



RESEARCH CENTER  
Nancy - Grand Est

FIELD

Activity Report 2012

# Section Dissemination

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## CAMUS Team

## 8. Dissemination

### 8.1. Scientific Animation

Vincent Loechner co-organized IMPACT 2012, the 2nd International Workshop on Polyhedral Compilation Techniques, in conjunction with the HiPEAC conference in January 2012. Out of 13 received submissions, 6 were accepted as regular papers and 4 as tool demonstrations, and presented along a keynote by Keshav Pingali.

Philippe Clauss and Vincent Loechner are part of the program committee of IMPACT 2013.

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

Licence : Vincent Loechner, programmation système et réseau, 30, L2, University of Strasbourg, France

Licence : Vincent Loechner, fondements des systèmes d'exploitation, 33, L3, University of Strasbourg, France

Master : Vincent Loechner, système et programmation temps-réel, 25, M1, University of Strasbourg, France

Master : Vincent Loechner, compilation avancée, 6, M1, University of Strasbourg, France

Master : Vincent Loechner, parallélisme, 28, M2, University of Strasbourg, France

Master : Vincent Loechner, calcul parallèle, 30, école d'ingénieur (5ième année), University of Strasbourg, France

Master : Vincent Loechner, langage interprété, 40, M1, University of Strasbourg, France

Master : Vincent Loechner, TP programmation, 10, M1, University of Strasbourg, France

Licence : Julien Narboux, Culture et Pratique de l'Informatique, 18, L1, University of Strasbourg, France

Licence : Julien Narboux, Logique et Programmation Logique, 61, L2, University of Strasbourg, France

ENSIIE : Julien Narboux, Logique, 31, 1a, ENSIIE, France

Master: Julien Narboux, Ingénierie de la preuve, 27, M1, University of Strasbourg, France

Master: Julien Narboux, Certification du Logiciel, 36, M2, University of Strasbourg, France

Master: Julien Narboux, Suivi apprentissage, 50, M1-M2, University of Strasbourg, France

Master: Julien Narboux, Encadrement TER, -, M1, University of Strasbourg, France

Master: Julien Narboux, Encadrement Projet Individuel (1 étudiant), -, M2, University of Strasbourg, France

Master: Julien Narboux, Encadrement Projets de Groupe 140h (25 étudiants), 10, M2, University of Strasbourg, France

Master: Julien Narboux, Soutenances d'apprentissage, 10, M2, University of Strasbourg, France

Licence : Nicolas Magaud, Méthodologie du Travail Universitaire, 12, L1, University of Strasbourg, France

Licence : Nicolas Magaud, Projet professionnel personnel, 20, L1, University of Strasbourg

Licence : Nicolas Magaud, Structures de données et Algorithmes 2, 22, L2 Informatique, University of Strasbourg

Licence : Nicolas Magaud, Informatique : Algorithmique et Structures de Données, 20, L3 Mathématiques, University of Strasbourg

Licence : Nicolas Magaud, Pratique des systèmes d'exploitation (PSE), 16, L2 Informatique, University of Strasbourg

Master: Nicolas Magaud, Ingénierie de la preuve, 18 , M1, University of Strasbourg, France

Master: Nicolas Magaud, Suivi apprentissage, 60, M1-M2, University of Strasbourg, France

ENSIIE : Nicolas Magaud, Introduction à la Programmation Fonctionnelle, 52 , 1a, ENSIIE, France

CNAM Alsace : Nicolas Magaud, Algorithmique, 40, 1a, CNAM Alsace, France

Licence : Éric Violard, Programmation système & réseau, 60 , L2, University of Strasbourg, France

Licence : Éric Violard, Programmation fonctionnelle, 42 , L2, University of Strasbourg, France

Licence : Éric Violard, Bases de données, 8 , L2, University of Strasbourg, France

Master : Éric Violard, Compilation, 54, M1, University of Strasbourg, France

Master : Éric Violard, Sémantique, 45, M1, University of Strasbourg, France

Master : Alain Ketterlin, Compilation, 64 , M1, University of Strasbourg

Master : Alain Ketterlin, Compilation avancée, 20 , M1, University of Strasbourg

Master : Alain Ketterlin, Suivi d'apprenti, 12 , M1, University of Strasbourg

Master : Philippe Clauss, Compilation avancée, 30 , M1, University of Strasbourg

Master : Philippe Clauss, Système et Programmation Temps-réel, 30 , M1, University of Strasbourg

Master : Philippe Clauss, OS embarqués, 30 , M1, University of Strasbourg

### 8.2.2. Supervision

PhD : Alexandra Jimborean, Adapting the polytope model for dynamic and speculative parallelization, University of Strasbourg, September the 14th 2012, Philippe Clauss and Vincent Loechner

PhD in progress : Aravind Sukumaran-Rajam, Enlarging the scope of polyhedral speculative parallelization, November 2012, Philippe Clauss and Alain Ketterlin

PhD in progress : Jean-François Dollinger, Heterogeneous speculative parallelization, September 2010, Vincent Loechner and Philippe Clauss

PhD in progress : Imèn Fassi, Multifor for Multicore, September 2012, Philippe Clauss and Yosr Slama

### 8.2.3. Juries

Philippe Clauss participated to the following HDR jurys in 2012:

Date	Candidate	Place	Role
Dec. 7	Fabrice Rastello	École Normale Supérieure de Lyon	Reviewer
Déc. 12	Cédric Bastoul	Univ. Paris-Sud	Examiner

Philippe Clauss participated to the following PhD jurys in 2012:

Date	Candidate	Place	Role
July 3	Oussama Gamoudi	Univ. Pierre et Marie Curie, Paris	Reviewer
Oct. 2	Artur Pietrek	Univ. Grenoble	Reviewer
Oct. 22	Andrés Salim Charif-Rubial	Univ. Versailles	Reviewer
Dec. 13	Mehdi Amini	École des Mines, Paris	Examiner

## CAMEL Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

### 9.1.1. Caramel seminar

Twenty speakers were invited to our seminar in 2012: Charles Bouillaguet, Stéphane Glondu, Marion Videau, Jérémie Detrey, Karim Khalfallah, Peter Schwabe, Jean-Charles Faugère, Luc Sanselme, Olivier Levillain, Aurore Guillevic, Cyril Bouvier, Răzvan Bărbulescu, Francisco Rodríguez-Henríquez, Laura Grigori, Hugo Labrande, Christophe Petit, Alexandre Benoit, Paul Zimmermann, Mohab Safey El Din, and Alin Bostan.

### 9.1.2. Committees memberships

- Jérémie Detrey
  - was a member of the program committee of the International Conference on Pairing-Based Cryptography (Pairing 2012),
  - was a member of the program committee of the International Workshop on the Arithmetic of Finite Fields (WAIFI 2012),
  - is a member of the program committee of the *Symposium en Architectures nouvelles de machines* (SympA 2013).
- Pierrick Gaudry
  - is a deputy director of LORIA until the end of 2012,
  - was in the hiring committees (Comités de Sélection) in Paris 6, Montpellier and Nancy,
  - with Cécile Dartyge (IECN), he organized a scientific day “Journée Charles Hermite” on cryptography and number theory,
  - was a member of the program committee of the 13th International Workshop on Information Security Applications (WISA 2012).
- Emmanuel Thomé
  - is an elected member of the Inria Evaluation Committee for the period 2011-2015,
  - was a member of the program committee of the Workshop on Elliptic Curve Cryptography (ECC 2012).
- Marion Videau
  - is a member of the scientific committee of the CCA seminar (*Codage, Cryptologie, Algorithmes*),
  - was a member of the program committee of the International Conference on Information Security and Cryptology (ICISC 2012),
  - is a member of the program committee of the *Symposium sur la sécurité des technologies de l’information et des communications* (SSTIC 2013).
- Paul Zimmermann
  - is an elected member of the Inria Scientific Board,
  - is a member of the program committee of the International Symposium on Symbolic and Algebraic Computation (ISSAC 2013).

### 9.1.3. Invited Conferences

- Jérémie Detrey was invited to give a talk at the Workshop on Elliptic Curve Cryptography (ECC 2012) in Querétaro, México.
- Emmanuel Thomé was invited to give a talk at the International Workshop on the Arithmetic of Finite Fields (WAIFI 2012) in Bochum, Germany.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Jérémie Detrey:
  - Security of websites: 2 hours (lecture), L1, IUT Charlemagne, Nancy, France.
- Emmanuel Thomé:
  - Cryptology: 20 hours, M1, ESIAL, Nancy, France.
  - Algorithmic Number Theory: 9 hours (lectures), M2, University Paris 7 (Master Parisien de Recherche en Informatique), Paris, France.
  - Introduction to cryptology: 3 hours (lecture), M2, École des Mines de Nancy, France.
  - Training for “Informatique et Sciences du Numérique”, Cryptology, Networks: 9 h, Université de Lorraine, Nancy, France. (Training for high school teachers who intend to teach this topic in high school).
- Marion Videau, teaching at the faculty of sciences, Université de Lorraine, Nancy, France:
  - Introduction to algorithmic and programming: 40 hours (lectures and tutorial sessions), 20 hours (practical sessions), L1.
  - Introduction to information system design: 10 hours (practical sessions), L3.
  - Introduction to cryptography: 15 hours (lectures), 15 hours (tutorial sessions), M1.
  - Introduction to information system security: 15 hours (lectures), 15 hours (tutorial sessions), M1.
  - Supervision and jury of M2 students internships: 10 hours.

### 9.2.2. Internships

Cyril Bouvier, ENS Paris, “Integer Factoring on High-Performance Architectures”, September 2011–August 2012, supervised by Paul Zimmermann.

Benjamin Dadoun, ENS Cachan, “Isolation of complex roots of univariate polynomials with the CEVAL algorithm”, June–July 2012, supervised by Paul Zimmermann.

Nathan Lecoanet, ESIAL, “What speedup can we expect in the Number Field Sieve with non-linear polynomials?”, June–July 2012, supervised by Paul Zimmermann.

Vlad-Cristian Miclea, Technical University of Cluj-Napoca (Romania), “Efficient FPGA implementation of finite-field multiplication algorithms”, June 2012–September 2012, supervised by Jérémie Detrey.

Florent Noyer, ESIAL, “Parallel reconstruction of a polynomial from its roots”, June–July 2012, supervised by Emmanuel Thomé

### 9.2.3. Supervision

HdR: Emmanuel Thomé, “Théorie algorithmique des nombres et applications à la cryptanalyse de primitives cryptographiques”, Université de Lorraine, 13/12/2012, [1].

PhD in progress:

- Nicolas Estibals, “Algorithmes et arithmétique pour l’implémentation de couplages cryptographiques”, started in 2009, co-supervised by Jérémie Detrey and Pierrick Gaudry.

- Răzvan Bărbulescu, “Number and function field sieve for discrete logarithm”, started in 2011, supervised by Pierrick Gaudry.
- Hamza Jeljeli, “Using graphics accelerators for problems arising in the Number Field Sieve and Function Field Sieve algorithms”, started in 2011, supervised by Jérémie Detrey and Emmanuel Thomé.
- Cyril Bouvier, “Integer Factoring on High-Performance Architectures”, started in 2012, supervised by Paul Zimmermann.

#### **9.2.4. Juries**

- Paul Zimmermann was a member of the PhD thesis jury of Vincent Nivoliers (University of Lorraine), of the PhD thesis jury of Romain Lebreton (École Polytechnique), and of the “Habilitation à diriger des recherches” jury of Emmanuel Thomé (University of Lorraine).

### **9.3. Popularization**

- With Nazim Fatès (MAIA project-team), Jérémie Detrey participated in a 2-hour television program dedicated to computer science and research, which was broadcast on the internal channel of the Nancy-Brabois children’s hospital.
- Pierrick Gaudry:
  - co-organized a cycle of 3 conferences in the honour of Turing in Nancy. The three speakers were Giuseppe Longo, François Morain, and Jean Lassègue.
  - gave a talk at the “7ème colloque de l’ARCSI”, in Metz for a general audience.
- Marion Videau:
  - participated to the film *Le Modèle Turing* of Catherine Bernstein (but her visual part was cut out during editing).
  - participated to a short television report for France 3 Lorraine about cryptography and her work as a researcher.
- Paul Zimmermann gave a 2-hour presentation about cryptography to students of “seconde” and “terminale” at the Lycée Jean de Pange in Sarreguemines.



## CARTE Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

### 9.1.1. Responsibilities

Guillaume Bonfante:

- was a member of the program committee of the workshop DICE 2012, Tallinn, Estonia,
- refereed some projects for the Netherlands Organisation for Scientific Research (NWO).

