



RESEARCH CENTER
Bordeaux - Sud-Ouest

FIELD

Activity Report 2014

Section Dissemination

Edition: 2015-03-24

1. BACCHUS Team	4
2. CAGIRE Team	7
3. CARMEN Team	9
4. CQFD Project-Team	11
5. FLOWERS Project-Team	13
6. GEOSTAT Project-Team	19
7. HIEPACS Project-Team	21
8. LFANT Project-Team	24
9. MAGIQUE-3D Project-Team	27
10. MAGNOME Project-Team	30
11. MANAO Project-Team	32
12. MC2 Team	34
13. MNEMOSYNE Project-Team	36
14. PHOENIX Project-Team	38
15. POTIOC Project-Team	41
16. REALOPT Project-Team	46
17. RUNTIME Team	49
18. SISTM Team	52

BACCHUS Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events organisation

- M. Colin and M. Ricchiuto have co-organized (with P. Lubin, I2M Bordeaux) the event B'Waves 2014, a workshop on breaking waves hosting some of the world's leaders on modelling and simulation of free surface waves. The event has been hosted by Inria BSO, and a second edition B'Waves 2016 will be held in Norway (host: Bergen University) ;
- M. Ricchiuto has co-organized (with A. Delis, Technical University of Crete) the mini-symposium 'non-hydrostatic free surface flows: models and methods' and the ECMI 2014 conference (Taormina, June 2014) ;
- Ci's member of the board of the GAMNI group of SMAI and she is secretary. She has participated to the organization of the "journées SMAI-MAIRCI-GAMNI sur le Maillage" (Paris, May 2014) ;
- P.M. Congedo has organized a mini-symposium on Uncertainty Quantification Techniques for Fluid-flow Problems at the ECCOMAS 2014 Conference (Barcelona, July 2014) ;
- P.M. Congedo has contributed to the organization of VKI Lecture Series Uncertainty Quantification in Computational Fluid Dynamics - STO-AVT-235 (Brussels, September 2014).

7.1.1.1. Reviewer

We reviewed papers for top international journals and conferences 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.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Licence : Héloïse Beaugendre, Co-Responsable des projets TER de première année, 10h, L3, ENSEIRB-MATMÉCA, FRANCE

Licence : Héloïse Beaugendre, Encadrement TER, 16h, L3, ENSEIRB-MATMÉCA, FRANCE

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 : Pietro Marco Congedo, Fundamentals of Fluid Mechanics II, 20h, 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, 10h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Approximation numérique et problèmes industriels, 26h, M1, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Outils informatiques pour l'insertion professionnelle, 9h, M2, Université de Bordeaux, France
- Master : Héloïse Beaugendre, Calcul Parallèle (OpenMP-MPI), 40h, M1, ENSEIRB-MATMÉCA et Université de Bordeaux, France
- Master : Héloïse Beaugendre, Calcul Haute Performance (MPI), 36h, M2, ENSEIRB-MATMÉCA, France
- Master : Héloïse Beaugendre, Calcul Haute Performance et décomposition de domaine, 36h, M2, ENSEIRB-MATMÉCA et Université Bordeaux, France
- Master : Mathieu Colin, PDE, 30 H, M1, ENSEIRB-MATMÉCA, FRANCE
- Master : Mathieu Colin, EDP approfondies, 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 Numérique des écoulements 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
- Master : Mario Ricchiuto, Simulation Numérique des écoulements fluides, 16h, M3, ENSEIRB-MATMÉCA, France
- Master : Mario Ricchiuto, Post-graduate course on introduction to CFD, 18h, M2 IAS (Master Spécialisé Ingénierie Aéronautique et Spatiale, http://www.ensam.fr/fr/formation_initiale/masteres_specialises/ingenierie_aeronautique_et_spatiale), ENSAM, France

7.2.2. 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 : 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.

CAGIRE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committee

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.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

- Co-chair ([RM], with M. Visbal, Air Force Research Laboratory, Ohio, USA) of the symposium on DNS, LES and hybrid RANS/LES within the international conference FEDSM (Fluid Engineering Division Summer Meeting) of the ASME (American Society of Mechanical Engineers), organized in Chicago, in August 2014.
- Member [RM] of the scientific committee of the Intl Symp. Turbulence, Heat and Mass Transfer, Sarajevo, Bosnia and Herzegovina, 2015
- Member [RM] of the scientific committee of the Intl. Symp. Engineering Turbulence Modelling and Measurement, Marbella, Spain, 2014

9.1.2.2. Reviewer

- Turbo Expo ASME Gas Turbines Conference 2015 (Montreal) [PB]

9.1.3. Journal

9.1.3.1. Reviewer

This year, the team members have reviewed 33 papers for the following journals:

- Aerospace Science and Technology [PB]
- Combustion and Flame [PB]
- Computational Thermal Science [PB]
- Computers and Fluids [RM]
- Concurrency and Computation: practice and experience [PB]
- Flow Turbulence and Combustion [RM]
- Heat Transfer Engineering [RM]
- International Journal of Heat and Fluid Flow [RM]
- International Journal of Refrigeration [PB]
- Journal of Computational Physics [VP]
- Journal of Fluid Mechanics [RM]
- Journal of Petroleum Science and Engineering [PB]
- Journal of Propulsion Power [PB]
- Proceedings of the Combustion Institute [PB]

9.2. Teaching - Supervision - Juries

9.2.1. 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.
- Continuous Training : [RM] Simulation numérique de la turbulence en LES, 3h, EUROSAAE, Paris, France.

9.2.2. Supervision

- PhD in progress: Simon Delmas, Simulation d'écoulements pariétaux génériques à bas nombre de Mach pour l'amélioration du refroidissement des chambres de combustion : développement et mise en œuvre de schémas de type Galerkin discontinu adaptés, University of Pau, started January 2013, Dir.: [PB] and Co-dir.: [VP].
- PhD in progress : Nurtoleu Shakhan, Modelling and simulation of supersonic jet in crossflow, University of Almaty (Kazakhstan), started October 2013, Dir.: Altyn Naïmanova and Co-dir.: [PB] (the thesis subject has been modified mid-2014).
- 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, Dir.: [RM]

9.2.3. 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 : Guao Wang, « Simulation numérique sur des feux de nappe de kérosène de grande échelle soumis à un vent traversier avec prise en compte d'un aéronef », University of Poitiers, France, 10 January 2014, [PB, referee].
- PhD : Julien Pilet, « Analyse du comportement moteur stabilisé en windmilling par couplage des modèles thermodynamiques et simulations numériques », University of Toulouse, France, 17 January 2014, [PB, referee].

9.3. Popularization

- Opération Forum des Métiers organisée par la Zone d'Activité Pédagogique d'Oloron Sainte Marie (64) , Salle Pierre Scohy, Oloron Sainte Marie (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).

CARMEN Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events selection

- Y. Coudière member of the Scientific Comitty for the international conference FCVA “Finite Volumes for Complex Applications”, Berlin, juin 2014.”.
- From the 1st january 2014, Y. Coudière is in charge of the team CSM at the IMB.
- From september 2014, Y. Coudière is in charge of the Licence “Ingénierie Mathématiques” at the university of Bordeaux.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

License : S. Labarthe, *pre-BAC Analysis and Geometry*, 24 h eqTD.

License : S. Labarthe, *Introduction to analysis*, 48 h eqTD.

License : S. Labarthe, *Help for the redaction of a resume*, 21 h eqTD.

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)*, 28 h eqTD

Engineering school: F. Caro, *TER* 2nd year, 6h eqTD, ENSEIRB-MATMECA, IPB.

Engineering school: F. Caro, *Finite elements, variational formulation and Sobolev spaces*, 36h eqTD, Institut Galilée, Univ. Paris 13.

Engineering school: Y. Coudière, *TER* 2nd year, 6h eqTD, ENSEIRB-MATMECA, IPB.

Cursus Ingénieur: Y. Coudière, *project in scientific computing, F90* 1st year, 16h eqTD, ENSEIRB-MATMECA, IPB.

Master : Y. Coudière, « *Analyse numérique approfondie* », 36h eqTD, M2, Univ. Bordeaux.

8.2.2. Supervision

PhD in progress: A. Davidovic, Modelling the cardiac ventricular structural heterogeneities, started on October 2012, supervised by Y. Coudière and C. Poignard.

PhD in progress: G. Ravon, An inverse problem for cardiac optical mapping, started on October 2012, supervised by Y. Coudière and A. Iollo.

PhD in progress: J. Lassoued, Construction de methodes de reduction de modèle pour le problème d’estimation de parametres en electrophysiologie cardiaque, strted on october 2013, co-supervized by N. Zemzemi with Moncef Mahjoub, École Nationale d’Ingénieur de Tunis (Tunisia).

PhD in progress: W. Mbarki, Études thérique et numérique du couplage purkinje-myocarde en electrophysiologie cardiaque, started on october 2013, co-supervised by N. Zemzemi with Saloua Aouadi, Faculté des sciences de Tunis (Tunisia).

PhD in progress: P.E. Bécue, Numerical simulations for cardiac electrophysiology at the microscopic scale, started on october 2014, co-supervised by M. Potse with F. Caro, U. Bordeaux and Maison de la Simulation at Saclay.

8.2.3. Juries

- Y. Coudière, reviewer, PhD of Elisa Schenone, 26 Nov. 2014

- M. Potse, member, D Carlos Sánchez Tapia, Universidad de Zaragoza, Zaragoza, Spain, 23 June 2014.
- M. Potse, member, PhD Annabelle Collin, Univ. Pierre et Marie Curie, Paris VI; France, 6 Oct. 2014

8.3. Popularization

- G. Ravon and Y. Coudière obtained a financial support from Cap'Math for the game: "Heart Attack". It is destined to middle and high school students to introduce mathematical modelling.
- S. Labarthe presented the work of the team at the June session of the Inria Bordeaux-Sud Ouest "Unithé ou café" scientific diffusion presentation.

CQFD Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Member of the conference program committee

Jonatha Anselmi has been member of the conference program committee of the 8th International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS) and of the 21st International Conference on Analytical and Stochastic Modelling Techniques and Applications (ASMTA).

Pierrick Legrand has been member of the conference program committee of the EVOLVE 2015 International Conference and of the Genetic and Evolutionary Computation Conference (GECCO 2014).

9.1.1.2. Reviewer

All the members of the team are regular reviewers for several conferences in applied probability and statistics.

9.1.2. Journal

9.1.2.1. Member of the editorial board

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.

9.1.2.2. Reviewer

All the members of the team are regular reviewers for several journals in applied probability and statistics.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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.

Licence : J. Anselmi, Probabilités 16 heures, niveau L3, Institut Polytechnique de Bordeaux, école ENSEIRB-MATMECA, 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, Scoring, 21 ETD, niveau M2, Bordeaux university, France

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
 Licence : B. de Saporta, Logiciels scientifiques 15h ETD, M1, université Montpellier 2, France
 Master : B. de Saporta, Processus de Markov, 31,5h ETD, M2, université Montpellier 2, France
 P. Legrand, Mathématiques générales (responsable de l'UE), Licence 1 SCIMS (138 heures)
 P. Legrand, Informatique pour les mathématiques (responsable de l'UE), Licence 1 SCIMS (36 heures)
 P. Legrand, Complément d'Algèbre/Espaces Eucl. (responsable de l'UE), Licence 2 SCIMS (54 heures)

9.2.2. 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 in progress : 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 in progress : Isabelle Charlier, Optimal quantization applied to conditional quantile estimation, University of Bordeaux and Université Libre de Bruxelles, supervised by J. Saracco and D. Paindavaine.

