 26h, Numerical algorithmic 40h, C projects 25h at Bordeaux INP (ENSEIRB-MatMeca).
- A. Guermouche: System programming 36h at Bordeaux University.
- P. Ramet: System programming 24h, Databases 32h, Object programming 48h, Distributed programming 32h, Cryptography 32h at Bordeaux University, and Numerical algorithmic 40h at Bordeaux INP (ENSEIRB-Matmeca).

Post graduate level/Master

- E. Agullo: Operating systems 24h at Bordeaux University ; Dense linear algebra kernels 8h, Numerical algorithms 30h at Bordeaux INP (ENSEIRB-MatMeca).
- O. Coulaud: Paradigms for parallel computing 24h, Hierarchical methods 8h at Bordeaux INP (ENSEIRB-MatMeca).
- A. Esnard: Network management 27h, Network security 27h at Bordeaux University; Programming distributed applications 35h at Bordeaux INP (ENSEIRB-MatMeca).
- M. Faverge: System programming 72h, Load balancing and scheduling 13h at Bordeaux INP (ENSEIRB-MatMeca).
  He is also in charge of the master 2 internship for the Computer Science department at Bordeaux INP (ENSEIRB-MatMeca).
- L. Giraud: Introduction to intensive computing and related programming tools 20h, INSA Toulouse; Introduction to high performance computing and applications 20h, ISAE; On mathematical tools for numerical simulations 10h, ENSEEIHT Toulouse; Parallel sparse linear algebra 11h at Bordeaux INP (ENSEIRB-MatMeca).
- A. Guermouche: Network management 92h, Network security 64h, Operating system 24h at Bordeaux University.
- P. Ramet: Load balancing and scheduling 13h at Bordeaux INP (ENSEIRB-MatMeca).
- J. Roman: Parallel sparse linear algebra 10h, Algorithmic and parallel algorithms 22h at Bordeaux INP (ENSEIRB-MatMeca).
  He is also in charge of the last year “Parallel and Distributed Computing” option at ENSEIRB-MatMeca which is specialized in HPC (methodologies and applications). This is a common training curriculum between Computer Science and MatMeca departments at Bordeaux INP and with Bordeaux University in the context of Computer Science Research Master. It provides a lot of well-trained internship students for Inria projects working on HPC and simulation.

9.2.2. Supervision

PhD: Nicolas Bouzat; Fine grain algorithms and numerical schemes for exascale simulations of turbulent plasmas ; M.Mehrenberger (TONUS project-team), J. Roman, G. Latu (CEA-IRFM); defended on December 17, 2018; jury members: N. Crouseilles (referee, Inria Rennes Bretagne Atlantique), Ph. Helluy (Université Strasbourg), G. Latu (CEA Cadarache), M. Mehrenberger (Université Aix-Marseille), R. Namyst (referee, Université Bordeaux), S. Salmon (Université Reims).

PhD: Arnaud Durocher; High performance Dislocation Dynamics simulations on heterogeneous computing platforms for the study of creep deformation mechanisms for nuclear applications; O. Coulaud, L. Dupuy (CEA); defended on December 19, 2018; jury members: D. Barthou (Bordeaux INP), M. Blétry (Université Paris XII), L. Dupuy (CEA, Saclay), M. Fivel (referee, CNRS, Grenoble), J.F. Méhaud (referee, Université de Grenoble).

PhD in progress: Aurélien Falco; Data sparse calculation in FEM/BEM solution; E. Agullo, L. Giraud, G. Sylvand.

PhD in progress: Esragul Korkmaz; Solveurs creux direct et matrices hierarchiques; M. Faverge, P. Ramet.

PhD: Grégoire Pichon; Utilisation de techniques de compression $\mathcal{H}$-matrices pour solveur direct creux parallèle dans le cadre des applications FEM; M. Faverge, P. Ramet; defended on November 29, 2018; jury members: A. Buttari (CNRS, Toulouse), D. Goudin (CEA-CESTA, Le Barp), G. Kubické (DGA, Rennes), S. Lanteri (Inria, Sophia Antipolis), E. Ng (Lawrence Berkeley Nat. Lab., Berkeley), F. Pellegrini (Université de Bordeaux).

PhD in progress: Louis Poirel; Algebraic coarse space correction for parallel hybrid solvers; E. Agullo, L. Giraud; defended on November 28, 2018; jury members: B. Cuenot (CERFACS, Toulouse), M. Gander (referee, Université de Genève). M. Heroux (referee, Sandia Nat. Lab.), A. Legrand (CNRS, Grenoble), F.X. Roux (ONERA, UPMC Paris), P. Tallec (referee, Ecole Polytechnique).

9.2.3. Juries

- Aloïs Bissuel, “Résolution des équations de Navier-Stokes linéarisées pour l’aéroélasticité, l’optimisation de forme et l’aéroacoustique", referees: V. Dolean, R. Abgrall, president: L. Giraud, Université Paris-Saclay à l’Ecole polytechnique, spécialité: mathématiques appliquées, 22 Janvier 2018.
- Eemeho Edorh, “Incremental algorithms for long range interactions", referees: M. Bolden, O. Coulaud, Université Grenoble Alpes, spécialité: mathématiques et informatique, 2 Octobre 2018.
- Vinicius Garcia Pinto, “Performance Analysis Strategies for Task-based Applications on Hybrid Platforms", referees: G. Cavalheiro, B. Mohr, P. Navaux, N. Maillard, A. Legrand reviewers: A. Goldman, G. Thomas Université Grenoble Alpes, spécialité: mathématiques et informatique, et Universidade Federal do Rio Grande do Sul, 30 Octobre 2018.
- Guillaume Latu, HDR, “Contribution à la simulation haute-performance et aux méthodes de calcul très extensibles", referees: R. Abgrall, F. Desprez, R. Namyst, reviewers: S. Genaud, J. Roman, E. Sonnendrücker, Université Strasbourg, spécialité: informatique et calcul scientifique, 18 Mai 2018.
- Gilles Moreau, “On the solution phase of direct methods for sparse linear systems with multiple right-hand sides", referees: P. Amestoy, J. Erhel, L. Grigori, J.-Y. L’Excellent, reviewers: J. Gilbert, P. Ramet, ENS Lyon, spécialité: informatique, 10 Decembre 2018.

9.3. Popularization

9.3.1. Interventions

During the 10th anniversary of the Inria Bordeaux Sud-Ouest centre and the open day, scientific popularisation materials of the HiePACS team’s research work were presented to the attendees.

LFANT Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Editorial Boards

K. Belabas acts on the editorial board of *Journal de Théorie des Nombres de Bordeaux* since 2005 and of *Archiv der Mathematik* since 2006.

X. Caruso is an editor and one of the founder of the journal *Annales Henri Lebesgue*.

H. Cohen is an editor for the Springer book series *Algorithms and Computations in Mathematics (ACM)*.

J.-M. Couveignes is a member of the editorial board (scientific committee) of the *Publications mathématiques de Besançon* since 2010.

From January 2015 to September 2018 J.-M. Couveignes was a member of the scientific council of the Fondation Mathématique de Paris.

A. Enge is an editor of *Designs, Codes and Cryptography* since 2004.

8.1.2. Invited Talks

A. Page: *Algorithms for the cohomology of compact arithmetic manifolds and Hecke operators* in the Simons collaboration conference *Arithmetic Geometry, Number Theory, and Computation*, MIT (Boston, US), August 20-24, 2018.

8.1.3. Scientific Expertise

K. Belabas is a member of the 'conseil scientifique' of the Société Mathématique de France

8.1.4. Research Administration

Since January 2017, A. Enge is "délégué scientifique" of the Inria research centre Bordeaux–Sud-Ouest. As such, he is also a designated member of the "commission d'évaluation" of Inria.

Since January 2015, K. Belabas is vice-head of the Math Institute (IMB). He also leads the computer science support service ("cellule informatique") of IMB and coordinates the participation of the institute in the regional computation cluster PlaFRIM.

He is an elected member of "commission de la recherche" in the academic senate of Bordeaux University.

He is a member of the "Conseil National des Université" (25th section, pure mathematics).

J.-P. Cerri is an elected member of the scientific council of the Mathematics Institute of Bordeaux (IMB) and responsible for the bachelor programme in mathematics and informatics.

From January 2015 until January 2019, J.-M. Couveignes was the head of the Math Institute (IMB). He is head of the Scientific Committee of the Albatros (ALliance Bordeaux universities And Thales Research in AviOnicS) long term cooperation between Inria, Bordeaux-INP, Université de Bordeaux and CNRS.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : G. Castagnos, *Cryptanalyse*, 60h, M2, University of Bordeaux, France;

Master : G. Castagnos, *Cryptologie avancée*, 30h, M2, University of Bordeaux, France;

Master : G. Castagnos, *Courbes elliptiques*, 60h, M2, University of Bordeaux, France;

Master : D. Robert, *Courbes elliptiques*, 60h, M2, University of Bordeaux, France;

Master : K. Belabas, *Computer Algebra*, 91h, M2, University of Bordeaux, France;

Master : J.-M. Couveignes, *Algorithmic Arithmetic*, 30h, M2, University of Bordeaux, France;

Master : J.-M. Couveignes, *Modules, espaces quadratiques*, 30h, M1, University of Bordeaux, France;

Licence : Jean-Paul Cerri, Algèbre linéaire 2, 51h TD, L2, Université de Bordeaux, France

Licence : Jean-Paul Cerri, Arithmétique et Cryptologie, 24h TD, L3, Université de Bordeaux, France

Licence : Jean-Paul Cerri, Structures algébriques 2, 35h TD, L3, Université de Bordeaux, France

Master : Jean-Paul Cerri, Cryptologie, 60h TD, M1, Université de Bordeaux, France

Master : Jean-Paul Cerri, 3 TER, Université de Bordeaux, France

Licence : Jean Kieffer, Mathématiques pour la biologie, 64h TD, L1, Université de Bordeaux, France

8.2.2. Supervision

PhD: Chloe Martindale, *Isogeny graphs, modular polynomials, and applications*, defended in 2018, supervised by A. Enge and Marco Streng (Universiteit Leiden).

PhD: Antonin Riffaut *Calcul effectif de points spéciaux*, defended in 2018, supervised by Y. Bilu and K. Belabas.

PhD in progress : Ida Tucker, *Design of new advanced cryptosystems from homomorphic building blocks*, since October 2017, supervised by Guilhem Castagnos and Fabien Laguillaumie

PhD in progress: Abdoulaye Maiga, *Computing canonical lift of genus 2 hyperelliptic curves*, University Dakar, supervised by Djiby Sow, Abdoul Aziz Ciss and D. Robert.

PhD in progress: Jared Asuncion, *Class fields of complex multiplication fields*, since September 2017, supervised by A. Enge and Marco Streng (Universiteit Leiden).

PhD in progress: Emmanouil Tzortzakis *Algorithms for $\mathbb{Q}$-curves*, supervised by K. Belabas, P. Bruin and B. Edixhoven.

PhD in progress: Pavel Solomatin *Topics on L-functions*, supervised by B. de Smit and K. Belabas.

PhD in progress: Jean Kieffer *Isogénies et endomorphismes de variétés abéliennes*, supervised by D. Robert and A. Page.

Master thesis: Amandine Malonguemfo Teagho *Algorithms for isometries of lattices*, supervised by A. Page.

Master thesis: William Dallaporta *Bhargava's theory and parametrization of algebraic structures*, supervised by K. Belabas.

8.2.3. Juries

X. Caruso has written a report for the doctoral dissertation by Robin Bartlett, King's College in London: *On the reductions of some crystalline representations*.

A. Enge has written a report for the doctoral dissertation by Benjamin Wesolowski, École polytechnique fédérale de Lausanne: *Arithmetic & Geometric Structures in Cryptography*.

A. Enge has written a report for the professorial dissertation by Luca De Feo, Université de Versailles–Saint Quentin: *Exploring Isogeny Graphs*.

8.3. Popularization

8.3.1. Articles and contents

- X. Caruso published an article entitled *Polynômes tordus* in the journal *Au fil des maths de la maternelle à l'université...* edited by APMEP.
- H. Cohen wrote in [28] an introduction to Modular forms, which has been published in the book Notes from the International School on Computational Number Theory.

8.3.2. Education

D. Robert is a member of the jury of Agregations de Mathematiques. He is also the codirector with Alain Couvreur of the option "calcul formel" of the Modelisation part of the oral examination.

8.3.3. Interventions

- 24/02/2018 in Olot (Spain), A. Page, with the other participants of Sage Days 93: one day for 20 local high school students to explore mathematical problems.
- 24/05/2018, A. Page: Unithé ou café on the mathematics of wireless communications: *Méthodes algébriques et géométriques pour les communications sans fil : comment l'espace hyperbolique peut-il améliorer vos appels téléphoniques ?*
- 30/05/2018, A. Page: in Poitiers half a day meeting with junior school students who took part in the Al-Kindi competition; introduction to cryptography.
- 27/09/2018 D. Robert and A. Page: demonstration stand on graph-based cryptography at the Inria BSO Party Day.
- 9-11/10/201 A. Page: Fête de la Science at Inria Bordeaux, activity on cryptography (7 groups of students).
- 13/10/2018 D. Robert and A. Page: demonstration stand on graph-based cryptography at the Inria BSO Open Day.
- 11/12/2018 A. Page: talk at the Inria BSO Comité des Projets *Variations arithmétiques et algorithmiques sur le thème << Peut-on entendre la forme d'un tambour? >>*

MAGIQUE-3D Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Reviewer

Members of Magique 3D have been reviewers for the following journals:

- Applicable Analysis
- Applied Numerical Mathematics
- Computers and Geosciences
- Geophysical Journal International
- IMA Journal of Numerical Analysis
- International Journal for Numerical Methods in Engineering
- Journal of Computational Physics
- Journal of Inverse and Ill-posed Problems
- SIAM Journal of Numerical Analysis
- SIAM Journal on Scientific Computing
- Wave Motion

9.1.2. Leadership within the Scientific Community

Hélène Barucq is elected member of the Liaison Committee of SMAI-GAMNI (Society of Applied and Industrial Mathematics - Group for promoting the Numerical Methods for Engineers).

