RESEARCH CENTER
Bordeaux - Sud-Ouest

FIELD

Activity Report 2015

Section Dissemination

Edition: 2016-03-21

CAGIRE Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

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.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- Member [RM] of the scientific committee of the Intl Symp. Turbulence, Heat and Mass Transfer, Sarajevo, Bosnia and Herzegovina, 2015

10.1.2.2. Reviewer

This year, the team members have reviewed (12) contributions to the following conferences:

ECOS 2015 (Pau, France) (1) [PB] ASME GT Turbo Expo 2015 (Montréal, Canada) (2) [PB] ASME-GT Turbo Expo 2016 (Séoul, South Korea) (2) [PB] THMT-2015 (Sarajevo, Bosnia-Herzegovina) (5) [RM] NURETH (The Haag, The Netherlands) (2) [RM]

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing activities

This year, the team members have reviewed (29) papers for the following journals:

- Aerospace Science and Technology (6) [PB]
- Combustion and Flame (5) [PB]
- Computers & Fluids (1) [VP]
- International Journal of Fluid Mechanics Research (2) [PB]
- International Communications in Heat and Mass Transfer (1)[YM]
- International Journal of Sustainable Aviation (1) [PB]
- Journal of Computational and Applied Mathematics (1) [YM]
- Journal of Computational Physics (2) [VP]
- Journal of Petroleum Science and Engineering (2) [PB]
- Journal of the Taiwan Institute of Chemical Engineers (1) [PB]
- International Journal of Heat and Fluid Flow (3) [RM]
- Flow Turbulence and Combustion (2) [RM]
- Journal of Fluid Mechanics (1) [RM]
- Heat Transfer Engineering (1) [RM]

10.1.4. Invited talks

- “A brief overview of Inria Cagire team activity”, CTA/ITA/IAE, Sao José dos Campos, Brazil, 26 November 2015. [PB]

10.1.5. Scientific expertise

V. Perrier is an expert for research for the "Région Île de France".

10.1.6. Research administration

V. Perrier is a member of the evaluation committee, which is in charge of assessing the calibre of research conducted at Inria and guaranteeing the quality of its hiring and internal promotions.

V. Perrier participated to the hiring committees for Young Graduate Scientists (CR2) in Inria Bordeaux and Inria Saclay. He participated also to the hiring committee for an assistant professor in Pau.

V. Perrier is member of the health, safety and working conditions comittee, in charge of watching the prevention in the Bordeaux Sud Ouest center.

V. Perrier is appointed member of the Scientific Applications committee of Pau University in charge of developing the scientific computing and high performance computing policy within Pau University.

V. Perrier is an elected member of the Mathematics and Application experts committee in Pau university, in charge of hiring the non permanent teachers, of forming the hiring comittees for assistant professors, and of ranking the proposition of invited professors. He was elected vice-chair of this comittee in 2015.

V. Perrier is the scientific responsible for the website of the Mathematics department in Pau.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master : [RM], Turbulence Modelling, 28h, École centrale de Lille/ENSI Poitiers/ISAE-ENSMA, Poitiers, France.
- Engineering School: [RM] Industrial codes for CFD, 12h, ISAE-ENSMA, Poitiers, France.
- Master : [PB] “Fluid mechanics: Mach zero flows vs low Mach number flows”, 30h, M2, Al Faraby University, Almaty, Kazakhstan.
- Master : [PB], "An introduction to the numerical simulation of reacting flows", 15h, M2, ISAE-SupAéro, Toulouse, France.
- Licence : [JJ], "Sequences and functions of one variable", 48h45, L1 - Geo-sciences, Université de Pau et des Pays de l’Adour, Pau, France.
- Licence : [JJ], "Mathematics for the geo-sciences 2", 19h30, L2 - Chemistry, Université de Pau et des Pays de l’Adour, Pau, France.
- Licence : [JJ], "Sequences and series", 19h30, L2 - MIASHS, Université de Pau et des Pays de l’Adour, Pau, France.

10.2.2. Supervision

- PhD : Simon Delmas, Simulation numérique directe d’un jet en écoulement transverse à bas nombre de Mach en vue de l’amélioration du refroidissement par effusion des chambres de combustion aéronautiques, 16 December 2015, Sup.:[PB] and Co-sup.: [VP].
- PhD in progress: Jean-François Wald, Modélisation de la turbulence avec traitement adaptatif des parois prenant en compte la thermique active ou passive, started October 2013, Sup.: [RM]

- PhD in progress : Nurtoleu Shakhan, Modelling and simulation of supersonic jet in crossflow, University of Almaty (Kazakhstan), started October 2013, Sup.:A. Naïmanova and Co-Sup.:[PB] (the thesis subject has been modified mid-2014).
- Young Engineer: Benjamin Lux, Implementation of h-p multigrid in Aerosol, Sup.: [VP]

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):

- PhD : G. Sempionato "Numerical study of premixed stratified flame using the b-theta flame wrinkling model with extinction limit", National Institute of Aerospace Research (INPE), Sao José dos Campos, Brazil, 25 november 2015, Sup.: W.M.C. Dourado. [PB]
- PhD : D. Lahbib « Modélisation aérodynamique et thermique des multiperforations en LES », University of Montpellier-2, France, 17 December 2015. Supervisor and co-supervisor: F. Nicoud and A. Dauptain.[PB, referee]
- PhD : A. Ghani « Simulation aux grandes échelles des instabilités de combustion transverses pour des flammes parfaitement prémélangées et swirlées diphasiques ». University of Toulouse, France, 17 September 2015. Supervisor: L. Gicquel. [PB]
- PhD : C. Koupper “Unsteady multi-component simulations dedicated to the impact of the combustion chamber on the turbine of aeronautical gas turbines”, Université de Toulouse, France, 11 May 2015 (Rapporteur). Supervisor and co-supervisor: L. Gicquel and P. Duchaine. [PB, referee]
- PhD : N. Petrova “Turbulence-chemistry interaction models for numerical simulation of aeronautical propulsion systems”, École Polytechnique, Palaiseau, France, 16 January 2015. Supervisor: V.A. Sabel’nikov. [PB, referee]

10.3. Popularization

- « Simulation d’écoulements turbulents : retour d’expérience de partenariats de recherche », Meeting "Nature & Technology" organized by the "Conseil départemental des Pyrénées Atlantiques", devoted to « La recherche scientifique au service de l’aéronautique », Parlement de Navarre, Pau, France, 12 November 2015. [PB]
- « Carrefour des Métiers» organized by the "Zone d’Activité Pédagogique d’Orthez", gymnase Blazy, Mourenx(64), France, 4 April 2015 (a stand was manned by [PB] during one day with the objective of explaining the activity of researcher to an audience of schoolboys/girls and high school students).

CARDAMOM Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

In collaboration with J.-C. Saut, Mathieu Colin has organized the workshop "Quasilinear and nonlocal nonlinear Schrôdinger equations" at the Pauli institute, Vienna. (sept. 28th 2015-oct. 2nd 2015).
Pietro Marco Congedo and Luc Mieussens have contributed to the organisation of the Workshop “Modèles et Méthodes Cinétiques pour la Dynamique des Gaz Raréfiés”, Octobre 2015, Bordeaux (with Céline Baranger and Julien Mathiaud).

10.1.1.1. Member of the conference program committees

In collaboration with H. Kalisch (University of Bergen), Mathieu Colin has organized the session "Fully nonlinear Boussinesq models: Theory and practice" to the Nineth IMACS International Conference on Nonlinear Evolution Equation and Wave phenomena : Computation and Theory (April 01-05 2015).
In collaboration with A.-P. Engsig-Karup (DTU Compute), and C. Eskilsson (Chalmers University), Mario Ricchiuto has organized the session "Hydrodynamic modelling of wave energy converters" at the 2nd Frontiers in Computational Physics Conference: Energy Sciences, 3-5 June 2015, Zurich, Switzerland
In collaboration with E. Miglio (MOX Politecnico di Milano), Mario Ricchiuto has organized the session "Robust and Multi Scale Models for Water Wave Propagation" at the 2015 SIAM Conference on Mathematical and Computational Issues in the Geosciences, Stanford, June 29-July 2, 2015

10.1.1.2. Member of the editorial boards

Mathieu Colin is a member of the board of the journal Applications and Applied Mathematics: An International Journal (AAM)
Mario Ricchiuto is member of the editorial board of *Computers & Fluids, Elsevier*.

10.1.1.3. Reviewer - Reviewing activities

We reviewed papers for top international journals in the main scientific themes of the team : journal of Computational Physics, Computer Methods in Applied Mechanics and Engineering, Optimization 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, 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.

10.1.2. Invited talks

- 13th US National Congress on Computational Mechanics: H. Beaugendre *et al.*, Unsteady residual distribution schemes adapted to immersed boundary methods on unstructured grids to account for moving bodies, San Diego, CA, July 26-30, 2015.
- Pietro Marco Congedo has been invited as Speaker in three Lectures at the VKI lecture Series 38th Advanced Computational Fluid Dynamics. Adjoint methods and their application in Computational Fluid Dynamics, 2015, Von Karman Institute.
- P.M. Congedo, A phase transition model and scheme for reproducing cavitation, Workshop TOTAL MATHIAS, October 2015, Paris.
- Mario Ricchiuto, Simple conservative Simple and conservative mesh adaptation for shallow water flows, Oberwolfach workshop on "Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws", Oberwolfach (Germany), September 2015
- Luc Mieussens, SIAM conference on Computational Science & Engineering, 2015, Salt Lake City (Utah, USA)
- Luc Mieussens, Workshop "Kinetic and Related Equations", 2015, Oaxaca (Mexico), July 2015
- Luc Mieussens, Numerical Simulation of the Crookes Radiometer, 2nd European Conference on Non-equilibrium Gas Flows, University of Technology of Eindhoven (Nederlands), December 2015

10.1.3. Leadership within the scientific community

- As of January 2015, Luc Mieussens is member of the scientific board of CEA ;
- Pietro Marco Congedo is part of the scientific committee of the ARA (Association pour la rentrée atmosphérique) Association;
- Mario Ricchiuto is member of the Industrial CFD committee of the Aristote association ;

10.1.4. Scientific expertise

H. Beaugendre: ANR expertise (programme accompagnement spécifique des travaux de recherches et d'innovation defense).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Mathieu Colin, Analyse Fonctionnelle et Intégration, 54 h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Mathieu Colin, TER 32h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Mathieu Colin, Analyse, L1, Formation alternée INP, FRANCE

Licence : Pietro Marco Congedo, Fundamentals of Numerical Analysis II, 24h, ENSEIRB-MATMÉCA, France.

Licence : Cécile Dobrzynski, Langages en Fortran 90, 54h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Cécile Dobrzynski, Analyse numérique, 24h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Mario Ricchiuto, Fundamentals of Numerical Analysis, 24h,ENSEIRB-MATMÉCA, France.

Master : Héloïse Beaugendre, Responsable de filière de 3ème année, 15h, M2, ENSEIRB-MATMÉCA, France

Master : Héloïse Beaugendre, Calcul Parallèle (OpenMP-MPI), 40h, M1, ENSEIRB-MATMÉCA et Université de Bordeaux, France

Master : Héloïse Beaugendre, Encadrement de projets de la filière Calcul Haute Performance, 15h, M2, ENSEIRB-MATMÉCA, France

Master : Héloïse Beaugendre, Calcul Haute Performance et décomposition de domaine, 39h, M2, ENSEIRB-MATMÉCA et Université Bordeaux, France

Master : Héloïse Beaugendre , Projet fin d'études, 4h, M2, ENSEIRB-MATMÉCA, FRANCE

Master : Mathieu Colin, PDE, 30 H, M1, ENSEIRB-MATMÉCA, FRANCE

Master : Mathieu Colin, EDP appronfondies, 36 h, M2, Université de Bordeaux, FRANCE

Master : Mathieu Colin, TER, 12h, M1, ENSEIRB-MATMÉCA, FRANCE

Master : Mathieu Colin, Projet fin d'études, 6h, M2, ENSEIRB-MATMÉCA, FRANCE

Master : Pietro Marco Congedo, Simulation Numerique des ecoulements fluides, 20h, M2, ENSEIRB-MATMÉCA, France

Master : Cécile Dobrzynski, Projet fin d'études, 6h, M2, ENSEIRB-MATMÉCA, FRANCE

Master : Cécile Dobrzynski, TER, 16h, M1, ENSEIRB-MATMÉCA, FRANCE

Master : Cécile Dobrzynski, Théorie du maillage, 12h, M2, formation Structures Composites, ENSCBP, FRANCE

Master : Cécile Dobrzynski, Techniques de maillages, 36h, M2, ENSEIRB-MATMÉCA, FRANCE

Post-graduate: Mario Ricchiuto, 12h, Computational Methods for Compressible Flows, Research Master, von Karman Institute for Fluid Dynamics, BELGIUM

10.2.2. Supervision

PhD in progress : Arpaia Luca, Continuous mesh deformation and coupling with uncertainty quantification for coastal inundation problems, started in March 2014.

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

PhD in progress : Bellec Stevan, Discrete asymptotic modelling of free surface flows, October 2013.

PhD in progress : Cortesi Andrea, Predictive numerical simulation for rebuilding freestream conditions in atmospheric entry flows, started in October 2014.

PhD in progress : Filippini Andrea, Nonlinear finite element Boussinesq modelling of non-hydrostatic free surface flows, started in February 2014.

PhD in progress: Fusi Francesca, Stochastic robust optimization of a helicopter rotor airfoil, started in October 2013.

PhD in progress: Lin Xi, Asymptotic modelling of incompressible reactive flows in self-healing composites, started in October 2014.

PhD in progress : Nouveau Léo, Adaptation de maillage non structurés anisotropes pour les méthodes de pénalisation en mécanique des fluides compressibles, started in Oct 2013.

PhD in progress: Perrot Gregory, Physico-chemical modelling of self-healing ceramic composites, started in October 2011.

PhD in progress : Peluchon Simon, Approximation numérique et modélisation de l'ablation différentielle de deux matériaux: application à l'ablation liquide. Started in December 2014.

PhD in progress : Viville Quentin, Etude sur les méthodes de pénalisation adaptées aux maillages non-structurés fortement anisotropiques et utilisation de l'adaptation de maillage, started in Oct 2013.

10.2.3. Juries

PhD Jury:

- B. Monmarson, Institut National Polytechnique de Grenoble (P. Congedo, rapporteur).
- A. Resmini, UPMC, Paris (P. Congedo).
- L. Margheri, UPMC, Paris P. Congedo).
- C. Mimeau, LJK, Grenoble (H. Beaugendre).
- R. Chauvin, ONERA ISAE SUPAERO, Toulouse (H. Beaugendre).
- G. Perrot, U. Bordeaux (M. Ricchiuto)

10.3. Popularization

- P.M. Congedo, "Houston, YOU have a problem !", Unithé ou café Seminar, Inria Bordeaux Sud-Ouest, Avril 2015.
- M. Ricchiuto has contributed to the organisation of the Solutions Cop21 [0], and represented Inria representatives at the research stand on the opening day.

[0] http://www.inria.fr/institut/strategie/inria-a-la-cop21

CARMEN Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Member of the editorial boards

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

9.1.1.2. Reviewer - Reviewing activities

- M. Potse: Heart Rhythm, IEEE Transactions on Biomedical Engineering, Medical & Biological Engineering & Computing, Journal of Electrocardiology.
- M. Potse is council member of the International Society of Electrocardiology.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

IUT Orsay : P.E. Bécue - Discrete Mathematics, 64h.

IUT Orsay : P.E. Bécue - Introduction to modelling and Principal Component Analysis, 64h.

Engineering school: N. Zemzemi, (How to switch from a mathematical model to a numerical solution (examples with the cardiac activity of the heart in 2D)

9.2.2. Juries

- Y. Coudière, PhD advertiser for the PhD thesis of G. Ravon obtained on 17 december 2015
- Y. Coudière, PhD advertiser for the PhD thesis of A. Davidlovic expected on the first quarter of 2016.
- Y. Coudière, Rapporteur for the PhD thesis of Rocio Cabrera Lozoya

9.3. Popularization

- G. Ravon and Y. Coudière obtained a financial support from Cap'Math for the game: "Heart Attack". It is destinated to middle and high school students to introduce mathematical modelling.
- Poster price at the CNIC 2015 for A. Djokovic.

CQFD Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- NEO 2015 - Pierrick Legrand, http://neo.cinvestav.mx/NEO2015/. The aim of the NEO is to bring together scientists from different fields and countries to discuss recent advances in numerical and evolutionary optimization. The workshop has first been held in 2013 in Tlalnepantla, Mexico, and the NEO 2015 is the third edition.
- EVOLVE 2015 - Pierrick Legrand, http://www.evolve-conference.org/. The aim of the EVOLVE international conference is to build a bridge between probability, statistics, set oriented numerics and evolutionary computing, as well as to identify new common and challenging research aspects. The event is also intended to foster a growing interest for robust and efficient new methods with a sound theoretical background and, last but not least, to unify theory-inspired methods and cutting-edge techniques aimed at reaching top-level performance. By gathering researchers with different backgrounds, ranging from computer science to mathematics, statistics and physics, to name just a few, a unified view and vocabulary can emerge where theoretical and practical advancements may echo in different domains.. The wide use and large applicability spectrum of evolutionary algorithms in real-life applications nurture the need for further developing solid theoretical grounds. Among many examples intricate mathematical objects show, as proven by acknowledged new results that evolutionary algorithms can, in some cases, act as good and fast estimators. Similarly, the handling of large quantities of data may require the use of distributed environments where the probability of failure and the stability of algorithms need to be formally addressed. Common practice confirms in many cases that theory-based results ensure performance guarantee factors for evolutionary algorithms in areas as diverse as optimization, bio-informatics or robotics. Summarizing, EVOLVE focuses on basic research and application challenges arising in theory, new paradigms and practice, thus aiming to provide a unifying view and to raise questions related to reliability, performance guarantees and modeling.
- EA 2015 - Pierrick Legrand, https://ea2015.inria.fr/. 12th Biennial International Conference on Artificial Evolution, EA 2015, held in Lyon (France). Previous EA editions took place in Bordeaux (2013), Angers (2011), Strasbourg (2009), Tours (2007), Lille (2005), Marseille (2003), Le Creusot (2001), Dunkerque (1999), Nimes (1997), Brest (1995), and Toulouse (1994). Authors had been invited to present original work relevant to Artificial Evolution, including, but not limited to: Evolutionary Computation, Evolutionary Optimization, Co-evolution, Artificial Life, Population Dynamics, Theory, Algorithmics and Modeling, Implementations, Application of Evolutionary Paradigms to the Real World (industry, biosciences, ...), other Biologically Inspired Paradigms (Swarm, Artificial Ants, Artificial Immune Systems, Cultural Algorithms...), Memetic Algorithms, Multi-Objective Optimization, Constraint Handling, Parallel Algorithms, Dynamic Optimization, Machine Learning, and hybridization with other soft computing techniques. Each submitted paper was reviewed by three members of the International Program Committee. Among the 31 submissions received, 18 papers were selected for oral presentation and 8 other papers for poster presentation. For the previous editions, a selection of the best papers which were presented at the conference and further revised were published (see LNCS volumes 1063, 1363, 1829, 2310, 2936, 3871, 4926, 5975, 7401 and 8752).