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 ethnoarchéologique. 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. Financement Conacyt (Consejo Nacional de Ciencia y Tecnología) national scholarships for PNP programs (Programa Nacional de Posgrados Calidad), Mexico. Co-encadrement : L. Trujillo (50%), P. Legrand (50%). 2013-2016.

9.2.3. Juries

B. de Saporta was a member of the PhD defense jury of Coralie Fritsch, université Montpellier 2, France.

M. Chavent was a member of the CR2 concours of Inria Bordeaux-Sud-Ouest.

J. Saracco was a member of the PhD defense jury of Hussein Hashem, Brunel University, UK.

J. Saracco was a member of the PhD defense jury of Karim Claudio, Bordeaux University, France.

J. Saracco was member of various juries for positions in french universities (Bordeaux, professor; Poitiers, assistant professor; Orléans, professor) in april-may 2014.

9.3. Popularization

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).

FLOWERS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Invited Talks

- Manuel Lopes made a plenary talk at the conference Technologies de l'Information et de la Communication pour l'Enseignement (TICE), 18-20 Novembre, Beziers, France
- Manuel Lopes made an invited talk at the Robotics: Science and Systems : Workshop on Learning Plans with Context From Human Signals, USA.
- Manuel Lopes made an invited talk ICRA Workshop on Active Visual Learning and Hierarchical Visual Representations for General-Purpose Robot Vision, Hong-Kong
- Manuel Lopes made an invited talk ICRA Workshop on Autonomous Grasping and Manipulation: An Open Challenge, Hong-Kong
- Alexander Gepperth gave an invited lecture at the FP7-sponsored Summer School "Neuronal dynamics approaches to cognitive robotics", Bochum, Germany
- Matthieu Lapeyre gave a talk at Journées Scientifiques Inria 2014 (06/26/2014) about the Poppy project and especially on the open source aspects of the project.
- Matthieu Lapeyre participated to Open experience at WAVE 2014 conference (09/11/2014) about new models of distribution and presented the particularity of Poppy as an open science project.
- Matthieu Lapeyre made a talk at Digital Intelligence 2014 conference held in Nantes (France) about the use of Poppy for educational and artistic applications.
- Olivier Mangin made an invited talk at Language and Body symposium, International Association for the Study of Child Language Conference (IASCL), 14-18 July 2014, Amsterdam, Netherlands.
- Steve N'Guyen gave a talk at the ISIR lab (Institut des Systèmes Intelligents de et Robotique, Paris) about the Poppy project (06/10/2014).
- Clément Moulin-Frier gave two invited talks. The first one was at the Humanoids 2014 conference in Madrid, Spain, during the workshop entitled *Active Learning in Robotics: Exploration Strategies in Complex Environments*: <http://www.ausy.tu-darmstadt.de/Workshops/Humanoids2014ActiveLearning>. The second one was at the *PyconFr*, a French software developer conference: <http://www.pycon.fr/2014/schedule/presentation/37/>
- Pierre-Yves Oudeyer gave the following talks:
 - (Keynote) (march 2014) Developmental Robotics: : Lifelong Learning and the Morphogenesis of Developmental Structures, AAAI Spring Symposium on Implementing Selves with Safe Motivational Systems and Self-Improvement, Stanford Univ., US. https://www.youtube.com/watch?v=bkv83GKYpkI&list=PL8W4iBcZa2EIG_Q38ihjPdINjgkVXt0Uu
 - (Keynote) (june 2014) Curiosity-driven learning and development: How robots can help us understand humans, WACAI 2014, http://wacai14.litislab.fr/?page_id=140
 - (jan. 2014) Emergence du langage et robotique développementale, Séminaire de l'association X-SHS, <https://www.youtube.com/watch?v=LQ5evY4aCKI>
 - (feb. 2014) Developmental Robotics: Lifelong Learning and the Morphogenesis of Developmental Structures, Dagstuhl Seminar 14081 on "Robots learning from experiences", <http://www.dagstuhl.de/program/calendar/partlist/?semnr=14081&SUOG>

- (march 2014) La robotique comme outil pour comprendre les origines du langage, Rencontres Mollat, Bordeaux.
- (march 2014) Comment les robots nous aident à comprendre l'homme, Forum des Sciences Cognitives, Paris. <https://www.youtube.com/watch?v=enQYBR3zFpo>
- (avril 2014) Fabricating Open-Source Baby Robots, Tedx Cannes, <https://www.youtube.com/watch?v=AP8i435ztwE>
- (avril 2014) Poppy: Open Source Robotics Platform for Science, Art and Education, La Cantine, Rennes.
- (may 2014) Open Source Developmental Robotics, Bodywara workshop Inria/FING, Bordeaux.
- (june 2014) KidLearn: Machine learning for personalizing educational contents, Digital Intelligence conference, Nantes.
- (july 2014) The roles of active learning in sensorimotor and language development, International Conference of the International Society of Infant Studies (ISIS 2014), Symposium on Integrative models of language acquisition, slides: <https://www.dropbox.com/s/qcpad2lvbe3fs93/ISIS2014.pptx?dl=0>
- (sept. 2014) Curiosity-driven learning and development in robots, IX Advanced Multimodal Information Retrieval int'l summer school.
- (oct. 2014) Open source developmental robotics, Séminaire du Centre de Recherche Interdisciplinaire, Univ. Paris VII.
- (nov. 2014) The impact of curiosity-driven learning on self-organization of developmental process: robotic models, First International Symposium on Information Seeking, Curiosity and Attention, Bordeaux, France, vidéo: <https://www.youtube.com/watch?v=9ATEhHB99wQ&list=PL9T8000j7sJDZL1NrTL-zyFmeJlvXYXzm>
- (nov. 2014) Modeling cognitive development with robots, Seminar of the Center for Brain and Cognitive Development, Birbeck college.

9.1.2. Scientific events organisation

9.1.2.1. General chairs

9.1.2.1.1. First interdisciplinary symposium on Information-seeking, curiosity and attention

General chairs Pierre-Yves Oudeyer, Jacqueline Gottlieb, Manuel Lopes
6-7 Nov. 2014, Inria Bordeaux Sud-Ouest, France

Summary:

The past few years have seen a surge of interest in the mechanisms of active learning, curiosity and information seeking, and this body work has highlighted a number of highly significant questions regarding higher cognition and its development (for a recent review, see Tics13). One question is how subjects explore to build explanatory models of their environment, and how these models further constrain the sampling of additional information. A related question is how the brain generates the intrinsic motivation to seek information when physical rewards are absent or unknown, and how this impacts cognitive development in the long term. Our goal is to stimulate discussion on these and related topics and foster further research in this nascent and complex field. <https://openlab-flowers.inria.fr/t/first-interdisciplinary-symposium-on-information-seeking-curiosity-and-attention/21>

9.1.2.2. responsible of the conference program committee

Clément Moulin-Frier will be program chair at the ICDL/Epirob conference to be held in August 2015 in Brown University, Providence, Rhode Island, USA: <http://www.icdl-epirob.org/>

9.1.2.3. member of the conference program committee

David Filliat was Associate Editor for IROS. Freek Stulp was on the Program Committee of RSS, and an Associate Editor for IROS and ICRA. Alexander Gepperth was on the programme committee of ESANN and IJCNN.

9.1.2.4. reviewer

David Filliat was reviewer for ICARCV, ICRA, IROS, RFIA. Freek Stulp was a reviewer for ICRA and IROS. Manuel Lopes was reviewer for Iros, Icr, HRI, Aamas. Jonathan Grizou was reviewer for ICDL and HRI. Alexander Gepperth was reviewer for IROS, IJCNN, ESANN and ITSC.

9.1.3. Journal

9.1.3.1. member of the editorial board

Pierre-Yves Oudeyer was editor of the IEEE CIS Newsletter on AMD and associate editor of IEEE Transactions on Autonomous Mental Development, Frontiers in Humanoid Robotics, Frontiers in Neurorobotics, International Journal of Social Robotics, as well as member of the editorial board of Advances in Interaction Studies, John Benjamins Publishing Company.

Clément Moulin-Frier and Pierre-Yves Oudeyer are co-editors of a special issue in *Journal of Phonetics*, a major journal in speech science. This special issue, entitled *On the cognitive nature of speech sound systems* is focused on a target paper for which Clément Moulin-Frier is the first author. A dozen of international contributions are currently under review, the publication is expected during the spring of 2015. <https://hal.archives-ouvertes.fr/hal-01073668>

9.1.3.2. reviewer

David Filliat was reviewer for International Journal of Robotics Research, Robotics and Autonomous Systems, Neurocomputing Pierre Rouanet was reviewer for the journal IEEE Transactions on Human-Machine Systems. Freek Stulp was a reviewer for Autonomous Robots. Manuel Lopes was reviewer for IEEE Transactions on Robotics, IEEE Transactions on Autonomous Mental Development Jonathan Grizou was reviewer for IEEE Transactions on Autonomous Mental Development. Alexander Gepperth was reviewer IEEE Transactions on Intelligent Transportation Systems, Neurocomputing, Neural Networks, Neural Processing Letters and Cognitive Computation. PY Oudeyer reviewed projects for the European Commission and Inria, and was a reviewer for IEEE ICDL-Epirob, ICRA, IEEE TAMd.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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

Master: Apprentissage, 5 heures. M2, Enseirb-Matmecca (Manuel Lopes).

Master: La robotique de compagnie: concepts et techniques, 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 ans diffusion of IniRobot pedagogical kit (see highlights), Didier Roy, Thomas Guitard et Pierre-Yves Oudeyer.

9.2.2. Supervision

PhD in progress: Louis-Charles Caron, RGB-D object recognition on a mobile robot, started january 2012 (superv. Alexander Gepperth).

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: Guillaume Duceux, Navigation and exploration based on RGB-D cameras, started october 2011 (superv. David Filliat).

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: Thibaut Munzer, Learning from Instruction (superv. Manuel Lopes).

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

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

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

PhD finished: Jonathan Grizou, Fluid simultaneous learning of task and feedback models, started oct. 2011 (superv. Manuel Lopes and Pierre-Yves Oudeyer).

PhD finished: Matthieu Lapeyre, Poppy: Open source 3D printed and fully-modular robotic platform for Science, Art and Education, started sept. 2010 (superv. Pierre-Yves Oudeyer).

9.2.3. PhD Juries

Ryad Akrou (Pierre-Yves Oudeyer, Examineur) : Robust Preference Learning-based Reinforcement Learning, Univ. Paris Sud.

Raphael Laurent (Pierre-Yves Oudeyer, Examineur) : COSMO : un modèle bayésien des interactions sensori-motrices dans la perception de la parole, Univ. Grenoble.

Kirill Makikhin (Pierre-Yves Oudeyer, Rapporteur) : Towards a Biologically Plausible Computational Model of Developmental Learning with Robotic Applications, Univ. Queensland, Australia.

Hung Ngo (Pierre-Yves Oudeyer, Rapporteur) : Artificial Curiosity: Algorithms for Autonomous Acquisition of Robotic Skills, Univ. Svizzera Italiana.

Olivier Mangin (19/03/14, David Filliat, Examineur) : The Emergence of Multimodal Concepts: From Perceptual Motion Primitives to Grounded Acoustic Words. Univ Bordeaux, Pierre-Yves Oudeyer (dir.).