9.1.3. Scientific Expertise

- Julien Diaz was expert for the evaluation of Millennium Science Initiative project for the government of Chile.
- Since 2017, Hélène Barucq has been chairwoman of the committee which evaluates research projects in Mathematics, Computer Science, Electronics and Optics to be funded by the Regional Council New Aquitaine

9.1.4. Research Administration

- Julien Diaz is elected member of the Inria Technical Committee and of the Inria Administrative and Scientific Boards.
- Justine Labat is elected member of Laboratory Commitee of UPPA
- Justine Labat organized the seminar of PhD students of LMAP
- Juliette Chabassier is member of the Inria BSO Young Researcher Committee and of the Inria BSO Center Committee. She is member of the Workgroup for sustainable development at Inria Bordeaux Sud-Ouest.
- Victor Péron is appointed member of the CJC (Commission Jeunes Chercheurs) of Inria Bordeaux Sud-Ouest.
- Hélène Barucq is member of the monitoring and studies forward unit of Inria. She is the scientific head of the project DIP since its creation in 2009.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Julien Diaz, Transformées, 24h Eq. TD, M1, EISTIA, France

Licence : Marc Duruflé, Équations différentielles, 20h Eq. TD, L3, Enseirb-MatMeca, France

Licence : Marc Duruflé, Algorithmique Numérique, 30h Eq. TD, L3, Enseirb-MatMeca, France

Licence : Marc Duruflé, Mathématiques pour les sciences du milieu naturel, 30h Eq. TD, L3, Ensegid, France

Master : Marc Duruflé, Calcul scientifique en C++, 96h Eq. TD, M1, Enseirb-MatMeca, France

Licence : Marc Duruflé, Calcul scientifique en Fortran90, 20h Eq. TD, L3, Enseirb-MatMeca, France

Master : Florian Faucher, Inversion / optimisation, 10.5h Eq. Cours et TD, M2, Université de Pau et des Pays de l'Adour, France

Licence : Justine Labat, Algèbre pour l'informatique, 19.5h Eq. TD, L1, UPPA, France

Licence : Justine Labat, Introduction aux Probabilités, 12.5h Eq. TD, L2, UPPA, France

Licence : Victor Péron, Analyse 2, 39 Eq. TD, L1, UPPA, France

Licence : Victor Péron, Mathématiques appliquées, 15 Eq. TD, L1, UPPA, France

Licence : Victor Péron, Courbes et calcul intégral, 19.5 Eq. TD, L2, UPPA, France

Licence : Victor Péron, Analyse numérique des systèmes linéaires, 48.75 Eq. TD, L3, UPPA, France

Licence: Géométrie analytique, 20h Eq. TD, UPPA, France

Master : Victor Péron and Sébastien Tordeux, Analyse numérique des EDP 1: différences finies, 75 eq. TD, Master1, UPPA, France

Master : Victor Péron and Sébastien Tordeux, Introduction aux phénomènes de propagation d'ondes, 38 eq. TD, Master 2, UPPA, France

Master : Robin Tournemenne, Math-Info, 64h eq. TD, L3+M1, ENSAM Bordeaux, France

9.2.2. Supervision

PhD : Izar Azpiroz Iragorri, Contribution to the Numerical Reconstruction in Inverse Elasto-Acoustic Scattering, February 28th, Hélène Barucq, Julien Diaz and Rabia Djellouli (CSUN).

PhD : Elvira Shishenina, Discrétisation espace-temps d'équations d'ondes élasto-acoustiques dans des bases TREFFTZ-DG polynomiales, December 7th, Hélène Barucq and Julien Diaz.

PhD in progress : Hamza Alaoui Hafidi, Imagerie ultrasonore tridimensionnelle dans les milieux hétérogènes complexes, October 2015, Marc Deschamps, Michel Castaings, Eric Ducasse, Samuel Rodriguez (I2M), Hélène Barucq, Marc Duruflé, Juliette Chabassier (Magique 3D).

PhD in progress : Aurélien Citrain, Déformation 3D de maillages en imagerie sismique, Méthodes d'inversion sismique dans le domaine fréquentiel , October 2016, Hélène Barucq and Christian Gout.

PhD in progress : Alexandre Gras, Hybrid resonance for sensing applications, IOGS, October 2017, Philippe Lalanne(IOGS), Marc Duruflé, Hélène Barucq (Magique 3D)

PhD in progress : Pierre Jacquet, ,October 2017, Hélène Barucq and Julien Diaz.

PhD in progress : Justine Labat, Diffraction of an electromagnetic wave by small obstacles, Université de Pau et des Pays de l'Adour, October 2016, Victor Péron and Sébastien Tordeux

PhD in progress: Victor Martins Gomez, Experimental characterization and modeling of seismo-electromagnetic waves, Université de Pau et des Pays de l'Adour, October 2018, Hélène Barucq and daniel brito (LFCR)

PhD in progress : Rose-Cloé Meyer, Modeling of conducting poro-elastic media using advanced numerical methods , Université de Pau et des Pays de l'Adour, October 2018, Hélène Barucq and Julien Diaz

PhD in progress : Nathan Rouxelin, Advanced numerical modeling of acoustic waves propagating below the surface of the Sun, Université de Pau et des Pays de l'Adour, October 2018, Hélène Barucq and Juliette Chabassier

PhD in progress : Chengyi Shen, Approches expérimentale et numérique de la propagation d'ondes sismiques dans les roches carbonatées, October 2016, Julien Diaz and Daniel Brito (LFCR).

Master 2 internship : Rose-Cloé Meyer, Analyse de performances de schémas à pas de temps locaux pour la simulation numérique de phénomènes de propagations d'ondes, Enseirb-Matmeca, Sept. 2018.

Master 2 internship : Nathan Rouxelin, Comparaison des modèles de Galbrun et d'Euler linéarisé dans le contexte de l'héliosismologie , Insa Rouen, Sept. 2018.

Master 2 internship: A discontinuous Galerkin Trefftz type method for solving the Maxwell equations, INSA Toulouse, Sept 2018

Master 2 internship : Auxence MBaimou: Models for plates and beams, application to the piano bridge, Marseille University, Sept. 2018.

L3 internship : Jérémy Martin, Sept. 2018.

9.2.3. Juries

- Hélène Barucq : (Insa de Rouen et ENSA d'Agadir (Maroc)) "De l'optimisation pour l'aide à la décision. Application au problème du voyageur de commerce probabiliste et l'approximation de données", PhD thesis, December 12th 2018
- Hélène Barucq : Bruno Weber (Université de Strasbourg) "Optimisation de code Galerkin discontinu sur ordinateur hybride. Application à la simulation numérique en électromagnétisme", PhD thesis, November 26th 2018
- Hélène Barucq : Florent Masmoudi (Université de Toulouse) "Non intrusive reduced order models", PhD thesis, July 9th 2018
- Hélène Barucq : Boris Caudron (Université de Nancy) "Couplages FEM-BEM faibles et optimisés pour des problèmes de diffraction harmoniques en acoustique et en électromagnétisme, PhD thesis, June 25th 2018
- Julien Diaz : Florian Monteghetti (Université de Toulouse), Analysis and Discretization of Time-Domain Impedance Boundary Conditions in Aeroacoustics, October 15th 2018
- Sébastien Tordeux: Hélène Canot (Université de Bretagne Sud) Méthodes d'homogénéisation et simulations numériques appliquées à la réponse électromagnétique des matériaux multi échelles
- Juliette Chabassier : Antoine Bensalah (Université Paris Saclay) Une approche nouvelle de la modélisation mathématique et numérique en aéroacoustique par les équations de Goldstein, 6 july 2018
- Victor Péron : Mostafa Shahriari (Basque Center for Applied Mathematics, BCAM), Fast One-Dimensional Finite Element Approximation of Geophysical Measurements, November 14th 2018

9.3. Popularization

9.3.1. Interventions

- Justine Labat participated in scientific 'speed datings' during the 'Filles et Maths' day at Pau in May 2018.
- Justine Labat animated the stand in Mathematics during 'Le Village des Sciences' day at Pau in October 2018.

- Sébastien Tordeux gave a talk on numerical analysis in the Cercle Sofia Kovalevskaïa of Toulouse in May 2018
- Juliette Chabassier participated to a movie - debate event in Cognac in march 2018.
- Juliette Chabassier animated a workshop around virtual piano during the Inria "10 years night" in september 2018.
- Juliette Chabassier animated a workshop around virtual piano during the Inria "fête de la science" in october 2018.
- Robin Tournemenne animated a workshop around virtual piano during the Inria "fête de la science" in october 2018.
- Juliette Chabassier animated a workshop around virtual piano during the Inria "open doors day" in october 2018.
- Juliette Chabassier welcomed L3 students around a virtual piano workshop in december 2018.

MANAO 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

Eurographics 2018 and 2019, Eurographics Symposium on Rendering 2018 (EGSR), Eurographics Workshop on Graphics and Cultural Heritage (GCH), Symposium on Geometry Processing 2018 (SGP), Geometric Modeling and Processing 2018 (GMP), ACM Conference on 3D Web Technology (Web3D)

10.1.1.2. Reviewer

ACM Siggraph 2018, ACM Siggraph Asia 2018, Eurographics 2019, High-Performance Graphics 2018 (HPG), ACM CHI Conference on Human Factors in Computing Systems (CHI), ACM Conference on 3D Web Technology (Web3D), Eurographics Workshop on Graphics and Cultural Heritage (GCH)

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

ACM Transactions on Graphics (TOG), IEEE Transactions on Visualization and Computer Graphics (TVCG), Computer Graphics Forum (CGF), Journal of Vision (JoV), i-Perception, ACM Journal on Computing and Cultural Heritage (JOCCH), ACM Transactions on Applied Perception (TAP), Royal Society Open Science, Computer and Graphcis

10.1.3. Invited Talks

Pierre Bénard – *Rendu stylisé d'animations 3D : une approche centrée utilisateur* at Rencontres Animation Développement Innovation (RADI), Angouleme, France, November 14th, 2018. Gaël Guennebaud – *A fast solver for transport maps on 2D grids* at ANR MAPA, Nancy, France, December 18th, 2018.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

The members of our team are involved in teaching computer science at University of Bordeaux, ENSEIRB Engineering School, and Institut d'Optique Graduate School (IOGS). General computer science is concerned, as well as the following graphics related topics:

Master : Pierre Bénard, Gaël Guennebaud, Romain Pacanowski, Advanced Image Synthesis, 60 HETD, M2, Univ. Bdx, France.

Master : Xavier Granier & Antoine Lucat, Numerical Techniques, 45 HETD, M1, IOGS, France

Master : Xavier Granier, Image Synthesis, 14 HETD, M2, IOGS, France

Master : Gaël Guennebaud, Geometric Modeling, 31 HETD, M2, IOGS, France

Master : Gaël Guennebaud, Parallel Programming, 9 HETD, M1, IOGS, France

Master : Romain Pacanowski, Antoine Lucat, Algorithmic and Object Programming, 60 HETD, M1, IOGS, France

Master : Xavier Granier, Romain Pacanowski, Colorimetry and Appearance Modeling, 20 HETD, M1, IOGS, France.

Master : Gaël Guennebaud and Pierre Bénard, 3D Worlds, 60 HETD, M1, Univ. Bdx and IOGS, France.

Master : Pierre Bénard, Patrick Reuter, Virtual Reality, 20 HETD, M2, Univ. Bdx, France.

Master : Patrick Reuter, Graphical user interfaces and Spatial augmented reality seminars, M2, ESTIA, France.

Master : Pierre Bénard, Image Synthesis and 3D modeling, 20 HETD, M2, ENSEIRB, France.

Licence : Patrick Reuter, Digital Imaging, 30 HETD, L3, Univ. Bdx, France.

Some members are also in charge of some fields of study:

Master : Xavier Granier, M2, IOGS (Bordeaux), France.

10.2.2. Supervision

PhD : Loïs Mignard-Debize, Plenoptic function and its application to spatial augmented reality, Inria & Univ. Bordeaux, P. Reuter & I. Ihrke, 5 February 2018

PhD : David Murray, Expressive Rendering of Volumetric Data, Thermo Fisher Scientific & Univ. Bordeaux, J. Baril & X. Granier, 10 December 2018

PhD in progress : Antoine Lucat, Appearance Acquisition and Rendering, IOGS & Univ. Bordeaux, R. Pacanowski & X. Granier

PhD in progress : Thomas Crespel, Autostereoscopic 3D display, Inria & Univ. Bordeaux, P. Reuter & X. Granier

PhD in progress : Charlotte Herzog, 3 dimensions X-rays imaging for medical applications, Imaging Optics, IOGS & Univ. Bordeaux, X. Granier

PhD in progress : Camille Brunel, Real-Time Animation and Deformation of 3D Characters, Inria & Univ. Bordeaux, P. Barla, G. Guennebaud & P. Bénard

PhD in progress : Megane Bati, Inverse Design for Complex Material Apperance, IOGS & Univ. Bordeaux, R. Pacanowski & P. Barla

10.2.3. Juries

PhD (jury member) : Even Entem, Université Grenoble Alpes, October 26th, 2018.

PhD (reviewer) : Alexandre Bleron, Université Grenoble Alpes, November 8th, 2018.

10.3. Popularization

10.3.1. Interventions

- Public exhibitions: Station Campus, Live Painting with Maud Mulliez at the Musée Ethnographique de Bordeaux (November 29th, 2018).
- Talks for schoolchildren: Camille Brunel and Pierre Bénard gave a 30 minutes talk titled *L'art et la science des films d'animation 3D* in front of secondary students during "la semaine des Maths" (March 15th, 2018), "le Printemps de la Mixité" (March 27th, 2018), and "la Fête de la Science" (October 10th, 2018).
- Talk at e-artsup: Pierre Bénard gave a 1 hour talk titled *Sciences et techniques pour l'animation 3D* in front of art students (October 8th, 2018).
- Open days at Inria Bordeaux Sud-Ouest : Demonstration of the *Wedge Camera* at "la Fête de la Science" (October 13th, 2018)

10.3.2. Internal action

- 10-year-celebration of Inria Bordeaux Sud-Ouest : Demonstration of the *Wedge Camera* (September 27th, 2018)

MEMPHIS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

The team organized a conference in honour of Charles-Henri Bruneau. Several scientific presentations have been given by his many collaborators and friends. This conference was organized over two half-days: the afternoon of September 13 and the morning of September 14. The presentations are in a 30-minute format. https://indico.math.cnrs.fr/event/3768/

The team organized a half-day workshop on numerical modelling of swimming on December 12th 2018. Participants: Patrick Babin (MRGM), Michel Bergmann, Afaf Bouharguane, Marie Couliou (ONERA), Hamid Kellay (LOMA), Angelo Iollo, Olivier Marquet (ONERA).