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

J. Anselmi has been a member of the TPC of the international conferences VALUETOOLS-2015, ScalCom-2015 and ASMTA-2015.

M. Chavent has been a member of program commitee of the SFC 2015 conference.

P. Legrand has been a member of program committee for Gecco 2015, EA 2015, NEO 2015, EVOLVE 2015.

F. Dufour has been a member of the program committee of the international SIAM conference on Control & its Application, July 2015.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

F. Dufour is associate editor of the journal: SIAM Journal of Control and Optimization since 2009.

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

10.1.3.2. Reviewer - Reviewing activities

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

10.1.4. Invited talks

J. Anselmi gave the following invited talks;

- *Open-loop control of parallel queues: asymptotics of periodic policies*, international workshop "Modern Trends in Controlled Stochastic Processes: Theory and Applications", Liverpool, July 2015
- *Open-loop control of parallel queues: asymptotics of periodic policies*, international conference APS INFORMS, Istanbul, July 2015

M. Chavent gave invited talks at the seminar of MIAT-INRA of Toulouse in june 2015, and the seminar of the IECL of Nancy in November 2015.

A. Genadot gave a talk at the seminar of IMB, October 2015.

F. Dufour gave the invited talk *Constrained and Unconstrained Optimal Control of Piecewise Deterministic Markov Processes* international workshop "Modern Trends in Controlled Stochastic Processes: Theory and Applications", Liverpool, July 2015.

10.1.5. Research administration

M Chavent and J. Saracco are elected members of CNU 26.

B. de Saporta was an elected member of CNU 26 until sept. 2014.

J. Saracco is vice president of the french statistical society (SFdS).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence : J. Anselmi, Probability, 12,41 hours ("équivalent TD"), L1, ENSEIRB MATMECA filiere telecom, Bordeaux, France
- Licence : J. Anselmi, Probability, 8 hours ("équivalent TD"), L1, ENSEIRB MATMECA filiere electronique, Bordeaux, France
- Licence: M. Chavent, Statistique descriptive, 36 ETD, L1, Bordeaux university, France
- License: M. Chavent, Modélisation statistique, 18 ETD, niveau L3, Bordeaux university, France
- Master : M. Chavent, Analyse des données 2, 25 ETD, niveau M2, Bordeaux university, France
- Master : M. Chavent, Apprentissage automatique, 25 ETD, niveau M2, Bordeaux university, France
- Licence : F. Dufour, Probabilités et statistiques, 16 heures, niveau L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.

- Master : F. Dufour, Méthodes numériques pour la fiabilité, 24 heures, niveau M1, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.
- Master : F. Dufour, Probabilités, 20 heures, niveau M1, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, France.
- P. Legrand, Algèbre (responsable de l'UE), Licence 1 SCIMS (108 heures)
- P. Legrand, Informatique pour les mathÃ©matiques (responsable de l'UE), Licence 1 et Licence 2 (36 heures)
- P. Legrand, Espaces Euclidiens. (responsable de l'UE), Licence 2 SCIMS (54 heures)
- P. Legrand, Formation Matlab pour le personnel CNRS (responsable de l'UE), (24 heures)
- Licence: J. Saracco, Descriptive statistics, 10.5h, L3, First year of ENSC, France
- Licence: J. Saracco, Mathematical statistics, 20h, L3, First year of ENSC, France
- Licence:J. Saracco, Data analysis (multidimensional statistics), 20h, L3, First year of ENSC, France
- Licence: J. Saracco, Mathematics (complement of linear algebra), 20h, L3, First year of ENSC, France
- Master: J. Saracco, Statistical modeling, 20h, M1, Second year of ENSC, France
- Master: J. Saracco, training project, 20h, M1, Second year of ENSC, France
- A. Genadot, Probabilités (30h), Licence MIASHS deuxième année, Université de Bordeaux.
- A. Genadot, Modélisation statistique (18h), Licence MIASHS troisième année, Université de Bordeaux.
- A. Genadot, Probabilités (30h), Master MIMSE première année, Université de Bordeaux.

10.2.2. Supervision

PhD completed : Karim Claudio, Un outil d'aide à la maîtrise des pertes dans les réseaux d'eau potable : mise en place d'un modèle de fuite multi-état en secteur hydraulique instrumenté , supervised by J. Saracco and V. Couallier.

PhD completed : Amaury Labenne, Approche Statistique du diagnostic territorial par la notion de qualité de vie, supervised by M. Chavent, J. Saracco and V. Kuentz.

PhD in progress : Adrien Todeschini, Elaboration et validation d'un système de recommandation bayésien, supervised by F. Caron and M. Chavent.

PhD completed : Isabelle Charlier, Optimal quantization applied to conditional quantile estimation, University of Bordeaux and Université Libre de Bruxelle, supervised by J. Saracco and D. Paindaveine.

PhD in progress : Christophe Nivot, Optimisation de la chaîne de montage du futur lanceur européen, September 2013, B. supervised by B. de Saporta and F. Dufour

PhD in progress : Alizé Geeraert, Contrôle optimal des processus Markoviens déterministes par morceaux et application à la maintenance, University of Bordeaux, September 2014, supervised by B. de Saporta and F. Dufour.

Nicolas Antunes: Application d'algorithmes prédictifs à l'identification de niches ecoculturelles des population du passé: approche ethnoarcheologique. Financement ERC F. D'Errico. Co-encadrement : D'Errico, Del Moral, Legrand. Cette thèse consiste à utiliser des algorithmes de type GARP pour prédire l'existence de niches écologiques à partir de données climatologiques. 2011-2014.

Emigdio Z. Flores Lopez, "Classification of mental states with genetic programming", PhD in engineering sciences. Funded by Conacyt (Consejo Nacional de Ciencia y Tecnologia), national scholarship for PNPC programs (Programa Nacional de Posgrados Calidad), Mexico. Co-encadrement: L. Trujillo (50%), P. Legrand (50%). 2013-2016.

10.2.3. Juries

J. Anselmi has been a member of the jury for the PhD defense of Henda Ben Cheikh, with thesis granted by INSA–Toulouse.

P. Legrand has been a member of the jury for the PhD defense of Nicolas Antunes, Ubx.

FLOWERS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair

D Roy organized and was general chair of Colloque Robotique et Education (june 2015) : Research, users reports, talks and workshops about robotics for education. Program : http://dm1r.fr/wp-content/uploads/2015/05/colloque_robotique_education_2324062015.pdf. Videos: https://www.youtube.com/playlist?list=PL9T8000j7sJDcOoHA8r18561F3jDXZASN.

10.1.1.2. Member of the organizing committees

- PY Oudeyer was member of the steering committee of the fOSSa international conference on Free Open Source Software, Nantes: https://fossa.inria.fr.
- PY Oudeyer was workshop chair of the IJCNN 2015 International Joint Conference on Neural Networks, Killarney, Ireland: http://www.ijcnn.org
- PY Oudeyer has been member of the steering committee of the IEEE ICDL-Epirob International Conference on Development and Learning and Epigenetics Robotics.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- David Filliat was Associate Editor for IROS, and member of the conference committee for ECMR.
- Manuel Lopes was member of the conference committee for HRI, AAMAS.
- PY Oudeyer was member of the program committee of IEEE ICDL-Epirob

10.1.2.2. Reviewer

- Manuel Lopes was reviewer for IJCAI, IROS, ICRA.
- David Filliat was reviewer for ESANN, RFIA, ECMR.
- Pierre Rouanet was reviewer for IROS.
- Thibaut Munzer was reviewer for IROS.
- PY Oudeyer was reviewer for IEEE ICDL-Epirob, IROS, ICRA.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- PY Oudeyer has been Editor-in-Chief of the IEEE CIS Newsletter on Cognitive and Developmental Systems, http://icdl-epirob.org/cdsnl
- PY Oudeyer and Clément Moulin-Frier guest edited a special issue of the Journal of Phonetics, on the cognitive nature of speech sounds.
- PY Oudeyer has been associate editor of IEEE Transactions on Autonomous Mental Development, Frontiers in Humanoid Robotics, Frontiers in Neurorobotics, IEEE RAS Letters.
- Manuel Lopes is an associated editor for the, IEEE Transactions on Autonomous Mental Development

10.1.3.2. Reviewer - Reviewing activities

- Pierre Rouanet has reviewed papers for the IEEE Robotics and Automation Letters (RA-L).

- Anna-Lisa Vollmer was reviewer for Frontiers in Robotics and AI and Transactions on Autonomous Mental Development
- David Filliat was reviewer for International Journal of Robotics Research, IEEE Transaction on Robotics
- PY Oudeyer was reviewer for Infancy, Journal of Infant Behavioral Development, Journal of Phonetics, IEEE TAMD.

10.1.4. Invited talks

- PY Oudeyer gave a keynote talk at the Evostar 2015 international conference on bio-inspired computation: http://www.evostar.org/2015/, entitled "Open-source baby robots for science, education and art, april 2015.
- PY Oudeyer gave a keynote talk at the Devoxx 2015 international conference, entitled "Building open-source robots capable of autonomous learning" http://www.devoxx.fr, april 2015.
- PY Oudeyer gave a keynote talk at the BICA 2015 international conference on Biologically Inspired Cognitive Architecture, entitled "Developmental robotics and open-ended learning", https://liris.cnrs.fr/bica2015/wiki/doku.php/start, nov. 2015.
- PY Oudeyer gave a Spotligh talk at the OEB 2015 international conference on technology supported learning and training
- PY Oudeyer gave a talk at "Journée Brain", Univ. Bordeaux, entitled "Open-source baby robots: modelling sensorimotor development with robots", may 2015.
- PY Oudeyer gave a talk at Colloque GEII entitled "Poppy: Open-sour ce educational robot platform", june 2015
- PY Oudeyer, "Modélisation robotique du développement cognitif', sensoritmoteur et social", CogTalk, Zig Zag bar/Association of cognitive science students of Univ. Bordeaux, feb. 2015.
- PY Oudeyer, "Robotique développementale et sociale", Workshop Interactions Homme-Robots dans le contexte d'applications culturelles, La Rochelle, sept. 2015.
- PY Oudeyer, "Online optimization and personalization of teaching sequences: from developmental robotics to e-learning", International Teacher's Cognition workshop, Ecole Normale Supérieure, Paris
- PY Oudeyer, "Auto-organisation et curiosité dans le développement et l'évolution du langage", Séminaire du laboratoire du LATTICE, Ecole Normale Supérieure de Paris.
- PY Oudeyer, "Histoire et enjeux éducatifs de l'intelligence artificielle et de la robotique", dialog with JG Ganascia and M Doueihi at the Artificial Intelligence and Society seminar at College des Bernardins, Paris, oct. 2015.
- F. Stulp, Robot Skill Learning: Back to the Future, 22.10.2015, Josef Stefan Institute, Ljubljana, Slovenia.
- F. Stulp, Many regression algorithms, one unified model - A tutorial", 23.10.2015, Josef Stefan Institute, Ljubljana, Slovenia
- A.-L. Vollmer, Teaching, a bidirectional process: Evidence from adult-child and human-robot interaction, 09.09.2015, Tenth International School on Mind, Brain and Education, Ettore Majorana Foundation, Erice, Italy.
- M. Lopes, Interactive Learning for Cooperative Human-Robot Tasks, Algorithms for Human Robot Interaction Workshop, University of Berkeley, USA
- M. Lopes, Exploration Biases for Task Learning In Machines and Animals, Redwood Center for Theoretical Neuroscience, USA
- W. Schueller, Active Learning and Active Control of Complexity Growth in Naming Games, Complexity & Quantitative Linguistics Lab, Universitat Politècnica de Catalunya, Barcelona, Spain

- Boussoles du numérique (october 2015), Didier Roy, Stéphanie Noirpoudre, Thibault Desprez
- Assises nationales de la médiation numérique (novembre 2014), Didier Roy, Pierre-Yves Oudeyer
- Escales de l'éducation (ligue de l'enseignement) (september 2015), Didier Roy
- Symposium Scratch Amsterdam (août 2015) : presentation of Snap! programming
- Cap Sciences (several events during the year), Didier Roy
- Forum EIDOS 64 Pau : talks about educational robotics, Didier Roy

10.1.5. Leadership within the scientific community

PY Oudeyer has been Chair of IEEE CIS Autonomous Mental Development Technical Committee, and leaded its transformation into the IEEE CIS Cognitive and Developmental Systems Technical Committee.

Through his role of editor-in-chief of the IEEE CIS Newsletter on Cognitive and Developmental Systems, PY Oudeyer contributed to strengthn the interdisciplinary exchanges among developmental sciences, and in particular organized two interdisciplinary dialogs on key scientific issues: http://icdl-epirob.org/cdsnl.

10.1.6. Scientific expertise

- PY Oudeyer was expert for the EU Commission scientific programme.
- PY Oudeyer was expert for the OPECST office at Assemblée Nationale, about the role and evolution of robotics within society.
- PY Oudeyer was an expert for the Cherry Project, IPB, Bordeaux.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Freek Stulp is responsible for the coordination of the 5 first year computer science courses at ENSTA-ParisTech (140 students per year). He organized, gave lectures and was a tutor in the courses "IN101: Algorithmics and Programming (in Python)" and "IN104: Computer Science Project" (140 students each). He was a tutor in the course "IN102: Algorithms and Systems (in C)". With Michele Sebag he organized the course "Reinforcement Learning" (20 students) as part of the M2 "Machine Learning, Information and Content" at the Université Paris Saclay.

License: Introduction to Matlab, 21 heures. L3, ENSTA - ParisTech (David Filliat).

Master: Apprentissage, 5 heures. M2, Enseirb-Matmeca (Manuel Lopes, Pierre-Yves Oudeyer).

Master: La robotique de compagnie: concepts et tecniques, 9 heures. M2, ENSTA - ParisTech (Manuel Lopes).

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

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

Licence 2: Graphe, Langage, Cryptologie, 21 heures. Pôle universitaire français de Ho Chi Minh Ville

Pedagogical resources : Développement and diffusion of IniRobot pedagogical kit (see highlights), Didier Roy, Thomas Guitard et Pierre-Yves Oudeyer

Licence, Master: Seminar Developmental Robotics, 21 heures, Bielefeld University, Germany (Anna-Lisa Vollmer)

Master: Robotique Développementale, 3 hours, CogMaster, http://sapience.dec.ens.fr/cogmaster/www/e_01_portail.php (PY Oudeyer)

Pedagogical resources : Développement and diffusion of IniRobot pedagogical kit (see highlights), Didier Roy, Thomas Guitard et Pierre-Yves Oudeyer

Design of the conceptual framework and educational objectives of the Poppy Education courses to be finalized in 2016 (PY Oudeyer and D Roy)

Master: Robotique et Desig, 2 hours Master Design, Univ. Bordeaux.

Teaching at EPFL (3 interventions per year, 2 days each), Didier Roy

Teachers training for ESPE Aquitaine (1 day), teachers training of partner schools for Poppy Education, Didier Roy

Training facilitators TAP Pessac (3h), Talence (3h), CapSciences (3h), Petits débrouillards (3h), Didier Roy

Teacher trainings and education consultants DSDEN : 2015, 24 participants, Didier Roy

10.2.2. Supervision

HdR : Manuel Lopes, Autonomous Learning in Intelligent Agents and Robots, University of Bordeaux, September 2015

PhD in progress: Thomas Hecht, Bio-inspired sensor fusion, started November 2013 (superv. Alexander Gepperth).

PhD in progress: Egor Sattarov, Multimodal vehicle perception architecture, started November 2013 (co-superv. Alexander Gepperth).

PhD in progress: Thomas Kopinski, Machine Learning for human-machine interaction, started November 2012 (superv. Alexander Gepperth).

PhD in progress: Alexandre Armand, Contextual electronic copilot for driving assistance, started feb. 2011 (superv. David Filliat)

PhD in progress: Yuxin Chen, Interactive learning of objects and names on a humanoid robot, started oct. 2013 (superv. David Filliat).

PhD in progress: Celine Craye, Curiosity and visual attention for the guidance of an exploration robot, started apr. 2014 (superv. David Filliat).

PhD in progress: Adrien Matricon : Task dependent visual feature selection for optimising and generalizing robotics skills (superv. David Filliat, Pierre-Yves Oudeyer, and Freek Stulp).

PhD in progress: Clement Masson, Unsupervised learning of sensori-motor representations, started Oct. 2015 (superv. David Filliat, Olivier Sigaud and Freek Stulp).

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: Joris Guery, Domain adaptation for visual object recognition, started Oct. 2014 (superv. David Filliat and Bertrand Le Saulx (ONERA))

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

PhD in progress: Thibaut Munzer, Learning from Instruction, started oct 2013 (superv. Manuel Lopes).

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

PhD in progress: Alexandra Delmas, Auto-Apprentissage Auto-Adaptable pour la compliance au traitement, started oct 2014 (superv. Manuel Lopes).

PhD in progress: Fabien Benureau, Exploration strategies in developmental robotics (superv. PY Oudeyer)

10.2.3. Juries

Ben-Manson Toussaint, Modeling Perceptual-Gestural Knowledge for Intelligent Tutoring Systems, supervised by Vanda Luengo, University of Grenoble, France

Emanuel Sousa, Emergence de Concepts Multimodaux, supervised by Estela Bicho, and Wolfram Erlhagen, University of Minho, Portugal

Antoine Cully (21/12/15, David Filliat, Rapporteur) : Creative Adaptation through Learning

Elena Stumm (23/11/2015, David Filliat, Rapporteur) : Location Models For Visual Place Recognition

Alexandre Ravet (13/10/15, David Filliat, Examinateur) : Introducing Contextual Awarness within the State Estimation Process

Cédric Le Barz (30/06/15, David Filliat, Rapporteur) : Navigation visuelle pour la navigation autonome des petits drones

Romain Drouilly (29/06/15, David Filliat, Rapporteur) : Cartographie hybride métrique topologique et sémantique pour la navigation dans de grands environnements

Erwan Birem (12/03/2015, David Filliat, Rapporteur) : Localisation et détection de fermeture de boucle basées sur la saillance visuelle : algorithmes et architectures matérielles

Alain Droniou (09/03/2015, David Filliat, Examinateur) : Apprentissage de représentations et robotique développementale : quelques apports de l'apprentissage profond pour la robotique autonome.

PY Oudeyer was in the PhD jury of Alain Droniou (Univ. Paris VI, France, reviewer), Adam White (Univ. Alberta, Canada, reviewer), Vieri Santucci (Univ. Plymouth, UK, reviewer), Didier Roy (Univ. Bordeaux, examiner), Renaud Gervais (Univ. Bordeaux, examiner).

PY Oudeyer was in the HdR jury of Julien Diard (Univ. Grenole, reviewer), Jean-Baptiste Mouret (Univ. Paris, reviewer), Manuel Lopes (Univ. Bordeaux).