Isabelle Gnaedig is:

- co-leader of the EPI **Carte**,
- member of the scientific mediation committee of Inria Nancy Grand-Est,
- member of the engineer recruitment committee of Inria Nancy-Grand Est,
- social referee at Inria Nancy-Grand Est.

Mathieu Hoyrup is:

- the organizer of the **Seminar** of the LORIA Department "Formal Methods".

Jean-Yves Marion is:

- head of the EPI **Carte**,
- head of the **High Security Lab**,
- member of the executive committee of Inria Nancy-Grand Est,
- member of the AERES visiting committee,
- member of the CNU, section 27,
- member of the steering committee of DICE and LCC,
- chair of Malware 2012 and PC member of PREW 2012,
- co-organizer of a winter school at CIRM (one week on complexity).

Romain Pechoux is:

- principal investigator of the Inria associate team Cristal.

### 9.1.2. Talks

Guillaume Bonfante:

- talk at the "Rewriting and Logic Seminar" at the JAIST (Japan Advanced Institute of Science and Technology), Kanazawa, March 2012.

Emmanuel Hainry:

- presentation at **Logic and Interactions 2012**, complexity week in Marseille, January 30th to February 3rd, 2012.

Mathieu Hoyrup:

- invited to give the talk "On the inversion of computable functions" at the **7th International Conference on Computability, Complexity and Randomness**, in Cambridge, July 2012,
- gave the talk "Computability in Ergodic Theory" at the **Journées Calculabilités**, Paris, March 5 and 6, 2012.

Emmanuel Jeandel

- invited to give a four hours minicourse: "Computational aspects of multidimensional symbolic dynamics", at the first DySyCo school (**Dynamical Systems and Computation**) in Santiago, Chile, December 2012.

Jean-Yves Marion

- talk on computer viruses at Corte, September, 2012 and at Grenoble, December, 2012,
- two talks on computer viruses at Bloomington, Indiana University, October 29th and October 31st, 2012.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence:

- Guillaume Bonfante:
  - Java, L3, Ecole des Mines, Université de Lorraine, France.
- Emmanuel Hainry:
  - Operating Systems, 60 h, L1, IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Algorithms and Programs, 60 h, L1, IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Object Oriented Programming, 24 h, L1, IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Databases, 24 h, L2, IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Advanced Databases, 20 h, L2, IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Complexity, 28 h, L2, IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Algorithmics, 12 h, DU PFST (equiv. L1), IUT Nancy Brabois, Université de Lorraine, Nancy, France,
  - Operating Systems, 9 h, DU PFST (equiv. L1), IUT Nancy Brabois, Université de Lorraine, Nancy, France.
- Emmanuel Jeandel
  - Probability for Computer Science, 46 hours, L3 Informatique, FST, Université de Lorraine, Nancy, France.
- Romain Péchoux:
  - c2i, 20, L1 , Université de Lorraine, Nancy, France,
  - Propositional logic, 25 hours, L1 ISC, UFR MI, Université de Lorraine, Nancy, France,
  - Introduction to Java, 45 hours, L3 ISC MIAGE , UFR MI, Université de Lorraine, Nancy, France,
  - Databases, 42 hours, L3 LSG, ISAM-IAE, Université de Lorraine, Nancy, France,
  - Algorithmic complexity, 30 hours, L3 ISC MIAGE, IGA, Casablanca, Maroc.

Master:

- Guillaume Bonfante:

- Modelling and UML, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
- Video games, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
- Semantics, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
- Safety of software, M2, Ecole des Mines, Université de Lorraine, Nancy, France.
- Isabelle Gnaedig:
  - “Design of Safe Software”, Coordination of the module, M2, ESIA-Telecom (Université de Lorraine), Nancy, France,
  - “Rule-based Programming”, 20 hours, M2, ESIAL-Telecom (Université de Lorraine), Nancy, France.
- Emmanuel Jeandel:
  - Algorithms and Complexity, 35 hours, M1 Informatique, FST, Université de Lorraine, Nancy, France.
- Jean-Yves Marion:
  - Automata Theory, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
  - Logic, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
  - Data Base, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
  - Algorithmic, M1, Ecole des Mines, Université de Lorraine, Nancy, France,
  - Security, M2, Ecole des Mines, Université de Lorraine, Nancy, France,
  - Head of the M2 internships, M2, Ecole des Mines, Université de Lorraine, Nancy, France.
- Romain Péchoux:
  - Advanced Java, 52 hours, M1 MIAGE, UFR MI, Université de Lorraine, Nancy, France,
  - Mathematics for computer science, 20 hours, M1 SCA, UFR MI, Université de Lorraine, Nancy, France.

### **9.2.2. Supervision**

PhD : Pascal Vanier, "Pavages : périodicité et complexité calculatoire", Aix-Marseille Université, defended November 22th, 2012, Emmanuel Jeandel.

PhD in progress : Thanh Dinh Ta, Malware Algebraic Modeling and Detection, started Sept. 2010, Jean-Yves Marion (director) and Romain Péchoux (co-advisor).

PhD in progress: Hugo Férée, Computational Complexity in Analysis, started Sept. 2011, Jean-Yves Marion (director) and Mathieu Hoyrup (co-advisor).

PhD in progress: Aurélien Thierry, Morphological Analysis of Malware, started October 2011, Jean-Yves Marion.

PhD in progress: Joan Calvet, Viruses: how they interact with their environment, started October 2009, Jean-Yves Marion and José M. Fernandez, joint PhD with Ecole Polytechnique de Montréal.

### **9.2.3. Juries**

Isabelle Gnaedig:

- participation to the ESIAL-Telecom admission committee.

Emmanuel Hainry:

- in charge of the admission committee for dept. Réseaux et Télécoms at IUT Nancy Brabois.

Mathieu Hoyrup:

- participation to the jury of Master 2 "Logique Mathématique et Fondements de l'Informatique" of Benoît Monin.

Jean-Yves Marion:

- November 30th, 2012, HDR of Virgile Mogbil, U. Paris 13 (reviewer),
- December 3th, 2012, PhD of Vincent Cheval, ENS Cachan (president),
- December 6th, 2012, PhD of Antoine Madet (reviewer),
- December 7th, 2012, PhD of Vincent Demange,
- December 13th, 2012, HDR of Emmanuel Thomé,
- December 17th, 2012, PhD of Hedi Benzina, ENS Cachan (reviewer).

Romain Péchoux:

- participation to the UFR MI, licence Miage, admission committee.

### **9.3. Popularization**

Guillaume Bonfante:

- talk at the "Rendez-Vous du Numérique et de l'Intelligence Economique", about "Computer viruses", Strasbourg, October 2012,
- talk at the "Journées francophones de l'investigation numérique (JFIN)", about "Les virus, amis ou ennemis de l'investigation numérique ? ", Levallois-Perret, November 2012.

Emmanuel Hainry:

- presentation at Inria Jam Session 2012, June 19th, 2012 <http://www.inria.fr/centre/nancy/agenda/jam-session-alumni>.

Jean-Yves Marion:

- redaction of an article in "Pour la Science" [http://www.pourlascience.fr/ewb\\_pages/f/fiche-article-les-i-mac-i-resistant-ils-mieux-aux-virus-que-les-i-pc-i-30414.php](http://www.pourlascience.fr/ewb_pages/f/fiche-article-les-i-mac-i-resistant-ils-mieux-aux-virus-que-les-i-pc-i-30414.php).

## **CASSIS Project-Team**

# **9. Dissemination**

## **9.1. Scientific Animation**

### ***9.1.1. Editorial board***

- Information & Computation (Véronique Cortier)
- Journal of Computer Security (Véronique Cortier)

### ***9.1.2. Conferences***

- FroCoS 2013, 9th Symposium on Frontiers of Combining Systems, 18–20 September 2013, Nancy, France, (Christophe Ringeissen, conference chair)

### ***9.1.3. Program committees***

- Fabrice Bouquet: MODEVVA 2012, ICST 2013 (Publicity Chair)
- Véronique Cortier: CSF 2012 (co-chair), CCS 2012, ESORICS 2012, POST 2012, FCC 2012, SCSS 2012, LPAR 2012, MOVEP 2012.
- Frédéric Dadeau: CSTVA 2012 (co-chair)
- Alain Giorgetti: TAP 2012
- Pierre-Cyrille Héam: IHTIAP 2012
- Abdessamad Imine: DEXA 2012, CIIA 2013
- Steve Kremer: ACNS 2012, CSF 2012, FSTTCS 2012, ISPEC 2012, POST 2012, TGC 2012
- Christophe Ringeissen: CADE-24, FroCoS 2013
- Michaël Rusinowitch: CRISIS 2012, GRSRD 2012 (co-chair), IJCAR 2012, QASA 2012, SCSS 2012, WooPS12

### ***9.1.4. Summer school***

- TAROT 2012, 8th International Summer School on Training And Research On Testing, 2–6 July 2012, Métabief, France, (Frédéric Dadeau, general chair)

### ***9.1.5. Working groups***

- GT-Verif, Verification, GDR IM Working Group (Véronique Cortier, chair)
- MTV2, Testing Methods for Verification and Validation, GDR GPL Working Group (Frédéric Dadeau, co-chair)
- FORWAL, Formalisms and Tools for Verification and Validation, GDR GPL Working Group (Pierre-Cyrille Héam, co-chair)

## **9.2. Teaching - Supervision - Juries**

### ***9.2.1. Teaching***

- Licence :
  - Frédéric Dadeau, Algorithmics and Programming, 80 hours (ETD), L1, University of Franche-Comté, France
  - Frédéric Dadeau, Databases, 40 hours (ETD), L1, University of Franche-Comté, France
  - Frédéric Dadeau, Object-Oriented Modelling and Conception, 40 hours (ETD), L3, University of Franche-Comté, France
  - Frédéric Dadeau, Web Languages, 26 hours (ETD), L2, University of Franche-Comté, France
  - Alain Giorgetti, Logics and Deduction, 52 hours (ETD), L2, Université de Franche-Comté, France
  - Alain Giorgetti, Formal Methods, 81 hours (ETD), L3, Université de Franche-Comté, France
  - Pierre-Cyrille Héam, Discrete Mathematics, 190 hours (ETD), L1/L2, IUT Belfort-Montbéliard, France
  - Olga Kouchnarenko, Formal languages and automata, 95 hours (ETD), L3, University of Franche-Comté, France
  - Olga Kouchnarenko, Syntactic analysis and XML, 33 hours (ETD), L3, University of Franche-Comté, France
- Master :
  - Fabrice Bouquet, Compilation, 81 hours (ETD), M1, Université de Franche-Comté, France
  - Fabrice Bouquet, Method et Tools For Artificial Intelligence, 40 hours (ETD), M1, Université de Franche-Comté, France
  - Fabrice Bouquet, Test, 30 hours (ETD), M2, Université de Franche-Comté, France
  - Véronique Cortier, Security Theory, 37 hours (ETD), M2, Lorraine University, France
  - Frédéric Dadeau, Testing, 22 hours (ETD), M2, University of Franche-Comté, France
  - Alain Giorgetti, Program Proofs, 60 hours (ETD), M1, Université de Franche-Comté, France
  - Alain Giorgetti, Decision Procedures, 13 hours (ETD), M2, Université de Franche-Comté, France
  - Pierre-Cyrille Héam, Introduction to calculability, 22 hours (ETD), M2, Université de Franche-Comté, France
  - Pierre-Cyrille Héam, Automata based Verification, 20 hours (ETD), M2, Université de Franche-Comté, France
  - Abdessamad Imine, Security for XML Documents, 12 hours (ETD), M1, University of Lorraine, France
  - Olga Kouchnarenko, Components and security, 12 hours (ETD), M2, University of Franche-Comté, France
  - Olga Kouchnarenko, Specification, verification and validation, 15 hours (ETD), M2, University of Franche-Comté, France
  - Olga Kouchnarenko, Modelling and evaluation of complex systems, 20 hours (ETD), M2, University of Franche-Comté, France
- Doctorat :
  - Fabrice Bouquet, Model Based Testing for Functional and Security Test, 4 hours (ETD), 12th edition of the International School on Foundations of Security Analysis and Design (FOSAD), Bertinoro, Italy

### **9.2.2. Supervision**

- PhD :

Jonathan Lasalle, Génération automatique de tests à partir de modèles SysML pour la validation fonctionnelle de systèmes embarqués, Université de Franche Comté, June 29th, Fabrice Bouquet and Fabien Peureux

Elizabeta Fourneter, Génération de tests à partir de modèles UML/OCL pour les systèmes critiques évolutifs, Université de Franche Comté, December 5th, Fabrice Bouquet