9.1.2. Reviewer - Reviewing Activities

Journal of Computational Physics, International Journal of CFD, Journal of Non-linear Analysis B, ASME Journal of Computational and Nonlinear Dynamics, Journal of Fluid Mechanics, Acta Mechanica, AIAA Journal, International Journal Numerical Methods in Fluids, Computers & Fluids, Journal of Engineering Mathematics, European Journal of Mechanics / B Fluids, Journal Européen de Systèmes Automatisés, Applied Mathematics and Computation. Nuclear Science and Engineering, Computer Methods in Applied Mechanics and Engineering, Journal of Theoretical Biology, Computational Optimization and Applications, Applied science, Meccanica, SIAM journal on scientific computing, SIAM journal on uncertainty quantification, Advances in Computational Mathematics.

9.1.3. Invited Talks

Angelo Iollo was invited as plenary speaker to SIMAI 2018, https://ocs.simai.eu/index.php/SIMAIcongress/SIMAI2018.

Angelo Iollo was invited to Gran Sasso Science Institute for the *Intensive Week on Fluids and Waves*https://fluidsandwaves.wordpress.com/blog/

9.1.4. Scientific Expertise

Angelo Iollo is an expert for the European Union for the program FET OPEN.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Four members of the team are Professors or Assistant Professors at Bordeaux University and have teaching duties, which consist in courses and practical exercises in numerical analysis and scientific computing. Michel Bergmann (CR) also teaches around 64 hours per year (practical exercises in programming for scientific computing).

9.2.2. Supervision

PhD: Federico Tesser. *Parallel solver for the Poisson equation on a hierarchy of superimposed meshes, under a Python framework*, University of Bordeaux and Insubria University. 11/09/2018. Advisors: Michel Bergmann, Angelo Iollo.

PhD: Claire Taymans. *Solving Incompressible Navier-Stokes Equations on Octree grids : towards Application to Wind Turbine Blade Modelling*, University of Bordeaux. 28/09/2018. Advisors: Michel Bergmann, Angelo Iollo.

PhD: Baptiste Lambert. *Modelling and numerical simulation of interactions in particle-laden flows*, University of Bordeaux. 17/10/2018. Advisors: Michel Bergmann, Lisl Weynans.

PhD: Emanuela Abbate. *Numerical methods for the simulation of low-Mach phenomena in continuum mechanics*, University of Bordeaux and Insubria University. 19/12/2018. Advisors: Angelo Iollo, Gabriella Puppo.

PhD in progress: Michele Giuliano Carlino. *Fluid-structure models on Chimera grids.* 01/10/2018. Advisors: Michel Bergmann, Angelo Iollo.

PhD in progress: Sebastien Riffaud. *Convergence between data and numerical models.* Advisor: Angelo Iollo.

PhD in progress: Antoine Fondanèche. *Monolithic fluid-structure modeles on parallel hierarchical grids.* 01/09/2018. Advisor: Michel Bergmann, Angelo Iollo.

PhD in progress: Luis Ramos Benetti. *Monolithic fluid-structure modeles on parallel hierarchical grids.* 01/10/2017. Advisor: Michel Bergmann, Angelo Iollo.

PhD in progress: Mathias Braun. *Reduced-order modelling for increased resilience of water distribution networks*. 01/10/2015. Advisors: Angelo Iollo, Iraj Mortazavi, Olivier Piller.

PhD in progress: *Numerical simulation and modeling of zebra fish swimming for the study of human diseases of genetic and toxicological origin*. 01/10/2015. Advisors: Afaf Bouharguane, Patrick Babin.

9.2.3. Juries

Angelo Iollo has been reviewer of the PhD thesis of Nicola Pozzi *Numerical Modeling and Experimental Testing of a Pendulum Wave Energy Converter (PeWEC)*, Politecnico di Torino, DIMEAS, May 2018.

Tommaso Taddei has partecipated to the PhD thesis of Nicolas Cagniart *A few nonlinear approaches in model order reduction*, Sorbonne University, LJLL, November 2018.

9.3. Popularization

Afaf Bouharguane has presented her research at the event Unithé ou Café at Inria Bordeaux, November 2018.

Michel Bergmann, "Modéliser et optimiser les énergies renouvelables". Stand for the 10-th year anniversary of Inria Bordeaux South West centre, October 13th 2018.

MNEMOSYNE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

X. Hinaut: organisation of the Workshop on Language and Robotics (follower of the ML-HLCR workshop at IROS 2017), at IROS, 1st of October 2018, Madrid, Spain, http://iros2018.emergent-symbol.systems/. http://iros2018.emergent-symbol.systems/.

10.1.1.2. Member of the Conference Program Committees

F. Alexandre: TAIMA'18; SAB'18; X. Hinaut: ICDL-Epirob'18; N. Rougier: WSOM'18;

10.1.1.3. Reviewer

X. Hinaut: ICDL-epirob'18; CogSci'18; IJCNN'18; ESANN'18;

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Frédéric Alexandre: Academic Editor for PLOS ONE; Review Editor for Frontiers in Neurorobotics;
- Nicolas Rougier: Editor in chief for ReScience, Academic editor for PeerJ, review editor for Frontiers in Neurorobotics.
- Xavier Hinaut: guest editor in the Journal Advanced Robotics of a special issue on "Machine Learning Methods for High-Level Cognitive-Capabilities-in-Robotics"

10.1.2.2. Reviewer - Reviewing Activities

- F. Alexandre: Elife; EMBC; Frontiers in Neurobotics; Neurobiology of Disease; PLoS ONE
- André Garenne: Journal of Integrative Neuroscience
- Xavier Hinaut: Adaptive Behavior; Applied Science; Cognitive Computation; Cognitive Systems (CogSys); Neural Networks; ReScience; Transactions in Human-Robot Interaction (THRI); Transactions in Cognitive Developmental Systems (TCDS);
- Nicolas Rougier: Frontiers in Neuroinformatics, Frontiers in Neurobotics, Frontiers in Computational Neuroscience, PLOS Computational Biology, PeerJ;
- Thierry Viéville: Frontiers in Neuroinformatics, Frontiers in Neurobotics, Frontiers in Computational Neuroscience

10.1.3. Invited Talks

F. Alexandre:

- "When cognitive neursciences revisit Artificial Intelligence", Big Data Seminar of the Labri, February 8 and 22 (in two parts);
- "Understanding or transforming the human being ?", Annual meeting of the International Catholic Center for cooperation with UNESCO, Paris, May 4;
- "Modelling the medial prefrontal cortex for the motivated behaviour of an autonomous agent in the Minecraft video game", Symposium «Frontiers in medial prefrontal cortex research», Bordeaux, September 6;
- "Modeling the functional organization of the medial and ventral prefrontal cortex", Symposium on Cognitive Systems, Chemnitz (Germany), September 13;
- "Does Artificial Intelligence learn from its errors ?", Colloquium Cathy Dufour on Artificial Intelligence, University of Lorraine, November 16;
- "The contributions of Machine Learning to research on neurodegenerative diseases", in the annual meeting of the Bordeaux Initiative for Neurodegenerative Disorders (BIND), about Technological Innovations and Neurodegenerative Diseases (November, 23);

Ikram Chraibi Kaadoud: La Grande Jonction (Bordeaux);

Silvia Pagliarini at the European Birdsong Meeting, Odense, Denmark;

N. Rougier:

- Berstein Conference / PhD symposium (Berlin);
- ICML, Workshop on reproducibility in Machine Learning (Stockholm);
- Loria (Nancy);
- Digital Aquitaine / Club Commerce Connecté (Bordeaux);
- Phiteco conference (Compiègne);

10.1.4. Leadership within the Scientific Community

X. Hinaut:

- President of the association MindLaBDX: “open citizen lab” in Cognitive Sciences and Artificial Intelligence in Bordeaux.
- member of the Administration Committee of Fresco association (French Federation of students in Cognitive Science)

Nicolas Rougier: Editor in chief for ReScience

10.1.5. Scientific Expertise

F. Alexandre is the french expert for Mathematics and Computer Science of the PHC (Hubert Curien Program) Utique for scientific cooperation between France and Tunisia. He is also an expert for the Association Robert Debré for Medical Research.

Nicolas Rougier: UNESCO; Engineering and Physical Sciences Research Council (UK); Assistance Publique Hopitaux de Paris; Eurostars program (Eureka).

10.1.6. Research Administration

- F. Alexandre is member of the Inria Evaluation Committee, Deputy Scientific Delegate and Vice-head of the Project Committee of Inria Bordeaux Sud-Ouest (until september2018); member of the Inria monitoring and forecasting cell; Corresponding scientist for Bordeaux Sud-Ouest of the Inria COERLE ethical committee; Member of the national Inria committee for international chairs; Member of the local Inria committee for young researchers hiring; Member of the steering committee of the regional Cluster on Information Technology and Health; of the regional Cluster on Robotics; Expert of the ITMO ’Neurosciences, Sciences Cognitive, Neurologie, Psychiatrie’
- N. Rougier is vice-head of the Mnemosyne team-project; elected member of the Inria Evaluation Committee; IES referent for Inria Bordeaux Sud-Ouest; Member of the commitee for researcher recruitment; Member of the steering committee for the BioComp CNRS consortium; Editor in chief and co-founder of ReScience.
- Thierry Viéville is in charge of the http://classcode.fr project and in charge, for Inria, of the creation of a Master SmartEdTech at UCA within the scope of his mission for the Inria Sophia Antipolis - Méditérannée direction.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Many courses are given in french universities and schools of engineers at different levels (LMD) by most team members, in computer science, in applied mathematics, in neuroscience and in cognitive science. Thierry Viéville is teaching computer thinking in the Msc #CreaSmartEdtech ("Digital Expertise", "Educational Informatics" including Artificial Intelligence and Ontologies, "Digital Intedisciplinary Project ") and is co-orgazning this Master of Science [29]. In addition, this year, N. Rougier gave tutorials to the Advanced Python

Programming for Science summer school (Camerino, Italy) and a Digital Typography course (SIGGRAPH, Vancouver, Canada). In May, X. Hinaut gave an invited course on Echo State Networks in the Neural Networks lecture of the Master of Science on Intelligent Adaptive Systems of the University of Hamburg. F. Alexandre, X. Hinaut and N. Rougier have been participating and teaching to the "Robotics and Social Interactions" summer school (October 1-4, Moliets-et-Maa). We can also mention that S. Pagliarini (PhD student) was selected to participate to the OIST Computational Summer Course (June 24-July 15, Okinawa, Japan).

10.2.2. Juries

In addition to several juries in France, we can note a reviewing and participation to a PhD defense in Germany (F. Alexandre)

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Thierry Viéville is in charge of mission regarding e-education in particular the collaborations with the UCA university on these subjects, more precisely the LINE laboratory ESPE of Nice where he is affected at 20%, for the creation and co-direction of the MSc and the relation with EducAzur, and the actions within the Class´Code project.

10.3.2. Articles and contents

- For online publications: F. Alexandre in Usbek & Rica (June 8) and Inriality (May 17): https://usbeketrica.com/article/2067-la-singularite-empire-des-machines and https://www.inriality.fr/informatique/informatique-ia-intelligence-artificielle/2067-la-singularite-ou/;
- Interviews in order to popularize: F. Alexandre in La Tribune newspaper (September 10): https://objectifaquitaine.latribune.fr/innovation/2018-09-10/inria-bordeaux-10-ans-de-recherches-a-la-pointe-du-numerique-789911.html; I. Chraibi Kaadoud and A. Garenne in blog scilogs about neural networks: http://www.scilogs.fr/intelligence-mecanique/architecture-reseaux-de-neurones-de-choix/; http://www.scilogs.fr/intelligence-mecanique/architecture-des-reseaux-de-neurones-reseaux-de-neurones-artificiels-classiques-2-3/ and http://www.scilogs.fr/intelligence-mecanique/architecture-des-reseaux-de-neurones-reseaux-de-neurones-impulsionnels-3-3/; X. Hinaut about organizing a Hackathon in https://pixees.fr/hack1-cerveau/; N. Rougier in CNRS website (September 21): http://www4.cnrs-dir.fr/insb/recherche/parutions/articles2018/t-boraud.html and in Le Monde newspaper (September 19): https://www.lemonde.fr/sciences/article/2018/09/19/les-emotions-au-coeur-de-l-apprentissage_5357127_1650684.html; Thierry Viéville is co-editor and/or co-author of about two papers per month on http://binaire.blog.lemonde.fr.

10.3.3. Education

F. Alexandre: Teaching to the high-school professors in Philosophy of the academy of Poitiers about Artificial Intelligence (April, 25); Thierry Viéville has realized more than ten session of formation (over 400 teachers involved) within the scope of the Class´Code project, and co-organized two of them.

10.3.4. Interventions

- National events: participation of the team on the NeuroCampus to the Week of the Brain (Semaine du Cerveau: March 19-23); to the Declics program for high-schools (http://www.cerclefser.org/fr/declics/, Nov. 22); Fête de la Science at Inria Bordeaux and Cap Sciences in October: The humanoid Nao robot was listening to the instructions and learning names of objects. This demo was performed by X. Hinaut and A. Strock with a German collaborator from the University of Hamburg (J. Twiefel).
- Public exhibitions:
  - "Brain and Artificial Intelligence" at Regional Headquarters in Limoges (Feb. 2);

- "What is the usefulness of Artificial Intelligence ?" at Café des Sciences in Soustons (Dec. 12) (F. Alexandre);
- Science pour tous (Bordeaux), Machine learning (Communauté Urbaine de Bordeaux), AI Unplugged (Bordeaux), Déambulation autour de l'IA (Bordeaux), L'intelligence artificielle en question (Paris) (N. Rougier);
- Participation to the Neurocampus Day (S. Pagliarini, poster "Learning an inverse model for vocal production: toward a bio-inspired model");
- Thierry Viéville: Interventions on artificial Intelligence and the development of critical thinking on large audience popularization events (Universcience, Médiathèque de Bordeaux, Semaine du Cerveau, Fête de la Science, Select Sophia-Antipolis, more than 200 persons involved) and three interactive talks in high-school (more than 150 students involved).
- T. Firmo Drumond and B. Teja Nallapu prepared and presented a demo for the 10 years of the Bordeaux Inria Centre (September 27).
- N. Rougier and X. Hinaut participated to a theater performance on AI, showing the state of work of an artistic residence in November.