10.3. Popularization

IniRobot: Development, evaluation and dissemination of the IniRobot program for initiating young kids (primary schools) to computer science and robotics. This has been used and deployed in several major towns in France, including Lille, Talence and Lormont. It is now used by more than **7000** primary school children. Several days of formation for teachers have been organized to foster dissemination. The kit is Creative Commons, and available on the dedicated web site created: https://dm1r.inria.fr/c/kits-pedagogiques/inirobot

The Flowers team was a partner of several art/science projects studying various dimensions of the role and evolution of robots and society, and in particular

- The Comacina project exploring the role of movements and light in expressing emotions: http://comacina.org. This project was implemented through several residencies during the year, and several performances at various cultural places in Aquitaine, including at Pole Evasion in Ambares-et-Lagrave. a report is available at https://flowers.inria.fr/RencontreAutourDuGeste.pdf. It benefitted from funding from the Art/Science Idex call for project.
- The Marionnettes Electriques project studies animation techniques allowing to express fast and rich interaction in real-time on the stage. Various realizations can be seen from https://www.poppy-project.org/project/marionnettes-electriques/.
- The School of Moon project, from the Shonen dance company (headed by Eric Minh Cuong Castaing), is working on the design of a dance show about robots and posthumanity. It is using multiple robots, including the Poppy Humanoid robot in dynamic physical interaction with dancers. The premiere will happen in january 2016 at Ballet de Marseille. Web site: http://shonen.info/schoolofmoon/.

PY Oudeyer published a milestone popular science book together with astrophysicists Jean Audouze, biologist Georges Chapouthier, architect Denis Laming, on the common threads related to the origins of complexity at different scales in the universe. The tile is "Mondes Mosaiques, Astres, Villes, Vivant et Robots".

PY Oudeyer wrote a popular science article about developmental robotics in “Pour la Science” (the french version of Scientific American), entitled: “L’éveil des bébés robots”, available here: http://www.pyoudeyer.com/eveilRobotsPourLaScienceOudeyer15.pdf

PY Oudeyer gave several interviews in the general press and at radio and TV programs (e.g. Le Monde, Les Echos, Sciences et Avenir, RFI, Nova/PBS, Arte) to explain societal issues of robotics, http://www.pyoudeyer.com/press/

January 29, 2015: Pierre Rouanet, Matthieu Lapeyre and Nicolas Rabault presented the Poppy Project in the TTFX conference in Bordeaux.

Robots Makers’day (january) : First Lego League, Poppy and Thymio workshops

January 31, 2015: Aquitec 2015, Yoan Mollard presented the Poppy platform to students and visitors

February 11, 2015: Benjamin Clément, Manuel Lopes, Pierre Rouanet, and Pierre-Yves Oudeyer were invited to present the Kidlearn and Poppy projects to the French senate in Paris.

May 28 to 29, 2015: William Schueller, Baptiste Busch and Yoan Mollard participated to the jury of students option "Informatique et Sciences du numérique", Lycée Saint Genes, Bordeaux

June 03 to 06, 2015: Didier Roy, Sébastien Forestier and William Schueller participated to the event “Science and You” in Nancy, by presenting Poppy and Inirobot projects.

June 13, 2015: Thibault Desprez, Antoine Darfeuil, Amandine Spriet, Theo Segonds and Pierre Rouanet participated to the Robot Makers Day where they organized a half day workshop on how to program Poppy Torso in Bordeaux.

August 08, 2015 : David Filliat gave a Talk at "Festival de Fleurance", a science festival in Fleurance (south of France) : Les robots, bientot nos egaux ?

August 11-14, 2015: Theo Segonds and Pierre Rouanet were invited to present their work on the connection between Snap and Poppy robots to the 2015 Scratch conference in Amsterdam.

August 25, 2015 : David Filliat gave a Talk at "Rencontre enseignant-entreprises" at Ecole Polytechnique : Remplacer les hommes par les robots :jusqu’ou ira-t-on ?

September 28 to October 2, 2015: Baptiste Busch, Yoan Mollard, and other participants of the 3rd hand consortium presented the project on a booth among other EU projects at the IROS conference, Hamburg, Germany

October 13, 2015: Rencontre Inria Industrie: Baptiste Busch, Benjamin Clément and Alexandra Delmas presented respectively the projects 3rdHand, KidLearn and 5APC on a booth, Bordeaux

October, 16, 2015: Pierre Rouanet and Yoan Mollard presented the Poppy robots to the Bdx I/O Conference in Bordeaux.

October 20 to 22, 2015: Baptiste Busch, Pierre Rouanet, Yoan Mollard and Manuel Lopes showcased 3rd hand and Poppy robots to the ICT Forum in Lisbon, Portugal

November 16, 2015: Yoan Mollard gave a talk to the ESAC Alumni meeting 2015 about the 3rd hand project, European Space Agency, Madrid, Spain

October, 5, 2015: Nicolas Rabault presented the Poppy platform at the developer day from orange lab, Bordeaux.

March, 30 to 31, 2015: Nicolas Rabault presented "what is robotics" to primary school children for the "Festival jeune public du documentaire scientifique"

May, 29 to 30, 2015 : Matthieu Lapeyre and Nicolas Rabault : participated to the "open bidouille camp", Aix en Provence

GEOSTAT Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

N. Brodu is the principal convener of the special session « Machine Learning adaptations for Earth monitoring » at European Geosciences Union General Assembly, the most important european congress in Earth Sciences.

10.1.1.2. Member of the conference program committees

H. Yahia was a member of the conference program committee Recent Advances in Electronics & Computer Engineering (RAECE), January 2015.

10.1.2. Journal

10.1.2.1. Member of the editorial boards

H. Yahia is a member of the editorial board of the open access journal *Frontiers in Fractal Physiology*.

10.1.3. Invited talks

- B. Xu has given an invited talk at the University of Basel, *Research Group : Computational Physiology and Biostatistics*. Title: **From the Complexity Analysis of Biosignals to Clinical Applications**.
- K. Daoudi has given 2 invited talks on *nonlinear speech processing* at the Czech Technical University of Prague and the Brno University (Czech Republic).
- H. Badri has given an oral presentation at the ORASIS conference [27].
- N. Brodu, H. Yahia: *Multiscale analysis with stochastic texture differences*. Recent Advances in Electronics & Computer Engineering (RAECE), January 2015.
- O. Pont has given a presentation at the SCAM seminar: *Microcanonical cascade processes: how singularity analysis characterizes cardiac arrhythmia*, on November 19th, 2015.

10.1.4. Scientific expertise

- H. Yahia is a member of CNU (Conseil National des Universités), section 61.
- H. Yahia has participated in the evaluation of an ANR project.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Hicham Badri, Unix Shell scripting & Python , 32 hours, L2 level , Bordeaux 1 University, France

Master : Khalid Daoudi, Financial mathematics, 20 hours lecture courses, M2 level, Lorraine University, France

3rd year ingineer school: Nicoals Brodu, 18 hours, M1 level (supervision of 4 engineer students), Institut d'Optique, Bordeaux, France

Doctorat :

10.2.2. Supervision

PhD : Hicham Badri, Sparse and Scale-Invariant Methods in Image Processing, Bordeaux 1 University, December 1st 2015, supervisors: H. Yahia and D. Aboutajdine, [14].

PhD : Ayoub Tamim, Segmentation et classification des images satellitaires : application à la détection des zones d'upwelling côtier marocain et mise en place d'un applicatif de suivi spatio-temporel, Rabat University, September 22 2015, supervisors: K.Daoudi, H. Yahia, D. Aboutajdine, HAL link.

PhD in progress : Camila Artana, Ocean dynamics at super-resolution Western Atlantic, defense scheduled in 2018, supervision: C. Provost and H. Yahia.

PhD in progress: Anass El Aouni, Temporal evolution of coastal upwelling, defense scheduled in 2018, supervision: K. Minaoui, H. Yahia and D. Aboutajdine.

PhD in progress: Akanksha Garg, super-resolution for Earth Observation, defense scheduled in 2017, co-supervision: N. Brodu and D. Singh (in the framework of the OPTIC associated team).

PhD in progress: Ghopal Singh, Novel methods in classification and machine learning for Earth Observation, co-supervision: N. Brodu and D. Singh (in the framework of the OPTIC associated team).

10.2.3. Juries

- H. Yahia is a member of the jury in the PhD defense of Mr. M. Osadebey, title *Noise Estimation, Noise Reduction and Intensity Inhomogeneity Correction in MRI Images of the Brain*, Concordia University, Electrical and Computer Engineering, June 15th, 2015.
- H. Yahia was asked by Bourgogne University to review HDR candidacy.

10.3. Popularization

Geostat has participated to the Inria initiative for thge preparation of the COP21 international conference: *Our common future under climate change*.

HIEPACS 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

Luc Giraud has been member of the scientific program committee of the international conferences HiPC'15, IPDPS'16 and PDSEC'15.

Jean Roman has been member of the scientific program committee of the international conferences IEEE PDP'15 and PDP'16.

10.1.1.2. Reviewer

Furthermore, the HIEPACS members have contributed to the reviewing process of several international conferences: CCGRID 2015, IEEE IPDPS 2016, ...

10.1.2. Journal

10.1.2.1. Member of the editorial boards

Luc Giraud is member of the SIAM J. Matrix Analysis and Applications editorial board.

10.1.2.2. Reviewer - Reviewing activities

The HIEPACS members have contributed to the reviewing process of several international journals (ACM Trans. on Mathematical Software, Advances in Computational Mathematics, IEEE Trans. on Parallel and Distributed Systems, Journal of Parallel and Distributed Computing, Parallel Computing, SIAM J. Scientific Comp., ...).

10.1.3. Invited talks

Luc Giraud gave an invited talk at the 2015 Salishan Conference on High-Speed Computing (April 27 - 30, 2015) as well as to the seminar of the Laboratoire Jean Kuntzmann (LJK) iin Grenoble (Nov. 2015).

Mathieu Faverge gave an invited talk at an EDF seminar on High Programming Productivity for High Performance Computing via Runtime Systems (December 15th, 2015).

10.1.4. Scientific expertise

Luc Giraud was a member of the evaluation committee of the "Software for Exascale Computing" (SPPEXA) program funded by the funding agencies from France (ANR), Germany (DFG), and Japan (JST). He also acted as expert for projects submitted to the Israel Science Foundation.

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 Technical Group of GENCI and of the Scientific Advisory Board of the Maison de la Simulation.

Pierre Ramet is Scientific Advisor at CEA-DAM (French Department of Energy) since October 2015. He is member of the evaluation commitee at GENCI since 2008. He is also member of the Scientific Board of :

- the Scientific Computing axis of the Cluster of Excellence CPU from Bordeaux University since 2014,
- the Mesocentre in Bordeaux University since 2010.

10.1.5. Research administration

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.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Undergraduate level/Licence

1. A. Esnard: Operating system programming, 36h, University Bordeaux I; Using network, 23h, University Bordeaux I.
   He is also in charge of the computer science certificate for Internet (C2i) at the University Bordeaux I.
2. M. Faverge: Programming Environment, 26h, L3; Numerical Algorithmic, 30h, L3; C Projects, 20h, L3, ENSEIRB-MatMeca, France
3. P. Ramet: System programming 24h, Databases 32h, Objet programming 48h, Distributed programming 32h, Cryptography 32h at Bordeaux University.

Post graduate level/Master

1. O. Coulaud: Paradigms for parallel computing, 24h, ENSEIRB-MatMeca, Talence; Méthodes hiérarchiques, 8h, ENSEIRB-MatMeca, Talence.
2. E. Agullo: Operating sysems, 24h, University Bordeaux I; Dense linear algebra kernels, 8h, ENSEIRB-MatMeca; Numerical Algorithms, 30h; ENSEIRB-MatMeca, Talence.
3. A. Esnard: Network management, 27h, University Bordeaux I; Network security, 27h, University Bordeaux I; Programming distributed applications, 35h, ENSEIRB-MatMeca, Talence.
4. M. Faverge: System Programming, 74h, M1; Load Balancing and Scheduling, 19h, M2, ENSEIRB-MatMeca, Talence.
   He is also in charge of the second year of Embedded Electronic Systems option at ENSEIRB-MatMeca, Talence.
5. P. Ramet: Scheduling, 8h; Numerical Algorithmic, 30h; ENSEIRB-MatMeca, Talence.
   He also give classes on Cryptography, 30h, Ho Chi Minh City, Vietnam.
6. L. Giraud: Introduction to intensive computing and related programming tools, 20h, INSA Toulouse; Introduction to high performance computing and applications, 20h, ISAE-ENSICA; On mathematical tools for numerical simulations, 10h, ENSEEIHT Toulouse; Parallel sparse linear algebra, 11h, ENSEIRB-MatMeca, Talence.
7. A. Guermouche: Network management, 92h, University Bordeaux I; Network security, 64h, University Bordeaux I; Operating system, 24h, University Bordeaux I.
8. J. Roman: Parallel sparse linear algebra, 10h, ENSEIRB-MatMeca, Talence; Parallel algorithms, 22h, ENSEIRB-MatMeca, Talence.

10.2.2. Supervision

Defended PhD thesis

1. Astrid Casadei, *Optimisations des solveurs linéaires creux hybrides basés sur une approche par complément de Schur et décomposition de domaine*, defended on October 19th, advisors: F. Pellegrini and P. Ramet.
2. Arnaud Etchevery, *Simulation de la dynamique des dislocations à très grande échelle*, defended on November 23th, advisors: O. Coulaud and G. Sylvand.

3. Xavier Lacoste, *Scheduling and memory optimizations for sparse direct solver on multi-core/multi-gpu cluster systems*, defended on Febuary 18th, advisors: F. Pellegrini and P. Ramet.
4. Stojce Nakov, *On the design of sparse hybrid linear solvers for modern parallel architectures*, defended on December 14th, advisors: E. Agullo and J. Roman.
5. Alexis Praga, *Un modèle de transport chimie atmosphérique à grande échelle adapté aux calculateurs massivement parallèles*, defended on January 30th, advisors: D. Cariolle (CERFACS) and L. Giraud.
6. Fabien Rozar, *Contributions à l'amélioration de l'extensibilité de simulations parallèles de plasmas turbulents*, defended on November 5th, advisors: G. Latu and J. Roman.
7. Salli Moustafa, *Massively parallel Cartesian discrete ordinates method for neutron transport simulation*, defended on December 15th, advisors: P. Ramet and J. Roman.
8. Mawussi Zounon, *On numerical resilience in linear algebra*, defended on April 1st, advisors: E. Agullo and L. Giraud.

PhD in progress :

1. Pierre Blanchard, *Fast and accurate methods for dislocation dynamics*, starting Oct. 2013, advisors: O. Coulaud and E. Darve (Stanford Univ.).
2. Bérenger Bramas, *Optimization of time domain BEM solvers*, starting Jan 2013, advisors: O. Coulaud and G. Sylvand.
3. Nicolas Bouzat, *Fine grain algorithms and deployment methods for exascale plasma physic applications*, starting October 2015, advisors: G. Latu, M. Mehrenberger and J. Roman.
4. Jean-Marie Couteyen, *Parallélisation et passage à l'échelle du code FLUSEPA*, starting Feb 2013, advisors : P. Brenner (Airbus Defence and Space) and J. Roman.
5. Arnaud Durocher, *Passage à l'échelle des simulations de Dynamique des Dislocations sur plateforme hétérogène pour l'étude des mécanismes de fluage dans les matériaux du nucléaire*, starting Nov. 2015, advisors: O. Coulaud and L. Dupuy (CEA-DEN)
6. Aurélien Falco, *High performance solver for BEM-FEM coupling*, starting December 2015, advisors: E. Agullo, L. Giraud and G. Sylvand.
7. Grégoire Pichon, Utilisation de techniques de compression $\mathcal{H}$-matrices pour solveur direct creux parallèle dans le cadre des applications FEM, starting October 2015, advisors: L. Giraud and P. Ramet.
8. Cyrille Fournier, *New parallel progamming paradigm for LES calculation at large scale*, starting March 2015, advisors: L. Giraud and G. Staffelbach (CERFACS).
9. Maria Predari, *Dynamic Load Balancing for Massively Parallel Coupled Codes*, starting Oct. 2013, advisors: A. Esnard and J. Roman.
10. Louis Poirel, *Two level hybrid linear solver*, starting Nov. 2014, advisors: E. Agullo, M. Faverge and L. Giraud.

10.2.3. Juries

- HDR of M. Chau (INP Toulouse) entitled “Algorithmes Paralléles Asynchrones et Applications en Calcul Scientifique" defended December 2015. L. Giraud (referee).
- PhD of J. Herrmann (ENS Lyon) entitled “Memory-aware Algorithms and Scheduling Techniques for Matrix Computations" defended November 2015. L. Giraud (examinator).
- Phd of E. Cieren (Université Bordeaux) entilted “Molecular Dynamics for Exascale supercomputers" defended October 2015. O. Coulaud (examinator).

- Phd of P. Pei Li (Université Bordeaux) entilted “Système unifié de transformation de code et d’exécution pour un passage aux architectures multicœurs hétérogènes" defended December 2015. J. Roman (examinator).

10.3. Popularization

In the context of HPC-PME initiative, we started a collaboration with ALGO’TECH INFORMATIQUE and we have organised one of the first PhD-consultant action implemented by Xavier Lacoste led by Pierre Ramet. ALGO’TECH is one of the most innovative SMEs (small and medium sized enterprises) in the field of cabling embedded systems, and more broadly, automatic devices. The main target of the project is to validate the possibility to use the sparse linear solvers of our team in the area of electromagnetic simulation tools developped by ALGO’TECH.

The HIEPACS members have organized the PATC training session on Parallel Linear algebra at CINES in Montpellier April 9-10, 2015.

LFANT Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

The team has organised the international conference ECC 2015 — 19th Workshop on Elliptic Curve Cryptography in Bordeaux from September 28 to September 30 and a Summer School on elliptic curves the week before from September 23 to September 25.

The three day conference with 170 participants comprised about fifteen invited lectures by world-renowned scientist, presenting the major advances of the previous year. Topics ranged widely from new mathematical and algorithmic results on elliptic curves and abelian varieties, over implementations and attacks of cryptosystems up to practical studies on real-world use of curve based cryptography. This year, a panel discussion on the standardisation of elliptic curves for cryptographic use was also organised.

The preceding summer school with about 70 participants included four invited lectures of three hours each (one of which was given by Damien Robert), and a software tutorial on Sage and Pari/GP. The tutorial on Pari/GP was done by Bill Allombert and Karim Belabas. The school concluded with an afternoon of computer exercices.

8.1.1.1. General chair, scientific chair

Andreas Enge and Damien Robert were scientific chairs, Andreas Enge was the general chair.

8.1.1.2. Member of the organizing committees

Andreas Enge, Anne-Laure Gautier and Damier Robert were members of the organizing committee.