Asma Chérif, Modèles de Contrôle d'Accès pour les Applications Collaboratives, Université de Lorraine, November 26th, Abdessamad Imine and Michaël Rusinowitch

- PhD in progress :

Kalou Cabrera Castillos, Automated Test Generation from Property Patterns, started in December 2009, Frédéric Dadeau and Jacques Julliand

Rémy Chrétien, Decision procedures of equivalence properties, started in October 2012, Véronique Cortier and Stéphanie Delaune

Aloïs Dreyfus, Efficient approaches for systems validation, started in Novembre 2010, Pierre-Cyrille Héam and Olga Kouchnarenko

Ivan Enderlin, Test Data Generation for Unit Testing in PHP, started in October 2011, Fabrice Bouquet, Frédéric Dadeau and Alain Giorgetti

Jean-Marie Gauthier, Method for validation and simulation of SysML model: Applied on micro-systems, started in October 2012, Fabrice Bouquet, Fabien Peureux and Ahmed Hammad

Richard Genestier, Formal specification and verification of programs generating structured data, started in October 2012, Alain Giorgetti and Olga Kouchnarenko

Bao-Thien Hoang, Secure Collaboration in Social Networks, started in April 2011, Abdessamad Imine and Christophe Ringeissen

Vincent Hugot, Approximations and Constraints: Application to the Verification of Embedded Systems, started in October 2010, Pierre-Cyrille Héam and Olga Kouchnarenko

Jean-Luc Joly, Randomized approaches for validation and verification procedures, started in December 2011, Pierre-Cyrille Héam

Robert Künnemann, Verification of Security APIs, started in October 2010, Steve Kremer and Graham Steel

Houari Mahfoud, Access Control Models for XML Documents, started in September 2010, Abdessamad Imine and Michaël Rusinowitch

Guillaume Scerri, Symbolic and automatic security proofs in computational models, started in September 2011, Hubert Comon-Lundh and Véronique Cortier

Elena Tushkanova, Specification and formal certification of (combinations of) decision procedures, started in October 2009, Alain Giorgetti, Olga Kouchnarenko and Christophe Ringeissen

Cyrille Wiedling, Formal analysis of E-voting protocols, started in September 2011, Véronique Cortier

### **9.2.3. Juries**

Inria evaluation committee (Véronique Cortier, Michaël Rusinowitch)

Referee for Karine Mordal's PhD, December 2012, Paris: Analyse et conception d'un modèle de qualité logiciel (Fabrice Bouquet)

Referee for Benoît Groz' PhD, October 2012, Lille: XML Security Views Queries, Updates, and Schema (Michaël Rusinowitch)

Referee for Marion Daubignard's PhD, January 2012, Grenoble: Formal Methods For Concrete Security Proofs (Steve Kremer)

Referee for Antoun Yaacoub's PhD, November 2012, Toulouse: Information Flow in Logic Programming (Olga Kouchnarenko)

Committee chair for Lionel Droz-Bartholet's PhD, February 2012, Besançon: Conception, validation et évaluation d'un nouveau protocole de gestion de la mémoire partagée collaborative tolérant aux pannes (Fabrice Bouquet)

Committee chair for Qianxue Wang's PhD, March 2012, Besançon, France: A new family of chaotic pseudo-random generators (Pierre-Cyrille Héam)

Committee chair for Lamiel Toch's PhD, November 2012, Besançon, France: Contribution to scheduling techniques on parallel and distributive systems (Pierre-Cyrille Héam)

Examiner for Muhammad Naeem Irfan's PhD, September 2012, Grenoble, France: Analysis and optimisation of machine learning algorithms for software components (Frédéric Dadeau)

### **9.3. Popularization**

Invited conference of Véronique Cortier at the national annual days of the APMEP (Association des Professeurs de Mathématiques de l'Enseignement Public), Metz, October 27-30, 2012.

Invited conference of Fabrice Bouquet at Software Quality Club (association of software professional): "Model-based Testing today", Paris, January 24, 2012

Invited conference of Fabrice Bouquet at 6th SysML France conference: "Test generation from SysML Model", Mulhouse, November 13, 2012

Interview of Véronique Cortier for the Information Letter of Info CST Lorraine (Culture Scientifique et Technique), issue 87, January 2012.

Participation of Véronique Cortier in a documentary film on the life of Alan Turing (film director: Catherine Bernstein)

Participation of Véronique Cortier in the Big Data report, published at *CNRS Le Journal*, November 2012.

"Le vote électronique est-il anti-démocratique par essence ?" by Steve Kremer and Christophe Castro in *Inriality*, March 29, 2012.

Inria Alumni Jam Session organized by Steve Kremer, Nancy, June 19, 2012.



## PAREO Project-Team

# 8. Dissemination

## 8.1. Scientific Animation

- Jean-Christophe Bach:
  - Reviewer for SLE 2012 (5th International Conference on Software Language Engineering)
- Horatiu Cirstea:
  - PC member of RuleML 2012 (International RuleML Symposium on Rule Interchange and Applications).
  - Steering committee of RULE.
  - Responsible for the Master speciality “Logiciels: Théorie, méthodes et ingénierie”.
- Claude Kirchner:
  - Keynote speaker of RTA 2012 (23rd International Conference on Rewriting Techniques and Applications): “Rho-Calculi for Computation and Logic”.
- Sergueï Lenglet:
  - Presentation at “Journées communes LTP - LAC - LaMHA”
- Pierre-Etienne Moreau:
  - Member of the board of the Doctoral School in Computer Science and Mathematics.
  - Member of the GDR–GPL (CNRS Research Group on Software Engineering) board.
  - Head of the local committee for Inria “détachements” and “délégations”.
  - Head of the Computer Science department at Ecole des Mines de Nancy.
  - PC member of RTA 2012 (23rd International Conference on Rewriting Techniques and Applications), SLE 2012 (5th International Conference on Software Language Engineering), and WRLA 2012 (9th International Workshop on Rewriting Logic and its Applications)
- Sorin Stratulat:
  - PC Member of SYNASC’12 (14th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing), IAS’12 (8th International Conference on Information Assurance and Security), and CISIS’12 (5th International Conference on Computational Intelligence in Security for Information Systems).
  - Invited Speaker at PAS’12 (International Seminar on Program Verification, Automated Debugging and Symbolic Computation).
  - Member of the LITA Laboratory Council.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence : Horatiu Cirstea, Structures de données, 20h, L3, Université de Lorraine, Nancy

Licence : Sergueï Lenglet, Algorithmique et structures de données, 110h, L1, L2, IUT Charlemagne, Nancy

Licence : Sergueï Lenglet, Bases de données, 60h, L1, IUT Charlemagne, Nancy

Licence : Sergueï Lenglet, Analyse et conception de systèmes d’information, 20h, L2, IUT Charlemagne, Nancy

Licence : Pierre-Etienne Moreau, Tronc Commun d'Informatique, 35h, L3, École des Mines de Nancy

Licence : Christophe Calvès, Certificat Informatique et Internet, 40h, L1, Université de Lorraine, Nancy

Master : Horatiu Cirstea, Analyse et conception de logiciels, 100h, M1, Université de Lorraine, Nancy

Master : Horatiu Cirstea, Génie logiciel avancé, 30h, M2, Université de Lorraine, Nancy

Master : Pierre-Etienne Moreau, Software Engineering, 15h, M1, École des Mines de Nancy

Master : Pierre-Etienne Moreau, Bootcamp OO Programming, 45, M1, École des Mines de Nancy

Master : Pierre-Etienne Moreau, Research project, 30h, M2, École des Mines de Nancy

### 8.2.2. Supervision

PhD : Cláudia TAVARES, "Un système de types pour la programmation par réécriture embarquée", Université de Lorraine, March 2nd 2012, Claude Kirchner et Pierre-Etienne Moreau

PhD : Vincent DEMANGE, "Vers un calcul des constructions pédagogiques", Université de Lorraine, December 7th 2012, Sorin Stratulat et Loïc Colson

PhD in progress : Jean-Christophe BACH, "Transformation de modèles et certification", November 1st 2010, Pierre-Etienne Moreau

### 8.2.3. Juries

Pierre-Etienne Moreau:

PhD committee of Aurélien Monot, "Vérification de contraintes temporelles de bout-en-bout dans le contexte AutoSar", Nancy 2012

PhD committee of Luc Engelen, "From Napkin Sketches to Reliable Software", Eindhoven 2012

PhD reviewer of Pengfei Liu, "Intégration de politiques de sécurité dans des systèmes ubiquitaires", Bordeaux 2013

PhD committee of Laurent Wouters, "Multi-Domain Expert-User Modeling Infrastructure", Paris 2013

## 8.3. Popularization

Jean-Christophe Bach participated to scientific mediation by proposing several activities to demonstrate the *algorithmic thinking* at the core of the Computer Science without requiring any computer or even electric devices. These activities are the first part of the CSIRL (Computer Science In Real Life) project which aims to popularize computer science and to initiate children, school students and non-scientists into this domain. These activities were presented during the high school students welcome at LORIA and Inria - Nancy Grand Est, and also during APMEP<sup>1</sup> days.

Jean-Christophe Bach was also involved in popularization activities with Interstices<sup>2</sup> by writing short debunking articles ("Idées reçues") for non computer scientists about Church's thesis and Turing's work.

<sup>1</sup><http://www.apmep.asso.fr/>

<sup>2</sup><http://interstices.info>

## TRIO Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

- Liliana Cucu is the Delegate of International Relations for the Inria Nancy-Grand Est center.
- Olivier Zendra is an elected member of the Research Center Committee of Inria Nancy Grand Est.
- Nicolas Navet chairs with Thomas Nolte (MRTC Mälardalen) of the Sub-Committee on Real-Time Fault Tolerant Systems of the IEEE Industrial Electronic Society (IES) - Technical Committee on Factory Automation (TCFA).
- Nicolas Navet is member of the Editorial Board of the Journal of Embedded Computing (IOS Press).
- Liliana Cucu is an elected member of Inria Evaluation Commission (CE).
- Olivier Zendra is head of the Documentation Committee of Inria Nancy Grand Est, member of the Health, Safety and Work Environment of Inria and of Inria Nancy Grand Est - LORIA Committees, member of the Permanent Education Committee of Inria Nancy Grand Est - LORIA, member of the new Sustainable Development Local and National Committees, member of the Inria Nancy Grand Est - LORIA Committee for the selection of hardware configurations.
- Olivier Zendra is CIR expert for the Ministry of Research for the scientific evaluation of research in companies.
- Liliana Cucu and Nicoals Navet are ANRT expert for evaluating CIFRE applications.
- Olivier Zendra is founder and steering committee member of the IC00OLPS (International Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems) workshop.
- Liliana Cucu and Nicolas Navet were general chairs of the 20th International Conference on Real-Time and Network Systems (RTNS 2012).
- Liliana Cucu was co-chair of RTSOPS and WIP session of WFCS 2012.
- Liliana Cucu was program committee member of ECRTS, ETFA, SIES, ACM RACS.
- Nicolas Navet was program committee member of ACM RACS'2012, IEEE RSP'2012, Track on Industrial Communication Systems and Real-Time and (Networked) Embedded Systems at IEEE ETFA 2012, IEEE ICSS-2012, IEEE SIES'2012, IEEE WFCS'2012, WoNeCa-2012.
- Nicolas Navet was co-animator of the High Performance Embedded Systems (HPES) cluster of GDR CNRS ASR, and co-animator of Actriss group (real-time services and infrastructure) of HPES cluster.
- Olivier Zendra was co-chair of IC00OLPS 2012, June 11th, Beijing, CN.
- Olivier Zendra was program committee member for CIEL 2012, DASIP 2012, IC00OLPS 2012, RESoLVE 2012.
- The permanent members of TRIO team are reviewers for numerous international Conferences and Workshops and, in particular for the following journals: IEEE Transactions on Industrial Informatics, Real-Time Systems, IEEE Computer Communications, Journal of Discrete Event Systems, Journal of Systems Architecture, Journal of Embedded Computing, Journal of Scheduling, Theoretical Computer Science, ACM Surveys, ACM Transactions on Embedded Computing Systems, Information Processing Letters.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Olivier Zendra, langages à objets / Java, 53h, niveau (L2), University of Lorraine, France

Master : Liliana Cucu, Multiprocessor real-time systems, 30h, niveau (M1), University of Lorraine, France

Master : Nicolas Navet, Real-time critical systems, 30h, niveau (M1), University of Lorraine, France

### **9.2.2. Supervision**

PhD & HdR :

PhD : Aurélien Monot, Vérification des contraintes temporelles de bout-en-bout dans le contexte AutoSar, University of Lorraine, November 29th, Françoise Simonot, Nicolas Navet and Bernard Bavoux

PhD : Pierre Caserta, Analyse statique et dynamique de code et visualisation des logiciels via la métaphore de la ville: contribution à l'aide à la compréhension des programmes, December 7th, Jean-Pierre Thomesse and Olivier Zendra

PhD in progress: Dorin Maxim, Probabilistic real-time systems, October 1st 2010, Liliana Cucu and Françoise Simonot-Lion

### **9.2.3. Juries**

- Liliana Cucu was member of the PhD thesis jury of Mikel Cordovilla, defended in April 2012 at ONERA, Toulouse.
- Olivier Zendra was member of the PhD thesis jury of Olivier Sallenave, defended in November 2012 at LIRMM / Université de Montpellier

## VEGAS Project-Team

# 7. Dissemination

## 7.1. Scientific Animation

Program and Paper Committee:

- Sylvain Lazard: Program committee of the ACM Symposium on Computational Geometry 2012 (SoCG'12) and of the European Workshop on Computational Geometry (EuroCG'12).
- Sylvain Petitjean: Program committee of the IEEE International Conference on Computer Vision and Pattern Recognition (CVPR'12).