Fabien Hervouet (30/06/2014, David Filliat, Rapporteur) : Exploration et structuration intrinsèquement motivées d'espaces d'apprentissage sensorimoteur : contributions théoriques, plateforme et expérimentations

Adrien Jauffret (11/07/2014, David Filliat, Rapporteur) : De l'auto-évaluation aux émotions - approche neuromimétique et bayésienne de l'apprentissage de comportements complexes impliquant des informations multimodales

Kangni Kueviakoe (30/09/2014, David Filliat, Rapporteur) : Localisation multi-capteurs garantie : Résolution d'un problème de satisfaction de contraintes

Emilie Wirbel (7/10/14, David Filliat, Rapporteur) : Localisation et navigation topologiques de robots humanoïdes

Irene Ayllon Clemente (25/7/14, Alexander Gepperth, Rapporteur) : An on-line learning system for speech acquisition.

9.3. 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. 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>

PY Oudeyer gave a TedX talk in Cannes, explaining open-source developmental robotics, <https://www.youtube.com/watch?v=AP8i435ztwE>

PY Oudeyer gave several interviews in the general press (e.g. Le Monde, Les Echos, Sciences et Avenir) to explain societal issues of robotics, <http://www.pyoudeyer.com/press/>

PY Oudeyer wrote three popular science articles to explain societal issues of robotics:

- "What can we learn about development from baby robot" <http://www.pyoudeyer.com/WhatDoWeLearnFromBabyRobotsOudeyer2015.pdf>
- Oudeyer, P-Y. (2014) Robotique: les grands défis à venir, Futuribles, Mars 2014 <http://www.pyoudeyer.com/PYOudeyerRobotFuturibles14.pdf>.
- Oudeyer, P-Y. (2014) Des abeilles aux sources de la parole, in Breve de Maths, Mathématiques pour la planète terre, Nouveau monde editions, <http://www.breves-de-maths.fr/des-abeilles-aux-sources-de-la-parole/>.

06/02/2014 : "Developmental Robotics - Learning objects by interaction", David Filliat, Invited conference, Institut Bull, Réunion du groupe de réflexion CEM "Cerveaux et machines"

6-8/02/2014 : Aquitec, Yoan Mollard presented the Poppy platform to students and visitors

18-20/03/2014 : Innorobo 2014, Yoan Mollard and Steve N'guyen presentend the projects Poppy and 3rd hand

11/04/2014 : "Semantic Mapping", David Filliat, Invited Conference, Laboratoire Imagine, Ecole Nationale Supérieure des Ponts et Chaussées

20-22/06/2014: Poppy has been presented in the Paris Makerfair and obtained a "maker of merit" award.

2-8/07/2014: Demonstrations of Poppy took place at the FAB10 conference in Barcelona, the biggest conference about the maker revolution. Poppy was among the ten finalists for the Fablab award.

4-5/09/2014: Clement Moulin-Frier, Steve N'Guyen and Pierre Rouanet participated to a Hackathon in "cité des sciences" about programming the Poppy humanoid platform.

11/10/2014: Robotics animations for the "Fete de la science" at ENSTA ParisTech,

17/10/2014 : "Robots and Social Interaction Decisions - Developmental robotics", David Filliat, Invited presentation for the ITechLaw 2014 conference.

25-28/10/2014: Clement Moulin-Frier and Pierre Rouanet presented the Poppy platform and the associated libraries - pypot and explauto - to the PyConFR2014 conference and organised of a Hackathon.

19-21/11/2014: Clement Moulin-Frier, Nicolas Rabault, and Pierre Rouanet presented the Poppy platform to the fossa 2014 conference.

10/12/2014: Robotics demonstration for "Science Break" organised by Diagonale Paris Saclay : <http://sciencebreak.ladiagonale-paris-saclay.fr>

Clément Moulin-Frier contributed to a scientific diffusion paper in the French journal *Biofutur* about the use of robotics in the study of language evolution and acquisition: <http://www.biofutur.com/anciens-numeros>. <https://hal.archives-ouvertes.fr/hal-01100048>

Fabien Benureau supervised two students in 3rd year of the Cognitive Science major at the University of Bordeaux on their TER project. The project used Poppy, exploring how the attitude towards robots influences how humans recognise the emotion they try to express. Poppy having no facial expression — or face — yet, the students expressed the five expressions they selected (anger, surprise, joy, sadness, disgust) with body movements alone. They videotaped the sequences of movements (videos are available here http://python.sm.u-bordeaux2.fr/ter/2014/sc/desprez-zerdoumi/?page_id=289) and created an experiment asking volunteers to guess which emotion was displayed. The form also included the Negative Attitude towards Robots Scale (NARS), to investigate the possible correlation between fear of robot and the ability to identify their emotional attitude. The results showed no correlation between the two, although it was admitted that the experiment would have to be improved and ran again before any conclusion could be made.

GEOSTAT Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

H. Yahia and K. Daoudi are members of the scientific committee of the ISIVC 2014 conference.

8.1.1.2. Reviewer

K. Daoudi has been reviewer for INTERSPEECH, ICASSP and for the "The Icelandic Research Fund" project.

8.1.2. Journal

8.1.2.1. Member of the editorial board

- H. Yahia is a member of the editorial board of the open access journal *Frontiers in Fractal Physiology*.
- H. Yahia has been a member of Elsevier's *Digital Signal Processing* from 2011 until mid 2014.
- H. Yahia is the editor in chief of the *Frontiers Research Topic* "theoretical physics and signal processing", to be organized in 2015 with P. Ivanov (Boston University) and A. Turiel (ICM-CSIC).

8.1.3. Conseil National des Universités

H. Yahia, member, section 61.

8.2. Teaching - Supervision - Juries

8.2.1. Seminars, presentations

- H. Yahia has given a presentation at the **Séminaire Cristolien d'Analyse Multifractale** (SCAM), headed by S. Jaffard: *Exposants de singularité en formalisme microcanonique et analyse multirésolutions quasi-optimale*, Jan 16, 2014.
- H. Yahia was invited to make a presentation: *Edges, transitions, criticality: novel nonlinear characterizations of low-level transition features in signal processing and applications to cross-scale inference in complex signals* at the ISIVC 2014 conference <http://www.i3e.ma/isivc2014/keynote.php>.
- O. Pont was invited to make a presentation: *Cardiodynamic Complexity: Electrocardiographic Characterization of Arrhythmic Foci*, [22].
- K. Daoudi was invited by Dr. Jon Gudnason to give a lecture on nonlinear speech analysis at Reykjavik university, Iceland.
- H. Badri has made a presentation at *Journées de l'EDMI* (Bordeaux - France), November 2014.
- H. Badri has made a presentation in the MANAO team: *Recovering Gradient Fields with Multi-Sparse Priors* March 26, 2014.
- H. Badri has made presentation at the "Signal-Image" seminar, co-organized by IMS-IMB-LaBRI in the framework of Labex CPU, May 15, 2014.
- GEOSTAT has invited A. Bijaoui, astronomer Emeritus to give a seminar for the Inria BSO centre, June 3rd, 2014.

8.2.2. Courses, summer schools

1. Mediterranean School of Complex Networks - (Salina, Sicily), June 9-13, attended by H. Badri.

2. WIPO intellectual property certificate attended by H. Badri.
3. University Teaching 101 - Johns Hopkins University certificate attended by H. Badri.

8.2.3. Teaching

Licence : H. Badri, C2I course, 32 hours, L1 level, Bordeaux I University, France.

Master : K. Daoudi was invited by the Moroccan CNRST within the FINCOME'2014 program (<http://www.fincome.cnrst.ma/>) to give a 20 hours lecture on speech processing at the Master2 InfoTelecom of the faculty of science of Rabat (<http://www.fsr.ac.ma/MIT/>).

8.2.4. Juries

H. Yahia was a member of the PhD Jury of S. Chef (Le2I, UMR CNRS 6306, Laboratoire Electronique, Informatique et Image), defended November 25, 2014. Title: *Contribution à l'analyse de signaux acquis par émission de photons. Dynamique pour l'étude de circuits à très haute intégration*. Jury:

- S. Binczak, professeur université de Bourgogne (directeur de thèse),
- S. Jacquir, maitre de conférence université de Bourgogne (co-encadrant),
- F. Morain-Nicolier, IUT de Troyes, (rapporteur),
- K. Sanchez, docteur ingénieur CNES, (examineur),
- L. Torres, professeur LIRMM, (rapporteur),
- H. Yahia, chargé de recherche Inria Bordeaux (examineur).

HIEPACS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committee

Olivier Coulaud has been member of the organizing committee of the first International Workshop on Dislocation Dynamics Simulations that was devoted to the latest developments realized worldwide in the field of Discrete Dislocation Dynamics simulations. This international event held in December 10th to the 12th at "Maison de la Simulation" in Saclay, France and attended by 55 participants.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

Mathieu Faverge has been member of the technical program committee of the international conference HiPC'14.

Luc Giraud has been member of the scientific program committee of the international conferences HiPC'14, ICS'14, IPDPS'14, VecPar'14, PDCN'14.

Jean Roman has been member of the scientific program committee of the international conference IEEE PDP'14.

9.1.2.2. Reviewer

Luc Giraud has been involved in the first round of ANR evaluation and has performed reviewing for PRACE.

Furthermore, the **HIEPACS** members have contributed to the reviewing process of several international conferences: IEEE HiPC 2014, CCGRID 2015, IEEE IPDPS 2015, IEEE PDP 2014,

9.1.3. Journal

9.1.3.1. Member of the editorial board

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

9.1.3.2. Reviewer

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

9.2. Teaching - Supervision - Juries

9.2.1. 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, 28h, ENSEIRB-MatMeca, Talence; Code coupling, 6h, ENSEIRB-MatMeca, Talence.
2. E. Agullo: Operating systems, 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.

9.2.2. Supervision

Defended PhD thesis

1. Yohann Dudouit, *Scalable parallel elastodynamic solver with local refinement in geophysics*, defended on December 8th, advisors: L. Giraud and S. Pernet (ONERA).
2. Andra Hugo *Composabilité de codes parallèles sur plateformes hétérogènes*, defended on December 12th 2014, advisors: A. Guermouche, R. Namyst and P-A. Wacrenier.
3. Clément Vuchener, *Algorithmique de l'équilibrage de charge pour des couplages de codes complexes*, defended on February 7th 2014. advisors: A. Esnard and J. Roman.

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. Astrid Casadei, *Scalabilité et robustesse numérique des solveurs hybrides pour machines massivement parallèles*, starting Oct. 2011, advisors: F. Pellegrini and P. Ramet.
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 Etcheverry, *Toward large scale dynamic dislocation simulation on petaflop computers*, starting Oct. 2011, advisor: O. Coulaud.
6. Xavier Lacoste, *Scheduling and memory optimizations for sparse direct solver on multi-core/multigpu cluster systems*, starting Jan. 2012, advisors: F. Pellegrini and P. Ramet.
7. Alexis Praga, *Parallel atmospheric chemistry and transport model solver for massively platforms*, starting Oct. 2011, advisors: D. Cariolle (CERFACS) and L. Giraud.

8. Stojce Nakov, *Parallel hybrid solver for heterogeneous manycores: application to geophysics*, starting Oct. 2011, advisors: E. Agullo and J. Roman.
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. Favergé and L. Giraud.
11. Fabien Rozar, *Peta and exaflop algorithms for turbulence simulations of fusion plasmas*, starting Nov. 2012, advisors: G. Latu (CEA Cadarache) and J. Roman.
12. Moustapha Salli, *Design of a massively parallel version of the SN method for neutronic simulations*, starting Oct. 2012, advisors: L. Plagne (EDF), P. Ramet and J. Roman.
13. Mawussi Zounon, *Numerical resilient algorithms for exascale*, starting Oct. 2011, advisors: E. Agullo and L. Giraud.