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committees

- Andreas Enge was the programme chair of ECC 2015 (Bordeaux)

8.1.2.2. Member of the conference program committees

- Damien Robert was a member of the ECC 2015 (Bordeaux), Asiacrypt 2015 (Auckland) and CRI 2015 (Yaoundé) program committees.
- Sorina Ionica was a member of the Latincrypt 2015 (Guadalajara, Mexico) program committee.

8.1.3. Journal

8.1.3.1. 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.

H. Cohen is an editorial board member of *Journal de Théorie des Nombres de Bordeaux*; he is an editor for the Springer book series *Algorithms and Computations in Mathematics (ACM)*.

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

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

8.1.4. Invited talks

- F. Johansson gave an invited talk on "Fast arbitrary-precision evaluation of special functions in the Arb library" at The 13th International Symposium on Orthogonal Polynomials, Special Functions and Applications (OPSFA-13), National Institute of Standards and Technology, Gaithersburg, MD, USA (June 2015)
- S. Ionica gave an invited talk on “Fast scalar multiplicaton in pairing groups” at the "Pairings in cryptography" Minisymposium, SIAM AG15 Conference, Daejeon, South Korea (August 2015)
- A. Enge gave an invited talk on “Computing with theta functions on abelian surfaces” at the 11th Symposium on Algebra and Computation (AC2015), Tokyo Metropolitan University (December 2015)
- E. Milio gave an invited talk on “Computation of modular polynomials in dimension 2” at the Elliptic Curve Cryptography 2015 Conference in Bordeaux (September 2015). He also gave a similar talk at the Journées codage et cryptographie at la Londe-les-Maures (October 2015).
- D. Robert gave two invited talks on “Isogenies, Polarisations and Real Multiplication”, one for the Modular Forms and Curves of Low Genus: Computational Aspects conference at Providence (September 2015) and one for the Journées codage et cryptographie at la Londe-les-Maures (October 2015).

8.1.5. Scientific expertise

J.-M. Couveignes is a member of the scientific council of the labex "Fondation Sciences Mathématiques de Paris", FSMP, Paris.

J.-M. Couveignes is a member of the ’conseil d’orientation’ of the labex "Institut de Recherche en Mathématiques, Interactions et Applications", IRMIA, Strasbourg.

8.1.6. Research administration

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.

Since January 2015, J.-M. Couveignes is the head of the Math Institute (IMB).

A. Enge is the head of the COST-GTRI, the Inria body responsible for the scientific evaluation of the international partnerships of the institute.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence: Enea Milio, Analyse, 12h, L1, Université de Bordeaux, France;

Licence: Enea Milio, Mise à niveau Maths, 12h, L1, Université de Bordeaux, France;

Licence: G. Castagnos, *Algorithmique algébrique 1*, 34.67h, L3, University of Bordeaux, France

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*, 30h, M2, University of Bordeaux, France;

Master: K. Belabas, *Computational number theory*, 70h, M2, University of Bordeaux, France;

Master: K. Belabas, *Computer Algebra*, 90h, M2, University of Bordeaux, France;

Master: K. Belabas, *Algorithms for Public Key Cryptography*, 30h, M2, University of Bordeaux, France;

Summer School: F. Johansson gave three invited lectures on "High-precision methods for zeta functions" at the UNCG Summer School in Computational Number Theory, Greensboro, NC, USA in May 2015;

Summer School: J.-M. Couveignes and D. Robert gave a one week course on *Algorithmic number theory and cryptology* for the École Mathématique Africaine, organised with support from the Centre International de Mathématiques Pures et Appliquées (CIMPA) in March 2015 at Franceville, Gabon.

Summer School: D. Robert gave a talk on *The group structure of rational points of elliptic curves over a finite field* (including practical exercices on Sage or Pari/GP) for the Elliptic Curves Cryptography (ECC 2015) Summer School in September 2015 at Bordeaux.

Summer School: D. Robert gave a one week course on *Introduction to cryptology* as part of the seminar on security at Yaoundé I University preceding the Colloque de Recherche en Informatique in December 2015.

Summer School: S. Ionica gave a two lecture course on *Introduction to elliptic curve cryptography* at the ASCrypto 2015, the summer school organised at the Latincrypt 2015 conference, in Guadalajara, Mexico.

Summer School: A. Enge gave eight lectures at the SEAMS school on *Algebras and their applications (Quantum Physics, Cryptography and Statistics)* at Universiti Putra Malaysia in November 2015, entitled *Elliptic curves* (two lectures), *Hyperelliptic curves* (two lectures), *Kummer varieties*, *Exponential and subexponential algorithms for the discrete logarithm problem* (two lectures), *Pairings on elliptic curves*.

8.2.2. Supervision

PhD: Athanasios Angelakis, *Universal Adelic Groups for Imaginary Quadratic Number Fields and Elliptic Curves*, University of Bordeaux / University of Leiden, supervised by K. Belabas and P. Stevenhagen, defended 09/2015.

PhD: Julio Brau, *Galois representations of elliptic curves and abelian entanglements*, University of Bordeaux / University of Leiden, supervised by K. Belabas and P. Stevenhagen, defended 12/2015.

PhD: Enea Milio, *Computing modular polynomials in dimension 2*, University Bordeaux, supervised by A. Enge and D. Robert, defended 12/2015.

PhD in progress: Iuliana Ciocanea, *The module isomorphism problem*, supervised by K. Belabas and H. Lenstra.

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

PhD in progress: Pınar Kılıçer, *Topics in complex multiplication*, Universities Bordeaux and Leiden, supervised by A. Enge and M. Streng

PhD in progress: Chloë Martindale, *Isogeny graphs*, Universities Bordeaux and Leiden, supervised by A. Enge, P. Stevenhagen, M. Streng

F. Johansson was a mentor in Google Summer of Code for Anubhav Srivastava (undergraduate student at IIIT Hyderabad) who did a successful GSoC project on "BLAS wrappers for linear algebra in FLINT"

S. Ionica supervised P. Bert's Master 1 thesis "Index calculus algorithms for small genus hyperelliptic curves". P. Bert is a student of the CSI master (Univ. of Bordeaux) and was an intern with LFANT from the 10th of May 2015 to the 31th of July 2015.

8.2.3. Juries

K. Belabas was a member of the jury of Olga Balkanova's PhD defense in Bordeaux (supervised by G. Molteni and G. Ricotta)

K. Belabas was a member (as supervisor) of the juries of Athanasios Angelakis and Julio Brau.

J.-M. Couveignes was a member of the jury, as a referee, for François Arnaud's HDR defense.

J.-M. Couveignes was a member of the jury, for Cyril Bouvier's PhD defense.

J.-M. Couveignes was a member of the jury, for Tristan Vaccon's PhD defense.

J.-M. Couveignes was a member of the jury, for Kevin Atighehchi's PhD defense.

A. Enge and D. Robert were members (as supervisors) of the jury for Enea Milio's PhD defense.

8.3. Popularization

Damien Robert participated in a CinémaScience event to discuss with the public after a projection of the film "Imitation Game" on Alan Turing. The theme of the intervention was "The contributions of Alan Turing from computer science to cryptography".

MAGIQUE-3D Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

Hélène Barucq organized the Third Workshop of Strategic Action DIP in Pau, June 21-22, 2015, http://dip.inria.fr/workshops/third-workshop-of-the-strategic-action-dip/

Victor Péron and Hélène Barucq organized a series of courses at University of Pau in the framework of the GEAGAM project: Coding the FEM (A. Rodriguez), Seismic depth imaging (R. Baina), Discontinuous Galerkin methods for the simulation of wave propagation (J. Diaz), May 18-22, 2015

Victor Péron and Hélène Barucq organized the Workshop on Advanced Subsurface Visualization Methods: “Exploring the Earth”, Pau 26-27 May 2015, in the framework of the GEAGAM project https://sites.google.com/site/geagamnetwork/workshop.

Juliette Chabassier organized with Damien Fournier a Mini Symposium on Helioseismology at Waves 2015 conference (THE 12TH INTERNATIONAL CONFERENCE ON MATHEMATICAL AND NUMERICAL ASPECTS OF WAVE PROPAGATION), Karlsruhe, Germany, July 20-24, 2015. http://waves2015.math.kit.edu/conf_program.html#minisymp

9.1.2. Journal

9.1.2.1. Reviewer - Reviewing activities

In 2015, the members of the team have been reviewers for ESAIM : Mathematical Modelling and Numerical Analysis, New York Journal of Mathematics, SIAM Journal on Scientific Computing, SIAM Journal on Numerical Analysis, Acta Acustica united with Acustica, Journal of the Acoustical Society of America, Journal of Sound and Vibration, Journal of Computational Physics, Mathematics of Computation, Wave Motion, Geophysical Journal International, Journal of Computational Acoustics.

9.1.3. Research administration

Hélène Barucq was vice-chair of the Inria evaluation committee until June 2015. She participated to the national jury of Inria competitive selection for Senior Researchers (DR2) and to the local jury of Inria competitive selection for Young Graduate Scientists (CR2) in Bordeaux. She participated to the selection committee for Research Positions (Junior and Senior). She participated to the selection committee for an Assistant Professor position at the University of Pau. She is member of the board of the Laboratory of Mathematics of Pau and of the research federation IPRA which are both under the administrative supervision of CNRS. She is the scientific head of the project DIP.

Julien Diaz is elected member of the Inria Technical Committee and of the Inria Administrative Board. He is appointed member of the CDT (Commission de Développement Technologique) and of the Center Committee of Inria Bordeaux Sud-Ouest.

Sébastien Tordeux is elected member of the 26th section of the CNU (Conseil National des Universités).

Victor Péron is appointed member of the CJC (Commission Jeunes Chercheurs) of Inria Bordeaux Sud-Ouest.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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

Licence : Victor Péron, Compléments d'analyse, 19,5 Eq. TD, L2, UPPA, France

Licence : Victor Péron, Calcul intégral, 19,5 Eq. TD, L3, UPPA, France

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

Master : Marc Duruflé, Calcul scientifique en C++, 96h Eq. TD, M1, Bordeaux INP, France

Master : Marc Duruflé, Equations Différentielles, 20h Eq. TD, L3, Bordeaux INP, France

Master : Victor Péron et Sébastien Tordeux, Analyse numérique fondamentale, 87h Eq. TD, M1, UPPA, France

Master : Victor Péron, Analyse, 23h Eq. TD, M1, UPPA, France

Master : Sébastien Tordeux, Introduction aux phénomènes de propagation d'ondes, 38h Eq. TD, M2, UPPA, France

Master : Sébastien Tordeux, Introduction aux phénomènes de propagation d'ondes, 20h Eq. TD, M2, ENS Kouba, Algérie

9.2.2. Supervision

PhD : Jérôme Luquel, RTM en milieu hétérogène par équations d'ondes élastiques, UPPA, April 16th 2015, Hélène Barucq and Julien Diaz

PhD : Théophile Chaumont-Frelet, High Order Methods for Helmholtz Problems in Highly Heterogeneous Media, INSA Rouen, December 11th 2015, Hélène Barucq and Christian Gout (INSA Rouen).

PhD : Marie Bonnasse-Gahot, Simulation of elastic wave propagation in time harmonic domain using discontinuous Galerkin methods, Université de Nice Sophia Antipolis 15/12/2015, Julien Diaz and Stéphane Lantéri (EPI Nachos, Inria Sophia Antipolis-Méditerranée).

PhD : Julen Alvarez-Aramberri, hp-adaptive inversion of magnetotelluric measurements, University of Basque Country and UPPA, December 18th 2015, Hélène Barucq and David Pardo.

PhD in progress : Izar Azpiroz Iragorri, Approximation des problèmes d'Helmholtz couplés sur maillages virtuels , October 2014, Hélène Barucq, Julien Diaz and Rabia Djellouli.

PhD in progress : Vincent Darrigrand, Etude d'erreur pour des problèmes d'Helmholtz approchés par des techniques de Petrov-Galerkin , October 2013, Hélène Barucq and David Pardo.

PhD in progress : Aralar Erdozain, Fast inversion of 3D Borehole Resistivity Measurements using Model Reduction Techniques based on 1D Semi-Analytical Solutions, October 2013, Hélène Barucq, David Pardo and Victor Péron.

PhD in progress : Florian Faucher, Méthodes d'inversion sismique dans le domaine fréquentiel , October 2014, Hélène Barucq.

PhD in progress : Mamadou N'Diaye, "Analyse et développement de schémas temporels hybrides pour les équations hyperboliques du premier ordre", January 2015, Hélène Barucq and Marc Duruflé.

PhD in progress : Elvira Shishenina, Approximations hybrides par éléments finis et éléments virtuels discontinus pour l'élasto-acoustique, October 2015, Hélène Barucq and Julien Diaz.

PhD in progress : Vincent Popie, Modélisation asymptotique de la réponse acoustique de plaques perforées dans un cadre linéaire avec étude des effets visqueux, 2012, Estelle Piot (ONERA) et Sébastien Tordeux.

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

9.2.3. Juries

Hélène Barucq : Antoine Rousseau (Université de Montpellier), “Modélisation mathématique et numérique de quelques problèmes issus des sciences de l’environnement”, HDR, December 3th 2015

Julien Diaz : Stojce Nakov (Université de Bordeaux) “Solveur hybrides très haute performance et multi seconds membres pour la simulation3D en régime fréquentiel de propagation d’ondes dans des milieux avec hétérogénéïté et topographie”, PhD thesis, December 14th 2015

Victor Péron : Julen Alvarez-Aramberri (UPV-EHU, Bilbao) “hp-Adaptative Simulation and Inversion of Magnetotelluric Measurements”, PhD thesis, December 18th 2015

MANAO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

Organization of Dagstuhl Seminar on “Computational Imaging”

10.1.1.2. Member of the organizing committees

Steering Board Eurographics Workshop on Graphics and Cultural Heritage

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

CCD 2015, CVPR 2015, Digital Heritage 2015, Eurographics 2016, Expressive 2015 (NPAR-SBIM-CAe), ICCP 2015, ICCV 2015, GMP 2016

10.1.2.2. Reviewer

ACM Siggraph 2015, ACM Siggraph Asia 2015, CCD 2015, CHI 2015 CVPR 2015, Eurographics 2016, Eurographics Symposium on Rendering 2015, ICCP 2015, ICCV 2015, Pacific Graphics 2015

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing activities

SIAM Journal on Scientific Computing, OSA Journal of the Optical Society of America A, IEEE Transactions on Pattern Analysis and Machine Intelligence, ACM Transaction on Graphics, IEEE Transaction on Visualisation and Computer , Computer Graphics Forum, Visual Computer, Graphics, GMOD

10.1.4. Invited talks

Journée de la Recherche en Robotique, Carl Zeiss Inc., RWTH Aachen, KAUST, Bordeaux University, Heidelberg University
FMX 2015 - Conference on Animation, Effects, Games and Transmedia www.fmx.de Stuttgart, Germany, Filmakademie Baden-Wuerttemberg [16]

10.1.5. Scientific expertise

DFG grant proposal, Schloss Dagstuhl seminar proposal

10.1.6. Research administration

Some members are part of: Committee of the Bordeaux Sud-Ouest Inria Center, Evaluation Committee of Inria, Scientific Council of the Image & Sound team at LaBRI.

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 and Romain Pacanowski, Photorealistic and Expressive Image Synthesis, 60 HETD, M2, Univ. Bdx, France.

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

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

Master : Gaël Guennebaud, Geometric Modeling, 22 HETD, M2, IOGS, France

Master : Xavier Granier, Romain Pacanowski, Boris Raymond Brett Ridel, Algorithmic and Object Programming, 60 HETD, M1, IOGS, France

Master : Xavier Granier, Radiometry, 10 HETD, M1, IOGS, France

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

Master : Gaël Guennebaud and Pierre Bénard, High-performance 3D Graphics, 60 HETD, M1, Univ. Bdx and IOGS, France.

Master : Pierre Bénard, Virtual Reality, 24 HETD, M2, Univ. Bdx, France.

Master : Ivo Ihrke, Computational Optical Imaging, 30 HETD, M1, IOGS, France

Master : Ivo Ihrke, Introduction to Image Processing, 30 HETD, M1, IOGS, France

Master : Ivo Ihrke, Advanced Display Technology, 12 HETD, M1, IOGS, France

Master : Christophe Schlick, Pierre Bénard, Image Synthesis, 60 HETD, M2, ENSEIRB, France

Licence : Patrick Reuter, Digital Imaging, 36 HETD, L3, Univ. Bdx, France.

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

Master : Xavier Granier, Optics and Computer Science, M1/M2, IOGS, France.

License : Patrick Reuter, Science and Modeling, L2, Univ. Bdx, France.

10.2.2. Supervision

PhD : Alkhazur Manakov, Calibration and Characterization of Advanced Image-Based Measurement Systems, Saarland University, I. Ihrke

PhD : Boris Raymond, Rendering and manipulation of anisotropic materials, Univ. Bordeaux, P. Barla & G. Guennebaud & X. Granier

PhD : John Restrepo, Plenoptic Imaging and Computational Image Quality Metrics, Univ. Bordeaux, I. Ihrke

PhD : Brett Ridel, Interactive spatial augmented reality, Univ. Bordeaux, P. Reuter & X. Granier

PhD : Carlos Zubiaga Pena, Image-space editing of appearance, Univ. Bordeaux, P. Barla & X. Granier

PhD : Florian Canezin, Implicit Modeling, Univ. Toulouse III, G. Guennebaud & Loïc Barthe

PhD : Mathieu Diawara, Computer-Assisted 2D Animation, Univ. Bordeaux, P. Barla, P. Bénard & X. Granier

PhD : Arthur Dufay, Adaptive high-quality of virtual environments with complex photometry, Univ. Bordeaux, J.-E. Marvie R. Pacanowski & X. Granier

PhD : Thibaud Lambert, Real-time rendering of highly detailed 3D models, Univ. Bordeaux, G. Guennebaud & P. Bénard

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

PhD : Antoine Lucat, Appearance Acquisition and Rendering, CNRS (LP2N) & IOGS, R. Pacanowski & X. Granier

10.3. Popularization

February 2015: Journée numérique au Sénat on the showroom "Modèles 3D, réalité augmentée et sauvegarde du patrimoine", http://www.senat.fr/evenement/journee_numerique_inria.html.

MEMPHIS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

Organization of the Scientific Day of the team "Modelling and Scientific Computing" of the Mathematics Institute of Bordeaux.

With Frédéric Gibou we have organized an international workshop in Santa Barbara funded by the Idex initiative in Bordeaux. The topics of the workshop were about our common research subjects: hierarchical Cartesian meshes and monolithic models: multi-resolution schemes based on octree grid structures, refined grid patches, numerical zooms, overset.

Charles-Henri Bruneau is in the organizing commettee of ICCFD conference, a major conference in CFD.

10.1.2. Journal

10.1.2.1. Member of the editorial boards

Angelo Iollo is in the advisory board of Acta Mechanica.

10.1.2.2. Reviewer - Reviewing activities

- projects CSCS Swiss National Supercomputing Centre
- reviews of applications for PhD and Postdoc grants at Inria (commission jeunes chercheurs)
- journals: 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.