Editorial responsibilities:

- Xavier Goaoc: Editor of the *Journal of Computational Geometry*.
- Sylvain Petitjean: Editor of *Graphical Models* (Elsevier).

Workshop organizations:

- Sylvain Lazard co-organized with S. Whitesides (Victoria University) the 11th Inria - McGill - Victoria Workshop on Computational Geometry <sup>2</sup> (Bellairs Research Institute of McGill University) in Feb. (1 week workshop on invitation).
- Xavier Goaoc was co-organiser of the *Journées de Géométrie Algorithmique 2012* (<http://jga2012.fr>). This event gathered the french community of computational geometry (50-60 participants) for one week.
- Xavier Goaoc was co-organiser of *Algorithms & Permutations 2012* (<http://igm.univ-mlv.fr/AlgoB/algoperm2012/>). This event gathered ~ 70 participants from theoretical computer science for two days.
- Xavier Goaoc organized a *workshop on interactions between stochastic and computational geometries* (<http://webloria.loria.fr/~goaoc/ANR-Presage/meetings.html>) where 21 participants, on invitation, worked for a week on research problems at the interface between stochastic and computational geometries.

Other responsibilities:

- Sylvain Lazard: Head of the Inria Nancy-Grand Est *PhD and Post-doc hiring committee* (since 2009). Member of the *Bureau du Département Informatique de Formation Doctorale* of the *École Doctorale IAE+M* (since 2009). Member of the hiring committee for St Dié assistant professor position. Chargé de formation par la recherche for Inria Nancy-Grand Est.
- Laurent Dupont: *Responsible* of admissions of IUT Charlemagne, University Nancy 2 (September 2011- September 2012). *Member* of Commission Pédagogique Nationale Infocom/SRC (since 2011). *Member* of Commission Information Scientifique (Inria/Loria).
- Xavier Goaoc: Chair of the Inria *COST-GTRI committee* (since 2011).
- Guillaume Moroz: Member of the organizing committee of the *Olympiades académiques de mathématiques*. *Vice delegate* of the *Commission des Utilisateurs des Moyens Informatiques pour la Recherche*. Invited to give a course at Young researcher School EJCIM 2012 and doctoral school of science and technology of Versailles.
- Sylvain Petitjean: Until August: *Scientific delegate* of Inria Nancy Grand-Est and chairman of its *Project committee* (since 2009). Member of the *Executive committee* of Inria Nancy Grand-Est, member of its *Commission des développements technologiques*. Member of Inria's *Evaluation committee*. Since September: Acting director of the Inria Nancy Grand-Est. Member of Inria's *Executive committee*.
- Marc Pouget: Member of the CGAL Editorial Board (since 2008).

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<sup>2</sup>Workshop on Computational Geometry

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

Master: Marc Pouget and Xavier Goaoc, *Introduction à la géométrie algorithmique*, 10.5 HETD, M1, École Nationale Supérieure de Géologie, France

Master: Xavier Goaoc, *Recherche opérationnelle*, 25 HETD, M1, École des Mines de Nancy.

Master: Xavier Goaoc, *Pépites en géométrie algorithmique*, 4.5 HETD, M1, École des Mines de Nancy.

Licence: Laurent Dupont, *Systèmes de Gestion de Bases de Données Avancé*, 40h, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Concepts et Outils Internet*, 40h, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Programmation Objet et Évènementielle*, 40h, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont, *Rich Internet Applications*, 40h, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont and Yacine Bouzidi, *Programmation de Sites Web Dynamiques*, 68h, Université de Lorraine (IUT Charlemagne).

Licence: Laurent Dupont and Yacine Bouzidi, *Algorithmique*, 76h, Université de Lorraine (IUT Charlemagne).

Licence: Sylvain Lazard, *Algorithms and Complexity*, 25h, L3, Université de Lorraine.

### 7.2.2. Supervision

PhD in progress : Yacine Bouzidi, *Résolution de systèmes algébriques bivariés et topologie de courbes planes*, started in October 2010, Sylvain Lazard et Marc Pouget

PhD in progress : Fabien Mathieu, *Simulation numériques 3D pour le prototypage rapide par Stratoconception*, thèse CIFRE with CIRTES, started in February 2012 and stopped in September 2012 for administrative reasons, Sylvain Lazard.

### 7.2.3. Juries

- Xavier Goaoc was on the reading and defense committees of the thesis of Daniela Maftuleac, Aix-Marseille Univ, Juin 2012.

## VERIDIS Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

- Pascal Fontaine co-chaired the program committee of PAAR 2012 and SMT 2012. He served on the program committee of PxTP 2012. He has been ex-officio member of the SMT Steering Committee starting September 2011 until August 2012, and he is now an elected member for two years starting September 2012.
- Dominique Méry is
  - a member of the IFIP Working Group 1.3 on *Foundations of System Specification*,
  - head of the Doctoral School IAEM Lorraine for the University of Lorraine,
  - head of the Formal Methods department of the LORIA laboratory,
  - an expert for the French Ministry of Education (DS9),
  - an expert for the French Agence Nationale de la Recherche (ANR) and AERES.
  - the director of international affairs at ESIAL Nancy, and
  - the president of the APCB association.
  - He served on the program committees of DS-Event-B, FHIES, FM (co-chair), ICECCS, ICFEM, iFM, MEDI, and TASE.
- The academic duties of Stephan Merz include:
  - member of the IFIP Working Group 2.2 on *Formal Description of Programming Concepts*,
  - nominated member of the Section 7 of the Comité National de la Recherche Scientifique (until the summer of 2012),
  - Inria representative in the Scientific Directorate of the International Computer Science Meeting Center in Dagstuhl,
  - delegate for the organization of conferences at Inria Nancy Grand-Est,
  - co-head of the PhD committee for computer science in Lorraine (since December 2012),
  - program committees of ICFEM, iFM, SAC, SBMF, and SEFM conferences, AVoCS (co-chair), ATX, and TLA (co-chair) workshops, steering committee of AVoCS,
  - co-organizer of the VTSA summer school between Nancy, Saarbrücken, Luxembourg, and Liège,
  - expert for the French Agence Nationale de la Recherche (ANR), AERES, German DFG, European ERC, and Canadian NSERC.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

The university employees of VeriDis have significant teaching obligations. We indicate the graduate courses they have been teaching this year, as well as significant pedagogical responsibilities.

- Dominique Méry gave courses in the Master program in Nancy on: formal system engineering, modeling and verification of systems, theoretical computer science, development of software systems, distributed algorithms.
- Stephan Merz taught a course on algorithmic verification in the Master program in Nancy (30 hours) and a course on modal logic in the undergraduate curriculum on cognitive and computer science (30 hours).

### 9.2.2. Supervision

PhD: Sabina Akhtar, Verification of Distributed Algorithms using PlusCal-2, Université de Lorraine, May 2012, supervised by Stephan Merz;

PhD in progress: Manamiary Andriamiarina, Refinement Techniques for Distributed Algorithms, since 10/2010, supervised by Dominique Méry;

PhD in progress: Henri Debrat, Formal Verification of Fault-Tolerant Distributed Algorithms, since 10/2009, supervised by Bernadette Charron-Bost and Stephan Merz;

PhD in progress: Tianxiang Lu, Verification of the Pastry Routing Protocol, since 05/2009, supervised by Stephan Merz and Christoph Weidenbach;

PhD in progress: Hernán Vanzetto, SMT Techniques for TLA<sup>+</sup> Proof Obligations, since 10/2010, supervised by Kaustuv Chaudhuri and Stephan Merz.

### 9.2.3. Juries

Dominique Méry wrote reports on the following PhD theses.

- Anton Tarasyuk: *Formal Development and Quantitative Verification of Dependable Systems*, University of Turku;
- Jean-Charles Chaudemar: *Etude des architectures de sécurité de systèmes autonomes – Formalisation et évaluation en Event B*, Université de Toulouse;
- Damien Imbs: *Calculabilité et conditions de progression des objets partagés en présence de défaillances*, Université de Rennes;
- Vincent Filou: *Une étude formelle de la théorie des calculs locaux à l'aide de l'assistant de preuve Coq*, Université de Bordeaux.

Stephan Merz wrote reports on the following PhD and habilitation theses:

- Francesco Bongiovanni: *Design, Formalization and implementation of overlay networks; application to RDF data storage*, Université de Nice-Sophia Antipolis;
- Abderrahmane Feliachi: *Semantics Based Testing for Circus*, Université Paris-Sud;
- Sylvain Conchon: *SMT Techniques and their Applications*, Université Paris-Sud.



## CALVI Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

#### 9.1.1. Invitations at conferences and summer schools

- Michel Mehrenberger gave invited talks at
  - ICOPS 2012, Edinburgh (Scotland, UK), 8-12 July 2012, "Conservative semi-lagrangian schemes on mapped meshes", <http://icops2012.lboro.ac.uk/>
  - 4th Summer school on numerical modelling for fusion, 8-12 October 2012, IPP, Garching near Munich "High Order Semi-Lagrangian Schemes for the Vlasov equation", [http://www.ipp.mpg.de/ippcms/eng/for/veranstaltungen/konferenzen/su\\_school/](http://www.ipp.mpg.de/ippcms/eng/for/veranstaltungen/konferenzen/su_school/)
- Sever Hirstoaga gave an invited talk at The 9th AIMS Conference, in the Special Session 79 : "Numerical Methods based on Homogenization and on Two-Scale Convergence", 1-5 July 2012, Orlando.
- Eric Sonnendrücker gave an invited talk on "Numerical Algorithms for Gyrokinetic simulations" at the Workshop on Computational Challenges in Magnetized Plasma, IPAM, UCLA, April 16-20, 2012.
- Jean Roche gave invited talks at
  - Engopt 2012, Rio de Janeiro, Brazil, July 2012, on "Interior Point Methods for Shape Optimization in Electromagnetic Casting"
  - 10th WCCM, Sao Paulo, Brazil, 8-13 July 2012, on "Adaptivity in Shape Optimization with an exterior state equation"

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

Philippe Helluy is responsible for the second year of Master CSSI (*Calcul Scientifique et Sécurité Informatique*) of the UFR Mathématique et Informatique, Université de Strasbourg.

Laurent Navoret is responsible for *Master Enseignement - parcours Agrégation* of the UFR Mathématique et Informatique, Université de Strasbourg, since September 2012.

- Nicolas Besse
  - Licence : Analyse, 90H, L2, Université de Lorraine Faculté des Sciences et Techniques, France
  - Licence : Analyse complexe, 16H, L3, Université de Lorraine Faculté des Sciences et Techniques, France
  - Licence : Analyse, 38H, L1, Université de Lorraine Faculté des Sciences et Techniques, France
  - Master : Modélisation mathématique et méthodes numériques pour les plasmas de fusion, 45H, M2-Fusion, Université de Lorraine, France
- Philippe Helluy
  - Master: EDP hyperboliques, 30 HETD, M2, Université de Strasbourg, France
  - Master: Contrôle Optimal, 30 HETD, M2, Université de Strasbourg, France
  - Master: Calcul Scientifique, 30 HETD, M1, Université de Strasbourg, France

Master: Elemental numerical methods, 30 HETD, M1 physique, Université de Strasbourg, France

Master: Recherche Opérationnelle, 30 HETD, école d'ingénieurs ENSIIE, Strasbourg, France.