9.2.3. Juries

- HDR of B. Goglin (Université de Bordeaux) entitled “Vers des mécanismes génériques de communication et une meilleure maîtrise des affinités dans les grappes de calculateurs hiérarchiques” defended April 2014. J. Roman (examinator).
- PhD of M. Dorier (Ecole Normale Supérieure de Rennes) entitled “Addressing the challenges of I/O variability in post-petascale HPC simulations” defended December 2014. J. Roman (external referee).
- PhD of D. Genet (Université de Bordeaux) entitled “Design of generic modular solutions for PDE solvers for modern architectures” defended December 2014. J. Roman (examinator).
- PhD of P. Jacq (Université de Bordeaux) entitled “Méthodes numériques de type volumes finis sur maillages non-structurés pour la résolution de la thermique anisotrope et des équations de Navier-Stokes compressibles” defended July 2014. J. Roman (examinator).
- PhD of B. Lizé (Université Paris 13) entitled “Résolution Directe Rapide pour les Éléments Finis de Frontière en Électromagnétisme et Acoustique : \mathcal{H} -Matrices. Parallélisme et Applications Industrielles” defended June 2014. L. Giraud and G. Sylvand (examinator).
- PhD of P. Jolivet (Université de Grenoble et LJLL) entitled “Méthodes de décomposition de domaine. Application au calcul haute performance” defended October 2014. L. Giraud (examinator).
- PhD of R. Kanna (Manchester University) entitled “Numerical linear algebra problems in structural analysis” defended October 2014. Jury: D. Silvester (internal referee) L. Giraud (external referee).
- PhD of L. Boillot (Université de Pau et des Pays de l’Adour), entitled “Contributions à la modélisation mathématique et à l’algorithmique parallèle pour l’optimisation d’un propagateur d’ondes élastiques en milieu anisotrope” defended December 2014, E. Agullo (examinator).

9.3. 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 developed by ALGO’TECH.

The **HIEPACS** members have organized the PATC training session on Parallel Linear algebra at “Maison de la simulation” in Saclay from March 26th to March 28th.

LFANT Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events organisation

7.1.1.1. member of the organizing committee

The team helped organising the **Colloque Jeunes Chercheurs en Théorie des Nombres**, which took place in Bordeaux on 11/06/2014–13/06/2014.

7.1.2. Scientific events selection

7.1.2.1. member of the conference program committee

Andreas Enge was a member of the programme committee for the *Elliptic Curve Cryptography* 2014 conference in Chennai, India.

Sorina Ionica was a member of the program committee for the *Latincrypt* 2014 conference.

7.1.3. Journal

7.1.3.1. member of the editorial board

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.

7.1.4. Other scientific activities

7.1.4.1. Invited talks

- D. Robert was invited to give a talk on “Pairings on abelian varieties and the Discrete Logarithm Problem” for the Discrete Logarithm Problem Conference in May 2014 at Ascona, Switzerland
- D. Robert was invited to give a talk on “Isogenies between abelian varieties” for the Effective moduli spaces and applications to cryptography conference in June 2014 at Rennes
- D. Robert was invited to give a talk on “Optimal pairings on abelian varieties” for the Elliptic Curve Cryptography conference in October 2014 at Chennai, India
- H. Ivey-Law was invited to give a talk on “Arithmetic on Jacobians of Relative Curves” for the Number Theory Meets Geometry conference in November 2014 at Kaiserslautern, Germany
- A. Enge has given an invited talk on “Abelian varieties and theta functions for cryptography” at the 4th International Cryptology and Information Security Conference at Putrajaya, Malaysia
- A. Enge has given an invited talk on “Class invariants for Abelian surfaces” at the workshop Computational Number Theory of Foundations of Computational Mathematics in Montevideo, Uruguay

7.1.4.2. Seminar

The following external speakers have given a presentation at the LFANT seminar, see

<http://lfant.math.u-bordeaux1.fr/index.php?category=seminar>

- Frédérique Oggier (NTU, Singapour): “Le codage pour le stockage distribué de données”
- Hartmut Monien (Physikalisches Institut der Universität Bonn): “Zeta values, random matrix theory and Euler-MacLaurin summation” and “Calculating rational coverings for subgroups of $\mathrm{PSL}_2(\mathbb{Z})$ efficiently”
- Nicolas Delfosse (Montreal): “Une introduction au calcul quantique tolérant aux fautes”
- Eduardo Friedman (Universidad de Chile): “Cône de Shintani et degré topologique”
- John Boxall (Caen): “Heuristiques sur les variétés abéliennes adaptées à la cryptographie à couplage”
- Pınar Kılıçer (Leiden+IMB): “The class number one problem for genus-2 curves”
- Bertrand Maury (Paris-Sud): “Arbre bronchique infini et entiers dyadiques”
- Emmanuel Thomé (Nancy): “Un algorithme quasi-polynomial de calcul de logarithme discret en petite caractéristique”
- Oriol Serra (UPC, Barcelone): “Algebraic Removal Lemma”
- Amalia Pizarro-Madariaga (Valparaíso): “Estimations for the Artin conductor”
- Alina Dudeanu (EPFL): “Computing a Velu type formula for rational cyclic isogenies between isomorphism classes of Jacobians of genus two curves that are defined over a finite field.”
- Gaetan Bisson (University of French Polynesia): “On polarised class groups of orders in quartic CM-fields”
- Kamal Khuri Makdisi (American University of Beirut): “Moduli interpretation of Eisenstein series”
- Kamal Khuri Makdisi (American University of Beirut): “On divisor group arithmetic for typical divisors on curves”
- Chloe Martindale (University of Leiden / IMB): “An algorithm for computing Hilbert modular varieties”
- Dimitar Jetchev (EPFL): “Euler systems from special cycles on unitary Shimura varieties and arithmetic applications”
- Alain Couvreur (Inria and LIX, École Polytechnique): “Une attaque polynomiale du schéma de McEliece basé sur les codes de Goppa "sauvages".”

7.1.4.3. Research administration

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.

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 2011, J.-M. Couveignes is involved in the *GDR mathématiques et entreprises* and in the *Agence pour les mathématiques en interaction avec l'entreprise et la société*.

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

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Summer school: A. Enge, Complex multiplication of elliptic curves and Pairings on elliptic curves, 6h, Putrajaya, Malaysia

Master: K. Belabas, Computer Algebra, 90h, M2, Université de Bordeaux

Master: K. Belabas, Computational number theory, 50h, M2, Université de Bordeaux

Master: K. Belabas, Number theory, 24h, M1, Université de Bordeaux

Licence: K. Belabas, C2i, 24h, L1, Université de Bordeaux

Licence: Jean-Paul Cerri, Codes et cryptologie, 34.67h, TD niveau L1, Université de Bordeaux

Licence: Jean-Paul Cerri, Algèbre 4, 50.67h, TD niveau L3, Université de Bordeaux

Licence: Jean-Paul Cerri, Cryptographie et Arithmétique, 24h, Cours niveau L3, Université de Bordeaux

Master, Jean-Paul Cerri, Arithmétique, 36h, Cours niveau M1, Université de Bordeaux

Encadrement, Jean-Paul Cerri, Encadrement d'un projet tuteuré (L3) et d'un TER (M1), Université de Bordeaux

Master: J.-M. Couveignes, Algorithms for public key cryptography, 40h, M2, Université Bordeaux, France;

Master: J.-M. Couveignes, Algorithms for number fields, 40h, M2, Université Bordeaux, France;

Licence : E. Milio, Topologie et Fonctions de plusieurs variables, 36 heures, niveau L2, université de Bordeaux site Victoire, France

Master: Sorina Ionica, Encadrement de 3 projets master (M2 CSI), Université de Bordeaux.

7.2.2. Supervision

PhD: Aurel Page, *Méthodes explicites pour les groupes arithmétiques*, [12], supervised by K. Belabas and A. Enge, defended 07/2014

PhD: Nicolas Mascot, *Computing modular Galois representations* [11], supervised by K. Belabas and J.-M. Couveignes, defended 07/2014

PhD in progress: Enea Milio, *Isogénies entre surfaces abéliennes*, University Bordeaux, supervised by A. Enge and D. Robert

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 and M. Streng

7.2.3. Juries

D. Robert was a member of the committee for the PhD defense of Christophe Tran in Rennes (December 2013).

A. Enge was a referee for the PhD of Nicole Sutherland, University of Sydney, entitled “Algorithms for Galois extensions of Global Function Fields”.

7.3. Popularization

K. Belabas gave a lecture to present Bhargava’s works (2014 Fields medal) to high school teachers during the “Journée de l’IREM d’Aquitaine” (11/2014, about 100 attendants).

A. Enge has presented “Les maths au service du secret (et de sa découverte!)” during the Math en Jeans congress held in Bordeaux in April 2014, for an audience of highschool pupils aged 12 to 17.

He has spoken on “Mathematik für (und gegen!) das Geheimnis” in an event in July at Gymnasium Leopoldinum, Detmold, Germany, to an audience comprised of pupils aged 12 to 18 and of mathematics teachers.

At the GNU Hacker’s Meeting 2014 in München, Germany, he has presented a tutorial on “GnuPG key signing”.

MAGIQUE-3D Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. responsable of the conference program committee

Sébastien Tordeux was member of the program committee of the 7th International Conference on Mathematical Modeling (ICMM-2014) that was held in Yakutsk, Russia.

9.1.2. Journal

9.1.2.1. reviewer

Juliette Chabassier has been reviewer for SIAM Journal on Scientific Computing (SISC), Acta Acustica united with Acustica and the Journal of the Acoustical Society of America.

Victor Péron has been reviewer for ESAIM : Mathematical Modelling and Numerical Analysis, Journal of Computational and Applied Mathematics, Zentralblatt MATH.

Lionel Boillot has been reviewer for ESAIM Proceedings, Congrès SMAI 2013, Volume 45, September 2014

Marc Duruflé has been reviewer for ESAIM : Mathematical Modelling and Numerical Analysis

9.1.3. Administrative Activities

- Mohamed Amara is President of the Université de Pau et des Pays de l'Adour.
- Hélène Barucq is vice-chair of the Inria evaluation committee. 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 (Grant and Senior) Positions. She participated to the selection committee for a Professor position at the University of Rouen and at the University of Lille. 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 evaluation committee. He participated to the local juries for Young Graduate Scientists (CR2) in Bordeaux and Lille. He participated to the selection committee for an Assistant-Professor position at the University of Toulouse. He is elected member of the CLHSCT (Comité Local Hygiène et Sécurité) of Inria Bordeaux Sud-Ouest and appointed member of the CDT (Commission de Développement Technologique), of the CUMI (Commission des Utilisateurs des Moyens Informatiques) 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). He is also responsible of the first year of the Master of Applied Mathematics of Pau University.
- 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 : Vincent Darrigrand, Initiation à la modélisation statistique, 21h eqTD, L2, UPPA, France

Licence : Vincent Darrigrand, Suites et fonctions d'une variable, 24.38h eqTD, L1, UPPA, France

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

Licence : Victor Péron, Mathématiques pour les Sciences de la Matière, 19,5 Eq. TD, L2, UPPA, France

Master : Victor Péron, Analyse numérique fondamentale, 75 Eq. TD, M1, UPPA, France

Master : Victor Péron, Analyse, 28 Eq. TD, M1, UPPA, France

Master : Marc Duruflé, Outils informatiques pour le calcul scientifique, 80 Eq. TD, M1, Bordeaux INP, France

Master : Sébastien Tordeux, Analyse Numérique Fondamentale, 34 eqTD, M1, UPPA, FRANCE

Master : Sébastien Tordeux et Julien Diaz, Introduction aux phénomènes de propagation d'ondes, 60 eqTD, M2, UPPA, FRANCE

9.2.2. Supervision

PhD : Lionel Boillot, Contributions à la modélisation mathématique et à l'algorithmique parallèle pour l'optimisation d'un propagateur d'ondes élastiques en milieu anisotrope, UPPA, 12/12/2014, Hélène Barucq et Julien Diaz

PhD : Vanessa Mattesi, Propagation des ondes dans un milieu comportant de petites hétérogénéités: analyse asymptotique et calcul numérique, UPPA, 11/12/2014, Sébastien Tordeux

PhD : Florent Ventimiglia, Schémas numériques d'ordre élevé en temps et en espace pour l'équation des ondes du premier ordre. Application à la Reverse Time Migration, UPPA, 05/06/2014 Hélène Barucq and Julien Diaz.