10.1.3. Invited talks

Invited seminars at Institut Montpelliérain Alexander Grothendieck, Ecole Centrale Nantes, Laboratoire de Mathématiques et Applications de Poitiers, Laboratoire de Mathématiques d'Orsay, Florence University .

10.1.4. Leadership within the scientific community

Angelo Iollo is responsible of the scientific policy of the scientific computing departement of the LabEx CPU. This departement gathers 60 researhers of the math lab IMB, of the computer science lab LaBRI, of the mecanichs lab I2M and of the CEA.

10.1.5. Scientific expertise

Angelo Iollo has been reviewer of the PhD defense « Modélisation numérique du vol inspiré à la biologie » of Thomas Engels, TU Berlin et Université Aix-Marseille, 12/12/2015. Also he is scientific reviewer for ANR (1 project) and the Romanian Research Agency (8 projects).

Michel Bergmann has a reviewing activity for the CSCS Swiss National Supercomputing Center. He is also member of the Inria Young Researchers Commission, which allocates PhD and Postdoc grants.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Four members of the team are Professors or Assistant Professors at Bordeaux University and have a teaching duty, which consists in courses and practical exercises in numerical analysis and scientific computing.

E-learning

Online course on the Moodle webpage of Bordeaux University, 13 weeks, licence 2, Differential equations, Lisl Weynans, 5 students registered.

10.2.2. Supervision

In case of co-supervision, the name of the concerned student/postdoc is mentionned twice.

Michel Bergmann:

- PhD students:
  - Alice Raeli (cpu)
  - Federico Tesser (inria)
  - Claire Morel (valeol)
  - Baptiste Lambert (univ. Bordeaux)
- Postdoc:
  - Andrea Ferrero (Aerogust)

Afaf Bouharguane

- Research Engineer: Andrea Valenti (cpu)

Charles-Henri Bruneau

- PhD student: Meriem Jedouaa (co-tutelle Grenoble Emmanuel Maitre)

Angelo Iollo:

- PhD students:
  - Alice Raeli (cpu)
  - Federico Tesser (inria)
  - Claire Morel (valeol)
  - Emanuela Abbate (univ. Insubria)
  - Mathias Braun (univ. Insubria)
- Postdoc:
  - Andrea Ferrero (Aerogust)
- Research Engineers:
  - Marco Cisternino (cpu)
  - Florian Bernard (Inria)
  - Andrea Valenti (CPU)
- Master: Nadia Loy (univ/ Florence)

Lisl Weynans

- PhD student:Baptiste Lambert (univ. Bordeaux)
- Research Engineers:Marco Cisternino (CPU)

  2012-2015. Dr. Alexia de Brauer. Compressible Materials Simulations. Codirectors A. Iollo and T. Milcent. DGA Grant. University of Bordeaux.

  2012-2015. Dr. Gwladys Ravon. Inverse Problems in Cardiac Electrophysiology. Codirectors A. Iollo, Y. Coudiere. Idex and IHU Grant. University of Bordeaux.

  2012-2015. Dr. Florian Bernard. Efficient Asymptotic Preserving Schemes for BGK and ES-BGK models on Cartesian grids. Codirectors A. Iollo and G. Puppo. University of Bordeaux and Politecnico di Torino. Grant from the Politecnico di Torino.

10.2.3. Juries

Participation to hiring comittees ("comités de sélection"): Ecole Centrale de Nantes, I2M laboratory at Bordeaux University.

Participation to PhD defence juries: C.-H. Bruneau for Eysteinn Helgason (Chalmers, Sweden), L. Weynans for Pierre Bigay (Ecole Centrale Nantes)

10.3. Popularization

One member of the team (Lisl Weynans) is in charge of the communication with secondary degree for the Mathematics Institute.

Participation popularization operations, such as: "Fête de la Science", "Des enseignants dans les labos", "Le printemps de la mixité", and several talks in high schools to popularize scientific computing.

Pedagogic project with an high in rural area about statistics: the PARADOX project, awarded by a grant from the fundation "Sciences à l'école".

MNEMOSYNE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

Nicolas Rougier: Program chair for the EuroScipy 2015 conference. Organization of the "Tentatives, Tentations, Intentions" conference (Nancy, December 2015).

10.1.1.2. Member of the organizing committees

Frédéric Alexandre: Member of the organizing committee of the Conference "Cognition and Innovation", Paris, November 5-6th, cf http://fondation-cognition.org/?q=node/259.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

Frédéric Alexandre: Member of program committee of CAP 2015 (french conference on Machine Learning)

10.1.2.2. Reviewer

- Nicolas Rougier: Reviewer for EuroScipy 2015, Scipy 2015, ICANN 2015.
- Frédéric Alexandre: Reviewer for the International IEEE EMBS Conference on Neural Engineering; for the International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB 2015);

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Frédéric Alexandre: Review Editor for Frontiers in Neurorobotics;
- Nicolas Rougier: Editor in chief for ReScience, review editor for Frontiers in Neurorobotics.

10.1.3.2. Reviewer - Reviewing activities

- Nicolas Rougier: Reviewer for PLOS ONE, Frontiers in Neuroscience, IEEE Transactions on Visualization and Computer Graphics, IEEE Transactions on Image Processing, Journal of Computer Graphics Techniques
- Frédéric Alexandre: Reviewer for Cognitive Computation, PlosOne, Applied Intelligence

10.1.4. Invited talks

- Nicolas Rougier: Invited tutorial ("Neural Fields and cognition") at the 24th Annual Computational Neuroscience Meeting in Prague; Invited talk ("Distributed, Asynchronous, Numerical and Adaptive computing: from neurons to behavior." at the first meeting og the BioComp initiative; Invited tutorial ("matplotlib for beginner") at EuroScipy 2015.
- Frédéric Alexandre: invited talk at the symposium "Modeling the early visual system: From natural vision to numerical applications" of the 12th meeting of the French Neuroscience Society; Invited talk at the special day on modeling irrationality in cognition, organized jointly by the french society of Artificial Intelligence and the french society of Research on Cognition; Invited talk at the scientific council of IMB (institute of mathematics in Bordeaux, june 23rd);

10.1.5. Scientific expertise

Expert for the BBSRC research council (UK) (Nicolas Rougier)

10.1.6. Research administration

- F. Alexandre is member of the Inria Evaluation Committee; Vice-head of the Project Committee of Inria Bordeaux Sud-Ouest; 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; Responsible of the local Inria committee for invited professors; Member of the steering committee for the BioComp CNRS consortium; Editor in chief and co-founder of ReScience.
- Thierry Viéville is in charge, at the Inria national level, of the institute science outreach actions and depends on the Direction Générale Déléguée à la Science for this part of his work. He is, for Inria, at the origin of the http://classcode.fr project, and drives it [18], [12].

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Many courses are given in 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 since 2009 in charge of formations of high-school teachers in popular computer science.

10.2.2. Juries

We participate to many juries each year.

10.3. Popularization

For a multi-disciplinary team as Mnemosyne, science popularization is not only a nice and useful contribution to the dissemination of scientific knowledge but also a necessity since we work with colleagues from bio-sciences with whom sharing profound ideas in computer science is mandatory for a real collaboration.

- Thierry Viéville is for 80% of his time involved in popularization actions [35], both at a concrete level (including on Mnemosyne subjects [23]) and at the methodological level [34], [19]. This explains the amount of references to these external subjects in this document.
- Nicolas Rougier: Question/answers about Artificial Intelligence (AI) with the general public (NODE, Bordeaux); popularized article about AI on Interstices; invited talk for the "Pint of Science" festival; interview about AI in the `#Thinovery` magazine; two articles in "The Conversation (FR)" about neurosciences and AI; "Unithé ou Café" at Inria BSO; Blog posts in "Binaires" (36 15 EULA) and "Scilogs" ("L'intelligence artificielle n'aura pas lieu.")
- Frédéric Alexandre: Blog post in Scilogs: "Rien de neuf sous le soleil de l'IA" (www.scilogs.fr/intelligence-mecanique/rien-de-neuf-sous-le-soleil-de-lia/); Conference at the Bordeaux museum of science (Cap Sciences, March 5th) "Modeling the brain to better understand neurodegenerative diseases"; Article in the french scientific magazine Pour la Science: "Where are the real dangers of Artificial Intelligence" (http://www.pourlascience.fr/ewb_pages/a/article-ou-sont-les-vrais-dangers-de-l-apos-intelligence-artificielle-35148.php); Conference at the Multimedia Library of Tulle "Modeling emotions to better understand neurodegenerative diseases" (March 28th); Participation to the french radio broadcast 3D on the national channel France Inter (http://www.franceinter.fr/emission-3d-le-journal-robots-cops, May 31st); Interview in the french scientific magazine Science et Vie Junior ("Must we fear super intelligences", issue of August); Interview in Inriality "Who is afraid about Artificial Intelligence" (http://www.inriality.fr/communication/intelligence-artificielle/qui-peur-de/); Responsible for the Masterclass "Think different" to the Biznext conference (december17th, Bordeaux, cf interview http://objectifaquitaine.latribune.fr/innovation/2015-11-20/les-robots-intelligents-nous-poussent-ils-a-penser-le-monde-autrement.html and announcement on TV http://france3-regions.francetvinfo.fr/aquitaine/emissions/jt-1213-aquitaine);

- PhD students participated to the regional exhibition Aquitec (C. Héricé and Maxime Carrere), to “Fête de la Science” (I. Chraibi Kaadoud and C. Héricé), to “Printemps des filles” (I. Chraibi Kaadoud and C. Héricé) and to the organizing committee of Pint of Science Bordeaux (C. Héricé).

Monc Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Chair of conference program committees

- S. Benzekry: member of the scientific committee of the “Journées de modélisation BioMathématique de Besançon" (http://mb2.univ-fcomte.fr/).

9.1.2. Journal

9.1.2.1. Member of the editorial boards

- Th. Colin - SIAM News, Mathematical Biosciences and Engineering, SMAI Mathématiques et Applications

9.1.2.2. Reviewer - Reviewing activities

- S. Benzekry - biomathematical modeling journals: Journal of Theoretical Biology, Mathematical Biosciences, Bulletin of Mathematical Biology, Theoretical Biology and Medical Modeling, Mathematical Biosciences and Engineering, Journal of Biological Informatics, Journal of Biological Systems, ESAIM:Proc, Mathematics and Computers in Simulation; and medical/biological journals about cancer: Clinical Pharmacokinetics, BMC Cancer
- C. Poignard - SIAM Journal on Mathematical Analysis, IEEE Trans on Mag, J. Math. Biology, J. Theoretical Biology
- O. Saut - IEEE Trans. Med. Imaging, PLOS Computational Biology, Medical Image Analysis, Nature Comm.

9.1.3. Invited talks

- Th. Colin - Congrès de la société Francophone de Biologie Théorique (Poitiers, June 2015), Present challenges of mathematics in oncology and biology of cancer (CIRM, Dec 2015).

9.1.4. Leadership within the scientific community

- O. Saut is the head of the CNRS GDR 3471 Metice (http://metice.math.cnrs.fr).

9.1.5. Scientific expertise

- O. Saut is an export for the French Ministry of Research (PHC and EGIDE programs)

9.1.6. Research administration

- C. Poignard is elected member of the Inria evaluation committee.
- O. Saut is a member of the Steering Committee of Labex TRAIL (http://trail.labex.u-bordeaux.fr).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : T. Michel, *Travaux encadrés de recherche*, 41h, L3, ENSEIRB-Matmeca, France

Licence : T. Michel, *TD Probabilités/Statistiques*, 32h, L3, ENSEIRB-MATMECA, France

Licence : T. Michel, *Harmonisation Maths (cours-TD Séries, Intégrales)*, L3, ENSEIRB-MATMECA, France

Licence : C. Poignard, *TD Équations Différentielles Ordinaires*, 30h, L3, ENSEIRB-Matmeca, France

Licence : E. Baratchart, *Initiation au calcul scientifique*, 64h, L3, ENSCBP, France

Licence : O. Gallinato, *Méthodes numériques linéaires*, 64h, L3, Université de Bordeaux, France

Licence : G. Lefebvre, *Mathématiques pour les sciences de l'environnement*, 48h, L1, Université de Bordeaux, France

Licence : G. Lefebvre, *Mathématiques et représentation des phénomènes physiques*, 35h, L1, Université de Bordeaux, France

Licence : G. Lefebvre, *Fondamentaux pour les mathématiques et l'informatique*, 35h, L1, Université de Bordeaux, France

Licence : S. Benzekry, *Equations Différentielles*, 20h, L3, ENSEIRB-MATMECA, France

Licence : A. Collin, *TD Equations Différentielles*, 20h, L3, ENSEIRB-MATMECA, France

Master : C. Poignard, *Modélisation électromagnétique des cellules*, 36h, M2, Université Bordeaux, France

Master : C. Poignard, *CM-TD Analyse Numérique*, 50h, L3, Formation SC - ENSCPB, France

Master : O. Saut, *TD Analyse des Equations aux dérivées partielles*, 30h, M1, ENSEIRB-Matmeca, France

Master : A. Collin, *TD Analyse des Equations aux dérivées partielles*, 30h, M1, ENSEIRB-MATMECA, France

Master : O. Saut, *TP C++*, 44h, M1, ENSEIRB-Matmeca, France

Master : A. Collin, *TP C++*, 44h, M1, ENSEIRB-MATMECA, France

DAEU-B : P. Berment, *Mathématiques pour le DAEU-B*, 64h, DAEU-B, Université de Bordeaux, France

9.2.2. Supervision

PhD : J. Jouganous, Lung metastases growth modeling and simulation, Université de Bordeaux, 23rd Sep 2015

PhD : G. Lefebvre, Modeling and analysis of tumor heterogeneity during treatments resistance: case of GIST liver metastases, Université de Bordeaux, 3rd Dec 2015

PhD in progress : P. Berment, Mathematical modelling evaluating radiotherapy outcome for colorectal tumor with Pet Scan, Oct 2013, Thierry Colin and Olivier Saut

PhD in progress : E. Baratchart, Quantitative study of the dynamics and spatial aspects of metastatic development using mathematical models, Dec 2012, S. Benzekry, Th. Colin and O. Saut

PhD in progress : M. Deville, Modeling of electroporation and gene transfection across tissue. Theoretical and numerical aspects., Sep 2014, C. Poignard and R. Natalini (IAC, CNR Roma)

PhD in progress : O. Gallinato, Invasive process modeling of the tumor metastatic cells, Nov 2013, C. Poignard and T. Suzuki (Osaka University)

PhD in progress : T. Kritter, Primary tumors modelling with a view to the gliomas and adenocarcinomas study, Sep 2015, C. Poignard and O. Saut

PhD in progress : T. Michel, Analysis of mathematical growth tumor models, Sep 2013, C. Poignard and Th. Colin

PhD in progress : A. Perreti, Anti-angiogenic traitements modeling using medical imaging, Oct 2014, Th. Colin and O. Saut

9.2.3. Juries

- O. Saut was a reviewer of the PhD of Baptiste Bedessem "Influence des contraintes environnementales (mécaniques, stérique, hypoxique, acidité) sur la durée du cycle cellulaire dans un contexte tumoral Approche par la modélisation computationnelle et par l'expérimentation", Univ. Grenoble, Oct 2015.
- O. Saut was a reviewer of the PhD of Joris Costes "Développement de méthodes de résolution d'équations aux dérivées partielles : du schéma numérique à la simulation d'une installation industrielle", ENS Cachan, June 2015.

9.3. Popularization

- C. Poignard gave a lecture at IREM "Des décharges électriques contre le cancer" (April 2015)
- O. Saut is a regular speaker at Entretien de l'Excellence (http://www.lesentretiens.org)
- O. Gallinato gave a lecture at "la nuit des chercheurs" (Sep 2015)
- P. Berment is participating at a "Math en jean" project with the "collège Chambéry" of Villenave d'Ornon since December 2015
- A. Perreti and C. Perier represented Inria to the Aquitec forum (Jan 2015)
- S. Benzekry gave an interview to "radio campus" in June 2015 (http://www.c-yourmag.net/article/2015-06-03/il-modelise-levolution-des-tumeurs-avec-les-mathematiques-16763)

PHOENIX Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Member of the conference program committees

Charles Consel

- ESOP 2015, the 24th European Symposium on Programming. April 11-15, 2015 London, United Kingdom.

9.1.2. Invited talks

- C. Consel: HomeAssist: An Assisted Living Platform for Aging in Place Based on A Multidisciplinary Approach. Presentation at Washingon State University, July 7, 2015.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Hélène Sauzéon, "General Cognitive Psychology", 36h, L2/L3, University of Bordeaux, France

Licence: Hélène Sauzéon, "Cognitive Neuropsychology", 14h, DU, University of Bordeaux, France

Master: Hélène Sauzéon, "Cognitive Science of Language", "Technologies For Cognitive Disabilities", "Human Factors and HCI", 120h, M1/M2, University of Bordeaux, France

Master: Charles Consel, "Telephony Over IP", 43h, M2, Bordeaux INP, France.

Master: Charles Consel, "Software Engineering for Smart Spaces", 10h, M2, Bordeaux INP, France.

Master: Charles Consel, "Ubiquitous Computing", 10h, M2, Bordeaux INP, France.

9.2.2. Supervision

PhD: Paul van der Walt, “Certification d’une plateforme ouverte”, completed in December 2015, supervised by Charles Consel

PhD in progress: Milan Kabac, “Orchestration à grande échelle d’objets communicants”, started in September 2012, supervised by Charles Consel

PhD in progress: Charles Fage, “Validation expérimentale d’un assistant numérique d’inclusion scolaire d’élèves collègiens porteurs d’autisme”, started in September 2012, supervised by Hélène Sauzéon

PhD in progress: Lucile Dupuy, “DomAssist: Assistance domiciliaire pour la personne âgée et son aidant formel basée sur la technologie DiaSuiteBox”, started in September 2013, supervised by Hélène Sauzéon and Charles Consel

PhD in progress: Adrien Carteron, "A development environment dedicated to assistive application", started in October 2014, supervised by Charles Consel.

PhD in progress: Cécile Magnier, "Customized technology for autonomous schooling: on longitudinal effects for students with an autism spectrum disorder", started in November 2014, supervised by Hélène Sauzéon and Charles Consel.

PhD in progress: Quentin Chisin, "Digital home assistance for young adults with Down syndrome", started in December 2014, supervised by Bernard N’Kaoua and Charles Consel.

9.2.3. Juries

Charles Consel participated in the following jury:

- Thesis defense committee for A. Capra, Université de Bordeaux, december 2015.