Doctorat : Modèles mathématiques et numériques de la transition de phase, 30 HETD, M2, Université de Strasbourg, France

- Simon Labrunie

Licence : Mathématiques générales en DUT génie civil, 55h, L1, Université de Lorraine, France

Licence : Mathématiques générales en DUT génie civil, 55h, L2, Université de Lorraine, France

- Michel Mehrenberger

Licence : Optimisation non lineaire, 54h, L3, Université de Strasbourg, France

Licence : Méthodes d'Analyse Numérique, 39h, L3, ENSIIE (ecole d'ingenieur, antenne de Strasbourg), France

Licence : Analyse Numérique, 72h, L2, Université de Strasbourg, France

Licence : Calcul Formel et Simulation Numérique, 18h, L2, Université de Strasbourg, France

Master : Mathematical methods for physics, 30h, M1, Université de Strasbourg, France

Master : Spectral Analysis, 30h, M1, Université de Strasbourg, France

Master: Méthodes numériques pour les EDP, TP, 20h, M1, Université de Strasbourg, France

- Laurent Navoret

Licence : TD Technique d'Analyse Numérique, 36h eq. TD, L3, Université de Strasbourg, France

Licence : Introduction numérique aux E.D.P., 43.75h eq. TD, L3, Université de Strasbourg, France

Master : Modélisation : Option Calcul Scientifique, 72 eq. TD, M2, Université de Strasbourg, France

- Jean R. Roche

Licence: Mathématiques, 162 h eq. TD, L2, ESSTIN, Université de Lorraine, France.

Master : Optimisation, 30 h eq. TD, M1, ESSTIN, Université de Lorraine, France.

### 9.2.2. Supervision

HdR : Michel Mehrenberger, *Inégalités d'Ingham et schémas semi-lagrangiens pour l'équation de Vlasov*, 5 October 2012, Coordinator: Eric Sonnendrücker

PhD in progress : Céline Caldini , *Collisions dans les modèles gyrocinétiques*, Advisor: Mihai Bostan

PhD in progress : Pierre Glanc, *Approximation numérique des équations de Vlasov par des méthodes de "remapping" conservatifs*, Advisors: Nicolas Crouseilles, Emmanuel Frénod, Philippe Helluy and Michel Mehrenberger

PhD in progress : Nhung Pham, *Méthodes fluides généralisées pour les plasmas*, Advisor: Philippe Helluy

PhD in Progress : Michel Massaro, *Résolution numérique de lois de conservation sur architectures multicores*, Advisors: Philippe Helluy, Catherine Mongenet.

PhD in progress : Christophe Steiner, *Etudes de l'opérateur de gyroviscosité et de son couplage avec les équations de Vlasov gyrocinétiques*, Advisors: Nicolas Crouseilles and Michel Mehrenberger

PhD in progress : Mathieu Lutz, *Etude théorique et numérique de l'approximation gyrocinétique*, Advisors: Emmanuel Frénod and Eric Sonnendrücker

PhD in progress : Mohamed Ghattassi, *Analyse et Contrôle d'un Four*, Université de Lorraine, Advisor: Jean Roche.

PhD in progress : Takashi Hattori, *Full wave modeling of lower hybrid current drive in tokamaks*, Université de Lorraine, Advisors: Simon Labrunie and Jean Roche.

### 9.2.3. Juries

Simon Labrunie participated to the following Ph.D. defense committees :

- Jean-Yves Moller, Ph.D. at Université de Lorraine, Title: *Eléments fins courbes et accélération pour le transport de neutrons*, January 2012. Simon Labrunie was co-director together with Richard Sanchez from CEA Saclay.
- Sébastien Cambon, Ph.D. at INSA Toulouse. Title: *Méthodes d'éléments fins d'ordre élevé et d'équations intégrales pour la résolution de problèmes de furtivité radar d'objets à symétrie de révolution*, July 2012.

### 9.3. Popularization

- October 2012 : Laurent Navoret gave a popularization talk, entitled "La valse relaxante des particules" and about the Landau damping, for the "Fête des sciences 2012" in Strasbourg.
- December 2012 : Philippe Helluy gave a talk entitled: "How to solve PDE on GPU" to high school students at IUFM d'Alsace.

## **CORIDA Project-Team**

## **9. Dissemination**

### **9.1. Scientific Animation**

Most of the members of the team are regular reviewers of major journals of the field and participate to major conferences. We give here below a selection of our other activities or responsibilities.

- Xavier Antoine and Karim Ramdani were members of the organizing committee of the “Journées de Metz 2012”.
- Fatiha Alabeau is member of the National Committee of the CNRS, section 41, member of the AERES committees for the CEREMADE (University Paris-Dauphine) and MAP5 (University Paris Descartes) and member of the Administration Council of the S.M.A.I., was member of the organizing committee of MCPIT2013 "Modelling, Control and Inverse Problems for the Planet Earth in all its states", Conference of the GDRE CONEDP and for “Mathematics of the Planet Earth, co-organisation”, november 18–23 2013, Institut Henri Poincaré, Paris, France and of the thematic school of the CNRS, GDRE CONEDP, “Control of PDEs, interactions and applicative challenges”, november 5–9 2012, CIRM Luminy, France, and is member of the editorial board of the journal Evolution Equations and Control Theory (EECT), American Institute of Mathematics and Sciences (AIMS)
- Antoine Henrot is head of Fédération Charles Hermite (FR CNRS 3198) which is a Federation of four scientific units: CRAN (Research Center for Automatic Control), IECN (Institut Elie Cartan of Nancy), LMAM (Mathematical Center of research in Metz), LORIA ((Lorraine Laboratory of IT Research and its Application), elected to the Administrative Council of the University of Lorraine in June 2012, and scientific Delegate for Mathematics at AERES (the French Agency for Evaluation of Research) since September 2012.
- Marius Tucsnak became senior Member of Institut Universitaire de France in 2012 and is member of the editorial boards of ESAIM COCV, Journal of Mathematical Fluid Dynamics (New) and Revue Roumaine de Mathématiques Pures et Appliquées (New).

### **9.2. Teaching - Supervision - Juries**

#### **9.2.1. Teaching**

Most of the members of the team have a teaching position (192 hours a year) in Université de Lorraine.

- Fatiha Alabeau has a full time full professor position in the University of Metz;
- Xavier Antoine has a full time full professor position at INPL;
- Thomas Chambrion has a full time associate professor position at ESSTIN;
- Antoine Henrot has a full time full professor position at INPL;
- Bruno Pinçon has a full time associate professor position at ESIAL;
- Lionel Rosier has a full time full professor position at ESSTIN;
- Jean-François Scheid has a full time associate professor position at ESIAL;
- Marius Tucsnak has a full time full professor position at UHP;
- Julie Valein has a full time associate professor position at ESSTIN.

### **9.2.2. Supervision**

PhD : [11] Ghislain HAINE, “Observateurs en dimension infinie. Application à l’étude de quelques problèmes inverses”, Université de Lorraine, October 22, 2012. Supervisor: Karim Ramdani.

PhD: Jérôme Lohéac, “Contrôle en temps optimal et nage à bas nombre de Reynolds”, Université de Lorraine, December 6th, 2012. Supervisors: Marius Tucsnak and Jean-François Scheid (IECN and EPI Corida).

PhD in progress : Tatiana Manrique, “Stratégies efficaces pour la commande de véhicules hybrides”, Université de Lorraine. Supervisors: Gilles Millerioux (CRAN, Université de Lorraine) and Thomas Chambrion (IECN and EPI Corida).

PhD in progress: Chi Ting Wu, title not available yet, Université de Lorraine. Supervisors: Marius Tucsnak and Julie Valein (IECN and EPI Corida).

## TOSCA Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

- M. Bossy is a member of the Scientific Committee of the *École Doctorale “Sciences Fondamentales et Appliquées”* of the Université de Nice – Sophia Antipolis.
- M. Bossy is a member of the *Collectif Andromède* of the PACA Region council.
- M. Bossy is a elected member of the Inria Evaluation Board, a member of the NICE Committee of Inria Sophia Antipolis –Méditerranée.
- M. Deaconu is a member of the *COST-GTAI (Groupe de Travail Actions Incitatives)* of Inria, of *Comité des Projets* and *Bureau du Comité des Projets* at Inria Nancy, Grand-Est.
- M. Deaconu is a member of the *Conseil de Laboratoire* at Elie Cartan Institute in Nancy.
- M. Deaconu organized the session *Probabilités Numériques* in the *11th Colloque Franco-Roumain de Mathématiques Appliquées* held in Bucharest in August.
- A. Lejay is member of a editorial board of the collection *Séminaire de Probabilités*.
- A. Lejay is member of the scientific committee of the *Journées de Probabilités*.
- A. Lejay is general Secretary of Société des Mathématiques Appliquées et Industrielles (SMAI).
- A. Lejay is elected member of the Commission du Personnel of the Institut Élie Cartan.
- A. Lejay is member of the COMIPERS at Inria Nancy Grand-Est.
- D. Talay served as the Scientific Deputy of Inria Sophia Antipolis — Méditerranée.
- D. Talay, jointly with F. Delarue (Université de Nice Sophia Antipolis) and G. Pagès (Paris 6 University), organized the workshop ERGONUM in Sophia Antipolis in June.
- D. Talay served as an Associate Editor of: *Stochastic Processes and their Applications*, *ESAIM Probability and Statistics*, *Stochastics and Dynamics*, *SIAM Journal on Numerical Analysis*, *SIAM Journal in Financial Mathematics*, *Journal of Scientific Computing*, *Monte Carlo Methods and Applications*, *Oxford IMA Journal of Numerical Analysis*, *Communications in Applied Mathematics and Computational Science*, *Éditions de l'École Polytechnique*. He also served as the Co-editor in chief of *MathematicS in Action*.
- D. Talay is serving as a member of the Advisory Board of the Centro de Mathematica da Universidade do Porto (Portugal).
- D. Talay participated to a junior position recruitment committee at Paris 6 University.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

Master : M. Bossy, *Continuous Probabilistic Models with Applications in Finance*, 45h, M2 IMAFA (*Informatique et Mathématiques Appliquées à la Finance et à l'Assurance*), Ecole Polytechnique Universitaire, Univ. Nice – Sophia Antipolis, France.

Master : M. Bossy, *Risk management on energetic financial markets*, 13.5h, Master *Ingénierie et Gestion de l'Energie*, École des Mines de Paris at Sophia-Antipolis, France.

Master : M. Bossy *Particle Methods*, 18 h, Master 2 *Probabilité et Applications* at Université Paris 6, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 13.5h, M1, Ecole des Mines de Nancy, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 22.5h, M2, Ecole des Mines de Nancy, France.

Licence: P. Charton *Evaluation des méthodes d'analyse appliquées aux sciences de la vie et de la santé*, 27h, L1, Univ. de Lorraine, France.

Licence: P. Charton *Outils théoriques : probabilités statistiques*, 37h, L3, Univ. de lorraine, France.

Master: M. Deaconu, *Stochastic modeling*, 30h, M2, Université de Lorraine, France.

Master: M. Deaconu, *Simulation of random variables*, 9h, M1, Ecole des Mines de Nancy, France.

Master : A. Lejay, *Probabilistic Numerical methods for Mathematical Finance*, 28.5h, M2, Université de Lorraine (Metz), France.

Master : A. Lejay, *Numerical methods*, 22.5h, M2, Université de Lorraine (Nancy), France.

Master: D. Talay, *Stochastic Flows*, 12h, M2 *Probabilités et Applications* and M2 *Probabilités et Finance* at Université Paris 6, France.

Master: E. Tanré, *Advanced numerics for Computational Finance*, 30 h, M2, UNSA (Mathmodes Erasmus Mundus), France.

Master: E. Tanré, *Numerical Probability in Finance*, 12 h, M2, Ecole PolytechNice (IMAFa), France.

Master: E. Tanré, *Numerical Methods in Finance*, two sessions with 18 h, M2, ULB (University Certificates in Financial and Insurance Risk Modelling And Quantitative Methods in Finance), Belgium.

Licence : D. Villemonais, *Probabilités*, 21h, L3, École des Mines de Nancy, France.

Master: L. Violeau, *Continuous Probabilistic Models with Applications in Finance* (exercice classes), 20h, M2 IMAFA (*Informatique et Mathématiques Appliquées à la Finance et à l'Assurance*), Ecole Polytechnique Universitaire, Univ. Nice, France.

Licence: L. Violeau, *Probabilty and Statistics* (exercice classes), 20h, L3, Ecole Polytechnique Universitaire, Univ. Nice, France.