10.3.5. Internal action

- Internal meetings: T. Firmo Drumond presented Deep Learning to the Inria Bordeaux Café des Sciences (March 22);
- Nicolas Rougier gave a talk about scientifc fraud and misconduct at the institute of neurodegenerative diseases.

10.3.6. Creation of media or tools for science outreach

Thanks to fundings from the Bordeaux Museum of Science Cap Sciences (http://www.cap-sciences.net/) and from the Foundation Blaise Pascal (https://www.fondation-blaise-pascal.org/), we have begun to design a software tool to run small demonstrative scenarios, to help everyone discover the brain functions at the origin of our sensorimotor and vital cognitive behaviors (instinctive and motivated behavior, selection of embodied action, emotional decision-making, seat of self-awareness, etc.). This resource is for a wide audience to whom we can show scenarios, but also co-build multi-media resources to share methods and knowledge (participatory scientific mediation approach) and to discuss these topics. It is also at the disposal of scientific mediators (researchers and beyond) who wish to co-construct such resources, or to present research results involving the animation of anatomy of the nervous system as well as of users or authors of computer code who want to reuse shared technologies to derive other applications, in particular become familiar with the specification languages (here JSON and markdown).

MONC Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

C. Poignard was one of the chair of the CEMRACS 2018 about “Numerical and mathematical modeling for biological and medical applications: deterministic, probabilistic and statistical descriptions"

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

S. Benzekry was in the Scientific Committee of the “Third MB2 conference (Mathematical Biology Modeling days of Besançon)" held in June 2018 in Besançon, France.

10.1.2.2. Reviewer

B. Denis de Senneville was a reviewer for the IEEE International Symposium on Biomedical Imaging (ISBI) held in April 2018 in Washington DC, USA.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- S. Benzekry is a member of the Editorial Board of “Mathematical Biosciences and Engineering"
- C. Poignard is a member of the Editorial Board of “Discrete and Continuous Dynamical Systems-S"

10.1.3.2. Reviewer - Reviewing Activities

- S. Benzekry served as a reviewer for PLoS Computational Biology, Medical Image Analysis, Cancer Chemotherapy and Pharmacology, Oncotarget and Applicandae Mathematica.
- B. Denis de Senneville served as a reviewer for IEEE Transactions on Medical Imaging, Physics in Medicine and Biology and Journal of Medical Imaging.
- O. Saut served as a reviewer for PLOS One and Computational and Applied Mathematics.

10.1.4. Invited Talks

- S. Benzekry: Jan 2018, Conference on Statistics and Health, Toulouse, France
- S. Benzekry: Feb 2018, CMM-Fields-Inria Workshop on Mathematics for Medicine, Toronto, Canada
- S. Benzekry: Jun 2018, 3rd Mathematical Biology Modelling Days, Besançon, France
- O. Saut: Computational Systems Biology of Cancer, Institut Curie, France
- S. Benzekry: Jun 2018, Mathematical perspectives in the biology and therapeutics of cancer, Marseille, France
- C. Poignard: Jul. 2018, Mathematical perspectives in the biology and therapeutics of cancer, Marseille, France
- S. Benzekry: Jul 2018, Annual Workshop on Mathematics in Medicine, Wolfgang Pauli Institute, Vienna, Austria
- C. Poignard: Aug. 2018, The XIVth Franco-Romanian Conference in Applied Mathematics, Bordeaux, France
- O. Saut: Sep 2018, Virtual Physiological Human Conference (VPH), Zaragoza, Spain

- B. Denis de Senneville: Oct. 2018, Partial Differential Equations for Social and Biological Events, Osaka, Japan
- C. Poignard: Oct. 2018, Partial Differential Equations for Social and Biological Events, Osaka, Japan
- S. Benzekry: Nov 2018, Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy, Oaxaca, Mexico

10.1.5. Leadership within the Scientific Community

- S. Benzekry was nominated expert within the scientific board of the national multi-thematic institute (ITMO) Cancer of the French alliance for health sciences (AVIESAN).

10.1.6. Scientific Expertise

- B. Denis de Senneville was a grant reviewer for the Swiss National Science Fundation.
- B. Denis de Senneville was in the selection committee for an Assistant Professor position in Bordeaux University.
- C. Poignard was in the Inria CRCN National selection committee

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : S. Benzekry, Ordinary Differential Equations, 20h, L3, INP Bordeaux, France

Licence : C. Poignard, Undergraduate teaching in Numerical and Applied Mathematics, 80h, L3-M1, INP Bordeaux, ENSAM, France

Licence : B. Denis de Senneville, Probability and Statistics, 30h, L3, INP Bordeaux, France

Master : A. Collin, TP C++, 96h, niveau M1, INP Bordeaux, France

Master : A. Collin, Cours de maillage, 36h, niveau M2, INP Bordeaux, France

Master : A. Collin, Encadrement de projets, 30h, niveaux M1, M2, INP Bordeaux, France

Doctorat: S. Benzekry, Computational modeling in medicine, 6h, Université de Bordeaux, France

10.2.2. Supervision

PhD : T. Kritter, *Utilisation de données cliniques pour la construction de modèles en oncologie*, Université de Bordeaux, 01/10/2018, under the supervision of Olivier Saut et de Clair Poignard

PhD in progress : C. Nicolò, *Mathematical modeling of systemic aspects of cancer and cancer therapy*, 2016 - 2019, under the supervision of S. Benzekry and O. Saut

PhD in progress: S. Corridore, *Mathematical Model for Electroporation*, 2016 - 2019, under the supervision of A. Collin, C. Poignard.

PhD in progress: C. Perier, *Combining texture analysis and modeling for evaluation of therapies and clinical outcome*, under the supervision of B. Denis de Senneville and O. Saut, 2016 - 2019.

PhD in progress: A. Crombé, *Beyond radiomics for soft-tissue sarcoma*, 2017-2020, under the supervision of O. Saut.

PhD in progress: C. Vaghi, Improving intra-tumor drug distribution of anti-cancer nanoparticles by data-informed mathematical modeling, Nov 2017 - Nov 2020, under the supervision of S. Benzekry and C. Poignard.

10.2.3. Juries

- S. Benzekry: Committee member of the PhD thesis of A. Rodallec (Aix-Marseille University)
- A. Collin: Committee member of the PhD thesis of T. Kritter (Bordeaux University)
- B. Denis de Senneville: Committee member of the PhD thesis of C. Zachiu

- C. Poignard: Reviewer of the PhD thesis of A. Auvray (Ecole Centrale de Lyon)
- C. Poignard: Committee member of the PhD thesis of T. Kritter (Bordeaux University)
- O. Saut : Committee member of the Phd thesis of J-E Bibault (Univ. Sorbonne Paris Cité).
- O. Saut : Committee member of the PhD thesis of Alexis Arnaud (Grenoble Alpes University).

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- S. Benzekry is a member of the local Inria commission of informatical tools users (CUMI)
- C. Poignard is an elected member of Inria's national evaluation committee.

10.3.2. Interventions

- O. Saut: Fête de la Science, Cap Science, Bordeaux.

PHOENIX-POST Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

Hélène Sauzéon participated in organizing the residence seminar "Human and technology", framed by the Institute of advances studies of the Bordeaux University, held on Jun 5-6, 2018, at Cadillac, France.

Hélène Sauzéon organized the scientific workshop "Innovation technologique et maladies neurodégénératives" of the Excellence center BIND, on Nov 23, 2018.

8.1.2. Scientific Events Selection

8.1.2.1. Reviewer

Hélène Sauzéon and Stéphanie Giraud performed reviews for the ACM-CHI conference.

8.1.3. Journal

8.1.3.1. Reviewer - Reviewing Activities

Hélène Sauzéon performed reviews for the following journals: Psychonomic Bulletin and Review; Gerontology; PlosOne, Memory and Cognition, Aging, Neuropsychology and Cognition, International Journal of Environmental Research and Public Health.

8.1.4. Scientific Expertise

Hélène Sauzéon is a member for the evaluation committee CES 19 (TECSAN) - ANR, since 2017.

8.1.5. Research Administration

Hélène Sauzéon held the following responsibilities:

- Vice-Director of the Lab "Activité, handicap, cognition et système nerveux" (EA 4136), leader of the axis "Handicap cognitif", since 2015.
- Member of the "Young researchers" committee within Inria Bordeaux, since 2015.
- Member of the Committee launching a new institute of advanced studies at the University of Bordeaux since 2016. In this context she participated at the design of this institute, leveraging her expertise in cognitive sciences and interdisciplinary research at Inria Bordeaux. Indeed, the aim of the institute is fostering interdisciplinary research, innovation, and creativity, by providing adequate financial support, educative and participative resources to researchers on the Bordeaux campus.
- Member of the International Relations Committee — IFR Handicap-INSERM, since 2017.
- Leader of the Innovations and Transfer committee of the excellence center BIND in Bordeaux, since 2018.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master (M2) : Charles Consel, “Advanced topics — Technology surveys”, 17h, Bordeaux INP, France
- Licence: Hélène Sauzéon, “Psychologie Cognitive Générale”, 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, “Sciences cognitives du langage”, 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, “Neuropsychologie cognitive (Vieillissement normal et pathologique)”, 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, “Technologies du Handicap cognitif”, 30h, University of Bordeaux, France.
- Master: Hélène Sauzéon, “Facteurs Humains et IHM”, 9h, University of Bordeaux, France.
- Licence (L3) : Eugène Volanschi, “Introduction to imperative programming”, 24h, Bordeaux INP, France
- Licence (L3) : Eugène Volanschi, “Object-oriented programming”, 24h, IUT Informatique, Bordeaux, France
- Licence (L2) : Bernard Serpette, “Functional Programming”, 35h, Université de Bordeaux, France.
- Licence (L2): Cécile Mazon, “Fonctions exécutives”, 22h, MIASHS, Université de Bordeaux, France
- Licence (L2) : Cécile Mazon, “Introduction à la psychologie cognitive”, 22h, MIASHS, Université de Bordeaux, France
- Licence (L2): Cécile Mazon, “Applications d’assistance sur tablettes”, 7h, MIASHS, Université de Bordeaux, France
- Master : Cécile Mazon, “Préparation et évaluation en inspection ergonomique des interfaces”, 7h, Université de Bordeaux, France

8.2.2. Supervision

- PhD: Audrey Landuran, “Design, adaptation and validation of digital tools for people with intellectual disabilities’, defended on Nov 26, 2018, directed by Bernard N’Kaoua.
- PhD: A. Delmas, “Conception et validation d’un serious game pour l’éducation thérapeutique d’enfants asthmatiques”, defended on Sept 12, 2018, co-directed by Hélène Sauzéon and Pierre-Yves Oudeyer.
- PhD in progress : Cécile Mazon, “Personalization and evaluation of a digital assistant for school inclusion of college students with autism and/or intellectual disability”, University of Bordeaux, started in September 2016, co-directed by Hélène Sauzéon and Charles Consel.
- PhD in progress: P.A. Cinquin, “Conception et validation d’un lecteur accessible aux personnes avec troubles cognitifs pour un système d’enseignement numérique”, started in 2016, co-directed by Hélène Sauzéon and Pascal Guitton.
- PhD in progress: A. Zamudio Rodriguez, ”Suivi longitudinal de l’impact à 12 et 24 mois de la solution DomAssist auprès de personnes âgées pré-fragiles et fragiles”, started in Octobre 2017, co-directed by Hélène Sauzéon and K. Pérès.
- PhD in progress: Rafik Belloum, “A methodology for developing assistive services”, started in 2016, directed by Charles Consel.

8.2.3. Juries

Hélène Sauzéon participated in the following juries:

- President of the PhD thesis jury for S. T. Popescu (PhD in Cognitive Sciences, supervised by M. Wexler and J. Sackure), 2018, École des Hautes Études en Sciences Sociales, Paris.
- President of the PhD thesis jury for I. Chraibi Kaadoud (PhD in Computer Science, supervised by F. Alexandre and J.N. Rougier), 2018, Université de Bordeaux.
- Reviewer in the PhD thesis jury for L. Quillion-Dupré (PhD in Cognitive Sciences, Psychology and Neurocognition, supervised by V. Rialle and E. Monfort), 2018, Université de Grenoble.
- Examiner in the PhD jury for B. Clement (PhD in Computer Science, supervised by P.Y. Oudeyer and M. Lopez), 2018, Université de Bordeaux.

8.3. Popularization

8.3.1. Articles and contents

- Mazon, C., Fage, C. et Sauzéon, H. (2017). "Impacts des technologies numériques pour favoriser l'inclusion scolaire d'élèves avec Trouble du Spectre Autistique". In *Les Cahiers de l'Actif* (a journal for professionals working in caregiving and assistance).

8.3.2. Interventions

- Bernard Serpette, Mar 12, 2018: participating to the Week of math at the primary school St-Genes in Bordeaux: initiating 1st and 2nd grade pupils to computational thinking via problem-solving games
- Cécile Mazon, Sept 27, 2018: participating to the Open days at Inria Bordeaux: presenting to the general public the scientific projects about technology assistance for young persons with ASD.
- Cécile Mazon, Jan 18-19, 2018: Poster for the symposium UB-CNRS - "Sensibilisation et regards croisés autour du handicap", Pôle juridique, Université de Bordeaux, France
- Cécile Mazon, Jan 15-19, 2018: managing the internship of a high-school pupil (Roxane Allouche) at Inria Bordeaux

PLEIADE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of the Conference Program Committees

Alain Franc co-organized with IRSTEA Bordeaux, IFREMER Nantes and INRA Toulouse the biannual meeting of the Mexico Network at Inria, Ada Lovelace room, in November 2018 (see https://mexico2018.sciencesconf.org/) and s a member of the Scientific Committee. The theme of the meeting was "Optimization, Sensitivity Analysis, and Exploration of Model Outputs." Mexico is a methodological network dedicated to methods of computer exploration of complex models. [0]

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Alain Franc is member of the editorial board of BMC Evolutionary Biology.

Pascal Durrens is a member of the editorial board of the journal ISRN Computational Biology.

9.1.3. Research Administration

David Sherman is a co-president of the INRA Commission for the Evaluation of Engineers (CEI IMP6) [0]. Every INRA staff engineer is evaluated by this commission every four years.

Alain Franc has been appointed "chargé de mission calcul" at INRA by INRA Delegate for Digital Transition. As such, his mission is to propose animations and solutions for the development of scientific computing at INRA, whatever the Research Department.