Hélène Sauzéon participated in the following juries:

- Thesis defense committee for S. Gombart, Université de Tours, december 2015
- Thesis defense committee for B. Chateau, Université de Poitiers, december 2015

9.3. Popularization

- Hélène Sauzéon. " Assistance numérique pour soutenir les activités quotidiennes des personnes âgées et/ou avec handicap cognitif." Journée de Lancement du Living Lab e-santé Aquitain. March 5, 2015, Bordeaux.
- Hélène Sauzéon. " Quels outils numériques pour les élèves avec handicap cognitif ?" Congrès FNAREN. June 24-27, 2015, Cenon.
- Hélène Sauzéon. "DomAssist : pesrpectives d'application en EPHAD." Congrès EHPAD et Innovations. July 2, 2015, Bordeaux.
- Phoenix members. Présentation de DomAssist et College+. Les rencontres Inria-Industrie sur le thème de la santé. Novembre 13, 2015, Bordeaux.
- Benjamin Bertran. Présentation de DomAssist. Colloque sur la Silver Economy. October 19, 2015, Bordeaux (200 personnes).
- Benjamin Bertran. Présentation de DomAssist / HomeAttendant, Rencontre médico-social. October 1, Limoges (80 personnes).

PLEIADE Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Journal

8.1.1.1. Member of the editorial boards

Pascal Durrens is a member of the editorial board of the journal ISRN Computational Biology. David Sherman is a member of the editorial board of the journal Computational and Mathematical Methods in Medicine.

8.1.1.2. Reviewer - Reviewing activities

Pascal Durrens was reviewer for the journal BMC Genomics.

8.1.2. Scientific expertise

Pascal Durrens is an expert in Genomics for the Fonds de la Recherche Scientifique-FNRS (FRS-FNRS), Belgium. David Sherman is an expert for INRA's "Microbial Ecosystems and Metaomics" program.

8.2. Teaching - Supervision - Juries

8.2.1. Supervision

PhD: Razanne Issa, *Analyse symbolique et inférence de modèles métaboliques*, Université de Bordeaux, July 10, 2015. Thesis director: David Sherman.

8.2.2. Juries

Mid-term PhD review: Julie Laniau, Université de Rennes, October 1, 2015. Thesis director: Anne Siegel. Examinator: David Sherman

8.3. Popularization

David Sherman participated in popularization activities based on Thymio-II mobile robots for education, coordinated by the Mobsya association and EPFL (Switzerland). He contributed code to the Aseba project for piloting Thymio-IIs from the Scratch programming language, assisted in teaching at the Flornoy elementary school, and organized a team in the R2T2 event (http://r2t2.org) on November 4, 2015.

POSET Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- D. Janin was general chair of the workshop "Modélisation et représentation musicale", GDR ESARS, Bordeaux,

10.1.2. Scientific events selection

10.1.2.1. Chair of conference program committees

- D. Janin, PC Chair of ACM Workshop on Functional Art, Music, Modeling and Design (FARM), Vancouver (Canada), associated with ICFP,

10.1.2.2. Member of the conference program committees

- M. Desainte-Catherine, PC member of Journées d'Informatique Musicale (JIM 2015), Montréal (Canada),
- M. Desainte-Catherine, PC member of Sound and Music Computing (SMC 2015), Maynooth (Ireland),
- M. Desainte-Catherine, PC member of International Conference on Digital Audio Effects (DAFX 2015), Trondheim (Norway).

10.1.2.3. Reviewer

Members of the project are yearly reviewers for a number of international conferences including LICS, ICALP, STACS, MFCS, FST&TCS, in theoretical computer science, and ICMC, SMC, NIME, FARM, TENOR, JIM in computer music.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- S. Salvati is editor of the Journal of Logic Language and Information (JoLLI); since the end of 2015, he has been promoted as Editor in Chief,
- M. Desainte-Catherine is editor of the Revue francophone d'informatique musicale (RFIM).

10.1.3.2. Reviewer - Reviewing activities

Members of the project are regular reviewers for a number of international journal including ACM Computers In Entertainment (CIE), Iranian Journal of Fuzzy Systems (IJFS), Journal of New Music Research (JNMR), Journal of Logic Language and Information (JoLLI), Revue francophone d'informatique musicale (RFIM), Discrete Mathematics &Theoretical Computer Science (DMTCS), International Journal of Foundations of Computer Science (IJFCS), Information & Computation (I&C) ...

10.1.4. Invited talks

- S. Salvati, LIF seminar, "Formal language theory and lambda-calculus", February 2015
- M . Desainte-Catherine, Albi Seminar *Les nouveaux territoires de la création*, “Jouer avec le temps”, March 2015,
- S. Salvati, Chocola meeting, "Model construction for higher-order model-checking", April 2015
- S. Salvati was an invited speaker of the conference Finite State Methods in Natural Language Processing, "Context-freeness, automata and denotational semantics", June 2015
- S. Salvati, NII seminar "Model construction for higher-order model checking", July 2015,
- D. Janin, Dagstuhl Seminar *Verification of Evolving Graph Structures*, “Higher dimensional strings”, November 2015,
- D. Janin, RNSC MuSICAL meeting, "Visualisation et programmation musicale via l’algèbre", December 2015,
- D. Janin, workshop GDR Esthétique Arts et Science (ESARS), "Représentation musicale et algèbre”, Novembre 2015,
- M. Desainte-Catherine, colloque A& S FACTS, “Projet A& S le chant du filament”, with Nicolas Villenave, November 2015,
- M. Desainte-Catherine and J.-M. Celerier, workshop GDR Esthétique Arts et Science (ESARS), “Structuration du temps avec i-score”, Bordeaux, November 2015.

10.1.5. Leadership within the scientific community

- M. Desainte-Catherine is president of the Association Française d’Informatique Musicale (AFIM)
- S. Salvati is the secretary of the Foundation for Logic Language and Information (FoLLI).

10.1.6. Scientific expertise

- Expertise of Art and Science projects of Diagonale Paris-Saclay.
- Expertise of projects for the young researcher award of Science and Music colloque at the University of Rennes.

10.1.7. Research administration

- M. Desainte-Catherine, directrice adjointe du LaBRI,
- M. Desainte-Catherine, directrice scientifique et administrative du SCRIME,
- M. Desainte-Catherine, responsable du thème SI de l’équipe image et son du LaBRI,
- D. Janin, membre commission recherche Bordeaux INP/ENSEIRB-MATMECA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Myriam Desainte-Catherine, *Programmation fonctionnelle*, 44 h, L3, Software Engineering department, Bordeaux INP, France,

Licence: Myriam Desainte-Catherine, *Projet d’algorithmique et de programmation*, 25 h, L3, Software Engineering department, Bordeaux INP, France,

Licence: Anne Dicky, *Algorithmique des graphes*, 30 h, L3, Computer Science Departement, Paris VI University, Vietnam,

Licence: Anne Dicky, *Probabilités et combinatoire*, 75 h, L3, Computer Science Departement, Bordeaux University, France,

Licence: Anne Dicky, *Algorithmique et structures de données*, 50h, L2, Computer Science Departement, Bordeaux University, France,

Licence: Anne Dicky, *Fondamentaux pour les mathématiques et l'informatique*, 35 h, L1, Computer Science Departement, Bordeaux University, France,

Master: Sylvain Salvati, *Logique*, 12h, M1, Computer Science Departement, Bordeaux University, France,

Licence: David Janin, *Projet d'algorithmique et de programmation*, 25 h, L3, Software Engineering department, Bordeaux INP, France,

Licence: Sylvain Salvati, *Analyse syntaxique et projet de programmation 3*, 37,5 h, niveau L3, Computer Science Departement, Bordeaux University, France,

Master: Myriam Desainte-Catherine, *Compilation*, 14 h, M1, Software Engineering department, Bordeaux INP, France,

Master: Myriam Desainte-Catherine, *Projet de Génie Logiciel*, 25 h, M1, Software Engineering department, Bordeaux INP, France,

Master: Myriam Desainte-Catherine, *Informatique musicale contrôle et composition*, 25 h, M2, Software Engineering department, Bordeaux INP, France,

Master: Anne Dicky, *Recherche operationelle*, 70 h, M1, Computer Science Departement, Bordeaux University, France,

Master: David Janin, *Projet de Génie Logiciel*, 25 h, M1, Software Engineering department, Bordeaux INP, France,

Master: David Janin, *Compilation*, 20 h, M1, Network and System Engineering department (RSI), Bordeaux INP, France,

Master: David Janin, *Tutorat*, 15 h, M1, M2, Network and System Engineering department (RSI), Bordeaux INP, France,

Doctorat: Sylvain Salvati, *Initiation à CoQ*, 12 h, Ecole Doctorale Mathématique et Informatique, Bordeaux University, France.

10.2.2. Supervision

HdR : Sylvain Salvati, "Lambda-calculus and formal language theory", Université de Bordeaux, defended in december 2015,

PhD : Jaime Arias, "Formal Semantics and Automatic Verification of Hierarchical Multimedia Scenarios with Interactive Choices", Universite´ de Bordeaux, defended in november 2015, supervised by M. Desainte-Catherine,

PhD : Jérôme Kirman, "Mise au point d'un formalisme syntaxique de haut niveau pour le traitement automatique des langues", Université de Bordeaux, defended in december 2015, supervised by Bruno Courcelle, Lionel Clément, Sylvain Salvati,

PhD in progress : Pauline Mouawad, "Analyse et modélisation de l'émotion musicale"', started in september 2012, supervised by M. Desainte-Catherine,

PhD in progress : Etienne Dubourg, "Contribution a` la the´orie des langages de tuiles", started in november 2012, supervised by D. Janin,

PhD in progress : Jean-Michaël Célérier, "Outils d'écriture spatiale pour les partitions interactives", started in january 2015, supervised by M. Desainte-Catherine,

PhD in progress : Simon Archipoff, "Modélisation et programmation tuilée réactive", started in september 2015, supervised by D. Janin,

10.2.3. Juries

- M. Desainte-Catherine was a member and a reviewer of the PhD jury of Olivier Perrotin, "Chanter avec les mains : Interfaces chironomiques pour les instruments de musique numériques", Université Paris-Saclay(LIMSI), Septembre 2015,

- M. Desainte-Catherine was a member and a reviewer of the PhD jury of Ko Yi Chun, “L’espace sensible :expérience inter-sensorielle et corporelle, à partir des dispositifs musicaux interactifs”, Université Vincennes Saint-Dennis, Novembre 2015,
- D. Janin was a member and the president of the PhD jury of Jaime Arias: “Formal Semantics and Automatic Verification of Hierarchical Multimedia Scenarios with Interactive Choices”, Universite´ de Bordeaux (LaBRI), November 2015,
- S. Salvati was a member of the PhD jury of Yann Salmon: “Analyse d’atteignabilité pour les programmes fonctionnels avec stratégie d’évaluation en profondeur”, Université de Rennes 1, December 2015.

POTIOC Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- Workshop organizer Interco3D (workshop on 3D Interaction & Cognition), ACM IHM conference, Toulouse, October 2015 (Anke Brock & Fabien Lotte)
- Doctoral Consortium, ACM IHM conference, Toulouse, October 2015 (Anke Brock)
- Panel Chair, ACM womENcourage conference, Uppsala, Sweden, September 2015 (Anke Brock)
- Workshop Organizer "Accessible Interaction for Visually Impaired People", MUC'15, Stuttgart, Germany, September 2015 (Anke Brock)
- Workshop co-organizer "Affective Brain-Computer Interface", ACII 2015, Xi'an, China (Fabien Lotte)
- Special session on "Robust EEG signal processing towards practical BCI design" at EUSIPCO 2015, Nice, France (Fabien Lotte)
- Special session on "user training" in the BCI workshop at the SMC2015 conference, Hong Kong, October 2015 (Fabien Lotte & Camille Jeunet)
- 4th Sino-French Workshop on Virtual Reality Co-organizer, Xi'an, August 2015 (Pascal Guitton)

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- ACII 2015: Program Committee Member (Fabien Lotte)
- Assets'15: Poster Committee Member (Anke Brock)
- Augmented Humans 2016: Program Committee Member (Fabien Lotte)
- CAA 2015: Program Committee Member (Pascal Guitton)
- CHI 2015: Program Committee Member (Martin Hachet)
- EUSIPCO 2015: Program Committee Member (Fabien Lotte)
- IEEE 3DUI: Best paper award Committee (Martin Hachet)
- IEEE SMC 2015: Program Committee Member (Fabien Lotte, Camille Jeunet)
- International Winter Conference on Brain-Computer Interfaces: Program Committee Member (Fabien Lotte)
- ITS'15: Program Committee Member (Anke Brock)
- Journées scientifiques Inria 2015 : Program Commitee Member (Pascal Guitton)

10.1.2.2. Reviewer

- ACII 2015 (Fabien Lotte)
- Augmented Humans 2016 (Fabien Lotte)
- CHI'15 (Anke Brock, Camille Jeunet, Fabien Lotte)
- CHI'16 (Jérémy Frey, Fabien Lotte, Anke Brock, Camille Jeunet)
- EUSIPCO 2015 (Fabien Lotte)
- ICASSP 2015 (Fabien Lotte)

- IHM'15 (Anke Brock)
- Interact'15 (Anke Brock, Fabien Lotte)
- Jetsan'15 (Anke Brock)
- MobileHCI'15 (Anke Brock)
- NIPS 2015 (Fabien Lotte)
- PRNI 2015 (Fabien Lotte)
- SMC2015 (Camille Jeunet, Fabien Lotte)
- UIST'15 (Anke Brock, Martin Hachet)
- womENcourage'15 (Anke Brock)

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Review Editor for Frontiers in Robotics and AI (Martin Hachet)
- Review Editor for Frontiers in Neuroprosthetics (Fabien Lotte)
- Review Editor for Frontiers in Human-Media Interaction (Fabien Lotte)

10.1.3.2. Reviewer - Reviewing activities

- ACM Journal on Computing and Cultural Heritage (Anke Brock)
- Frontiers in Human Media Interaction (Fabien Lotte)
- Frontiers in Neurosciences (Fabien Lotte)
- IEEE Journal on Selected Topics in Signal Processing (Fabien Lotte)
- IEEE Transactions on Affective Computing (Fabien Lotte)
- IEEE Transactions on Biomedical Engineering (Fabien Lotte)
- IEEE Transactions on Haptics (Anke Brock)
- IEEE Transactions on Human-Machine Systems (Fabien Lotte, Camille Jeunet)
- IEEE Transactions on Neural Systems and Rehabilitation Engineering (Fabien Lotte)
- International Journal of Psychophysiology (Camille Jeunet)
- Journal of Medical Imaging and Health Informatics (Fabien Lotte)
- Journal of Neural Engineering (Fabien Lotte)
- Journal of Visualized Experiments (Camille Jeunet)
- NeuroImage (Fabien Lotte)
- Proceedings of the IEEE (Fabien Lotte)
- T&F Behavior & Information Technology (Anke Brock)

10.1.4. Invited talks

- "Towards Improved BCI based on Human Learning Principles", 3rd International Winter Conference on Brain-Computer Interfaces, South Korea, January 2015 (Fabien Lotte)
- "Human Learning-based Brain-Computer Interface Design", University of Freiburg, Brain Links/Brain Tools excellence cluster, Germany, January 2015 (Fabien Lotte)
- "Interactions tangibles et réalités augmentées au service de l'éducation", Journées scientifiques Inria, Nancy, June 2015 (Martin Hachet)
- "Brain-Computer Interaction research at Potioc team », "Handicap & Système Nerveux" laboratory, The University of Bordeaux, Bordeaux, France, June 2015 (Fabien Lotte, Camille Jeunet, Jérémy Frey)
- "Towards practical BCI Technologies", RIKEN BSI, Japan, July 2015 (Fabien Lotte)

- “Robust EEG signals classification towards practical Brain-Computer Interface technologies”, Sugiyama Laboratory, the University of Tokyo, Tokyo, Japan, July 2015 (Fabien Lotte)
- “Towards practical BCI Technologies”, Cinet, Osaka, Japan, July 2015 (Fabien Lotte)
- “Popular Interaction” and "Interacting with spatial information", EPFL, Lausanne, Switzerland, August 2015 (Martin Hachet & Anke Brock)
- “Popular Interaction”, Dassault Systèmes, Campus 3DS - Paris, September 2015 (Martin Hachet)
- “Towards practical EEG-based Brain-Computer Interface Technologies”, South China University of Technology, Guangzhou, China, October 2015 (Fabien Lotte)
- "Interacting with spatial information", DFKI Saarbruecken, Germany, November 2015 (Anke Brock)
- "Improving BCI-user training: Towards a new generation of reliable, efficient and accessible brain-computer interfaces", Donders Discussions, Netherlands, November 2015 (Camille Jeunet)

10.1.5. Leadership within the scientific community

- IEEE 3DUI Steering Committee - leader (Martin Hachet)

10.1.6. Scientific expertise

- Review for "Crédit Impot Recheche" (Martin Hachet)
- Review of two research projects for the Research Foundation Flanders (Anke Brock)
- Review of one research project for HES-SO (Switzerland) (Pascal Guitton)
- Review of an ANR project (Fabien Lotte)

10.1.7. Research administration

- Member of Inria Ethical Committee (COERLE) (Pascal Guitton)
- Member of Inria Comité Parité et Egalité (Pascal Guitton)
- Member of Comité de Pilotage de Software Heritage (Pascal Guitton)
- Member of Commission de recrutement des Inspecteurs Généraux de l’Education Nationale (IGEN) (Pascal Guitton)
- Member of Committee for technological development at Inria Bordeaux Sud Ouest (CDT) (Fabien Lotte)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence

- Licence : Julia Chatain, Algorithms and programmation, TP, 32h eqtd, First year (L1), IUT de Bordeaux, France
- Licence : Jérémy Frey, Programming, CM-TD, 30h eqtd, L1 Computer Science, University of Bordeaux, France
- Licence : Damien Clergeaud, Functional and Symbolic Programming, TP, 32h eqtd, L3 Computer Science, University of Bordeaux, France

Master

- Master : Jérémy Frey, Programming projects, TD, 32h eqtd, M1 Computer Science, University of Bordeaux, France
- Master : Pascal Guitton, Virtual and Augmented Realities, CM, 36h eqtd, M2 Computer Science, University of Bordeaux, France

- Master : Pascal Guitton, Digital accessibility, CM, 12h eqtd, M1 Cognitive Science, University of Bordeaux, France
- Master : Pascal Guitton, Assistive technologies, CM, 30h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Anke Brock, Virtual Reality and 3D Interaction, CM, 7,5h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Martin Hachet, Virtual Reality and 3D Interaction, CM, 12h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Fabien Lotte, Virtual Reality and 3D Interaction, CM, 4h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Anke Brock, Handicap, Autonomy & Technology, TP, 4h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Anke Brock, Video Games and Interaction, CM-TD, 12h eqtd, 3rd year (M2), Enseirb, Bordeaux, France
- Master : Martin Hachet, Video Games and Interaction, CM-TD, 8h eqtd, 3rd year (M2), Enseirb, Bordeaux, France
- Master: Fabien Lotte, Virtual Reality, Accesibility and Brain-Computer Interfaces, 4h eqtd, 3rd year (M2), ENSSAT, Lannion, France
- Master: Fabien Lotte, Brain Computer Interfaces, 6h eqtd, 3rd year (M2), ESIEA, Laval, France
- Master : Anke Brock, Human-Computer Interaction, CM-TD, 12h eqtd, M2 Intelligent Systems and Robotics (M2SIR), University Toulouse, France