### 9.2.2. Supervision

- PhD in progress: Paul Charton, *Hedging strategies for wind energy prices*, September 2010, M. Deaconu and A. Lejay.
- PhD in progress: Julien Claisse, *Stochastic control of population dynamics*, September 2010, N. Champagnat, D. Talay.
- PhD in progress: Dalia Ibrahim, *Mathematical modelling for technical analysis techniques*, November 2009, D. Talay and E. Tanré.
- PhD in progress : Lionel Lenôtre, *Monte Carlo methods for discontinuous media*, Université Rennes 1, started in October 2012, Jocelyne Erhel (IRISA), Antoine Lejay and Géraldine Pichot (IRISA).
- PhD in progress : Geoffrey Nichil, *Provisionnement en assurance non-vie et optimisation du calcul du SCR*, 2011, S. Herrmann and P. Vallois.
- PhD in progress: Sebastian Niklitschek-Soto, *Discretized stochastic differential equations related to one-dimensional partial differential equations of parabolic type involving a discontinuous drift coefficient*, September 2010, D. Talay.
- PhD in progress: Nicolas Perrin, *Stochastic methods in molecular dynamics*, October 2009, M. Bossy, N. Champagnat, D. Talay.
- PhD in progress: Laurent Violeau, *Stochastic Lagrangian Models and Applications to Downscaling in Fluid Dynamics*, October 2010, M. Bossy and A. Rousseau.

### 9.2.3. Juries

- M. Bossy reported on the Ph.D. thesis of Lokman Abbas-Turki, Université Paris-Est.

- A. Lejay was an expert for the thesis of N. Marie (Université Paul Sabatier, Toulouse, France).
- D. Talay reported on the Habilitation à Diriger les Recherches of M. Benalaya (Université Paris 13), and on the Ph.D. thesis of N. Millot (Ecole Centrale) and N. Belaribi (University Paris 13). He also chaired the Committee for the Habilitation à Diriger les Recherches of A. Gloria (Université de Lille).

### 9.3. Popularization

- A. Lejay is a member of the organizing committee of the *Forum des lauréats des prix en informatique et mathématiques appliquées* (Inria & SMAI) held in Paris in December 2012.

### 9.4. Participation to congresses, conferences, invitations...

- M. Bossy gave invited talks at the *IMA Workshop Mathematics of the New Financial Systems University of Minnesota* in May and at the *Journées MAIRCI, Bull Grenoble* in September.
- M. Bossy gave talks at the *workshop MathAmSud* at Santiago, Chile in January and at the *Conference in Energy Finance at WPI* at Vienna, Austria in September.
- N. Champagnat gave a 4h lecture on *Modèles stochastiques individu-centrés en dynamique adaptative et étude du branchement évolutif* at the Summer School *Modélisation en dynamique des populations et Évolution: Probabilités et EDP* in September at La Londe les Maures.
- N. Champagnat gave talks at the MBI Workshop on *Evolution and Spread of Disease* in Columbus, Ohio, USA in March, at the Conference on *Probability, Population Genetics and Evolution* at the CIRM in Marseille in June, at the *6th European Congress of Mathematics (6ECM)* in Krakow in July and at the *XIème Colloque Franco-Roumain de Mathématiques Appliquées (CFR2012)* in Bucarest in August.
- N. Champagnat gave seminar talks at the SMILE Seminar on *Stochastic Models for the Inference of Life Evolution* at Collège de France, Paris, in March, at the *Rencontres de la Chaire MMB (Modélisation Mathématique et Biodiversité)* at Ecole Polytechnique, Palaiseau in June, at the workshop *Modèles stochastiques pour l'écologie et la biologie* of the Labex Numev in Montpellier in October, and at the *Séminaire de Probabilités de l'Institut de Mathématiques de Toulouse* in Toulouse in November.
- M. Deaconu gave invited talks at the *Workshop, Sequential Monte Carlo Methods and Efficient Simulation in Finance* at the Ecole Polytechnique in Paris in October, at the *Workshop, Perspective asupra cecetarii matematice in societatea bazata pe cunoastere*, organisé dans le cadre de la Conférence *Diaspora in Cercetarea Stiintifica si Invatamantul Superior in Romania*, in October, at the *Ecole Polytechnique Fédérale de Lausanne (EPFL)* in Lausanne in July.
- M. Deaconu gave a seminar talk at the *Séminaire de Probabilités et Statistiques de l'Institut de Mathématiques de Bourgogne*, in January.
- D. Ibrahim gave a talk at the *Chair of Quantitative Finance seminar* of Centrale Paris, in April.
- J. Inglis participated in the international colloquium *Random Models in Neuroscience* at the Université Pierre et Marie Curie (Paris) in July.
- A. Lejay gave a talk at the conference *Recent Developments in Stochastic Analysis* at Lausanne (Switzerland) in February and at the workshop *Rough Paths and PDEs* at Oberwolfach (Germany) in August.
- A. Lejay gave seminar talks at the probability seminars of Université du Maine (Le Mans), Université de Bourgogne, Université de Grenoble and Université de Rennes.
- D. Talay gave talks at the *workshop MathAmSud* at Santiago, Chile in January and at the XV Ecole Franco-Espagnole Jacques-Louis Lions at Malaga in September. He also gave several seminars at Ecole Polytechnique and a seminar at Columbia University in October.



- D. Talay gave a plenary conference at ICNAAM 2012 in Greece in September.
- D. Talay gave mini-courses at the Séminaire Bachelier (Institut H. Poincaré, Paris) in January and February, and at ICERM (Brown University) in October.
- E. Tanré gave one talk at the *MathAmSud Workshop* in Santiago, Chile in January and two talks at the *CLAPEM (Latin American Congress of Probability and Mathematical Statistics)* in March at Vina del Mar, Chile.
- E. Tanré gave an invited talk at the International Colloquium *Random Models in Neuroscience* at the Université Pierre et Marie Curie (Paris) in July.
- E. Tanré gave a seminar talk at the *Probability Seminar* of Univ. of Bourgogne (Dijon).
- D. Villemonais gave a 6h lecture on *Distributions quasi-stationnaires* at the *Université de Marseille* in June 2012.
- D. Villemonais gave talk at the *Inhomogeneous random systems* annual workshop at the Institut Henri Poincaré in Paris in January 2012.
- L. Violeau gave a talk at the *XIème Colloque Franco-Roumain de Mathématiques Appliquées (CFR2012)* in Bucarest in August.

## BIGS Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

Conferences organized by our team in 2012:

- STochastic ANalysis days, 9-11 May: A 3 days international meeting gathering some of the best specialists in stochastic analysis and applications (including statistics and fractional fields). Organizers: C. Lacaux, I. Nourdin, S. Tindel.
- Journée Fédération Charles Hermite, 15 October: Modeling for Cancer Therapies. Organizers: W. Blondel, S. Tindel.
- Journée Modélisation des Biomolécules et leurs Interactions, 25-26 October. Organizers: M-D. Devignes, Aurélie Muller-Gueudin.
- Weekly Biostats Seminar at IECN, organized by Aurélie Muller-Gueudin. See <http://www.iecn.u-nancy.fr/~muller/gt.html>.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

BIGS is a team whose composition includes University staff only. All members teach numerous courses, ranging from L1 to M2 levels.

### 9.2.2. Supervision

HDR : C. Lacaux, *Contributions à la notion d'autosimilarité et à l'étude des trajectoires de champs aléatoires*, Université de Lorraine, 6/12/2012. See document [1].

PhD in progress: R. Bar, *Analyse de données en ligne*, from 01/09/2010. Advisor: J-M. Monnez.

PhD in progress: B. Lalloué: *Analyse des données dans l'étude de l'influence de caractéristiques socio-spatiales sur des événements de santé*, from 01/09/2010. Advisor: J-M. Monnez.

PhD in progress: R. Bonidal: *Analyse des systèmes discriminants multi-classes à grande marge*, from 01/09/2009. Advisors: Y. Guermeur, S. Tindel.

PhD in progress: G. Nichil, *Claim reserving for insurance*, from 01/09/2010. Advisors: S. Herrmann (University of Dijon), P. Vallois.

### 9.2.3. Juries

PhD : S. Bounebaché, *Stochastic partial differential equations of parabolic type with singular potential*, Université de Paris 6, June 2012. Advisor: L. Zambotti. Referee: S. Tindel.

PhD: J. Valentin, *Weak Itô formulae*, Telecom Paristech, June 2012. Advisor: A.S. Üstünel. Referee: S. Tindel.

HDR: B. Sausseureau: *Equations aux dérivés partielles stochastiques; Equations différentielles stochastiques dirigées par un mouvement brownien fractionnaire*, Université de Franche Comté, November 2012. Referee: S. Tindel.

## **CORTEX Project-Team**

# **8. Dissemination**

## **8.1. Scientific Animation**

### **8.1.1. Responsibilities**

- Principal Investigator of MATHANA (A. Hutt)
- Member of the Board of Directors in Organization of Computation Neuroscience (A. Hutt)
- Member of the steering committee of the french association for Artificial Intelligence (AFIA) (F. Alexandre)
- Member of the board of directors of the LORIA laboratory (B. Girau).
- Head of the Complex systems and AI department of the LORIA laboratory (B. Girau)
- Member of the scientific culture commission (N. Rougier)
- Elected member of the laboratory council (N. Rougier)
- Member of the Comité du Développement Technologique (L. Bougrain)
- Member of the “Bureau du Comité de Projets” (Steering Committee of the Project-Team Committee) (F. Alexandre, until Aug 2012)
- F. Alexandre and T. Viéville are members (and moderators) of the scientific committee of NeuroComp, the initiative to gather the french community in Computational Neuroscience (annual conference and web site: <http://www.neurocomp.fr/>).

### **8.1.2. Review activities**

- Reviewing for journals: Applied Intelligence, RIA, J. Physiol. (F. Alexandre), Physica A, Physical Review E, Physical Review Letters, Neuroimage, Cognitive Neurodynamics, J. Biological Physics, Mathematical Neuroscience, Philosophical Transactions of the Royal Society A (A. Hutt)
- Reviewing for journals: Applied Intelligence, RIA, J. Physiol. (F. Alexandre), Physical Review Letters, Neuroimage, Cognitive Neurodynamics, Mathematical Neuroscience (A. Hutt)
- Member of program committees: Reconfig (B. Girau), CAP (L. Bougrain, F. Alexandre)
- Reviewing (A. Hutt) for the NWO (Science Foundation Netherlands), the ANR and several french regional and territorial agencies (F. Alexandre)

### **8.1.3. Workshops, conferences and seminars**

- Organization of the NeuroComp/KEOPS'12 workshop, Beyond the retina: from computational models to outcomes in bioengineering. Focus on architecture and dynamics sustaining information flows in the visuomotor system. Bordeaux, October the 10th and 11th (F. Alexandre and T. Viéville). <http://www.neurocomp.fr/neurocomp-2012>
- Co-organization of the “Robots et corps” conference, 18/10/2012, Nancy (N. Rougier)
- Co-organization of CAP'12, French conference on Machine Learning, 23-25/05/2012, Nancy (L. Bougrain)
- Invited speaker and project leader on "Inverse reinforcement learning for a brain-computer interfaces driven robotic arm control", 8th International Summer Workshop on Multimodal Interfaces, eINTERFACE 2012, 02-27/07/2012, Metz (L. Bougrain)
- Invited speaker on “Brain-Machines Interfaces”, "Robots et corps" conference, 18/10/2012, Nancy (L. Bougrain)

- Speaker on "Brain-computer interfaces", meeting on ICT for autonomy during the Autonomic event, 18-19/10/2012, Metz (L. Bougrain)
- Exhibitor on Neuroprosthetics for the Inria Industry meeting on Numerical Simulation for Healthcare and Wellbeing, 21/11/2012, Strasbourg (L. Bougrain)

#### **8.1.4. International cooperations**

- in neurophysiology with MPI for Biological Cybernetics (Tubingen)
- in general anaesthesia with University of Auckland (New Zealand)
- on modeling visual attention with university of Chemnitz (Germany)
- in brain-computer interface with the Universidad Autónoma Metropolitana (UAM, Mexico)
- in spike sorting with university of Princeton (USA)

## **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 and in cognitive science. Moreover, several members of the team are implied in various kinds of academic responsibilities: Laurent Bougrain is responsible for the relations of the Master In Computer Science with professional partners, Bernard Girau is head of the RAR speciality of this Master, and member of the Conseil de Collegium Science et Technologie of the University of Lorraine

## **8.3. Popularization**

- The other half-time of Thierry Viéville's activity is dedicated to popularization of science (<http://science-info-lycee.fr>, <http://interstices.info>) with about 10 conferences and 20 days of scientific animation.
- Organization of a talk series on Image, Perception, Action & Cognition on a montly basis at the Inria-Nancy Grand Est laboratory (<http://ipac.loria.fr/>, Y. Boniface, N. Rougier).
- Participation to *Les cafés des sciences et techniques*, "Les Robots, le futur... demain ?" 22/11/2012, Epinal (N. Rougier)
- Participation to *Festival du film du chercheur*, 10/06/2012, Nancy (N. Rougier, L. Bougrain)
- Talk on Neuroprosthetics for the Science's day 2012 at Jules Ferry's school, 11/11/2012, Vandoeuvre-lès-Nancy (L. Bougrain)

## MASAIE Project-Team

# 8. Dissemination

## 8.1. Scientific Animation

### 8.1.1. International conferences

#### 8.1.1.1. CIMPA School

A. Iggidr is one of the three scientific directors and organizers of a CIMPA-UNESCO-MESR-MICINN-MOROCCO research School, held in Casablanca, October 1-12 : EpiCasa12 – Introduction to epidemiology: mathematical and statistical models and methods.