9.2. Popularization

9.2.1. Internal or external Inria responsibilities

David Sherman is president of the Commission for Technology Development (CDT) of the Inria Bordeaux Sud-Ouest research center. The CDT has two roles. First, it evaluates funding requests for Technology Development and Technology Transfer projects, which typically involve hiring technical staff. Second, the CDT is responsible for validating and overseeing contract engineers hired by Inria project-teams.

9.2.2. Interventions

The "Family-3D" activity (see below) was presented on three occasions:

- During the 10 year celebration on the evening of September 27
- During the Open House all day October 13
- During the Fête de la Science, to 8 groups of 12 students

9.2.3. Creation of media or tools for science outreach

Pleiade created an interactive activity "Family-3D" to explain the methods and uses of pattern classification of protein families. Using new software developed by the team we laid out 30 families in 3D space and converting those shapes to 3D volumes. The selected families had been previously grouped into biologically pertinent classes by human curators. Each shape was printed with an embedded unique RFID tag. We also designed and printed five interactive terminals, containing a microcontroller, an RFID reader with a custom-designed inductive coil as input, and an LED ring as output. Participants would propose groups of shapes that they believed belonged to the same class, and the terminal would evaluate the group.

[0] http://reseau-mexico.fr
[0] INRA UAR0837 DEV Délégation à l'Evaluation

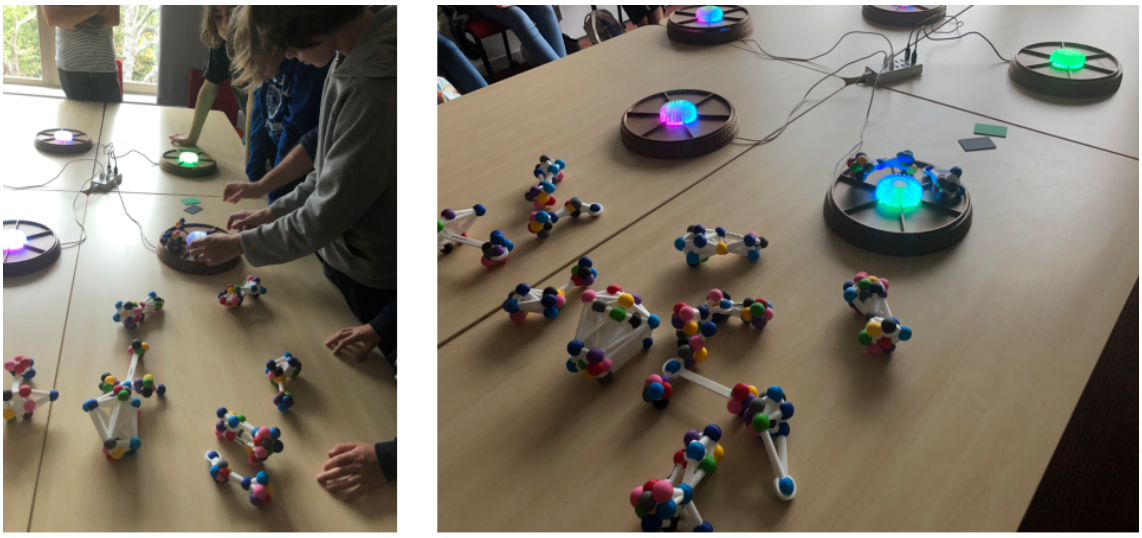

Figure 6. Family-3D activity during the Circuit Scientifique of the Fête de la Science, 2018

David Sherman contributes open-source software development to the Aseba platform for educational robotics [0], deployed in Thymio II robots used by children as well as in the simulator used by Class'Code [0] to train teachers.

David Sherman and Louise-Amélie Schmitt developed AsebaHub, a specialized WiFi hub for connecting Thymio-II robots into a local-area network. AsebaHub acts as either a wireless Access Point to which users may connect, or as a Bridge to an existing local-area network. Robots can be discovered using mDNS-sd (Zeroconf/Bonjour). AsebaHub works out of the box with the Aseba Studio and VPL programming environments, and can also provide an HTTP service that is compatible with Scratch, Snap!, or other environments.

[0] http://aseba.io/
[0] https://pixees.fr/classcode-la-formation-associee-a-pixees/

POTIOC Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- EduIHM 2018 (workshop at IHM 2018), Martin Hachet
- 5th Sino-French Workshop on Virtual reality (Chengdu, August 2018), Pascal Guitton
- 3rd International OpenViBE workshop, IEEE SMC 2018, (Miyazaki, Japan, October 2018), Fabien Lotte
- Workshop “Turning negative into positives! Exploiting “negative” results in Brain-Machine Interface research”, International BCI Meeting 2018, Asilomar, CA, USA, Fabien Lotte

10.1.1.2. Member of the Organizing Committees

- Workshop VR/AR in BCI, BCI Meeting Asilomar, USA, May 2018, Jelena Mladenovic
- Workshop“Collaborative and Competing Multi-Brain BCI‘s”, International BCI Meeting 2018, Asilomar, CA, USA, Fabien Lotte
- "3ème journée Nationale sur le neurofeedback : a forward step towards closed loop", Lyon, France, May 2018, Fabien Lotte
- Game Accessibility Conference EU 18, CNAM, Paris, October 2018, Pierre-Antoine Cinquin

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Cyberworlds 2018, Fabien Lotte
- IEEE Conference on Systems, Man and Cybernetics, Brain-Machine Interface Workshop (IEEE SMC) 2018, Fabien Lotte
- International Workshop on Pattern Recognition in NeuroImaging (PRNI) 2018, Fabien Lotte
- International Neuroergonomics Conference 2018 (Fabien Lotte)
- International BCI Meeting 2018, Fabien Lotte
- Augmented Human Conference (AH), 2018, Fabien Lotte

10.1.2.2. Reviewer

- ACM CHI 2018 and 2019
- ACM UIST 2018
- ACM MobileHCI 2018
- ACM IDC 2018
- ACM CHI Play 2018
- IEEE VR 2018
- 4th IEEE VR 3DCVE Workshop 2018
- IEEE SMC 2018
- ICMI 2018
- MCPMD Workshop, ICMI 2018
- Augmented Human 2018

- MobileCHI 2018
- ICASSP 2018
- Int. BCI Meeting 2018
- JJC-ICON 2018
- Neuroergonomics 2018
- PRNI 2018
- Cyberworlds 2018
- NIPS 2018
- Games User Research EU Conference 2018
- Conférence ISCRAM 2019

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- IEEE Computer Graphics and Applications, Martin Hachet
- Journal of Neural Engineering, Fabien Lotte
- Brain-Computer Interfaces, Fabien Lotte

10.1.3.2. Reviewer - Reviewing Activities

- Plos One
- Journal of Neural Engineering
- Computational Intelligence and Neuroscience
- Cognitive Computation
- Frontiers in Neuroscience
- IEEE Signal Processing Letters
- IEEE TVCG
- IEEE TBME
- IEEE Trans. Games
- IEEE TNSRE
- IEEE CGA
- IJHCS
- ACM TOCHI
- ACM TACCESS
- Springer Nature Scientific Reports

10.1.4. Invited Talks

- "Comment rendre accessible les enseignements en ligne comme les MOOC pour des étudiants en situation de handicap", Colloque Sensibilisation et regards croisés autour du handicap, 18-19 janvier 2018, Bordeaux, Pascal Guitton
- "Défis et opportunités pour l'Accessibilité numérique", 20ème anniversaire BrailleNet, 14 juin 2018, Issy les moulineaux, Pascal Guitton
- "Accessibilité numérique des systèmes d'enseignement en ligne pour des personnes en situation de handicap d'origine cognitif", 2ième Journée scientifique du centre d'excellence BIND (CHU & Université de Bordeaux) "Innovation technologique et maladies neurodégénératives", 23 novembre 2018, Bordeaux, Pascal Guitton

- "Measuring Intrinsic motivation/curiosity through Electroencephalography", UQAM Psychology Lab Montreal, Canada, Aurélien Appriou
- "Endowing the Machine with Active Inference in a P300 BCI", Seminar of Computational Neuroscience, Inria Bordeaux, November 2018, Jelena Mladenovic
- "Combining physiological sensing and User modeling for intuitive HCI at Intelligent User Interfaces: Eye Tracking and Beyond", Workshop in Haifa University, Israel, April 2018, Jelena Mladenovic
- "Taxonomy for Adaptive BCI: User and Task Modeling at Brain-computer communication: Towards real world applications", BCI Conference in IDC Herzlyia, Israel, March 2018, Jelena Mladenovic
- "Learning to control Mental Imagery-based Brain-Computer Interfaces", Journées Scientifiques Inria, Bordeaux, France, June 2018, Fabien Lotte,
- "L'interaction Cerveau-Ordinateur", Pause de l'institut des études avancées de l'université de Bordeaux, Cadillac, France, June 2018, Fabien Lotte
- "Models and tools to design non-invasive Brain-Computer Interfaces", Neurocampus annual meeting day, Bordeaux, May 2018, Fabien Lotte
- "Understanding and Redefining User Training to Mental Imagery-based Brain-Computer Interfaces Control", Laboratoire d'Étude des Mécanismes Cognitifs (EMC), Lyon, France, April 2018, Fabien Lotte
- "Redefining user training in BCI/Neurofeedback by combining machine learning, neuroscience and psychology", 2018 RIKEN-BSI-Cichocki Laboratory Alumni Japan Workshop on Frontier of Multidisciplinary Research: Brain Signal Processing and Multiway Data Mining Wakoshi, Saitama, Japan, March, 2018, Fabien Lotte
- "Learning for BCI and BCI for Learning", BCI Symposium "Brain-computer communication: Towards real world applications", Tel Aviv, Israel, March 2018, Fabien Lotte
- "Redefining User Training in Mental Imagery-based Brain-Computer Interfaces", ESPCI, Paris, February 2018, Fabien Lotte
- Présentation des travaux avec l'IRSA, 39ième congrès de la FISAF, Lauren Thevin

10.1.5. Scientific Expertise

- Expert for "Credit Impot Recherche", Martin Hachet
- Expert for the ANR, Committee CES33 "Interaction, Robotics and IA", Fabien Lotte

10.1.6. Research Administration

- Member of "Bureau du comite des projets", Martin Hachet
- Member of "Conseil administration de l'AFIHM", Martin Hachet
- Member of scientific committee of SCRIME, Martin Hachet
- Elected member of the board of the French BCI society (CORTICO), Fabien Lotte
- Representative of Inria for NEM, Fabien Lotte
- Member of Commission de recrutement des Inspecteurs Généraux de l'Education Nationale (IGEN), Pascal Guitton
- Responsable of Inria Cellule de veille et de prospective, Pascal Guitton
- Member of Inria Ethical Committee (COERLE), Pascal Guitton
- Member of Inria Comité Parité et Egalité, Pascal Guitton
- Responsable of Inria RA2020 Committee (new annual Activity Report), Pascal Guitton
- Member of Inria International Chairs Committee, Pascal Guitton

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master: Martin Hachet, Réalité Virtuelle, 12h eqTD, M2 Cognitive science, Université de Bordeaux
- Master : Philippe Giraudeau, Handicap et Nouvelles technologies, 9h eqTD, M2 Cognitive science, Université de Bordeaux
- Master: Martin Hachet, Réalités Virtuelles et augmentées, 18h eqTD, M2 Computer science, Université de Bordeaux
- Master: Rajkumar Darbar, Réalités Virtuelles et augmentées, 18h eqTD, M2 Computer science, Université de Bordeaux
- Master: Pierre-Antoine Cinquin, Assistive technologies, CM-TD, 15h eqTD, M2 Cognitive Science, Université de Bordeaux
- Master: Léa Pillette, Handicap, Autonomy and cognition, 5h eqTD, M2 Cognitive science, University of Bordeaux
- Master: Fabien Lotte, Réalités Virtuelles et augmentées, 7h eqTD, M2 Computer science, Université de Bordeaux
- Master: Fabien Lotte, Réalité Virtuelle, 5h eqTD, M2 Cognitive science, Université de Bordeaux
- Master: Pascal Guitton, Digital accessibility, CM, 18h eqTD, M1 Cognitive science, University of Bordeaux
- Bachelor: Aurélien Appriou, Knowledge and Representation, 13.5h eqTD, 3rd year BD MIASHS: Cognitive science
- Bachelor: Aurélien Appriou, Knowledge and Representation, 14h eqTD, 3rd year BD MIASHS: Cognitive science
- Bachelor, Aurélien Appriou, Langugages and Mind, 20h eqTD, 3rd year BD MIASHS: Cognitive science
- Bachelor: Lauren Thevin, Culture et Compétences Numériques, Pix (nouveau C2I), 10h eqTD, 1st year, Université de Bordeaux
- IUT : Philippe Giraudeau, Algorithme et programmation, 24h eqTD, 1st year IUT, Université de Bordeaux
- Engineering school: Camille Benaroch, Advanced mathematics and computer science, 61.5h eqTD, 2nd year, ENSAM, Bordeaux
- Engineering school: Martin Hachet, Ergonomie et Interaction, 15h eqTD, 3rd year, ENSEIRB, INP
- Engineering school: Léa Pillette, Knowledge and Representations, 36h eqTD, 1st year, ENSC, INP
- Engineering school: Léa Pillette, IT projects, 8h eqTD, 2nd year, ENSC, INP, Bordeaux
- Engineering school: Lauren Thevin, Intelligence Artificielle, 15h eqTD, 2nd year, ENSC, INP, Bordeaux
- Engineering school: Pierre-Antoine Cinquin, Video Game Accessibility, TD, 18h eqTD, M2 JMIN and STMN, CNAM ENJMIN, Angoulême
- MOOC : Pascal Guitton, Accessibilité numérique, 5 weeks, Plateforme FUN, 3rd session

10.2.2. Supervision

- PhD in progress: Rajkumar Darbar, Actuated Tangible User Interfaces, 1/12/2017, Martin Hachet
- PhD in progress: Philippe Giraudeau, Collaborative learning with tangible and aumented interfaces, 1/10/2017, Martin Hachet
- PhD in progress: Marc Baloup, Interaction with Avatars, 1/10/2018, Martin Hachet (33%)
- PhD in progress: Pierre-Antoine Cinquin, Design and Experimental Validation of Accessible E-learning systems for people with cognitive disabilities, since Sept. 2016, Pascal Guitton (50%)
- PhD in progress: Jelena Mladenovic, User modeling for Adaptive BCI design, 1/1/2016, Fabien Lotte (50%)