PhD in progress : Julen Alvarez, *hp*-adaptive inversion of magnetotelluric measurements, October 2011, Hélène Barucq and David Pardo.

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

PhD in progress : Théophile Chaumont-Frélet, High Order Methods for Helmholtz Problems in Highly Heterogeneous Media, October 2012, Hélène Barucq and Christian Gout.

PhD in progress : Marie Bonnasse-Gahot, Simulation de la propagation d'ondes élastiques et visco-élastiques en régime harmonique par des méthodes Galerkin discontinues d'ordre élevé en maillage non-structuré adaptées au calcul haute performance, October 2012, Julien Diaz and Stéphane Lantéri (EPI Nachos, Inria Sophia Antipolis-Méditerranée).

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 : Jérôme Luquel, RTM en milieu hétérogène par équations d'ondes élastiques, November 2011, Hélène Barucq and Julien Diaz.

PhD in progress : Vincent Popie, Détermination de l'impédance effective d'une plaque multiperforée, September 2012, Sébastien Tordeux and Estelle Piot

9.2.3. Juries

Victor Péron : Aliénor Burel (Université Paris-Sud XI) "Contributions à la simulation numérique en élastodynamique : découplage des ondes P et S, modèles asymptotiques pour la traversée de couches minces", July 4th 2014

9.3. Popularization

Juliette Chabassier has written a contribution for interstices, “Le piano rêvé des mathématiciens” (see https://interstices.info/jcms/ni_76925/le-piano-reve-des-mathematiciens)

Juliette Chabassier has contributed to “Visages des Sciences”, a series of postcards which are portraits of scientists.

MAGNOME Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Member of the editorial board

Pascal Durrens is :

member of the editorial board of the journal ISRN Computational Biology
expert in Genomics for the Fonds de la Recherche Scientifique-FNRS (FRS-FNRS), Belgium

David Sherman is :

member of the editorial board of the journal Computational and Mathematical Methods in Medicine

9.1.1.2. Reviewer

Pascal Durrens and David Sherman reviewed numerous papers for international journals, including BMC Genomics, Nucleic Acids Research, and Genome Biology and Evolution.

9.2. Teaching - Supervision - Juries

9.2.1. Supervision

PhD: Anna Zhukova, “Knowledge-based generalization for metabolic models,” 2011-4, Sherman

PhD: Razanne Issa, “Analyse symbolique de données génomiques,” 2010–, Sherman

9.2.2. Juries

David Sherman was a member of the juries of:

PhD: Anna Zhukova, “Knowledge-based generalization for metabolic models,” December 18, 2014

HDR: Sofian Maabout, “Contributions à l’optimisation de requêtes multidimensionnelles,” December 12, 2014

9.3. Popularization

David Sherman works with Didier Roy and Pierre-Yves Oudeyer of the Flowers project-team to develop tools and courseware for helping elementary school students explore robotics. David has developed software for communicating between the Scratch 2 visual programming language and the Thymio-II educational robot, and examples for use in the classroom.

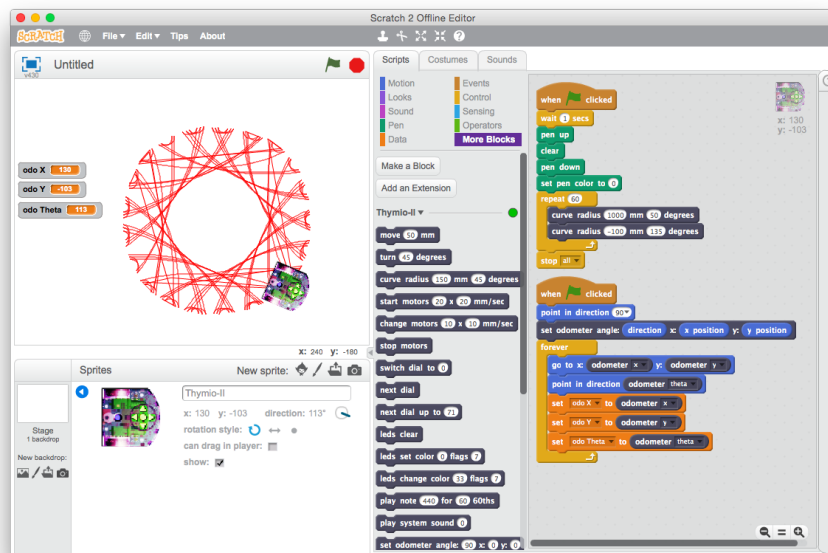


Figure 4. Piloting the Thymio-II robot with Scratch 2

MANAO Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events selection

8.1.1.1. member of the conference program committee

Expressive 2014 (NPAR-SBIM-CAe), Eurographics 2014, SIGGRAPH Asia Tech Brief & Posters 2014 CVPR 2014, ECCV 2014, Light Fields for Computer Vision 2014, Computational Cameras and Displays 2014, SPIE Photonics Asia 2014, International Conference on Computational Photography 2014, Pacific Graphics 2014

8.1.1.2. reviewer

ACM SIGGRAPH 2014, ACM SIGGRAPH Asia 2014, Eurographics 2015, Eurographics Symposium on Rendering 2014, Pacific Graphics 2014, ACM User Interface Software and Technology Symposium 2014

8.1.2. Journal

8.1.2.1. reviewer

ACM Transaction on Graphics (TOG), Computer Graphics Forum (CGF), Transactions on Visualization and Computer Graphics (TVCG), Computer & Graphics, Journal of Vision (JoV), SIAM Journal on Scientific Computing, Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Applied Optics, Optics Letters, REFIG, Journal of Computer Science and Technology (JCST), Journal of Zhejiang University Science C (ZUSC)

8.2. Teaching - Supervision - Juries

8.2.1. 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 Ridet, Algorithmic and Object Programming, 60 HETD, M1, IOGS, France

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

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

Master : Pascal Guitton and Pierre Bénard, Virtual Reality, 60 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.

8.2.2. Supervision

PhD : Cyprien Buron, Interactive Generation and Rendering of Massive Models: a Parallel Procedural Approach, Univ. Bordeaux, 4th of February 2014, J.-E. Marvie & G. Guennebaud & X. Granier

PhD : Heqi Lu, Importance Sampling of Realistic Light Sources, Univ. Bordeaux, 27th of February 2014, X. Granier & R. Pacanowski

PhD : Ilya Reshetouski, Kaleidoscopic Imaging, Saarland University, 6th of November 2014, I. Ihrke

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 Ridell, 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

8.2.3. Juries

PhD : Guillaume Bouchard [37], 23th of May, Lyon, France.

MC2 Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. National structures

- Thierry Colin is elected as a member of the national committee of the French Universities (CNU). It is a national structure that has in charge a peer review of the carriers of mathematicians in France.
- Olivier Saut is the head of the GDR Metice (Mathématiques appliquées aux espèces, tissus et cellules).
- C. Poignard is elected member of the Evaluation Committee of Inria. He is also Principal Investigator of the European Lab EBAM

9.1.2. Scientific events organisation

9.1.2.1. General chair, Scientific chair

- Workshop on Electroporation and Biophysical Therapies. (Organisation : C. Poignard, F. Tregan).
Website: <http://memove2014.sciencesconf.org/>

9.1.2.2. Member of the conference program committee

- S. Benzekry, member of the scientific committee of the MB2 conference (bio-mathematics workshop organized in Besancon, July 7-10, 2015)

9.1.3. Journal

9.1.3.1. Member of the editorial board

Thierry Colin is a member of the following scientific boards:

- 2001- : "Mathématiques et Applications", Springer-SMAI, 70 livres parus à ce jour.
- 2011- : Revue CPAA.
- 2012- : Revue Computational Surgery (Springer).
- 2012- : Comité éditorial de SIAM NEWS.
- 2014 - : Revue Mathematical Biosciences and Engineering.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

C. Poignard: 80 hours of teaching (Master course and undergraduate)

M. Bergmann: 80 hours of teaching

L. Weynans: teaching in approximation of PDEs and programming (Fortran), exchange operation with high schools, class of mathematics for math minor international engineer students

9.2.2. Supervision

HdR: Clair Poignard, A few advances in biological modeling and asymptotic analysis, Université de Bordeaux, September 2014

HdR: Michel Bergmann, Contributions à la simulation numérique en mécanique des fluides et à la réduction de modèle, Université de Bordeaux, June 2014

PhD: Michael Leguebe, Modélisation de l'électroperméabilisation à l'échelle cellulaire, Université de Bordeaux, September 2014, co-supervised by C. Poignard and T. Colin

PhD: Xin Jin, Une chaine d'outils numériques pour la conception aerodynamique de pales d'eoliennes, Universite de Bordeaux, September 2014, co-supervised by M. Bergmann and A. Iollo

PhD: Yoann Eulalie, Etude aérodynamique et contrôle de la traînée sur un corps de Ahmed culot, Jan 2014, co-supervised by I. Mortazavi and C.H. Bruneau.

PhD in progress: F. Cornelis is a medical doctor of the Institut Bergonie'. He is a radiologist practicing CT-Scans, MRI but also local mini-invasive treatments (interventional radiology). He spends one day a week to prepare a PhD on the modelling aspects of his work. started 2010

PhD in progress: F. Bernard, started October 2011

PhD in progress: Etienne Baratchart, Mathematical modeling of the metastatic initiation biology, started December 2012, cosupervised by S. Benzekry, T. Colin and O. Saut

PhD in progress: G. Lefebvre, Image-based modeling of resistance to targeted therapies for metastases from gastro-intestinal tumors, started October 2012, supervised by T. Colin

PhD in progress: J. Jouganous, Prediction of the spatial growth of lung metastatic nodules, started October 2012, supervised by O. Saut

PhD in progress: T. Michel, Modeling of tumor spheroids growth, started October 2013, co-supervised by T. Colin and C. Poignard

PhD in progress: O. Gallinato, Mathematical modeling of invadopodia, started October 2013, in joint supervision with T. Colin, C.Poignard from MC2 and T. Suzuki from Osaka University

PhD in progress: P. Berment, Modeling of PET-scan imaging data of tumor growth, started October 2013, co-supervised by O. Saut and T. Colin

PhD in progress: A. Peretti, Image-based mathematical modeling of kidney cancer, started 2014, co-supervised by T. Colin and O. Saut

PhD in progress: M. Deville, started 2014, in joint supervision by C. Poignard from MC2 and R. Natalini from the CNR and Sapienza University, Rome, Italy.