G. Sallet was also one of the lecturers.

This research school aims at providing the basic notions in epidemiology and modelling to students, or researchers, in mathematics and statistics, so that they can apply their knowledge to solve practical problems, that is:

- to understand scientific papers describing experiments or data acquisition in epidemiology, or dealing with mathematics applied to epidemiology;
- to perform classical data analyses;
- to model a simple epidemiological problem;
- to participate in research projects in epidemiology together with biologists.

#### 8.1.1.2. Conference Saint-Louis

MASAIE and University of Gaston Berger have organized a conference in honor of Gauthier Sallet in Saint-Louis (Senegal) from December 3 to 7, 2012 ( [http://www.ugb.sn/?option=com\\_content&view=article&id=217](http://www.ugb.sn/?option=com_content&view=article&id=217)). This conference was preceded by a school (November 29-30).

The scientific committee was composed of Julien Arino, Pierre Auger, Jean-Michel Coron, Jean-Luc Gouze, Claude Lobry, Mary-Teuw Niane, Michel Langlais, Hamidou Touré. The conference was sponsored by Inria, IRD, UGB, MESR Senegal. More than 50 participants from control theory, population dynamics and epidemiology participated to these events. The journal "Mathematical Control and Related Fields (MCRF)" will offer a special issue in connection to the Conference in honor of G. Sallet.

### 8.1.2. Expertise, scientific animation

G. Sallet was expert to synthesize all the studies carried out in WorkPackage 3, "Modelling and Simulations", WP leader Dr. Yves Dumont (CIRAD – AMAP). 25th March until 5th April at the CRVOI, La Réunion Island

G. Sallet gives conferences in the network M3D (Mathématiques et Décision pour le Développement Durable) : Structuration dans les modèles épidémiologiques. May 7-10, 2012. Oleron (<http://reseau-m3d.fr/>)

G. Sallet was invited by UMMISCO IRD and GRIMCAPE (LIRIMA) as an expert to participate to "modélisation mathématique des maladies infectieuses en contexte forestier". September 25-29, 2012.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Master : G. Sallet, ODE and mathematical epidemiology, 30h, M2, Université Gaston Berger (Saint-Louis), Senegal.

### **8.2.2. Supervision**

Phd Berge Tsanou (MASAIE),

Sandwich these ( UPVM-université de Yaoundé I, Cameroun).

Etude de quelques modèles épidémiologiques de métapopulations : application au paludisme et à la tuberculose. Université de Lorraine, Metz, January, 13, 2012.

Phd : Josephine Wairimu Kagunda (MASAIE)

Sandwich these ( UPVM-université Nairobi, Kenya).

Mathematical Analysis and Dynamical Systems Modeling of Highland Malaria in Western Kenya. Université de Lorraine, Metz, November, 23, 2012.

Phd : Leontine Nkague Nkamba (MASAIE)

Sandwich these ( UPVM-université Gaston Berger Saint-Louis, Senegal).

Robustesse des Seuils en Épidémiologie et Stabilité Asymptotique d'un Modèle à Infectivité et Susceptibilité Différentielle. Université de Lorraine, Metz, November, 23, 2012.

Phd in progress : Derdei Bichara. Application de la théorie des observateurs à l'identification des paramètres de modèles épidémiologiques. Estimated date defence : February 2013

Phd in progress: Lena Tendeng. Modélisation de la bilharziose et validation de modèles. Estimated date defence : March 2013

## **SHACRA Project-Team**

# **9. Dissemination**

## **9.1. Scientific Animation**

### **9.1.1. Journals, Conferences, Workshop**

- **Jérémie Dequidt** has been reviewer for the following conference and journal:
  - Medical Image Computing and Computer Assisted Intervention (MICCAI)
  - Transaction on Medical Imaging (TMI)
  - Computer Methods and Programs in Biomedicine (CMPB)
- **Christian Duriez** has been reviewer for the following conference and journals:
  - Computer Methods in Applied Mechanics and Engineering (CMAME),
  - Computer Methods and Programs in Biomedicine (CMPB),
  - IEEE Transaction on Medical Imaging (TMI),
  - IEEE Transactions on Biomedical Engineering (TBME-EMBS)
  - IEEE Transaction on Haptics (ToH),
  - Proceedings of IEEE,
  - Computer and Graphics,
  - Eurographics 2012,
  - Eurohaptics 2012,
  - International Conference on Control, Automation, Robotic and Vision (ICARCV 2012),
  - IEEE Virtual Reality Conference (VR 2012),
  - Medical Image Computing and Computer Assisted Intervention (MICCAI 2012)

member of the following committees:

- Associate Editor of WorldHaptic Conference 2013
- **Jérémie Allard** has been member of the following committees:
  - Workshop on Virtual Reality Interaction and Physical Simulation (VRIPHYS)

and reviewer for the following conference and journal:

- SIGGRAPH
- Computers & Graphics

## **9.2. Teaching - Supervision - Juries**

### **9.2.1. Teaching**

Licence: Jeremie Dequidt, Programming, 48h, L3, Polytech'Lille, France

Licence: Jeremie Dequidt, Database, 12h, L3, Polytech'Lille, France

Licence: Jeremie Dequidt, Advanced Programming, 6h, L3, Polytech'Lille, France

Licence: Jeremie Dequidt, Hardware, 31h, L3, Polytech'Lille, France

Licence: Jeremie Dequidt, Unix Systems, 24h, L3, Polytech'Lille, France

Licence: Jeremie Dequidt, Numerical Analysis, 30h, L3, Polytech'Lille, France

Master: Jeremie Dequidt, 3D Modeling, 5h, M2, Polytech'Lille, France

Licence: Alexandre Bilger, Programming, 48h, L1, Université Lille 1, France

Master: Alexandre Bilger, Programming, 14h, L1, Polytech'Lille, France

Licence: Alexandre Bilger, Data Encoding, 32h, L1, Université Lille 1, France

Licence: Nazim Haouchine, Programming, 22h, L3, Polytech'Lille, France

Licence: Nazim Haouchine, Database, 36h, L3, Polytech'Lille, France

Licence: Ahmed Yureidini, Database, 32h, L1, Université de Lorraine, France

Licence: Ahmed Yureidini, Programming, 36h, L1, Université de Lorraine, France

Licence: Ahmed Yureidini, Hardware Architecture, 36h, L1, Université de Lorraine, France

### 9.2.2. Supervision

PhD & HdR :

PhD: **Yiyi Wei**, Discrete Exterior Calculus Approach for Aneurysm Related Simulation, USTL, 23/03/2012, **Stéphane Cotin and Songde Ma**

PhD in progress : **Ahmed Yureidini**, Modélisation d'organes par fonctions implicites, 2009, **Stéphane Cotin and Erwan Kerrien**

PhD in progress : **Hugo Talbot**, Real-time simulation of cardiac ablation in the framework of arrhythmia, 2010, **Stéphane Cotin and Hervé Delingette**

PhD in progress : **Vincent Majorczyk**, Simulation de Fluide GPU, 2010, **Stéphane Cotin and Jérémie Allard**

PhD in progress : **Guillaume Kazmitcheff**, Modélisation et simulation d'interventions chirurgicales sur l'oreille moyenne, 2011, **Stéphane Cotin and Christian Duriez**

PhD in progress : **Alexandre Bilger**, Biomechanical simulation for Deep Brain Stimulation, 2011, **Stéphane Cotin and Christian Duriez**

PhD in progress : **Zhifan Jiang**, Recalage d'images déformables pour la biomécanique, 2011, **Stéphane Cotin, Jérémie Dequidt, Mathias Brieu**

PhD in progress : **Tomas Golembiowski**, Modèles déformables adaptatifs pour la simulation de structures creuses, 2011, **Stéphane Cotin, Ludek Matyska, Christian Duriez**

PhD in progress : **Julien Bosman**, Simulations à base de particules et interactions multi-physiques en temps-réel, 2011, **Stéphane Cotin and Christian Duriez**

PhD in progress : **Mouhamadou Diallo**, Modélisation biomécanique du prolapsus génital, 2011, **Mathias Brieu, Pauline Lecomte, Christian Duriez**

PhD in progress : **Nazim Haouchine**, Augmented Reality Tools for Minimally Invasive Hepatic Surgery, 2012, **Stéphane Cotin, Marie-Odile Berger, Jérémie Dequidt**

PhD in progress : **Francois Dervaux**, Image driven simulation for interventional radiology procedures, 2012, **Stéphane Cotin, Jérémie Dequidt, Erwan Kerrien**

### 9.2.3. Juries

- **Jérémie Allard** was in the examination committee of :
  - Guillaume Bousquet, October 2012, University of Grenoble

## 9.3. Popularization

During this year, team researchers and students animated several scientific events. The different scientific animations are listed below:

- MICCAI 2012: some of the team students helped for the organization of the MICCAI conference that occurred in October in Nice,



- Futur en Seine: a scientific exhibition took place in Paris (in the 104 building) the 16th and 17th June 2012 and was a public event. Researchers and students presented demonstration videos done using SOFA during the whole week-end.
- Recontre Inria-Industrie: this was a public event taking place in Strasbourg the 21st of November 2012. Researchers and students presented demonstration videos done using SOFA during the whole week-end.
- Hugo Talbot did a visit in the "Humanoids and Intelligence Systems" laboratory at the Karlsruhe Institute for Technology and presented his Ph.D. work at this occasion.
- Unithe ou Cafe: this is a vulgarization event at Inria presenting the research work done by Inria teams and is dedicated to all employees. Hugo Talbot presented his Ph.D. work during a session called "La cardiologie au coeur du numerique".
- Sofa Training Days Grenoble 2012: this is a 5 days-learning session held in october, with more than 20 attendees (researchers, ingeneers...). Various topics were presented by several members of the team.
- Some high school students have spent a week in the team and have been interested on topics related to Medical Simulation and in a large view to scientific researches.

## ALGORILLE Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

Since October 2001, J. Gustedt is Editor-in-Chief of the journal *Discrete Mathematics and Theoretical Computer Science* (**DMTCS**). He is member of the recruiting committee for PhDs and postdocs of that center and has been member in three recruitment committees for university positions in 2012.

In 2011 and 2012, J. Gustedt also served as head of the *Networks, Systems and Services* department of the LORIA computer science lab and through that as a member of the directory of LORIA and of several recruiting commissions of Université de Lorraine.

Since 2005, S. Vialle is head of the RGE action ("Réseau Grand Est") of the GDR ASR of CNRS. For SUPÉLEC, S. Vialle served as head of the IMS research team (2010–2012), and is now leader of the IDMaD research group (focussed on distributed computing and big data) inside the IMS team.

Since 2010, J. Gossa serves as expert for the French ministry of science and education and is in charge of reviewing industrial R&D expenses and *Credit Impôt Recherche* reports.

Since 2011, S. Contassot-Vivier serves as an expert for the French ministry of education and research in the DGRI/MEI mission and is in charge of reviewing academic projects between french and foreign teams.

L. Nussbaum was member of the organization and program committee for the **Grid'5000 Winter School 2012**.

M. Quinson has served as program committee member of the 27th ACM/IEEE International Parallel & Distributed Processing Symposium (IPDPS'13).

We organized the first Realis event this year. Associated to the Compas'13 conference, this workshop aims at providing a place to discuss the reproducibility of the experiments basing the publications submitted to the main conference. L. Nussbaum was PC chair (with O. Richard) while M. Quinson was PC member.