10.2.2. Supervision

PhD

- PhD : Jérémy Frey, Leveraging human-computer interactions and social presence with physiological computing, Université de Bordeaux,defended 8/12/2015, (Martin Hachet & Fabien Lotte)
- PhD : Renaud Gervais, Interaction and Introspection with Tangible Augmented Objects, Université de Bordeaux, defended 9/12/2015, (Martin Hachet)

PhD in progress

- Julia Chatain (PhD Student in Computer Science, University of Bordeaux), "Design and evaluation of augmented geographic maps", since September 2015 (Anke Brock & Martin Hachet)
- Damien Clergeaud (PhD Student in Computer Science, University of Bordeaux), "Collaborative interaction for aerospace scenarios", since November 2014 (Pascal Guitton)
- Camille Jeunet (PhD Student in Cognitive Science, University of Bordeaux), ""Improving User training approaches for Brain-Computer Interface", since October 2013 (Martin Hachet, Fabien Lotte, co-supervision with Bernard N'Kaoua, University of Bordeaux and Sriram Subramanian, University of Sussex)
- Stephanie Lees (PhD student in Computer Science, Ulster University, UK): "Assessing and Optimising Human-Machine Symbiosis through Neural signals for Big Data Analytics", since February 2014 (Fabien Lotte, co-supervision with Damien Coyle, Paul McCullagh and Liam Maguire, Ulster University)
- Lorraine Perronnet (PhD student in Computer Science, Rennes University): "Neurofeedback and Brain Rehabilitation based on EEG and fMRI", since January 2014 (Fabien Lotte, co-supervision with Anatole Lécuyer, Christian Barillot, Inria Rennes and Maureen Clerc, Inria Sophia Antipolis)

- Joan Sol Roo (PhD Student in Computer Science, University of Bordeaux), "Interaction with Spatial Augmented Reality", since December 2014 (Martin Hachet)

Internships

- Julia Chatain (Master Student in Computer Science, Polytechnique France & EPFL Switzerland), "SyMAPse: Augmented Interactive Maps for Subjective Expression", February to July 2015, (Anke Brock & Martin Hachet, co-supervised by D. Laval at Cap Sciences)
- Pierre-Antoine Cinquin (M2 Cognitive Sciences, University of Bordeaux), "Digital accessibility for e-learning" (Pascal Guitton)
- Maxime Daniel (M2 Computer Science, University of Bordeaux), "Create a virtual environment that could validate the use of electroencephalography as an evaluation tool for 3D interactions", January to June 2015 (Jérémy Frey, Fabien Lotte, co-supervision with Julien Castet at Immersion)
- Adrien Dax (M2IHM, University Toulouse), "Design of Tangible Objects and InteractionTechniques for Visually Impaired Students", March to August 2015 (Anke Brock, co-supervision with C. Jouffrais, M. Macé & J. Ducasse at Irit Toulouse)
- Marie Demangeat (M1 Cognitive Science, University Bordeaux), "Design and evaluation of interactive devices forthe museum", April to May 2015, (Anke Brock, Julia Chatain & Martin Hachet)
- Maxime Duluc (last year in engineering school “Institut d’Optique Graduate School”), "Create an instrumented version of the tangible interface of electroencephalographic signals’ visualization Teegi", January to June 2015 (Jérémy Frey)
- Alexis Gay (M2 Design, University of Bordeaux Montaigne), "Design of Tobe, a tangible out-of-body experience", April to June 2015 (Jérémy Frey and Renaud Gervais)
- Emilie Jahanpour (M1 Cognitive Sciences, University of Bordeaux), "Is it possible to predict BCI performance from the performance obtained at simple motor tasks? (Camille Jeunet, Fabien Lotte, co-supervision with Bernard N’Kaoua)
- Houda Lamqaddam (M2IHM, University Toulouse), "Design of Innovative Interaction Techniques forInteractive Maps", March to August 2015 (Anke Brock, co-supervision with E. Dubois & M. Serrano at Irit Toulouse)

Other Supervision

- Charles Coeurderoy & Violaine Sudret (M2 Enseirb, Bordeaux), "GPS Narratif", Student Project, November 2015 to January 2016 (Julia Chatain & Anke Brock)
- Paul Ecoffet, Florian Gouet, Elias Rhouzlane, Mathieu Seurin, “Detecting frustration during a training from physiological and neurophysiological markers" (Camille Jeunet & Fabien Lotte)
- Ilias Ainseba, Théo Geral, Charles Gouverneur, “Les Interfaces Cerveau-Ordinateur : La technologie peut-elle compenser les défaillances du corps humain ? “, TPE 1ère S, 2015 (Camille Jeunet)

10.2.3. Juries

- PhD (rapporteur): William Delamarre, Nov. 2015, Grenoble (Martin Hachet)
- PhD (rapporteur): Jonhatan Mercier, Oct. 2015, Rennes (Martin Hachet)
- PhD (rapporteur): Jean-Claude Morgère, April 2015, Lorient (Pascal Guitton)
- PhD (examinateur): Paul-Antoine Arras, Feb. 2015, Bordeaux (Pascal Guitton)
- PhD (examinateur): Remy Brouet, March 2015, Grenoble (Martin Hachet)
- PhD (examinateur): Gautier Durantin, ISAE, Toulouse (Fabien Lotte)

- HdR (examinateur): Julien Pettré, June 2015, Rennes (Pascal Guitton)
- PhD (examinateur): Raphaëlle N. Roy, CEA, Grenoble (Fabien Lotte)
- PhD qualification examen ("mi-thèse"): Tracy Brandmeyer, Toulouse (Fabien Lotte)

10.3. Popularization

10.3.1. Job Fairs

- Salon Aquitec (Regional Career Fair), Bordeaux, January 2015 (Anke Brock & Camille Jeunet)

10.3.2. Science Festivals

- Fête de la Science, Talence, September 2015 (Julia Chatain)
- TechFest 2015, Mumbai, India. January. (Jérémy Frey, Jérémy Laviole)

10.3.3. Popularization Talks

- "Ma Thèse en 180s", Public Prize of the University of Bordeaux Final and regional final, April 2015 (Camille Jeunet)
- "Rencontres Numériques", Cultures scientifiques et techniques, Créteil, October 2015 (Martin Hachet)
- “Peut-on tout contrôler par la pensée”, DocForum, Lyon, Lavoir Public, November 2015 (Fabien Lotte, with Jérémie Mattout and Emmanuel Maby, Inserm Lyon)

10.3.4. Popularization Articles

- "Publication : du papier au numérique", Blog Binaire - Le Monde (Pascal Guitton) [45]
- "Publication : le temps des dérives", Blog Binaire - Le Monde (Pascal Guitton), [46]

10.3.5. Demonstrations

- Augmented Michelson Interferometer, ETOP, June 2015 (David Furio, Martin Hachet).
- Fête du centre: virtual reality demo (Inria), June 2015

10.3.6. Women In Science

- Printemps de la Mixité (Event for High-School Students with the aim to increase the interest in science, specifically in girls), Université de Bordeaux, Mai 2015 (Anke Brock: Organisation for Inria and Panel Talk & Potioc team: Demos)
- Panelist "Témoignages de femmes dans des professions scientifiques des secteurs public et privé et à différents niveaux de carrière" at the Colloque femmes & sciences (women in science annual meeting), Toulouse, November 2015 (Anke Brock)
- Panelist at the "Journées Femmes et Informatique" (women in computing conference) of the Société Informatique de France (French association on computing), Orléans, February 2015 (Anke Brock)
- Panelist “Out of the ordinary jobs in Computer Science” at the ACM womENcourage conference, Uppsala, Sweden, September 2015 (Anke Brock)
- Django Girls, Bordeaux, November 2015 (Julia Chatain)

10.3.7. Inria Media Channels

- Inside Inria Video https://www.youtube.com/watch?v=8bNS6JHmCwo (Anke Brock + the whole Potioc team)
- Podcast "Comment améliorer l’accès aux cartographies pour les déficients visuels ?" for Interstices, April 2015 https://interstices.info/jcms/ni_78646/comment-ameliorer-lacces-aux-cartographies-pour-les-deficients-visuels (Anke Brock)

REALOPT Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- François Clautiaux has organized an optimization challenge with multinational automobile manufacturer Renault (prizes of 30.000 euros).
- François Vanderbeck has been chosen by MOS as the general chair of the next triennal Symposium on Mathematical Optimization (ISMP-2018)

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

The team members are members of the following program committees:

- Olivier Beaumont: IPDPS'15: IEEE International Parallel & Distributed Processing Symposium.
- Olivier Beaumont: ISCIS'15, 30th International Symposium on Computer and Information Sciences.
- Olivier Beaumont: SC'15: IEEE ACM International Conference for High Performance Computing, Networking, Storage and Analysis.
- Olivier Beaumont: HCW'15 24th International Heterogeneity in Computing Workshop.
- Olivier Beaumont: HeteroPar'2015: Thirteenth International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms.
- Olivier Beaumont and Lionel Eyraud-Dubois: HIPC'15: IEEE International Conference on High Performance Computing.
- François Clautiaux: Roadef 2015: French Operational Research Society Conference.
- Arnaud Pêcher: JGA 2015: Journées Graphes et Algorithmes 2015.
- Pierre Pesneau: INOC 2015: 7th International Network Optimization Conference.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Olivier Beaumont is editor for IEEE Transactions on Parallel and Distributed Systems (TPDS)
- François Vanderbeck is Associate Editor for the EURO Journal on Computational Optimization

10.1.3.2. Reviewer - Reviewing activities

The team members are regular referees for the best journals of the field.

10.1.4. Invited talks

Arnaud Pêcher: "On dense sphere packings", International Conference on Graph Theory and its Applications, Coimbatore, India, 2015

10.1.5. Research administration

- Olivier Beaumont is the scientific deputy of Inria Bordeaux Sud-Ouest.
- François Vanderbeck is taking care of the team OptimAl ("Optimisation Mathématique Modèle Aléatoire et Statistique") at the Mathematics Institute of Bordeaux.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : A. Pêcher, Programmation Impérative, 10h, DUT, Université de Bordeaux, France

Licence : A. Pêcher, Conception Objet, 42h, DUT, Université de Bordeaux, France

Licence : A. Pêcher, Programmation objet en Java, 44h, DUT, Université de Bordeaux, France

Licence : A. Pêcher, Algorithmique Avancée, 32h, DUT, Université de Bordeaux, France

Licence : A. Pêcher, Assembleur, 24h, DUT, Université de Bordeaux, France

Licence : A. Pêcher, Programmation Mobile, 24h, DUT, Université de Bordeaux, France

Licence : P. Pesneau, Système et Programmation en Fortran 90, 59h, L2, Université de Bordeaux, France

Licence : P. Pesneau, Modèles et Méthodes d'Optimisation, 30h, L2, Université de Bordeaux, France

Licence : P. Pesneau, Recherche Opérationnelle, 24h, DUT, Université de Bordeaux, France

Master : O. Beaumont, Big Data, 4h, M1, Institut National Polytechnique de Bordeaux, France

Master : O. Beaumont, Optimisation en Cloud Computing et Big Data, 15h, M2, Université de Bordeaux, France

Master : O. Beaumont, Distributed Computing, 4h, M2, Institut National Polytechnique de Bordeaux, France

Master : F. Clautiaux, Programmation Linéaire 1, 15h, M1, Université de Bordeaux, France

Master : F. Clautiaux, Introduction à la Programmation en Variables Entières, 15h, M1, Université de Bordeaux, France

Master : F. Clautiaux, Gestion des Opérations et Planification de la Production, 30h, M2, Université de Bordeaux, France

Master : F. Clautiaux, Problèmes combinatoires et routage, 30h, M1, Université de Bordeaux et Institut National Polytechnique de Bordeaux, France

Master : B. Detienne, Programmation Linéaire 1, 14h, M1, Université de Bordeaux, France

Master : B. Detienne, Optimisation Convexe Non Linéaire, 29h, M1, Université de Bordeaux, France

Master : B. Detienne, Recherche Opérationnelle, 16h, M1, Institut National Polytechnique de Bordeaux, France

Master : B. Detienne, Introduction à la Programmation en Variables Entières, 14h, M1, Université de Bordeaux, France

Master : B. Detienne, Gestion des Opérations et Planification de la Production, 28h, M2, Université de Bordeaux, France

Master : B. Detienne, Optimisation Stochastique, 58h, M2, Université de Bordeaux, France

Master : L. Eyraud-Dubois, Introduction à la Programmation par Contraintes, 30h, M2, Université de Bordeaux, France

Master : L. Eyraud-Dubois, Optimisation en Cloud Computing et Big Data, 15h, M2, Université de Bordeaux, France

Master : J. Guillot, Modèles de flot, 14h, M1, Université de Bordeaux, France

Master : P. Pesneau, Problèmes combinatoires et routage, 8h, M1, Université de Bordeaux, France

Master : P. Pesneau, Programmation Linéaire 1, 10h, M1, Université de Bordeaux, France

Master : P. Pesneau, Algorithmique et Programmation Objet, 60h, M1, Université de Bordeaux, France

Master : P. Pesneau, Modèles de flot, 15h, M1, Université de Bordeaux, France

Master : P. Pesneau, Programmation Linéaire 2, 14h, M1, Université de Bordeaux, France

Master : R. Sadykov, Modélisation, Optimisation, Complexité et Algorithmes, 50h, M2, CNAM Aquitaine, Bordeaux, France

Master : I. Tahiri, Outils et Logiciels pour l'Optimisation, 30h, M1, Université de Bordeaux, France

Master : F. Vanderbeck, Recherche Opérationnelle, 15h, M1, Institut National Polytechnique de Bordeaux, France

Master : F. Vanderbeck, Programmation Entière, 58h, M2, Université de Bordeaux, France

10.2.2. Supervision

PhD : Matthieu Gérard, Heuristiques basées sur la génération de colonnes pour un proble`me de planification du personnel, University of Lille, December 9th 2015, François Clautiaux (dir) and Manuel Davy (dir) and Ruslan Sadykov (co-dir).

PhD : Hugo Kramer, Software clustering problems, Universtate Federal de Flumense. Eduardo Uchoa (dir) and Francois Vanderbeck (co-dir).

PhD in progress : Jérémy Guillot, Optimisation de problèmes de partionnement, September 2014, François Clautiaux (dir) and Pierre Pesneau (dir).

PhD in progress : Quentin Viaud, Méthodes de programmation mathématiques pour des problèmes complexes de découpe, January 2015, François Clautiaux (dir), Ruslan Sadykov (dir), and François Vanderbeck (co-dir)).

PhD in progress : Martin Bué, Gestion du revenu dans le cadre du voyage professionnel, September 2012, François Clautiaux (dir), Luce Brotcorne (dir).

PhD in progress : Rodolphe Griset, Robust planning in Electricity production, November 2015, Boris Detienne (dir) and François Vanderbeck (dir).

PhD in progress : Imen Ben Mohamed, Location routing problems, October 2015, Walid Klibi (dir) and François Vanderbeck (dir).

PhD in progress : Thomas Bellitto, Infinite graphs, September 2015, Arnaud Pêcher (dir) and Christine Bachoc (dir).

PhD in progress : Philippe Moustrou, Codes, September 2014, Arnaud Pêcher (dir) and Christine Bachoc (dir).

10.2.3. Juries

- Olivier Beaumont: Evaluation (rapporteur) of the habilitation thesis (HDR) of Georges Da Costa (IRIT Toulouse).
- Olivier Beaumont: Evaluation (rapporteur) of the PhD thesis of Nathalie Herr (University of Besançon).
- François Clautiaux: Evaluation (directeur) of the PhD thesis of Matthieu Gérard (University of Lille).

- Ruslan Sadykov: Evaluation (encadrant) of the PhD thesis of Matthieu Gérard (University of Lille).
- Ruslan Sadykov: Evaluation (examinateur) of the PhD thesis of Hugo Kramer (University Federal Fluminense, Niteroi, Brazil).
- Ruslan Sadykov: Pre-evaluation of the PhD thesis of André Soares Velasco (University Federal Fluminense, Niteroi, Brazil).
- Ruslan Sadykov: Evaluation (examinateur) of the Master thesis of Daniel Dias de Olieira Neto (University Federal Fluminense, Niteroi, Brazil).

10.3. Popularization

François Clautiaux is a member of the board of AMIES, the French Agency for Interaction in Mathematics with Business and Society. AMIES is a national organization that aims to develop relations between academic research teams in mathematics and business, especially SMEs.

SISTM Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

The practical part of "Atelier INSERM", *Big Data in clinical research*, was organized at Bordeaux by the team in Oct 2015.

9.1.1.1. Member of the organizing committee

BMW (Bordeaux Modeling Workshop), a two days workshop was organized (with 30 participants).

8th French Clinical Epidemiology Conference EPICLIN

Colloque Francophone International sur l'Enseignement de la Statistique - CFIES'2015, Janv 2015 Bordeaux

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

RT is a member of the scientific committee of IWHOD International Workshop on HIV Observational Databases from 2013,

9.1.3. Journal

9.1.3.1. Member of the editorial board

Lifetime Data Analysis (DC)

Stat Surveys (DC)

Journal de la Société Française de Statistique (DC)

9.1.3.2. Reviewer

The members of the team reviewed numerous papers for the following international journals :

AIDS (RT)

Biometrical (BL)

Biometrics (DC)

Health Services and Outcome Methodology (DC)

International Jounral of Epidemiology (DC)

Journal of Applied Statistics (MA)

Journal of Multivariate Analysis (RG)

Journal of the Royal Statistical Society: Series A (DC)

Statistical Methods and Applications (MA)

Statistics in Medicine (DC, RT)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : MA teaches in the two years of the Master of Public Health at ISPED, Univ. Bordeaux, France. Furthermore, she is head of the first year of the master.

Master : DC, teaches occasionnaly in the Biostatistics specialty of the second year of the Master of Public Health.

Master : RG, teaches in the two years of the Master of Public Health.

BL teaches at the School of Mathematics and Physics (The University of Queensland, Australia).

Master : RT, 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.

E-learning

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

RG teaches in the first year of the e-learning program of the Master of Public Health.

RT is head of the Epidemiology specialty of the second year of the e-learning program of the Master of Public Health, and teaches in it.

RG and Perrine Soret participate to the IdEx Bordeaux University "Défi numérique" project "Begin'R".