PhD in progress: M. Jedouaa, Effets collectifs dans l'interaction plasma/globules rouges et la nage de micro-organismes, started 2013, co-supervised by C.H. Bruneau and E. Maître (Grenoble)

9.2.3. Juries

Angelo Iollo was in the jury of the following PhDs

- Reviewer: Anna Cattani, Politecnico di Torino, « Multispecies Models to Describe Large Neuronal Networks », Torino, Fev 2014.
- Reviewer: Nicolas Dovetta, LadHX, Ecole Polytechnique, « Data-based models for flow control », Paris, June 2014.
- Reviewer: Ali Al Alaouwi, IMATH, Université de Toulon « Reconstruction 3D des vaisseaux sanguins », Dec 2014.
- Jury: Elisa Schenone, LJLL, UPMC, « Reduced Order Models, Forward and Inverse Problems in Cardiac Electrophysiology », Nov 2014.
- Jury: Guillaume Dechristé, IMB, Université de Bordeaux « Méthodes numériques pour la simulation d'écoulements de gaz raréfiés autour d'obstacles mobiles », Dec 2014.

9.3. Popularization

- C. Poignard "Des décharges électriques contre le cancer" (Journée IREM Mai 2014).
- C. Poignard, A. Silve. Différence de potentiel induite par un champ électrique sur la membrane d'une cellule biologique . La Revue 3EI, N°75, Jan 2014.
- O. Saut participates to the "excellence interviews" (<http://www.lesentretiens.org>)
- Lisl Weynans and Michel Bergmann held a stand at the "Fete de la science".
- Lisl Weynans is "chargee de mission" from the IMB for relations with high schools and gave talks to students and teachers to introduce scientific calculus.

MNEMOSYNE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Collective responsibilities

- 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 local Inria committee for invited professors, 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 member of the Inria Evaluation Committee; Responsible of the local Inria committee for invited professors
- Thierry Viéville is in charge, at the Inria national level, of the institute science outreach actions and depends on the Direction de la Recherche for this part of his work.

8.1.2. Scientific events organisation

8.1.2.1. general chair, scientific chair

Organization of a scientific day common to Inria and the Next Generation Internet Foundation, about bodyware, Bordeaux, May 12 (N. Rougier).

8.1.2.2. member of the organizing committee

F. Alexandre participated to the organization of the workshop Bordeaux Computational Biology and Bioinformatics, Bordeaux, Nov. 25-26 ; of the Braincamp on Innovation and Cognitive Sciences, Paris, March 21.

All the permanent members of the team participated to the organization of LACONEU 2014, the third Summer School in Computational Neuroscience, in Valparaiso, Chile, from 13 to 31 Jan. 2014.

8.1.3. Scientific events selection

8.1.3.1. member of the conference program committee

Member of the program committee of SAB, ICANN (F. Alexandre)

8.1.3.2. reviewer

Reviewing for the Conicyt (Chile), the ANR, the FRM (Foundation for Medical Research), the Hospital of Rennes (F. Alexandre)

8.1.4. Journal

8.1.4.1. reviewer

Reviewer for PlosOne, Frontiers in Neurorobotics, Cognitive Computation, Applied Intelligence (F. Alexandre)

8.2. Teaching - Supervision - Juries

8.2.1. 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.

All the permanent members of the team gave lectures at LACONEU 2014, the third Summer School in Computational Neuroscience, in Valparaiso, Chile, from 13 to 31 Jan. 2014.

F. Alexandre gave a tutorial at the summer school on Robotics and Social Interactions (May 19-23), Moliets et Maa (France) and was an invited speaker to the Sino-French International Workshop on Computational Neuroscience in Shanghai (June); to the scientific day Inria/Fing on Bodyware (May 12); to the NeuroSTIC conference (July, 1-2, Cergy).

8.2.2. Juries

We participate to many juries each year.

8.3. Popularization

For a multi-disciplinary team as Mnemosyne, science popularization is not 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 half-time involved in popularization actions both at a concrete level (including on Mnemosyne subjects) and at the methodological level. This explains the amount of references to these external subjects in this document.
- Nicolas Rougier: Invited talk on “The role of the body in human cognition” in the 13th Forum des Sciences Cognitives, Paris, March 2014; Participation to a round-table meeting on the digital society at the Futur en Seine festival; Article in Linux Mag on scientific visualization [21]
- PhD students participated to the regional exhibition Aquitec (C. Héricé and Maxime Carrere) and to “Fête de la Science” C. Héricé).

PHOENIX Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events selection

8.1.1.1. Member of the conference program committee

Charles Consel:

- ICSE 2014, the 36th International Conference on Software Engineering. June 1-7, Hyderabad, India.
- ESOP 2015, the 24th European Symposium on Programming. April 11-15, 2015 London, United Kingdom.

Hélène Sauzéon:

- Conférence ITASD : des solutions numériques pour les personnes avec Autisme (Paris, Oct. 2014)
- Journées d'étude du vieillissement cognitif (Caen 2014)

8.1.1.2. Reviewer

Loïc Caroux has reviewed papers for the following conferences:

- CHI 2015 (ACM Conference on Human Factors in Computing Systems)
- HFES 2014 (International Annual Meeting of the Human Factors and Ergonomics Society)
- IHM 2014 (Conférence Francophone sur l'Interaction Homme-Machine)

8.1.1.3. Invited talks

- Consel C.: "Activity verification". Presentation at Northeastern University on human assistance, October 27, 2014.
- Sauzéon, H. and Caroux, L. (2014, Juillet). Plans expérimentaux et statistiques « pratiques ». Workshop of the Inria Project Lab Personally Assisting Living (IPL PAL), Talence, France.
- Sauzéon, H. and Consel, C. (2014) Projet DomAssist. 2ème Congrès Européen de Stimulation Cognitive – Technologies de compensation et Stimulation Cognitive, 22-23 septembre 2014, Toulouse.
- Sauzéon, H. and Consel, C. (2014) Assistance à domicile et aide à la réalisation des activités quotidiennes :le projet DomAssist. Technologies Appliquées Au Handicap : de la compensation à la participation - IFR Handicap PARIS – CNRS, 26 septembre 2014, Paris.
- Dupuy L., N'Kaoua B., Consel C., Aguilova L., and Sauzéon H. (2014). Role of cognitive reserve on everyday functioning among oldest old physically frail. XIIIème Colloque International sur le Vieillissement Cognitif – JEV, 15 et 16 septembre 2014, Caen, France.
- Congrès de Psychiatrie et de Neurologie de Langue Française Fage C., Consel C., and Sauzéon H., Collège+ : Un Assistant Scolaire pour Soutenir l'Inclusion Scolaire en Classe Ordinaire des Elèves avec Troubles du Spectre Autistique (TSA), CPNLF 2014 (Bordeaux, France, 2014).

8.1.2. Journal

8.1.2.1. Reviewer

Loïc Caroux reviewed papers for the following journals:

- Computers in Human Behavior
- Behaviour and Information Technology
- Journal of Physical Education and Sport Management

Hélène Sauzéon reviewed papers for the following journals:

- Gerontology
- BMC Geriatrics
- Applied Psycholinguistics
- Experimental Aging Research
- Journal of Speech, Language, and Hearing Research

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

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

Licence: Hélène Sauzéon, "Neuropsychologie Cognitive", 14h, DU, Université de Bordeaux, France

Master: Hélène Sauzéon, "Sciences cognitives du langage", "Technologies du handicap cognitif", "Facteurs humains et IHM", 120h, M1/M2, Université de Bordeaux, France

Master: Lucile Dupuy, "Fonctions cognitives en situation", 18h, M1, Université de Bordeaux, France

Master: Charles Fage, "Handicap, autonomie et technologies", 15h, M2, Université de Bordeaux, France

Master: Charles Fage, "Environnement de la recherche", 12h, M2, Université de Bordeaux, France

Master: Charles Fage, "Troubles cognitifs et handicap", 10h, M1, Université de Bordeaux, France

Master: Charles Fage, "Facteurs humains et IHM", 8h, M1, Université de Bordeaux, France

Master: Charles Fage, "Handicap et nouvelles technologies", 25h, M1, Université de Bordeaux, France

8.2.2. Supervision

PhD: Stéphanie Gatti, "Architecture en composants et qualification incrémentale", finished in February 2014, supervised by Charles Consel and Emilie Balland

PhD in progress: Paul van der Walt, "Certification d'une plateforme ouverte", started in November 2012, 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 collégiens 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.

8.2.3. Juries

Charles Consel participated in the following juries:

- Committee of the best thesis award of the "GDR GPL" (Prix de la thèse GDR GPL 2013, 2014).
- Member of the AERES Research Evaluation committee of the LIG lab (Laboratoire d'Informatique de Grenoble), December 2014.
- Thesis defense committee for Arnad Sinha, Université de Rennes 1, 28 mai 2014.

Hélène Sauzéon participated in the following juries:

- Thesis defense committee for M. Abrame, Université Paris Descartes, december 2014.
- Thesis defense committee for C. Toczé, Université Tours, december 2014.

8.3. Popularization

Various members of the Phoenix Inria project team participated in the following events:

- Charles Consel. "Presentation of the DomAssist project". Journée du Numérique organisé par Inria à l'Assemblée Nationale, Paris, France, january 21, 2014.
- Charles Consel. "Presentation of the DomAssist project". Journée de lancement de la Silver Economie Aquitaine, Bordeaux, France, february 17 2014.
- Loïc Caroux. "Des besoins de la personne âgée pour son maintien à domicile à la solution DomAssist". Semaine Nationale des Retraités et des Personnes Agées, Carbon-Blanc, France. October 2014.
- Loïc Caroux, Alexandre Spriet. "DomAssist : Plate-forme d'assistance domiciliaire pour la personne âgée et son aidant formel". Journée de la Santé Connectée en Aquitaine, Bordeaux, France. October 2014.
- Charles Consel, Hélène Sauzéon. "Assistance numérique pour compenser les déficiences cognitives à tous les âges de la vie". 2e Assises nationales de la médiation numérique : le numérique dans votre quotidien. October 16-17, 2014, Bordeaux.
- Lucile Dupuy. "Presentation of the DomAssist project". Fêtes de la science, Bordeaux, France, september-october 2014.
- Charles Fage. Production of a video-presentation of the School+ assistive platform with the Inria Communication Service. <http://vimeo.com/93262450>.

In addition to the following popularization actions, the DomAssist project has been presented during 2014 in two french newspapers (Sud Ouest, La Croix), and in one television report on France 3 TV.