- PhD in progress: Léa Pillette, Formative feedback for BCI, 1/10/2016, Fabien Lotte (50%)
- PhD in progress: Aurélien Appriou, Estimating learning-related mental states in EEG, 1/10/2017, Fabien Lotte
- PhD in progress: Camille Benaroch, Computational Modeling of BCI user training, 1/10/2018, Fabien Lotte (50%)

10.2.3. Juries

- PhD: Guillaume Cortes [with report], Univ. Rennes, Martin Hachet
- PhD: Alexandra Delmas, Univ. Bordeaux, Martin Hachet
- PhD: Adrien Verhulst, Centrale Nantes, Pascal Guitton
- PhD: Anne-Solène Dris [with report], INSA Rennes, Pascal Guitton
- PhD: Mark Parent [with report], Univ. Laval, Quebec, Canada, Fabien Lotte
- PhD: Ayoub Hajlaoui [with report], Université Pierre et Marie Curie and Telecom Paris, France, Fabien Lotte
- Benjamin Wittevrongel [with report], KU Leuven, Belgium, Fabien Lotte
- PhD: Benjamin Clément, Univ. Bordeaux, France, Fabien Lotte
- PhD: Bertille Somon, Univ. Grenobles Alpes, France, Fabien Lotte
- PhD: Aldo Mora, ESPCI, Paris, France, Fabien Lotte
- HdR: Antonio Capobianco [with report], Univ. Strasbourg, Pascal Guitton
- HdR: Patrick Reuter, Univ. Bordeaux, Pascal Guitton

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Member of editorial Board of Blog Binaire - Le Monde, Pascal Guitton

10.3.2. Articles and contents

- Martin Hachet, *Art et Informatique: Fertilisation croisée*, Blog Binaire - Le Monde, [46]
- Pascal Guitton, *L'accessibilité numérique, pourquoi il faut la développer*, Blog Binaire - Le Monde, [45]
- Bruno Arnaldi, Pascal Guitton & Guillaume Moreau, *Rendez-vous dans 10 ans*, Blog Binaire - Le Monde, [44]

10.3.3. Education

- Potioc booth at EdTech days, Bordeaux, May 18
- "Pensez-vous qu'il soit possible de lire dans les pensées?", Scientific debate to launch the "projets indisciplinés" of University of Bordeaux, October 2018, Fabien Lotte
- "La recherche sur les interfaces cerveau-ordinateur chez Potioc", Presentation for Bachelor 3, ENS Lyon, visiting Inria Bordeaux, December 2018, Fabien Lotte
- "Le futur des interfaces : interfaces invisibles", Master Class Festival Futur.e.s, Lauren Thevin
- Booth at Laval Virtual (Espace Révolution)

10.3.4. Interventions

- Pint of Science, Bordeaux, May 18, Martin Hachet and Philippe Giraudeau
- Cinema Sciences, Merignac, April 18, Martin Hachet
- Goûter des sciences / Les petits débrouillards (Figure 9), Bordeaux, December 18, Martin Hachet, Philippe Giraudeau, Théo Segonds, Nicolas Palard

- Organization of a workshop for middle and high school students, Ethnography museum, University of Bordeaux, 8-11th Oct. 2018, Léa Pillette
- "Optimizing humans digital learning by decoding brain activity in real time", Poster, ESOF Toulouse, France, July 2018, Aurélien Appriou
- "Flow theory for optimizing BCI", CogTalk, Bordeaux, November 2018, Jelena Mladenovic
- "Cerveau et jeux vidéo", CogTalk, Bordeaux, March 2018, Pierre-Antoine Cinquin
- L'accessibilité des jeux vidéo, Masterclass Scientific Game Jam, March 2018, Université de Bordeaux
- Seminar for PhD students – Flow theory for optimizing BCI, ISPED Bordeaux, November 2018, Jelena Mladenovic
- "Contrôler un ordinateur par l'activité cérébrale : Mythe ou Réalité ?", Conférence grand public de restitution des pauses de l'institut des études avancées de l'université de Bordeaux, Talence, June 2018, Fabien Lotte
- "Les Interfaces Cerveau-Ordinateur : Progrès et questions", Centre Culturel du Hâ, Bordeaux, France, May 2018, Fabien Lotte
- "Mixed reality for visual impaired people", Cherchons pour Voir & IJA (Institut des Jeunes Aveugles, Toulouse), Apéro Sciences, Lauren Thévin
- "Accessibilité numérique : pourquoi et comment", Inria Tech Talk, Station F, Paris, Pascal Guitton

Figure 9. The Potioc team at Gouter des Sciences / les petits débrouillards, Dec. 18.

10.3.5. Internal action

- Unithé ou Café, Martin Hachet, May 18
- Potioc Demos for 10th anniversary of Inria Bordeaux, Sept. 18
- Fete de la sciences, Demo at CapSciences, Oct. 18.

REALOPT Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

The Team has organized ISMP, the major Mathematical Programming conference (around 1900 people). ISMP is the triennial international congress of mathematical optimization, where scientists from all over the world as well as industrial practitioners of mathematical optimization meet in order to present their most recent developments and results and to discuss new challenges from theory and practice. It is the symposium of the Mathematical Optimization Society (MOS).

https://ismp2018.sciencesconf.org/

François Vanderbeck was Chair of the conference.

10.1.1.2. Member of the Organizing Committees

All members of the team have been member of ISMP Organizing Committee.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Olivier Beaumont: Program Chair HIPC https://hipc.org

10.1.2.2. Member of the Conference Program Committees

- Lionel Eyraud-Dubois: Euro-Par'18, ICPP'18,
  - IPDPS'18 http://www.ipdps.org
  - Euro-Par'18 https://europar2018.org
  - ICPP'18 http://oaciss.uoregon.edu/icpp18/index.php
- Pierre Pesneau: ISCO 2018
- Ruslan Sadykov, Boris Detienne, Pierre Pesneau, Lionel Eyraud-Dubois, Olivier Beaumont: https://ismp2018.sciencesconf.org
- François Clautiaux: http://roadef2018.labsticc.fr/wp/
- Olivier Beaumont:
  - SuperComputing'18 https://sc18.supercomputing.org
  - IPDPS'18 (primary PC member) http://www.ipdps.org
  - IPDPSW'18 http://www.ipdps.org/ipdps2018/2018_call_for_workshops.html
  - HeteroPar'18 https://hcl.ucd.ie/heteropar2018/
  - HPML'18 https://hpml2018.github.io

10.1.2.3. Reviewer

- Lionel Eyraud-Dubois: SC

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

- Lionel Eyraud-Dubois: JOSH, TPDS

- François Clautiaux: European Journal of Operational Research, International Transactions on Operations Research, Asia-Pacific Journal of Operational Research
- Pierre Pesneau : Discrete Applied Math.
- Ruslan Sadykov: Transportation Science, European Journal of Operational Research, Journal of Scheduling, Operations Research Letters, Mathematical Programming Computation
- Olivier Beaumont: TPDS, IJHPCA

10.1.4. Invited Talks

- François Clautiaux: Invited seminar at Séminaire parisien d'optimisation (December 10th 2018)
- François Clautiaux: Invited talk at MEXICO working group (November 13th, 2018)
- Olivier Beaumont: Invited talk at the 13th Scheduling for Large Scale Systems Workshop, Lawrence Berkeley National Laboratory, California http://scheduling-workshop.tk
- Ruslan Sadykov: Invited talk at the seminar of the Faculty of Economics and Business, KU Leuven, Belgium (June 6th, 2018)

10.1.5. Leadership within the Scientific Community

François Clautiaux is Secretary of ROADEF, the French OR association

10.1.6. Research Administration

- Olivier Beaumont and François Clautiaux are WorkPackage leaders of the Idex Cluster SysNum https://sysnum.labex.u-bordeaux.fr/en/
- Olivier Beaumont is the head of Commission Jeunes Chercheurs and Commission Délégations at Inria Bordeaux Sud-Ouest.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : François Clautiaux, Grands Domaines de l'Optimisation

Master : François Clautiaux, Gestion des Opérations et Planification de la Production, 58 heqTD, M2, Université de Bordeaux

Master : François Clautiaux, Combinatoire et logistique, 29 heqTD, M2, Université de Bordeaux

Master : François Clautiaux, Introduction à la programmation en variables entières, 29 heqTD, M2, Université de Bordeaux

Master : François Clautiaux, Outils logiciels pour l'optimisation, 29 heqTD, M2, Université de Bordeaux

Master: François Clautiaux, Combinatoire et routage, 15 heqTD, ENSEIRB INPB

Master : Lionel Eyraud-Dubois et Olivier Beaumont, Approximation et BigData, 29 heqTD, M2, Université de Bordeaux

Licence : Pierre Pesneau, Grands Domaines de l'Optimisation, L1, Université de Bordeaux

Licence : Pierre Pesneau, Programmation pour le calcul scientifique, 24 heqTD, L2, Université de Bordeaux

Licence : Pierre Pesneau, Optimisation, 59 heqTD, L2, Université de Bordeaux

Master : Pierre Pesneau, Algorithmique et Programmation 1, 28 heqTD, M1, Université de Bordeaux

Master : Pierre Pesneau, Algorithmique et Programmation 2, 29 heqTD, M1, Université de Bordeaux

Master : Pierre Pesneau, Optimisation dans les graphes, 15 heqTD, M1, Université de Bordeaux

Master : Pierre Pesneau, Programmation linéaire, 15 heqTD, M1, Université de Bordeaux

DUT Informatique : Pierre Pesneau, Recherche Opérationnelle, 24 heqTD, IUT de Bordeaux

Master : Ruslan Sadykov, Introduction to Constraint Programming, 29 heqTD, M2, Université de Bordeaux

10.2.2. Supervision

PhD : Thomas Bellitto, Walks, Transitions and Geometric Distances in Graphs. 27/08/2018, Arnaud Pêcher (dir) and Christine Bachoc (dir).

PhD : Rodolphe Griset, Robust planning in Electricity production, 15/11/2018, Boris Detienne (dir) and François Vanderbeck (dir).

PhD : Quentin Viaud, Mathematical Programming Methods for Complex Cutting Problems, Université de Bordeaux, 11/12/2018, François Clautiaux (dir), Ruslan Sadykov (dir), François Vanderbeck (co-dir)

PhD : Jérémy Guillot, Résolution exacte de problèmes de couverture par arborescences sous contraintes de capacité, 18/12/2018, François Clautiaux (dir) and Pierre Pesneau (dir).

PhD in progress : Alena Shilova, Scheduling for Deep Learning Frameworks from October 2018, Olivier Beaumont (dir) and Alexis Joly (dir)

PhD in progress: Tobias Castanet, Use of Replication in Distributed Games from September 2018, Olivier Beaumont (dir), Nicolas Hanusse (dir) and Corentin Travers (dir).

PhD in progress : Imen Ben Mohamed, Location routing problems, from October 2015, Walid Klibi (dir), Ruslan Sadykov (dir), François Vanderbeck (co-dir).

PhD in progress : Guillaume Marques, Planification de tournées de véhicules avec transbordement en logistique urbaine : approches basées sur les méthodes exactes de l'optimisation mathématique, from September 2017, Ruslan Sadykov (dir) and François Vanderbeck (co-dir)

PhD in progress : Gaël Guillot, Aggregation and disaggregation methods for hard combinatorial problems, from November 2017, François Clautiaux (dir) and Boris Detienne (dir).

PhD in progress : Orlando Rivera Letelier, Bin Packing Problem with Generalized Time Lags, from May 2018, François Clautiaux (dir) and Ruslan Sadykov (co-dir), a co-tutelle with Universidad Adolfo Ibáñez, Peñalolén, Santiago, Chile.

10.2.3. Juries

- François Clautiaux HDR : Mahdi Moeini (Toulouse, rapporteur) ; PhD thesis: E´milie Joannopoulous (Rennes, rapporteur), Dehia Ait-Ferhat (Grenoble, rapporteur), Stefania Pan (Paris 13, rapporteur), Mikae¨l Capelle (Toulouse, examinateur), Pierre-Antoine Morin (Toulouse, examinateur)
- Ruslan Sadykov : PhD thesis of Daniel Kowalczyk (KU Leuven, Belgium)

10.3. Popularization

Organizations

- Local events: "Journée emploi maths et interaction 2018". This day aims to bring together students, researchers and practitioners in mathematics in the Bordeaux area. https://uf-mi.u-bordeaux.fr/sites/jemi/

Interventions

- National events: Fête de la Science in Bordeaux (P. Pesneau and F. Clautiaux)
- RealOpt participated to the events related to the anniversary of Inria BSO

SISTM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Rodolphe Thiébaut, Boris Hejblum and Marta Avalos co-organized an invited session “Predicting health outcomes from administrative claims data and electronic health records” in the 4th International Conference on Big Data and Information Analytics. Theories, Algorithms and Applications in Data Science (BigDIA). Dec 17-19, 2018, Houston (USA). The invited session was chair by Rodolphe Thiébaut.

Robin Genuer Co-organizes a reading group called Smiling in Bordeaux (http://www.math.u-bordeaux.fr/~mchave100p/smiling/)

Boris Hejblum organizes the Biostatistics Seminar Series at the Bordeaux Public Health Inserm Research Center

Mélanie Prague organized the "Déjeuners scientifiques” at the "Journées de la statistique française" 2018.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Mélanie Prague was the organizer of a day on "Use of mathematical models for personalized medicine" at the International Conference « Statistics and Health: personalized medicine » - 11-12 January 2018, Toulouse Institute of Mathematics, Toulouse France

10.1.2.2. Member of the Conference Program Committees

Daniel Commenges is a member of the scientific committee of the International Biometric Conference Barcelona, July 2018 (http://2018.biometricconference.org)

Mélanie Prague is a member of the scientific committee of CIMI conference “Statistics in Health - personalised medicine” (http://www.cimi.univ-toulouse.fr/mib/en/conference-statistics-and-health), Toulouse 2018, 10-12 January

Marta Avalos was a member of the program committee of the annual meeting of the francophone Machine Learning community, CAp 2018, Rouen, June 2018 (http://cap2018.litislab.fr/Comites-en.html)

Rodolphe Thiébaut was a member of the scientific committee of the national conference on clinical research (EPICLIN)

Rodolphe Thiébaut is a member of the scientific committee of the IWHOD International Workshop on HIV Observational Databases since 2013 (http://newsite.iwhod.org/Committee)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Lifetime Data Analysis (Daniel Commenges)

Statistics Surveys (Daniel Commenges)

Associate editor of International journal of Biostatistics (Melanie Prague)

10.1.3.2. Reviewer - Reviewing Activities

ADAC (Robin Genuer)

AIDS (Rodolphe Thiébaut)

Am J Public Health (Mélanie Prague)

Biostatistics (Laura Richert)

Biometrics (Mélanie Prague, Boris Hejblum)

IMIA Yearb Med Inform (Marta Avalos)

International Journal of Epidemiology (Daniel Commenges)

Journal of Computational and Graphical Statistics (Robin Genuer)

Journal of the Royal Statistical Society: Interaction (Mélanie Prague)

Journal of Statistical Computation and Simulation (Boris Hejblum)

JRSS-B (Mélanie Prague)

Scientific Reports (Laura Richert)

Society of clinical trial (Mélanie Prague)

Statistical Methods in Medical Research (Robin Genuer, Mélanie Prague)

Statistical science (Mélanie Prague)

Trials (Laura Richert)

10.1.4. Invited Talks

Mélanie Prague gave 4 invited talks in 2018 (Montreal university,Canada; Department of evolutionary dynamics Harvard Boston USA; Dracula Inria team in Lyon France; institute Gustave Roussy Biostatistics Group Paris).