9.2.2. Supervision

PhD defended in Dec 2015 : Ana Jarne, *Modélisation de la réponse à l'IL-7*, co-directed by Daniel Commenges & Rodolphe Thiébaut

PhD defended in Mar 2015 : Boris Hejblum, *Analyse integrative de données de grande dimension appliquée à la recherche vaccinale*, co-directed by Rodolphe Thiébaut & François Caron

PhD defended in Oct 2015 : Marie-Quitterie Picat, *Méthodes pour l'analyse intégrative des marqueurs immunologiques*, directed by Rodolphe Thiébaut

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

PhD in progress : Chloé Pasin, *Modelling the immune response to HIV vaccine*, from Sep 2015, co-directed by Rodolphe Thiébaut and François Dufour

PhD in progress : Laura Villain, *Analysing and modeling the effect of interleukin 7 in HIV-infected patients*, from Sep 2015, co-directed by Rodolphe Thiébaut and Daniel Commenges

PhD in progress : 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 (60%), Cédric Galera (20%), Marta Avalos (20%)

Master internship : Chariff Alkhassim, *Reconnaissance automatique de populations cellulaires à l'aide de processus de Dirichlet*, from Feb 2015 to Sep 2015, co-directed by Rodolphe Thiébaut & François Caron

Master internship : Edouard Lhomme, *Analyse de la réponse immunologique au vaccin Ad5 dans un essai americain (HVTN 068)*, from Feb 2015 to Sep 2015, directed by Rodolphe Thiébaut

Master internship : Marina Travanca *Prédiction des accidents de la vie courante à partir de facteurs environnementaux et comportementaux : comparaison de méthodes d'apprentissage statistique adaptées aux données de l'observatoire MAVIE* from Apr 2015 to Jun 2015, co-directed by Marta Avalos and Ludivine Orriols

Master internship : Gaëlle Lefort *Développement d'un outil statistique d'aide à la décision pour l'organisation de l'entraînement chez des sportifs de haut niveau*, directed by Marta Avalos

Master internship : Emilie Chanfreau, *Etude de l'élagage dans la méthode des forêts aléatoires*, from Apr 2015 to Jun 2015, directed by Robin Genuer

Master internship : Maëva Kyeng, *ETUDE DE L'EVOLUTION DE LA CHARGE VIRALE CHEZ LES PATIENTS ATTEINTS Du VIH : COMPARAISON DE DEUX METHODES STATISTIQUES*, from Apr 2015 to Jun 2015, directed by Perrine Soret

9.2.3. Juries

Members of the team were involved in 6 PhD juries, 2 professorships and 2 HDR.

9.3. Popularization

MA and Perrine Soret animate "Les maths sont bonnes pour la santé" for high school students through the "Fête de la Science" organized at Inria, Oct 2015.

STORM Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- Raymond NAMYST was publicity co-chair of ACM International Conference on Computing Frontiers 2015 (CF'15).

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- Samuel THIBAULT was a program committee member for EuroPar'15.
- Olivier AUMAGE was a program committee member for HUCAA'15.
- Raymond NAMYST was member of the program committee for IEEE Cluster 2015, ROSS 2015, PPAM 2015, RESPA 2015, SAC/MUSEPAT 2016 and EuroPar 2016.

10.1.2.2. Reviewer

The members of the team reviewed numerous papers for various internationcal conferences such as IPDPS, Super-Computing, Euro-Par, ICPP.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing activities

The members of the team review papers from many high-level journals such as TPDS, CCPE, TACO, JPDC.

10.1.4. Invited talks

- Samuel THIBAULT was invited to participate to the HCW panel at IPDPS'15, and to the GPU thematic school in Grenoble in December 2015.
- Olivier AUMAGE was invited to participate to the workshop on Graph-based Languages and Task Programming workshop organized by the company Total in Pau in March 2015, and to the Parallel Runtimes and Architectures panel at the HiPEAC Computer System Week in Oslo in May 2015.

10.1.5. Scientific expertise

Raymond NAMYST has been Scientific Advisor at CEA/DAM (French Department of Energy) since 2007.

Denis Barthou was scientific expert for ANR CIFRE PhD files and for ANR HPC/simulation proposal.

10.1.6. Research administration

Raymond NAMYST is member of the committee in charge of allocating research delegations at Inria Bordeaux Sud-Ouest.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching administration

- Raymond NAMYST is co-chair of Teaching Department in Computer Science of University of Bordeaux
- Denis BARTHOU is in charge of the RSR option (M2 level) at Bordeaux INP.
- Samuel THIBAULT is responsible for the computer science topic of the first university semester.

10.2.2. Teaching

Licence : Marie-Christine Counilh, Introduction to Computer Science, 42HeTD, L1, University of Bordeaux

Licence : Marie-Christine Counilh, Object Oriented Programming, 51HeTD, L2, University of Bordeaux

Licence : Raymond Namyst, Computer Architecture, 38HeTD, L1, University of Bordeaux

Licence : Raymond Namyst, System Programming, 59HeTD, L3, University of Bordeaux

Licence : Samuel Thibault, Introduction to Computer Science, 42HeTD, L1, University of Bordeaux

Licence : Samuel Thibault, Networking and programming project, 24HeTD, L3, University of Bordeaux

Licence : Pierre-André Wacrenier, Introduction to Computer Science, 42HeTD, L1, University of Bordeaux

Licence : Pierre-André Wacrenier, System Programming, 35HeTD, L3, University of Bordeaux

Master : Raymond Namyst, Operating Systems, 60HeTD, M1, University of Bordeaux

Master : Raymond Namyst, Parallel Programming, 33HeTD, M1, University of Bordeaux

Master : Samuel Thibault, Operating Systems, 24HeTD, M1, University of Bordeaux

Master : Pierre-André Wacrenier, Parallel Programming, 51HeTD, M1, University of Bordeaux

Engineer School : Olivier Aumage, High Performance Communication Libraries, 20HeTD, Bac+5, ENSEIRB/IPB

Engineer School : Olivier Aumage, Languages and Supports for Parallelism, 14HeTD, Bac+5, ENSEIRB/IPB

Engineer School : Nathalie Furmento, Operating Systems, 20HeTD, Bac+5, ENSEIRB/IPB

Engineer School: Denis Barthou, Compilation, 28HeTD, M1, ENSEIRB/IPB

Engineer School: Denis Barthou, Computer Architectures, 54HeTD, L3, ENSEIRB/IPB

Engineer School/M2: Denis Barthou, Architecture of parallel computers, 24HeTD, M2, ENSEIRB/IPB

Engineer School: Denis Barthou, Games and interaction, 20HeTD, M2, ENSEIRB/IPB

Engineer School: Denis Barthou, Programming and Software Engineering, 55HeTD, L3/M1, ENSEIRB/IPB

10.2.3. Supervision

PhD: Corentin Rossignon, Design of an object-oriented runtime system for oil reserve simulations on heterogeneous architectures, 2015/07, Olivier Aumage and Pascal Hénon (TOTAL) and Raymond Namyst and Samuel Thibault

PhD: Paul-Antoine Arras, Ordonnancement d'applications à flux de données pour les MPSoC embarqués hybrides comprenant des unités de calcul programmables et des accélérateurs matériels, 2015/02, Emmanuel Jeannot, Samuel Thibault, Didier Fuin, Arthur Stoutchinin

PhD: Emmanuelle Saillard, Static/dynamic/iterative analyses for validation and improvement of multi-models HPC applications, U. Bordeaux, 2015/09, Patrick Carribault (CEA) and Denis Barthou

PhD: Emmanuel Cieren, Molecular Dynamics on Exascale Supercomputers, 2015/10, Laurent Colombet (CEA), Raymond Namyst

PhD: Antoine Capra, Virtualization in the context of High Parallel Computing, 2015/12, Marc Pérache (CEA), François Diakhaté (CEA), Raymond Namyst

PhD: Pei Li, Unified system of code transformation and execution for heterogeneous multi-core architectures, 2015/12, Elisabeth Brunet (Telecom Sud-Paris), Raymond Namyst

PhD in progress: Christopher Haine, Estimating efficiency and automatic restructuration of data layout, 2014/01, Olivier Aumage, Denis Barthou

PhD in progress: Jérôme Richard, Conception of a software component model with task scheduling for many-core based parallel architecture, application to the Gysela5D code, 2014/11, Christian Perez (LIP/ENSL), Julien Bigot (Maison de la Simulation), Olivier Aumage, Guillaume LATU (IRFM).

PhD in progress: Marc Sergent , Passage à l'échelle de moteur d'exécution à base de graphes de tâches, 2013/09, Olivier Aumage , David Goudin (CEA/CESTA), Samuel Thibault , Raymond Namyst

PhD in progress: Suraj Kumar, Task-based programming paradigms and scheduling, 2013/12, Emmanuel Agullo, Olivier Beaumont, Samuel Thibault

PhD in progress: Hugo Brunie. Characterizing and Using Hierarchical Heterogeneous Memories. 2015/09, Julien Jaeger (CEA), Patrick Carribault (CEA), Denis Barthou

PhD in progress: P. Huchant. Static/Dynamic Parallelism Adaptation. 2015/09, Denis Barthou, Raymond Namyst

PhD in progress: G. Vaumourin. Hybrid Memory Hierarchy and Dynamic Data Handling in Embedded Parallel Architectures. Alexandre Guerre (CEA), Thomas Dombek (CEA), Denis Barthou

PhD in progress: J.C. Papin, Potentials-based dynamic scheduling and partitioning tools for domain decomposition based simulations, Laurent Colombet (CEA), Raymond Namyst

10.2.4. Juries

Samuel THIBAULT was member of PhD defense jury of the following candidates:

- Nicolas Bertrand (INP Toulouse, Examinator)
- Sébastien Frémal (Mons Université (Belgium), Examinator)

Denis BARTHOU was member of PhD defense jury of the following candidates:

- Imen Fassi (U. Strasbourg, Reviewer)
- Leandro Fontoura Cupertino (U. Toulouse, Reviewer)
- Vincent Palomares (U. Versailles St Quentin, Reviewer)

Raymond NAMYST was member of the PhD defense jury of the following candidates:

- Aurèle Mahéo (Université Versailles Saint-Quentin, Reviewer)
- Luka Stanisic (Université de Grenoble, Reviewer)
- Safae Dahmani (CEA, Reviewer)
- Andi Drebes (Université Pierre et Marie Curie, President)
- Salli Moustafa (EDF, President)
- Vincent Lanore (ENS Lyon, President)
- Damien Dosimont (Université de Grenoble, Examinator)
- Florent Lopez (Université de Toulouse, Examinator)

He was also member of the HDR defense jury of the following candidates:

- Georges Da Costa (Université Paul Sabatier de Toulouse, President)

Nathalie FURMENTO was member of a Recruiter Committee for a permanent engineer position at the Université de la Rochelle.

10.3. Popularization

- Olivier Aumage gave a tutorial on task-based runtime systems at the HiPEAC conference in Amsterdam in January 2015.
- Olivier Aumage participated to the Inria Booth at the SuperComputing conference in Austin in November 2015.
- Samuel Thibault gave a talk at the ELCI Workshop in Paris.
- Samuel Thibault published a paper « L'accessibilité partout ! Retour d'expérience sous Debian » in the professional « Programmez ! » journal.

TADAAM Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

TADAAM has organized the 22nd European MPI Users' Group Meeting, also known as EuroMPI. EuroMPI is the preeminent meeting for users, developers and researchers to interact and discuss new developments and applications of message-passing parallel computing, in particular in and related to the Message Passing Interface (MPI).

TADAAM has also organized the MPI Forum meeting that took place just after the EuroMPI conference.

9.1.1.2. Member of the steering committee

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

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

Alexandre DENIS, Brice GOGLIN, Emmanuel JEANNOT and Guillaume MERCIER acted as Program Co-chairs as well as Proceeding Editors of Euro-MPI 2015.

9.1.2.2. Member of the conference program committees

Brice GOGLIN was a member of the program committee of HotInterconnect 23, EuroMPI 2015.

Emmanuel JEANNOT was a member of the program committee of IPDPS'2015, PPAM 2015, EuroMPI 2015, Heteropar'2015, Compas 201, HiPC'15

Alexandre DENIS was a member of the program committee of HeteroPar 2015, HiPC'15, EuroMPI 2015, and Compas'15.

Guillaume MERCIER was a member of the program committee of EuroMPI 2015.

9.1.2.3. Reviewer

Emmanuel JEANNOT was reviewer of SuperComputing.

Alexandre DENIS was a reviewer for CCGrid'2015.

Guillaume MERCIER was a reviewer for IPDPS 2015.

9.1.3. Journal

9.1.3.1. Member of the editorial boards

Emmanuel JEANNOT is associate editor of the International Journal of Parallel, Emergent and Distributed Systems

9.1.4. Editing activities

Emmanuel Jeannot edited the special issue following the HeteroPar 2014, APCIE 2014, and TASUS 2014 workshops [9].

9.1.4.1. Reviewer - Reviewing activities

Brice GOGLIN was a reviewer for the IEEE Micro journal.

Guillaume MERCIER was a reviewer for the Simulation and Modelling Practice and Theory Journal (SIMPAT) and Parallel Computing (PARCO)

Emmanuel JEANNOT was a reviewer for IEEE TPDS, Parallel Computing, JPDC, ACM TACO

François Pellegrini was a reviewer for Parallel Computing.

9.1.5. Invited talks

Alexandre DENIS gave a talk about overlap of communication and computation at *CEA/DAM*.

Brice GOGLIN gave a talk about managing locality in hierarchical computing platforms at *Maison de la Simulation*.

Emmanuel JEANNOT gave an invited talk system-scale optimisation of HPC applications at the PADAL workshop in Berkeley [0].

Emmanuel JEANNOT gave an invited talk on topology-aware data management at the Sandia National Lab working group.

Emmanuel JEANNOT gave the keynote speech at the Heteropar'2015 workshop in Vienna.

François PELLEGRINI was invited to participate in a round table on the law of the Internet of things at the Law faculty of Université d'Aix-Marseille.

François PELLEGRINI gave an invited talk on legal aspects of software creation during the *Journées nationales du GDR "Génie de la Programmation et du Logiciel"*[0] in Bordeaux.

François PELLEGRINI gave an invited talk on legal aspects of software creation during the *Journées du réseau du développement logiciel (DevLOG)*[0] in Bordeaux.

François PELLEGRINI was invited to participate in a round table on the use of personal data for the personalization of healthcare treatments, in the context of the 3rd *Rencontres du droit et de l'innovation* held by the Forum Montesquieu in Bordeaux.

François PELLEGRINI was invited to give a talk on Big data and personal data, in the context of the Juriconnexion meetings [0], at École française du Barreau, in Issy-les-Moulineaux.

9.1.6. Scientific expertise

Emmanuel JEANNOT was member of the hiring committee for the professor position in computer science of the university of Bordeaux.

François PELLEGRINI is a commissioner at CNIL, the French data privacy supervision authority, where he has been appointed by the President of the French Senate in December 2013.

François PELLEGRINI, as a commissioner at CNIL, is the representative for France in the data privacy supervision bodies of several European organizations that process personal data (Europol, the Schengen information system, etc.). He has been appointed as technical expert for on-site inspection missions of such data processing systems.

9.1.7. Standardization Activities

TADAAM attends the MPI Forum meetings on behalf of Inria (where the MPI standard for communication in parallel applications is developed and maintained).

9.1.8. Tutorials

Brice GOGLIN gave tutorials about managing hardware affinities on hierarchical platforms with HWLOC during a PRACE Advanced Training Center session and during EuroMPI. He also gave a hands-on session on advance uses of the GIT version control system in Inria Bordeaux internal seminars.

[0] https://sites.google.com/a/lbl.gov/padal-workshop/padal15
[0] http://gdr-gpl.cnrs.fr/node/196
[0] http://devlog.cnrs.fr/jdev2015/t4
[0] http://www.juriconnexion.fr/programme-de-la-journee-du-8-decembre-2015-2/

Emmanuel JEANNOT gave a tutorial about optimizing process placement with TreeMatch during a PRACE Advanced Training Center session.

9.1.9. Research administration

Emmanuel JEANNOT is member of the scientific council of the Labex IRMIA (Université de Strasbourg).

Emmanuel JEANNOT is the head of the young researcher commission of Inria Bordeaux Sud-Ouest in charge of supervising the hiring of the PhDs and post-doc of the center.

François PELLEGRINI is deputy vice-president of Université de Bordeaux in charge of digital issues. In this context, he participates in the definition and implementation of policies regarding aspects of research such as the development of the academic computing center of the Bordeaux area (MCIA), relationships with other universities (UPPA, Université de La Rochelle), etc.

9.2. Teaching - Supervision - Juries

9.2.1. 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 and C programming to advanced topics such as computer architecture, operating systems, parallel programming and high-performance runtime systems.

9.2.2. Supervision

PhD: François Tessier, Placement of parallel applications according to the topology and the affinity, Université de Bordeaux, defended Jan. 26, 2015. Advisor: Emmanuel Jeannot and Guillaume Mercier.

PhD: Paul-Antoine Arras, Ordonnancement d'applications à flux de données pour les MPSOC, Université de Bordeaux, defended Feb. 3, 2015. Advisor: Emmanuel Jeannot and Samuel Thibault.

PhD in progress: Remi Barat, multi-criteria graph partitioning, started in 2014. Advisor: François Pellegrini.

PhD in progress: Raphaël Blanchard, parallelization and data distribution of discontinuous Galerkin methods for complex flow simulations, started in 2013. Advisor: François Pellegrini.

PhD in progress: Nicolas Denoyelle, advanced memory hierarchies and new topologies, started in 2015. Advisor: Brice Goglin and Emmanuel Jeannot.

PhD in progress: Benjamin Lorendeau, new programming models and optimization of Code Saturn, started in 2015. Advisor: Yvan Fournier and Emmanuel Jeannot.

PhD in progress: Romain Prou, communication management based on remote memory access, started in 2015. Advisor: Alexandre Denis and Emmanuel Jeannot.

PhD in progress: Hugo Taboada, communication progression in runtime systems, started in 2015. Advisor: Alexandre Denis and Emmanuel Jeannot.

PhD in progress: Adèle Villiermet, topology-aware resource management, started in 2014. Advisor: Emmanuel Jeannot and Guillaume Mercier.

9.2.3. Juries

Brice GOGLIN was member of the PhD defense of the following candidates:

- Surya Narayanan Khizahanchery Natarajan (Inria Rennes, Reviewer)

Emmanuel JEANNOT was member of the PhD defense of the following candidates:

- Ivan Cores, (Universidade Da Coruña, Reviewer)
- Emmanuelle Saillard (Université de Bordeaux, President)
- Farouk Mansouri (Université de Grenoble, Reviewer)
- Stéfano Drimon Kurz Mór (Federal University of Rio Grande do Sul, Reviewer)

François PELLEGRINI was member of the PhD defense of the following candidates:

- François Tessier (Université de Bordeaux, President)
- Astrid Casadei (Université de Bordeaux, Member)
- Karl-Eduard Berger (CEA & Paris Saclay, Reviewer)

Brice GOGLIN was also a member of the hiring committees for the Inria Bordeaux communication department head, for a communication assistant, and for the works council (AGOS) assistant.

Emmanuel JEANNOT was member of the hiring committee of a research team assistant.

9.3. Popularization

Brice GOGLIN is in charge of the diffusion of the scientific culture for the Inria Research Center of Bordeaux. He gave numerous talks about high performance computing and research careers to general public audience and school student. He is also involved in the popularization of computer programming and robotics programming and gave several wide audience seminar on these topics.

François PELLEGRINI was invited to give a talk about privacy and information security by the students of ENS Bretagne at Rennes, in the context of their "EntretiENS" conference program.

François PELLEGRINI was a member of the jury of the Student Demo Cup at the Paris Open-Source Summit.