POTIOC Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. member of the organizing committee

- IEEE VR 2015 Lab and project presentation Chair (M. Hachet)

9.1.1.2. steering committee

- IEEE 3DUI (M. Hachet)

9.1.1.3. workshop organisation

- first OpenViBE workshop, September 2014, satellite workshop of the 6th International BCI conference, Graz, Austria, co-organized with Inria teams Athena, Hybrid, Neurosys and with the company Mensia Technologies (F. Lotte)
- BCI Workshop for art, Academy of Media Arts Cologne (KHM), Germany, February 2014 (C. Mühl)
- Interco3D Workshop at IHM14 (M. Hachet and F. Lotte)
- Workshop «Perspectives on Gender and Product Design» at CHI 2014 (A. Brock)

9.1.1.4. International Tutorials and Summer/Autumn/Winter schools

- "Design of BCI based on Oscillatory activity: signal processing and more", International BCCI Winter School on Neurotechnologies, Berlin, Germany, February 2014 (F. Lotte)
- "EEG Signal Processing and Classification for Brain Computer Interfacing (BCI) Applications", with A. Konar and A. Sinharay, ICASSP 2014, Florence, Italy, May 2014 (F. Lotte)

9.1.2. Scientific events selection

9.1.2.1. member of the conference program committee

- 6th International BCI conference (F. Lotte)
- CHI 2015 Program Committee (M. Hachet)
- ITS 2014 Poster Committee (A. Brock)
- MobileHCI 2014 Poster Committee (A. Brock)
- PRNI 2014 (F. Lotte)
- SUI 2014 (M. Hachet)
- Web3D 2014 (M. Hachet)

9.1.2.2. member of award committee

- Best talk and poster award committee, 6th International BCI Conference, Graz, Austria (F. Lotte)
- PhD Thesis award 2014 from AFIA (French Association for Artificial Intelligence) (F. Lotte)
- Best Poster award committee, SUI 2014, Honolulu, USA (M. Hachet)

9.1.2.3. reviewer

- CHI 2014 (A. Brock, M. Hachet, F. Lotte)
- CHI 2015 (A. Brock, M. Hachet, F. Lotte)
- EICS 2014 (A. Brock)
- Eurohaptics 2014 (A. Brock)

- ICASSP 2014 (F. Lotte)
- IEEE SMC 2014 (F. Lotte)
- IHM 2014 (A. Brock, F. Lotte)
- International BCI conference 2014 (F. Lotte)
- ITS 2014 (A. Brock)
- MobileHCI 2014 (A. Brock)
- NordiChi 2014 (A. Brock)
- PRNI 2014 (F. Lotte)
- UIST 2014 (A. Brock, M; Hachet, F. Lotte)

9.1.3. Journal

9.1.3.1. member of the editorial board

- journal ACM JOCCH Guest editor, Special issue on « Interacting with the past » 2014 (M. Hachet)
- Brain-Computer Interfaces journal Guest editor, Special issue on “Affective Brain-Computer Interfaces”, 2014 (C. Mühl)

9.1.3.2. reviewer

- ACM TOCHI (F. Lotte)
- BCI (F. Lotte)
- Behaviour & Information Technology (A. Brock)
- IEEE CG&A (F. Lotte)
- IEEE Trans. Affective Computing (F. Lotte)
- IEEE Trans. Biomed. Eng. (F. Lotte)
- IEEE Trans. on Computational Intelligence and AI in Games (J. Frey)
- IEEE Trans. Cybernetics (F. Lotte)
- IEEE Trans. on Haptics, Special Issue: Haptic Assistive Technology for Individuals who are Visually Impaired (A. Brock)
- IEEE Trans. Human Machine Systems (F. Lotte)
- International Journal of Human-Computer Studies (A. Brock)
- JMIHI (F. Lotte)
- J. Neural Eng. (F. Lotte)
- Pattern Recognition (J. Frey)
- PLOS-One (F. Lotte)
- Presence (F. Lotte)
- Proceedings of the IEEE (F. Lotte)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Bordeaux University

- Master : Jérémy Laviolle, Experimentation and Development projects , 5h, M2, University of Bordeaux, France
- Master : Jérémy Laviolle, Programmation project , 5h, M1, University of Bordeaux, France
- Master : Jérémy Frey, Programmation project , 27h, M1, University of Bordeaux, France

- Master : Anke Brock, Virtual Reality and 3D Interaction, 7,5h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Martin Hachet, Virtual Reality and 3D Interaction, 12h eqtd, M2 Cognitive Science, University of Bordeaux, France
- Master : Fabien Lotte, Virtual Reality and 3D Interaction, 5h, M2 Cognitive Science, University of Bordeaux, France
- Master : Jérémy Laviolle, Initiation to Research, 5h, M2, Bordeaux University, Bordeaux, France
- Licence : Camille Jeunet, Knowledge and Representation, 16h, L3 Mathematics and Informatics applied to Human and Social Sciences, University of Bordeaux, France
- Licence : Camille Jeunet, Human Sciences and Methods, 16h, L1 Mathematics and Informatics applied to Human and Social Sciences, University of Bordeaux, France
- Licence : Camille Jeunet, Cognitive Psychology, 16h, L1 Psychology, University of Bordeaux, France
- Licence : Camille Jeunet, Scientific Methodology, 16h, L2 Psychology, University of Bordeaux, France

Enseirb MatMéca

- Master : Anke Brock, Video Games and Interaction, 12h eqtd, 3rd year (M2), Enseirb, Bordeaux, France
- Master : Martin Hachet, Video Games and Interaction, 9h eqtd, 3rd year (M2), Enseirb, Bordeaux, France
- Master : Jérémy Laviolle, Project Multimedia Analysis, 16h, 3rd year (M2), Enseirb, Bordeaux, France

Optical Institute Graduate School

- Master : Jérémy Laviolle, High Performance Programming, 20h, 2nd year (M1), Optical Institute Graduate School, Bordeaux, France
- Master : Jérémy Laviolle, Image Analysis, 20h, 2nd year (M1), Optical Institute Graduate School, Bordeaux, France

Other Universities

- Master : Anke Brock, Human-Computer Interaction, 12h eqtd, 2nd year (M2SIR), University Toulouse, France
- Master: Fabien Lotte, Virtual Reality, Accesibility and Brain-Computer Interaction, 4h, M1/M2 level, ENSSAT Lannion, France

9.2.2. Supervision

PhD Students

- Damien Clergeaud, "Interactive Collaboration in Virtual Reality for Aerospace Scenarii", started November 1st, 2014, Pascal Guitton
- Jérémy Frey (PhD candidate in Computer Science, Bordeaux University), "Using Passive Brain-Computer Interfaces to assess and optimize 3D User Interfaces", started October 1st, 2012, Fabien Lotte and Martin Hachet
- Renaud Gervais, "Organic User Interfaces", started December 1st, 2012, Martin Hachet
- Camille Jeunet (PhD candidate in Cognitive Sciences, Bordeaux University), "Improving User training approaches for Brain-Computer Interface", started October 1st, 2013, Fabien Lotte, Martin Hachet, Bernard N'kaoua and Sriram Subramanian.
- Joan Sol Roo, "Interaction with Spatial Augmented Reality", started November 1st 2014, M. Hachet

- Lorraine Perronet (PhD candidate in Computer Science, Rennes University): “Neurofeedback and brain Rehabilitation based on EEG and fMRI”, 2014-2017 (expected), Fabien Lotte co-supervising with Anatole Lécuyer, Christian Barillot and Maureen Clerc
- Stephanie Lees (PhD candidate in Computer Science, Ulster University, UK): “Assessing and Optimising Human-Machine Symbiosis through Neural signals for Big Data Analytics”, 2014-2018 (expected), Fabien Lotte co-supervising with Damien Coyle, Paul McCullagh and Liam Maguire

Master Students

- Damien Clergeaud, « Interactive juggling », Martin Hachet
- Jean Bui Quang, « Hybrid optical bench », Martin Hachet
- Julia Schumacher (Master student in Computational Neuroscience, BCCN, Germany), "Explanatory feedback for Brain-Computer Interface training", Fabien Lotte
- Loïc Renault (Master student in Neurosciences, Bordeaux University), "The impact of self-paced training on BCI performances", Fabien Lotte
- Joao-Pedro berti Ligabo (Master student, Institut d'Optique Graduate School), "EEG signal denoising in OpenViBE", Fabien Lotte and Alison Cellard
- Dennis Wobrock (Master student in Cognitics, ENSC), "Physiological computing for 3D user interaction", Fabien Lotte co-supervising with Julien Castet
- Morgane Sueur (Master 1 Cognitive Science), "Human Learning in BCIs", Camille Jeunet
- Aurélien Appriou (Master 1 Cognitive Science), "Assessing stereoscopy with EEG", Jérémy Frey

Other Supervision

- Bachelor : supervision of student project about "Using BCIs for stroke rehabilitation", Bordeaux University, France, Camille Jeunet
- Master : supervision of student project on 3D tangible tabletops, M2, Bordeaux University, France, Anke Brock and Renaud Gervais

9.2.3. Juries

- Thesis Reviewer: Thi Thuong Huyen Nguyen, November 2014, INSA de Rennes, "Proposition of new metaphors and techniques for 3D interaction and navigation preserving immersion and facilitating collaboration between distant user », Martin Hachet
- Thesis Reviewer: Matthieu Duvinage, University of Mons, Belgium, 2014, Fabien Lotte
- Thesis Reviewer: Wojciech Samek, TU Berlin, Germany, 2014, Fabien Lotte
- Thesis Examiner: Yosra Rekik, December 2014, Université Lille 1, « comprendre, modéliser, et concevoir l'interaction gestuelle tactile", Martin Hachet
- Thesis Examiner: Romain Trachel, Inria Sophia-Antipolis/Université de Marseille, France, 2014, Fabien Lotte
- Thesis Examiner: Damien Lesenfants, Liège University, Belgium, 2014, Fabien Lotte
- Thesis Examiner: Jonathan Grizou, Inria Bordeaux Sud-Ouest/Bordeaux University, France, 2014, Fabien Lotte

9.3. Popularization

Popularization talks

- Presentation about Inria to High School Students during Aquitec, January (C. Jeunet)
- Presentation about Cognitive Sciences and Inria to High School Students at a local high school, March (C. Jeunet)

- Tangible and Gestural Interaction Forum (<http://fitg.lille.inria.fr/>), presentation (20mins) in Tourcoing, France, May 14th (J. Laviolle)
- Talk about Brain Computer Interfaces at "Café de la Connaissance", May (A. Cellard and C. Jeunet)
- New European Media Summit, Brussels, Belgium , September 30th (J. Laviolle, F. Lotte)
- Presentation on "How to design the computers of the future" and speedmeeting during "Filles et mathématiques: une équation lumineuse" (event to raise interest in mathematics in female high school students), University Toulouse, December 10th (A. Brock)

REALOPT Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Our team's organized the annual meeting of the French Operations Research Society (ROADEF) in February 2014. <http://roadef2014.sciencesconf.org> Roadef 2014 gathered more than 400 attendees, with plenary talks by Pierre Bonami (IBM ILOG CPLEX), Michel Balinski (Ecole polytechnique - CNRS), Andrea Lodi (University of Bologna), Pascal Van Hentenryck (NICTA), and Jean-Francois Cordeau (HEC Montréal); and 12 clusters having each organized a one-hour tutorial.

9.1.1.2. Chair of conference program committee

Arnaud Pêcher is co-chair of the programm committee of the international conference BGW2014.