Robin Genuer gave one invited talk at the "Séminaire de Probabilités et de Statistique du Laboratoire de Mathématiques Paul Painlevé de Lille".

Boris Hejblum gave 2 invited talks in 2018 (Genotoul Biostat/Bioinfo Day in Toulouse; Section of Biostatistics, University of Copenhagen, Danemark)

Marta Avalos gave 2 invited talks at the workshop “Big Data: la revolución de la información en la investigación biomédica”, 18-19th December 2018, Santiago de Chile (Chile)

10.1.5. Leadership within the Scientific Community

Rodolpe Thiébaut and Chloé Pasin are elected members of the “collège des écoles doctorales’, University of Bordeaux

Daniel Commenges is President of the French Region of the International Biometric Society

Mélanie Prague is an elected member of the “Young statistician group” of SFdS (French Society of Statistics)

Mélanie Prague is in charge of the group responsible for the communication of the SFdS - in charge of organizing the sponsoring of the society by public and private companies.

Laura Richert is a member of F-CRIN Steering Committee

Marta Avalos is general secretary of the “Statistics and Sport group” of SFdS (French Society of Statistics)

10.1.6. Scientific Expertise

- Rodolphe Thiébaut is an expert for INCA (Institut National du Cancer) for the PHRC (Programme hospitalier de recherche Clinique en cancérologie) and for the PRME (Programme de recherche médico-économique en cancérologie).
- Rodolphe Thiébaut is a member of the Membre du CNU 46.04 (Biostatistiques, informatique médicale et technologies de communication).
- Rodolphe Thiébaut is a member of the Scientific Council of INSERM.

- Rodolphe Thiébaut is a member of the commitee “Biologie des Systèmes et Cancer (Plan Cancer)”, a member of the Scientific Advisory Board of the “Institut Pierre Louis d’Epidémiologie et de Santé Publique” (UPMC, Dir : Dominique Costagliola), a member of the independent committee of international trials ODYSSEY and SMILE, a member of the scientific council of Muraz’s Center (Bobo-Dioulasso, Burkina Faso)
- Mélanie Prague is an expert for ANRS (France Recherche Nord&Sud Sida-HIV Hépatites) in the CSS 3 (Recherches cliniques et physiopathologiques dans l’infection à VIH) and AC 47.
- Laura Richert is an expert for the PHRC (Programme hospitalier de recherche Clinique).
- Marta Avalos is an expert for the ANSM (Agence nationale de sécurité du médicament et des produits de santé)

10.1.7. Research Administration

Daniel Commenges is the director of the Biostat-Info axis in the Inserm BPH (Bordeaux Public Health) institute.

Rodolphe Thiébaut is an elected member of the research committee (health sector) in University of Bordeaux and a member of the INSERM Scientific Council

10.2. Education

10.2.1. Teaching

In class teaching

Master : Robin Genuer, teaches in the two years of the Master of Public Health (M1 Santé publique, M2 Biostatistique) and 2nd year of the "Modélisation Stochastique et Statistique" Master, University of Bordeaux.

Master : Boris Hejblum, teaches in the two years of the Master of Public Health (M1 Santé publique, M2 Biostatistique).

Master : Rodolphe Thiébaut, teaches in the two years of the Master of Public Health, and he is head of the Epidemiology specialty of the second year of the Master of Public Health.

Master : Laura Richert teaches in the Master of Public Health at ISPED, Univ. Bordeaux, France (M2 Biostatistiques, M2 Epidémiologie).

Master : Mélanie Prague teaches in the Master of Public Health at ISPED, Univ. Bordeaux, France (M2 Biostatistiques).

Master : Marta Avalos teaches in the two years of the Master of Public Health (M1 Santé publique, M2 Biostatistique), the two years of the Master of Applied Mathematics and Statistics, and the 2nd year of the Master of “Management international : Développement pharmaceutique, Production et Qualité opérationnelle”, Univ. of Bordeaux.

Master: Chloé Pasin, Laura Villain, Hadrien Lorenzo and Louis Capitaine are teaching assistants for the two years.

Edouard Lhomme teaches in the Master of Public Health at ISPED, Univ. Bordeaux (M2 Epidémiologie) and in the Master of Vaccinology from basic immunology to social sciences of health (University Paris-Est Créteil, UPEC)

Bachelor : Laura Richert teaches in PACES and DFASM1-3 for Medical degree at Univ. Bordeaux

Edouard Lhomme teaches in PACES and DFASM1-3 for Medical degree at Univ. Bordeaux

Bachelor: Mélanie Prague and Boris Hejblum teach in the third year ingenious school ENSAI, Rennes.

Summer School: the SISTM team member teach in the ISPED Summer school.

E-learning

Marta Avalos is head of the first year of the e-learning program of the Master of Public Health, and teaches in it.

Mélanie Prague teaches in the Diplôme universitaire "Méthodes statistiques de régression en épidémiologie".

Boris Hejblum teaches in the Diplôme universitaire "Méthodes statistiques en santé.

Laura Richert teaches in the Diplôme universitaire "Recherche Clinique".

Robin Genuer is head of the Diplôme universitaire "Méthodes statistiques en santé and participated to the IdEx Bordeaux University "Défi numérique" project "BeginR" (http://beginr.u-bordeaux.fr).

10.2.2. Supervision

Master internship: Marie Alexandre, *PKPD modeling in pre-clinical development*, co-directed by Mélanie Prague with Nicolas Frances Roche Basel Switzerland (01/04/2018 - 31/09/2018)

Master internship (M1): Anthony Devaux, *Gene expression analysis with the R software*, directed by Boris Hejblum (01/06/2018 - 31/08/2018)

Master internship (M2): Roxane Coueron, *Sample size estimation for a microbiome study*, co-directed by Boris Hejblum with Hélène Savel, CHU Bordeaux (01/02/2018 - 31/08/2018)

Master internship: Marine Gauthier, *Variance component test for RNA-seq data analysis*, directed by Boris Hejblum (01/02/2018 - 31/07/2018)

Master internship: Julien Rouar, *PCA for absolute and relative abundance microbiota data: survey and implementation of methods*, co-directed by Marta Avalos with Cheng Soon Ong and Richard Nock, Data61, Australia (26/02/2018 - 31/08/2018)

PhD in progress: Marie Alexandre "Mechanistic modeling and optimization of vaccine response in HIV and Ebola", co-directed by Mélanie prague and Rodolphe Thiébaut, from Oct 2018.

PhD in progress: Marine Gauthier "Methods for bulk and single-cell RNA-seq data analysis in vaccine research", co-directed by Boris Hejblum and Rodolphe Thiébaut, from Sept 2018.

PhD in progress : Soufiane Ajana "Comparison of linear and non-linear machine learning approaches to predict Age-related Macular Disease (AMD) risk in a survival framework", co-supervised by Boris Hejblum and Hélène Jacqumin-Gadda (Inserm) and Cécile Delcourt (Inserm), from Sept 2016.

PhD in progress: Perrine Soret, *Modélisation de données longitudinales en grande dimension*, from Oct 2014, directed by Marta Avalos.

PhD in progress : Wenjia Wang "Modèle de Rasch", co-directed by Daniel Commenges with Mickael Guedj CIFRE Pharnext, from Oct 2015.

PhD in progress : Edouard Lhomme, *Analyse des déterminants de la réponse immunitaire post-vaccination dans des stratégies vaccinales expérimentales*, from Oct 2016, directed by Laura Richert.

PhD in progress : Hadrien Lorenzo, *Analyses de données longitudinales de grandes dimensions appliquées aux essais vaccinaux contre le VIH et Ebola*, from Oct 2016, co-directed by Rodolphe Thiébaut and Jérôme Saracco.

PhD in progress : Louis Capitaine, *Random forests for high dimensional longitudinal data*, from Oct 2017, co-directed by Robin Genuer and Rodolphe Thiébaut.

PhD in progress : Madelyn Rojas *Self-management of injury risk and decision support systems based on predictive computer modelling. Development, implementation and evaluation in the MAVIE cohort study*, from Oct 2017, (Injury Epidemiology team, Inserm U1219, ED SP2) co-directed by Emmanuel Lagarde, David Conesa and Marta Avalos.

PhD defense on Oct 30 2018: Chloé Pasin, *Modeling and optimizing the response to vaccines and immunotherapeutic interventions: application to Ebola virus and HIV*, from Sep 2015, co-directed by Rodolphe Thiébaut and Francois Dufour.

PhD defense on Dec 13 2018: Laura Villain "Modélisation de l'effet du traitement par injection IL7", co-directed by Daniel Commenges and Rodolphe Thiébaut, from Oct 2015.

PhD defense on Nov 16 2018: Mélanie Née *Recherche et caractérisation de profils attentionnels : mieux comprendre la place de l'attention dans la survenue des accidents de la vie courante*, from Oct 2015, co-directed by Emmanuel Lagarde, Cédric Galéra (from the research center Inserm U1219) and Marta Avalos.

10.2.3. Juries

Mélanie Prague was involved in the PhD defence jury of Steven Sanche (university of Montreal).

Mélanie Prague is a member of the follow-up dissertation comity of 3 PhD students: NICOLO Chiara, Sébastien Benzkcry's PhD student (Inria Bordeaux Sud-ouest, MONC team), Marie Astrid METTEN, Jean-Francois Viel's PhD student (Universty rennes 1 Inserm U1085) and, Jonas BEAL, Sebastien Latouche's PhD student (Institut Curie Paris).

Mélanie Prague took part in the recruitment commission Inria CR Bordeaux and a postdoc recruitment commitee in an European project at Pau university.

Marta Avalos is a member of the follow-up dissertation comity of 3 PhD students: Allison Singier (Pharmacoepidemiology team, Inserm U1219, ED SP2), Alexandre Conanec (Statistics, IMB, ED MI), Delphine Canzian (Education sciences, ED SP2).

Marta Avalos was involved in the PhD defence jury of Mélanie Née (University of Bordeaux).

Rodolphe Thiébaut took part in the HDR committee of Marta Avalos and the PhD defence jury of Vincent Madelain, Chloé Pasin and Laura Villain.

Daniel Commenges took part in the PhD defence jury of Laura Villain.

Laura Richert, Rodolphe Thiébaut, Robin Genuer, Boris Hejblum and Marta Avalos participated to the juries of Master in Public Health (Biostatistics, Epidemiology, Public Health)

Edouard Lhomme and Laura Richert participated to the juries of medical thesis defenses, Medical School of Bordeaux University

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Mélanie Prague is part of the Inria Commission de Développement Technologique (CDT)
- Mélanie Prague is part of the Inria commission des emplois de recherche.
- Robin Genuer is the webmaster of the publication site of the French statistical society

10.3.2. Articles and contents

- Mélanie Prague participated to an interview for Sud ouest Eco.
- Mélanie Prague made a video of presentation of SISTM team

10.3.3. Interventions

- Chloé Pasin presented "Modélisation et optimisation de la réponse immunitaire" to L3 student from ENS Lyon visiting Inria and Hadrien Lorenzo participated to research speed meetings with these students on December 6 2018.
- Melany Durand, Hadrien Lorenzo, Chloé Pasin and Mélanie Prague participated at the "Fête de la Science" and presented "D'une goutte de sang à ta prochaine visite chez le médecin : bien personnaliser ton traitement" to high school students on October 10 2018.

- Chloé Pasin participated at the "atelier Digit'elles" with the "Femmes and Sciences" organization at the "Fête de la Science" on October 9 2018.

10.3.4. Internal action

- the whole team participated in a showcase of their activity for Inria BSO 10th anniversary on September 27th, 2018 "Une goutte de sang contient-elle plus de données qu'un smartphone ?"
- Marta Avalos and Binbin Xu conducted a workshop on "Vivre la diversité à Inria Bordeaux – Sud-Ouest", within the internal workshop for the Inria BSO 10th anniversary, June 13. Participation to the SO News of June.

STORM Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Olivier Aumage, hosting of the OpenMP Language Committee week at Inria Bordeaux, May 14-18, 30 participants.
- Raymond Namyst, Organization of the "Inria National Scientific Days" in Bordeaux, June 27-29, 250 participants.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Olivier Aumage: Cluster 2018, ICPP 2018, SC Asia 2018.
- Emmanuelle Saillard: COMPAS 2018, ISC HPC 2018 (poster committee), SC18 (workshop committee).
- Samuel Thibault: HCW, P3MA'18
- Denis Barthou: CF 2018
- Raymond Namyst: ISC 2018, IPDPS 2018, SC 2018, Euro-MPI 2018, SC Asia 2018.

9.1.2.2. Reviewer

- Olivier Aumage: Cluster, HCW, ICPP, PDP, PDSEC, SC Asia.
- Emmanuelle Saillard: COMPAS, ISC HPC, SC.
- Samuel Thibault: HCW

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Olivier Aumage: CCPE special issue.