9.1.1.3. Member of the conference program committee

- Arnaud Pêcher is member of the program committee of ICGT2014
- Arnaud Pêcher is member of the program committee of Journées Graphes et Algorithmes 2014
- Pierre Pesneau is member of the program committee of INOC 2015, International Network Optimization Conference, May 18-20, 2015

9.1.2. Journal

9.1.2.1. Member of the editorial board

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

9.1.2.2. Reviewer

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

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Arnaud Pêcher, Programmation objet et impérative, 200h, DUT, Université de Bordeaux, France

Licence : Arnaud Pêcher, Théorie des graphes, 16h, DUT, Université de Bordeaux, France

Licence : Pierre Pesneau, Système et Programmation, 59h, L2, Université de Bordeaux, France

Master : Olivier Beaumont, Optimisation en Cloud Computing & Big Data, 15h Cours, M2, Université de Bordeaux, France

Master : Olivier Beaumont, Fouille de données, 3h TD, M2, Institut Polytechnique de Bordeaux, France

Master : Olivier Beaumont, Fonctionnement des moteurs de recherche, 4h TD, M1, Institut Polytechnique de Bordeaux, France

Master : François Clautiaux, Programmation linéaire 1, 15h TD, M1, Université Bordeaux 1, France

Master : François Clautiaux, Introduction à l'optimisation en nombres entiers, 30h TD, M1, Université Bordeaux 1, France

Master : François Clautiaux, Gestion des opérations et planification de production, 60h TD, M2, Université Bordeaux 1, France

Master : François Clautiaux, Combinatoire et routage, 30h TD, M2, Institut Polytechnique de Bordeaux, France

Master : Boris Detienne, Optimisation stochastique, 60h cours/TD, M2, Université de Bordeaux, France

Master : Boris Detienne, Recherche opérationnelle, 16h TD, M1, Institut Polytechnique de Bordeaux, France

Master : Lionel Eyraud-Dubois, Optimisation en Cloud Computing & Big Data, 15h Cours, M2, Université de Bordeaux, France

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

Master : Pierre Pesneau, Modèles de flot, 22h Cours, M1, Université de Bordeaux, France

Master : Pierre Pesneau, Algorithmique et Programmation Objet (C++), 30h Cours Intégré, M1, Université de Bordeaux, France

Master : Ruslan Sadykov, Introduction à la Programmation par Contraintes, 30 HETD, M2, Université de Bordeaux, France

Master : Ruslan Sadykov, Modélisation, Optimisation, Complexité et Algorithmes, 50 HETD, M2, CNAM Aquitaine, France

Master : François Vanderbeck, Recherche opérationnelle, 15h cours, M1, Institut Polytechnique de Bordeaux, France

Master : François Vanderbeck, Programmation entière, 50h cours/TD, M2, Université de Bordeaux, France

9.2.2. Supervision

PhD : Nastaran Rahmani, Planning and routing via decomposition approaches [11], Université de Bordeaux, june 26th 2014, François Vanderbeck, Ruslan Sadykov, Boris Detienne

PhD : Sagnik Sen, A contribution to the theory of graph homomorphisms and colorings, Université de Bordeaux, february 3rd 2014, Arnaud Pêcher, E. Sopena, A. Raspaud

PhD in progress : Martin Bué, Gestion du revenu dans le cadre du voyage professionnel, 01/09/2012, François Clautiaux, Luce Brotcorne

PhD in progress : Matthieu Gérard, Résolution de problèmes d'optimisation dans le commerce de détail, 01/09/2012, François Clautiaux

PhD in progress : Jérémy Guillot, Optimisation de problèmes de partitionnement, 01/09/2014, François Clautiaux, Pierre Pesneau

PhD in progress : Suraj Kumar (Runtime project team), 01/11/2013, Emmanuel Agullo, Lionel Eyraud-Dubois, Samuel Thibault, Olivier Beaumont

PhD in progress : Thomas Lambert, 01/09/2014, Lionel Eyraud-Dubois, Abdou Guermouche, Olivier Beaumont

PhD in progress : Philippe Moustrou, Le codage aléatoire de réseau, 01/09/2014, Arnaud Pêcher, Pr. Bachoc

9.2.3. Juries

- Olivier Beaumont : Inria CR2 recruitment, Inria Bordeaux-Sud Ouest
- Olivier Beaumont : Inria CR1 recruitment, national
- Olivier Beaumont : Evaluation (rapporteur) of the PhD thesis of Dounia Zaidouni (ENS Lyon)
- François Clautiaux : Evaluation (examinateur) of the Habilitation à Diriger des Recherches d'Alice Yalaoui (Université de Technologie de Troyes)

- François Clautiaux : Evaluation (rapporteur) of the PhD thesis of Michael Gabay (Université de Grenoble)
- François Clautiaux : Evaluation (examineur) of the PhD thesis of Mohand Lounes Bentaha (Ecole Nationale des Mines de Saint-Étienne)
- François Clautiaux : Evaluation (examineur) of the PhD thesis of Nastaran Rahmani (Université de Bordeaux)
- François Clautiaux : Evaluation (examineur) of the PhD thesis of Rodrigue Tchapnga (Université de Bordeaux)
- Arnaud Pêcher : Evaluation (rapporteur) of the PhD thesis of Djelloul Mameri (Université de Clermont-Ferrand 2)
- Arnaud Pêcher : Evaluation (examineur) of the PhD thesis of Clément Charpentier (Université de Bordeaux)
- François Vanderbeck : Evaluation (rapporteur) of the PhD thesis of Sofia Zaourar (U Grenoble, 11/2014).
- François Vanderbeck : Evaluation (rapporteur) of the PhD thesis of Stephen J Maher (University of New South Wales, Sydney, Australia, 01/2014).

RUNTIME Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Emmanuel JEANNOT was a program chair of Heteropar 2014.

9.1.1.2. Member of the steering committee

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

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

Brice GOGLIN was a program committee member of ICCCN 2014, EuroMPI/ASIA 2014, CARLA 2014, HiPC 2014, Hot Interconnects 2014 and Cluster 2014. Emmanuel JEANNOT was a program committee member of CCGRID'2014, EuroMPI/ASIA 2014, HiPC 2014, Compas 2014. Samuel THIBAUT was a program committee member of IPDPS 2014, HIPC 2014 and MuCoCos 2014. Alexandre DENIS was a program committee member of HiPC 2014, Heteropar 2014, and Realis.

9.1.2.2. Reviewer

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

9.1.3. Journal

9.1.3.1. Member of the editorial board

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

9.1.3.2. Reviewer

Emmanuel JEANNOT was reviewer of IEEE TPDS, Parallel Computing, JPDC, IJPP. Samuel THIBAUT was reviewer for IJHPC.

9.1.4. Scientific project selection

9.1.4.1. Reviewer

Olivier AUMAGE reviewed a project proposal for the CORE 2014 call of Luxembourg's FNR research funding agency.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Members of the RUNTIME project gave thousands of hours of teaching at the University of Bordeaux and the IPB engineering school, covering a wide range of topics from basic use of computers and C programming to advanced topics such as operating systems, parallel programming and high-performance runtime systems.

9.2.2. Supervision

HDR: Brice Goglin, Towards generic Communication Mechanisms and better Affinity Management in Clusters of Hierarchical Nodes [9], 2014/04.

PhD: Bertrand Putigny, Benchmark-driven Approaches to Performance Modeling of Multi-Core Architectures [10], 2014/03, Denis Barthou and Brice Goglin.

PhD: Andra Hugo, Composability of parallel codes over heterogeneous platforms, 2014/12, Abdou Guermouche and Pierre-André Wacrenier and Raymond Namyst.

PhD in progress: François Tessier, Placement d'applications hybrides sur machine non-uniformes multicœurs, 2011/10 Emmanuel Jeannot and Guillaume Mercier

PhD in progress: Paul-Antoine Arras, Development of a Flexible Heterogeneous System-On-Chip Platform using a mix of programmable Processing Elements and hardware accelerators. 2011/10, Emmanuel Jeannot and Samuel Thibault

PhD in progress: Corentin Rossignon, Design of an object-oriented runtime system for oil reserve simulations on heterogeneous architectures, 2012/04, Olivier Aumage and Pascal Hénon (TOTAL) and Raymond Namyst and Samuel Thibault

PhD in progress: Emmanuelle Saillard, Analyse statique/dynamique/itérative pour la validation et l'amélioration des applications parallèles multi-modèles sur supercalculateur hybride de type cluster de CPUs/GPUs, 2012/10, Patrick Carribault (CEA/DAM), Denis Barthou

PhD in progress: Grégory Vaumourin, Hiérarchie mémoire hybride et gestion dynamique de données dans les architectures parallèles embarquées, 2013/10, Thomas Dombek (CEA/DACLE), Denis Barthou

PhD in progress: Soufiane Baghdadi, Collaboration entre compilateur et support d'exécution pour les applications parallèles 2011/10, Elisabeth Brunet (Telecom SudParis), Jean-François Trahay (Telecom SudParis), Denis Barthou

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, Stratégies d'ordonnancement dynamique pour l'algèbre linéaire dense, 2013/12, Emmanuel Agullo, Olivier Beaumont, Samuel Thibault

PhD in progress: Pei Li, High-Performance Code Generation for Stencil Computations on Heterogeneous Multi-device Architectures, 2012/10, Raymond Namyst, Elisabeth Brunet (Telecom SudParis)

PhD in progress: Christopher Haine, Estimating efficiency and automatic restructuring 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).

9.2.3. Juries

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

- Cédric Valensi (UVSQ, President)

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

- Sylvain Didelot (UVSQ, Reviewer)
- Robert Rey Exposito (Universidade Da Coruna, Examiner)

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

- Georges Markomanolis (ENS-Lyon, Reviewer)
- Aleksandar Ilic (Univ. Of Porto, Reviewer)
- Sergio Aldea Lopez (Univ. Of Valladolid, Reviewer)
- Sebastien Valat (UVSQ, Examiner)
- Cristian Ruiz (Univ. Of Grenoble, President)

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

- Florence Monna (LIP6, Examiner)

9.3. Popularization

Brice GOGLIN is in charge of the diffusion of the scientific culture for the Inria Research Center of Bordeaux. He is also a member of the national Inria committee on Scientific Mediation. He gave numerous talks about high performance computing and research careers to general public audience and school student, as well as several radio and paper interviews about Inria's activities. He is also involved in the popularization of computer programming and robotics programming and gave several wide audience seminar on these topics.

Brice GOGLIN gave talks about Software releases and Source version control with GIT in internal Inria seminars.

Samuel THIBAUT gave a talk about the structure of Internet and questions of security at "Unithé ou Café"

Olivier AUMAGE gave a talk at Seminar Modeling, at the Maison de la Simulation on the StarPU Runtime System.

Runtime organized a 2-days PRACE Advanced Training Center session where several member of the team gave talks about programming heterogeneous parallel architectures with tools such as StarPU and hwloc.

SISTM Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

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

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)
Annals of applied Statistics (DC)
Briefings in Bioinformatics (RG)
Health Services and Outcome Methodology (DC)
Information Science (RG)
International Journal of Epidemiology (DC)
Journal of Multivariate Analysis (RG)
Journal of the Royal Statistical Society: Series A (DC)
Machine Learning (RG)
Neurocomputing (RG)
Statistics in Medicine (MA, 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 occasionally 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.

9.2.2. Supervision

PhD in progress : Ana Jarne, *Modélisation d'interventions sur le système immunitaire pour le traitement et les vaccins contre le VIH*, from Nov 2012, co-directed by Daniel Commenges & Rodolphe Thiébaud

PhD in progress : Boris Hejblum, *Analyse intégrative de données de grande dimension appliquée à la recherche vaccinale*, Oct 2011, co-directed by Rodolphe Thiébaud & François Caron

PhD in progress : Marie-Quitterie Picat, *Analyse des biomarqueurs dans les troubles immunologiques des maladies du système immunitaire*, from Nov 2012, directed by Rodolphe Thiébaud

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

Master internship : Damien Chimits, *Analyse par groupe de gènes de données longitudinales d'expression génique*, from Mar 2014 to Sep 2014, co-directed by Rodolphe Thiébaud & Boris Hejblum

Master internship : Edouard Lhomme, *Modélisation de la dynamique de la réponse immunitaire précoce au vaccin VIH*, from Mar 2014 to Sep 2014, directed by Rodolphe Thiébaud

Master internship : Mélanie Née, *Consommation médicamenteuse et risque d'accident de la route : exploration par simulation de schémas d'études épidémiologiques applicables à partir des données médico-administratives*, from Mar 2014 to Sep 2014, co-directed by Marta Avalos & Ludivine Orriols

Master internship : Chloé Pasin, *Modelling the immune response to HIV vaccine*, from Feb 2014 to Sep 2014, directed by Rodolphe Thiébaud

9.2.3. Juries

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