9.1.3.2. Reviewer - Reviewing Activities

- Olivier Aumage: CCPE, IJPEDS, JPDC
- Samuel Thibault: JPDC, TPDS, IJHPCA

9.1.4. Invited Talks

- Olivier Aumage: SIAMPP (Tokyo), EPCC (Edinburgh), COMPAS (Toulouse), HPCS (Orléans).
- Emmanuelle Saillard: Journées GDR-GPL (Grenoble), Journée LaMHA (Paris).
- Samuel Thibault: ROMA seminar (Lyon), COMPAS (Toulouse), Task-based seminar (Uppsala)

9.1.5. Scientific Expertise

- Olivier Aumage: ANR (1 project in phase 2).
- Samuel Thibault: ANR (1 project in phase 2).

9.1.6. Research Administration

- Olivier Aumage: Permanent Contact for Team STORM.
- Nathalie Furmento: Member of the Commission de Développement Technologique at Inria Bordeaux Sud-Ouest

- Nathalie Furmento: Member of the technical team for PlaFRIM, Federative Platform for Research in Computer Science and Mathematics
- Nathalie Furmento: Member of the HCERES evaluation committee for the IRIF laboratory
- Nathalie Furmento: Member of the selection committee for an engineer position at the Université de Bordeaux

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Engineering School: Olivier Aumage, High Performance Communication Libraries, 20HeTD, M2, ENSEIRB-MATMECA.
- Engineering School: Olivier Aumage, Languages and Supports for Parallelism, 14HeTD, M2, ENSEIRB-MATMECA.
- Engineering School: Emmanuelle Saillard, Introduction to Algorithms, 16HeCI, L3, ENSEIRB-MATMECA.
- Engineering School: Emmanuelle Saillard, Tree Structure, 16HeCI, L3, ENSEIRB-MATMECA.
- Engineering School: Adrien Cassagne, Projet d'algorithmique et de programmation, 30HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Adrien Cassagne, Introduction aux réseaux, 15HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Adrien Cassagne, Applications TCP/IP, 15HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Philippe Virouleau, Programmation Impérative, 18HeTD, L3, ENSEIRB-MATMECA.
- Engineering School: Philippe Virouleau, Projet d'algorithmique et de programmation, 25HeTD, L3, ENSEIRB-MATMECA.
- Licence: Samuel Thibault is responsible for the computer science topic of the first university year.
- Licence: Samuel Thibault is responsible for the new Licence Pro ADSILLH (Administration et Développeur de Systèmes Informatiques à base de Logiciels Libres et Hybrides)
- Licence: Samuel Thibault, Introduction to Computer Science, 32HeTD, L1, University of Bordeaux.
- Licence: Samuel Thibault, Networking, 51HeTD, Licence Pro, University of Bordeaux.
- Engineering School: Denis Barthou is the head of the computer science teaching department of ENSEIRB-MATMECA (300 students, 20 faculty, 120 external teachers)
- Engineering School: Denis Barthou, Architectures (L3), Parallel Architectures (M2), Procedural Generation for 3D Games (M2), C/Algorithm projects (L3)
- Licence: Marie-Christine Counilh, Introduction to Computer Science (64HeTD), Introduction to C programming (52HeTD), L1, University of Bordeaux.
- Master MIAGE: Marie-Christine Counilh, Object oriented programming in Java (30HeTD), M1, University of Bordeaux.

9.2.2. Supervision

- PhD in progress: Ksander Ejjaaouani, Novembre 2016, Olivier Aumage, Michel Mehrenberger, Julien Bigot.
- PhD in progress: Adrien Cassagne, "Parallelization and Code Generation for Error Correcting Codes from Factor Graphs" October 2017, Olivier Aumage, Denis Barthou, Christophe Jego, Camille Leroux.
- PhD in progress: Idriss Daoudi, October 2018, Olivier Aumage, Thierry Gautier.

- PhD in progress: Romain Lion, October 2018, Samuel Thibault
- PhD in progress: Pierre Huchant, “Static analysis and dynamic adaptation of parallelism”, oct. 2015, supervised by Marie-Christine Counilh, Denis Barthou.
- PhD in progress: Hugo Brunie, “Optimization of data allocations for high performance applications on heterogeneous memory architectures”, oct. 2015, supervised by Julien Jaeger (CEA), Patrick Carribault (CEA) and Denis Barthou.
- Internship: Antoine Tirel, June 2018 - Sept. 2018, Emmanuelle Saillard

9.2.3. Juries

- Olivier Aumage: Ph.D defense of Adrián Castelló Gimeno at the University of Castellon Jaume I, (reviewer).
- Samuel Thibault: Ph.D defense of Germán Ceballos at the University of Uppsala (opponent).
- Denis Barthou: Ph.D defense of Van Long TRAN at Institut Telecom Sud-Paris, University Paris-Saclay (reviewer), Ph.D defense of Arnaud Durocher at the University of Bordeaux (president)

9.3. Popularization

9.3.1. Interventions

- Olivier Aumage, Emmanuelle Saillard, Denis Barthou: Welcoming of the general public for the open days at the Inria research center, October 2018.
- Emmanuelle Saillard, Corentin Salingue: Fête de la Science, Inria, October 2018.
- Emmanuelle Saillard, Corentin Salingue: Semaine des maths, Lycée Saint Genès, March 2018.
- Corentin Salingue: Printemps de la mixité, Inria, April 2018.
- Corentin Salingue: Welcoming of schoolchildren: internship of Matthieu Vigier-Lafosse, January 2018.

9.3.2. Internal action

- Emmanuelle Saillard: DevDays, October 2018
- Denis Barthou: Unithé ou café, June 2018

TADAAM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

In the context of ANR Dash, Guillaume AUPY organized a workshop on I/O in Europe https://project.inria.fr/dash/events/. He was the co-chair of the FTS workshop at Cluster 2018.

10.1.1.2. Member of the steering committee

Emmanuel JEANNOT is member of the steering committee of Euro-Par and the Cluster international conference.

10.1.1.3. Member of the Organizing Committees

- Guillaume AUPY was a member of the Organizing Committee of Per3S 2019.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Guillaume AUPY was workshop Chair at SC 2018, Inclusivity Vice-Chair at SC 2018, Algorithm track vice-chair at ICPP 2018.
- Emmanuel JEANNOT was the program chair of the COLOC workshop.

10.1.2.2. Member of the Conference Program Committees

- Emmanuel JEANNOT was member of the program committee of IPDPS 2019, HPML 2018, Heteropar 2018, Compas 2018.
- Brice GOGLIN was a member of the program committee of EuroMPI 2018, SuperComputing 2018 (posters), and of the COLOC, ExaComm and ROME Workshops.
- Alexandre DENIS was a member of the program committee of CCGrid 2018, CCGrid 2019, HiPC 2018, SC 2018 (workshops).
- Guillaume AUPY was a member of the program committee of SuperComputing 2018 (Doctoral Showcase), HPML 2018, CEBDA 2018 (IPDPS workshop).
- Guillaume MERCIER was a member of the programm committe of SuperComputing 2018 (Performance Measurement, Modeling, and Tools Track), EuroMPI 2018, CCGrid 2018, HPCS 2018 and Compas 2018

10.1.2.3. Reviewer

- Alexandre DENIS was a reviewer for IPDPS 2018.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Emmanuel JEANNOT is associate editor of the International Journal of Parallel, Emergent & Distributed Systems (IJPEDS).
- Emmanuel JEANNOT was an invited editor for the Special Issue of *Concurrency and Computation: Practice and Experience* for best papers of HCW 2018.

10.1.3.2. Reviewer - Reviewing Activities

- Guillaume AUPY was a reviewer for IEEE TPDS, Cluster Computing.

- Emmanuel JEANNOT was a reviewer for IEEE TPDS, Journal of Computational Science.
- Alexandre DENIS was a reviewer for IEEE TPDS.

10.1.4. Invited Talks

- Guillaume AUPY was invited to give a talk at Per3S 2018.
- Guillaume AUPY and Emmanuel JEANNOT were invited to give a talk at CCDSC 2018.

10.1.5. Scientific Expertise

- Emmanuel JEANNOT have been reviewer for the PRACE 6IP call (WP8).
- Emmanuel JEANNOT was a member of the hiring committee of an Inria junior researcher position at Bordeaux.
- François PELLEGRINI has been appointed as co-pilot of the project group on free/libre software at *Comité pour la science ouverte* (CoSO), an arm of the CODORNUM of the French Ministry of Higher Education and Research.
- François PELLEGRINI was a member of the former *Comité d'Orientation sur l'Information Scientifique et Technique* (CORIST) of *Institut National de la Recherche Agronomique* (INRA).
- François PELLEGRINI participated in a roundtable on "*the societal impact of digital identity*" during the *Assises de l'identité numérique* organized by the French ministries of the Interior and Justice, and the State Secretariat for digital issues.
- François PELLEGRINI was heard by members of the Law Commission of the French Senate, on e-voting.
- François PELLEGRINI was a member of the hiring committee for an assistant professor position at Université de Pau et des Pays de l'Adour.

10.1.6. Research Administration

- Emmanuel JEANNOT is deputy head of science of the Inria Bordeaux research center.
- Emmanuel JEANNOT is member of the Inria evaluation committee
- Emmanuel JEANNOT is member of LaBRI scientific coouncil and head of the Satanas team.
- Alexandre DENIS is head of the Inria Bordeaux CUMI-R (IT users committee).
- Brice GOGLIN and Guillaume MERCIER are elected members of the research centre committee.

10.1.7. Standardization Activities

TADAAM attended the MPI Forum meetings on behalf of Inria (where the MPI standard for communication in parallel applications is developed and maintained). TADAAM also created of a new working group in the MPI Forum, dedicated to hardware topologies management and currently leads this working group. The HSPLIT proposal in currently under early discussions for submission to the forum and eventual inclusion in the MPI standard.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Members of the TADAAM project gave hundreds of hours of teaching at Université de Bordeaux and the Bordeaux INP engineering school, covering a wide range of topics from basic use of computers, introduction to algorithmics and C programming to advanced topics such as probabilities and statistics, scheduling, computer architecture, operating systems, parallel programming and high-performance runtime systems, as well as software law and personal data.

Brice GOGLIN participated in the section about fondamentals of computer science in the MOOCs *Informatique et Création Numérique* and *Sciences Numériques et Technologie* which focus at bringing basics about computer science to high-school teachers.

François PELLEGRINI gave a doctoral course at the University of Luxembourg on "*Law and freedom(s) in the digital age*". He also teached at Télécom Sud Paris and École Nationale de la Magistrature.

10.2.2. Supervision

PhD: Nicolas DENOYELLE, advanced memory hierarchies and new topologies, defended on November 6th 2018. Advisor: Brice GOGLIN and Emmanuel JEANNOT.

PhD: Hugo TABOADA, *Recouvrement des Collectives MPI Non-bloquantes sur Processeur Many-core*, defended on 11 December 2018. Advisors: Alexandre DENIS and Emmanuel JEANNOT.

PhD in progress: Benjamin LORENDEAU, new programming models and optimization of Code Saturn, started in 2015. Advisors: Yvan FOURNIER and Emmanuel JEANNOT.

PhD in progress: Valentin Honoré, Partitioning Strategies for high throughput Applications, started in November 2017. Advisors: Guillaume AUPY and Brice GOGLIN.

PhD started: Andrès RUBIO, Management on heterogeneous and non-volatile memories, started in October 2018. Advisor: Brice GOGLIN.

PhD started: Nicolas VIDAL, IO scheduling strategies, started in October 2018. Advisors: Guillaume AUPY and Emmanuel JEANNOT.

10.2.3. Juries

Guillaume AUPY was a reviewer of the mid-PhD defense of Massinissa Ait Aba (CEA, supervisors: Alix Munier, Safia Kedad Sidhoum).

Emmanuel JEANNOT was member of the Ph.D defense jury of:

- Yann Barsamian (University of Strasbourg, Reviewer)
- Loic Pottier (University of Lyon, ENS Lyon, Reviewer)
- Philippe Virouleau (University of Grenoble-Alpes, Reviewer)

François PELLEGRINI was member of the Ph.D defense jury of:

- Grégoire Pichon (University of Bordeaux)

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Brice GOGLIN is in charge of the diffusion of the scientific culture for the Inria Research Centre of Bordeaux. He organized several popularization activities involving colleagues.

Guillaume AUPY co-organized (with Marthe Bonamy) a 2-day visit of Inria & Labri for undergrad students from ENS Lyon.

10.3.2. Education

- Brice GOGLIN was involved in the MOOC *Informatique et Création Numérique* which focuses at bringing basics about computer science to high-school teachers. He answered numerous questions on the forum. More than 19 000 people registered to the course, and more than 1 500 successfully finished it.
- Brice GOGLIN was involved in the building of the MOOC *Sciences Numériques et Technologie* which focus at bringing basics about computer science to high-school teachers.
- François PELLEGRINI, created a set of ten animated short videos on the digital revolution and its consequences, for high-school pupils and freshman students (Pix/C2i), in collaboration with the services of Université de Bordeaux.

10.3.3. Interventions

- Valentin HONORÉ and Brice GOGLIN went to the St Genes middle school in Bordeaux in March for *Semaine des Maths* to give hands-on sessions about basics of algorithmics and computer science.
- TADAAM presented its research to the general public during the 10th anniversary of the research centre on September 27th.
- Emmanuel JEANNOT was the roundtable presenter of the topic HPC and scientific computing at the Inria Bordeaux 10 years event on September 27th.
- Valentin HONORÉ and Brice GOGLIN presented TADAAM research during the research centre open day on October 13th.
- Guillaume AUPY, Valentin HONORÉ, Nicolas VIDAL and Brice GOGLIN gave seminars and hands-on session about computer science to schools attending *Fete de la Science* in October.
- Guillaume AUPY went to the Sainte-Foy-La-Grande middle school in the context of Maths-en-Jeans to talk about finding a way to share messages in class and how it relates to the internet.
- Brice GOGLIN introduced research, research carriers, high performance computing and data centers to middle-school interns on December 17th.
- François PELLEGRINI delivered a conference entitled "*Tous pirates ?*", at the National Theater of Bordeaux-Aquitaine (TNBA), in relation with the play of same name created by the Traverse and OS'O artist collectives.
- François PELLEGRINI participated in a conference and roundtable "*Ingénieurs, éthique et valeurs face à l'industrie 4.0*" organized by Fondation Anthony Mainguené at École Nationale Supérieure des Arts et Métiers.
- François PELLEGRINI was member of the jury during a fake trial of a self-driving artificial intelligence (*Carambolage du siècle*") at the Appeal Court of Paris, during the *Nuit du droit*.
- François PELLEGRINI delivered a conference on the digital revolution at Le Bar Commun during the *Week of digital Freedoms*.