L. Nussbaum is appointed as an expert on research grids by the direction of the Inria Nancy–Grand Est center.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

IUT Charlemagne: Lucas Nussbaum, Systems, 40 ETD, 1ère année (L1), Université de Lorraine, France

IUT Charlemagne: Lucas Nussbaum, Networks, 70 ETD, année spéciale (L1/2), Université de Lorraine, France

IUT Charlemagne: Lucas Nussbaum, Installation of Linux, 20 ETD, Licence pro ASRALL (L3), Université de Lorraine, France

IUT Charlemagne: Lucas Nussbaum, Administration of applications, 24 ETD, Licence pro ASRALL (L3), Université de Lorraine, France

IUT Charlemagne: Sylvain Contassot-Vivier, "Algorithmique", 42 ETD, année spéciale (L1), université de Lorraine, France

Licence: Jens Gustedt, "algorithmique et programmation", 20 TD, niveau (L1), Université de Lorraine, France

Licence, Stephane Vialle, "modèle de programmation", 21 TD, L1, SUPELEC, France

MIAGE Nancy: Marion Guthmuller, "Réseaux", 50 ETD, M1, Université de Lorraine, France

Master: Sylvain Contassot-Vivier, “Algorithmique répartie et systèmes distribués”, 45 ETD, M1, université de Lorraine, France

Master: Sylvain Contassot-Vivier, “Systèmes communicants”, 24 ETD, M2, université de Lorraine, France

Telecom Nancy: Sylvain Contassot-Vivier, “Algorithmique des systèmes parallèles et distribués”, 32 ETD, 2ème année (M1), université de Lorraine, France

Telecom Nancy: Lucas Nussbaum, Networks and systems, Systems part (40h), 2ème année (M1), Université de Lorraine, France

ESSTIN Nancy: Sylvain Contassot-Vivier, “Calcul haute performance”, 42 ETD, 4ème année (M1), université de Lorraine, France

Master, Stephane Vialle, “systèmes d’information”, 39 TD, M1, SUPELEC, France

Master, Stephane Vialle, “calcul haute performance”, 62 TD, M2, SUPELEC, France

Engineering School, Stéphane Genaud, “systèmes informatiques et réseaux”, 72 TD, niveau L3, ENSIIE, France

Engineering School, Stéphane Genaud, “middleware”, 32 TD, niveau M1, ENSIIE, France

Master, Stéphane Genaud, “parallélisme, systèmes distribués et grilles”, 21 TD, M2, University of Strasbourg, France

Master, Stephane Vialle, “parallélisme, systèmes distribués et grilles”, 21 TD, M2, University of Strasbourg, France

Master, Stephane Vialle, “systèmes distribués et grilles”, 28 TD, M2, University of Strasbourg, France

In addition, Martin Quinson authored a pedagogic platform in collaboration with Gérald Oster (Score team of Inria Nancy Grand Est). This tool aims at providing an environment that is both appealing for the student, easy to use for the teacher, and efficient for the learning process. It is available from [its page](#). Its advantages for the learning process are described in [11].

### 9.2.2. Supervision

PhD: Wilfried Kirschenmann, *Towards sustainable intensive computing kernels*, University of Lorraine, October 17, 2012, Stephane Vialle & Laurent Plagne (EDF)

PhD in progress: Tomasz Buchert, *Orchestration of experiments on distributed systems*, since Oct 2011, Jens Gustedt & Lucas Nussbaum

PhD in progress: Marion Guthmuller, *Dynamic verification of distributed applications, using a model-checking approach*, since Oct 2011, Sylvain Contassot-Vivier & Martin Quinson

PhD in progress: Thomas Jost, *Solveurs linéaires creux sur GPU*, since Jan 2010, Bruno Lèvy & Sylvain Contassot-Vivier

PhD in progress: Soumeya Hernane, *Models and algorithms for consistent data sharing in high performance parallel and distributed computing*, since Oct 2007, Jens Gustedt & Mohamad Benyettou

### 9.2.3. Juries

In 2012, our team members participated to following thesis and habilitation committees:

Stéphane Genaud, rapporteur, Adrian Muresan, University of Lyon - École Normale Supérieure, France.

Jens Gustedt, member, Jean-Loup Guillaume (HDR), University Paris 6.

Martin Quinson, rapporteur, Silas De Munck, University of Antwerp, Belgium.

Martin Quinson, member, Sabina Akhtar, University de Lorraine, France.

Martin Quinson, member, Bogdan Cornea, University de Franche-Comté, France.

Stephane Vialle, member, Lokman Abbas-Turki, University of Paris-Est, France.

Stephane Vialle, rapporteur, Jonathan Caux, University Blaise Pascal of Clermont-Ferrand, France.

Sylvain Contassot-Vivier, member, Karim Dahman, université de Lorraine, France

Sylvain Contassot-Vivier, member, Tomás Navarrete Gutiérrez, université de Lorraine, France

Sylvain Contassot-Vivier, member, Wahiba Taouali, université de Lorraine, France

### 9.3. Popularization

Jens Gustedt is regularly blogging about efficient programming in particular the **C programming language**. He also is an active member of the **stackoverflow community** a technical Q&A site for programming and related subjects.

Martin Quinson acts as a member to the Inria-Nancy Grand Est committee for Scientific Mediation. He works on several activities to demonstrate the *algorithmic thinking* at the core of the Computer Science without requiring any computer or even electric devices. An intern was funded for two months by the national Inria fund toward science popularization on this topic. These activities were demonstrated several times this year by Thomas Jost, Marion Guthmuller, Sébastien Badia and Martin Quinson to during popularization events welcoming the public within our laboratory. They were also shown during the national **APMEP** days, a nationwide gathering of maths teachers at the secondary level. Martin Quinson was involved in popularization activities with Interstice <sup>1</sup> by writing short debunking articles (“Idées reçues”) for non computer scientists about the Church thesis and Turing’s work.

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<sup>1</sup><http://interstices.info>

## MADYNES Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

Olivier Festor is the Co-Chair together with Aiko Pras from University of Twente of the IFIP Working-Group 6.6 on Network and systems management. This working group is actively involved the animation of most major conferences in this research area and organizes frequent meetings and workshops on the domain.

Olivier Festor is the Co-chair together with Lisandro Zambenedetti Grandvile from the Federal University of Rio Grande do Sul (UFRGS) of the Internet Research Task Force (IRTF) Network Management Research Group since march 2011. We organized a Flow management workshop at the Inria premises in Paris during IETF 83.

Olivier Festor served as a TPC Member of the following 2012 events: IEEE/IFIP Network Operations and Management Symposium (NOMS'2012); IFIP IEEE in conjunction with ACM CNSM'2012; ICCVE'2012; Globecom CSSM'2012; PST 2012, AFRICOMM 2012 and Policy 2012.

Olivier Festor was Student Travel Grants co-chair for the IEEE/IFIP Network Operations and Management Symposium (IEEE NOMS'2012).

Olivier Festor is member of the board of editors of the Springer Journal of Network and Systems Management. He is member of the editorial board of the IEEE Transactions on Network and Service Management.

Olivier Festor server as a TPC Co-chair of the IEEE International Conference on Communications (IEEE ICC), Communication and Information System Security Symposium 2012. He also serves as a TPC member of the 2012 ICC Communication Software Services and Multimedia Applications Symposium (CSSMA).

Olivier Festor is the Research Director of EIT ICT Labs.

Isabelle Chrisment the Co-Chair together with Ahmed Serhrouchni from Telecom ParisTech of the IFIP Task Force 6.5 on Secure Networking This Task Force provides a framework for the organization of activities within the scope of secure networking. It facilitates international cooperation activities and exchanges in this area.

Isabelle Chrisment served as a TPC member of : the 6th International IFIP Conference on Autonomous Infrastructure, Management and Security (IFIP AIMS'2012); the 13th joint TC6 and TC11 International IFIP Conference on Communications and Multimedia Security (IFIP CMS'2012) ; the Communication and Information Systems Security Symposium in the IEEE International Conference on Communications (IEEE ICC'12); the 14th french-speaking workshop on Algorithms in Telecommunications (Algotel'2012).

Remi Badonnel served as a TPC member of : the IFIP International Conference on Autonomous Infrastructure, Management and Security (IFIP AIMS'2012, PhD Symposium); the IEEE International Conference on Communications (IEEE ICC'12, CISS); the IEEE/IFIP Network Operations and Management Symposium (IEEE/IFIP NOMS'2012); the IEEE/IFIP International Workshop on Management of the Future Internet (IEEE/IFIP MANFI'2012); the International Conference on Cloud Computing and Services Science (CLOSER'2012).

Remi Badonnel chaired sessions at the following conferences:

- the IEEE International Conference on Communications (IEEE ICC'12, CISS),
- the IEEE/IFIP Network Operations and Management Symposium (IEEE/IFIP NOMS'2012),
- the IEEE/IFIP International Workshop on Management of the Future Internet (IEEE/IFIP MANFI'2012),
- the IEEE/IFIP/In Assoc. with ACM SIGCOMM International Conference on Network and Service Management (IEEE/IFIP/In Assoc. with ACM SIGCOMM CNSM'2012).

Ye-Qiong Song served as a TPC Member of the following 2012 events: the 17th IEEE international conference on Emerging Technologies & Factory Automation (ETFFA'2012) ; the 9th IEEE international conference on Embedded Software and Systems (ICCESS 2012) ; the 9th IEEE international workshop on Factory Communication Systems (WFCS 2012) ; the 10th International Conference On Smart homes and health Telematics (ICOST 2012); Workshop on Assistance and Service robotics in a human environment at IROS 2012; the International Workshop on Cooperative Robots and Sensor Networks (RoboSense 2012) in conjunction with the 3rd International Conference on Ambient Systems, Networks and Technologies (ANT-2012) ; the IEEE International Conference on Internet of Things (iThings 2012) ; the 11th International Workshop on Real-Time Networks (RTN 2012).

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

There is a high demand on networking courses in the various universities in which LORIA takes part. This puts high pressure on MADYNES members which are all in charge of numerous courses in this domain. Especially the team professors and associate professors ensure more than the required amount of teaching obligation in their respective institutions: IUT, bachelor, master, ESIAL/TELECOM Nancy and École des Mines de Nancy engineering schools. In this section, we only enumerate the courses that are directly related to our research activity.

Laurent Andrey is the Head of Department of the Charlemagne IUT specialization on multimedia networking.

André Schaff is the Director of the ESIAL/TELECOM Nancy Engineering School. Isabelle Chriment is co-directing the school and is in charge of the students recruitment process. Remi Badonnel is heading the Telecommunications and Networks specialization of the 2nd and 3rd years at the ESIAL/TELECOM Nancy engineering school, and is also in charge of the 2nd year design and development projects at the same school. They teach the networking related courses in this cursus.

Laurent Ciarletta is heading the specialization Safe Systems Architecture of the Computer Science and IT department of the Ecole des Mines de Nancy ("Grande Ecole", Engineering School, Master degree level). He is most notably in charge of Advanced Networking, Middleware, Component-based software development, Pervasive Computing, Networking and Systems courses at the Ecole des Mines de Nancy. Notably, within the ARTEM alliance (ICN - Business School, Mines Nancy, Ecole d'Art / School of Art), he is a member of the Research Comitee, more specifically with the "Smart Working Spaces" research theme, and he is co-responsible for the "Businesses: the digital challenge *CORP 3.0*, *Entreprises : le défi numérique* and the *Imagineries and the Workspaces*, 2 classes within the ARTEM alliance (over 90 hours).

Team members are teaching the following courses:

Licence : Laurent Andrey, Introduction to networks, 56, niveau L1 (DUT), IUT nancy-Charlemagne, France

Licence : Laurent Andrey, Introduction to network services, 38, niveau L2 (DUT), IUT nancy-Charlemagne, France

Ecole Ingénieur : Rémi Badonnel, Networks and Services Management, 24, niveau M2 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Industrial Project, 25, niveau M2 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Networks and Systems, 32, niveau M1 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Advanced Courses on Networks and Systems, 34, niveau M1 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Algorithmics, Data Structures and Algebra, 32, niveau L3 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Design and Development Project, 16, niveau M1 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Initiation to Research Project, 18, niveau M1 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, Object-Oriented Programming, 32, niveau L3 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Rémi Badonnel, XML Design and Development, 20, niveau L3 Ingénieur, TELECOM Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Networking and Information System, 5, niveau L3 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Bootcamp (programming bootcamp), 16, niveau M1 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Operating Systems, 16, niveau M1 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Networking, 27, niveau M1 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Advanced Networking and Ambient Systems, 18, niveau M1 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Embedded Systems, 14, niveau M1 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Advanced Software Engineering, 18, niveau M1 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Middleware, 6, niveau M2 Ingénieur, Mines Nancy, France

Ecole Ingénieur : Laurent Ciarletta, Android development, 12, niveau M1 and M2 Ingénieur, Collegium Ingenieur and Mines Nancy, France

Master : Isabelle Chrisment, Sécurité des Réseaux et des Services, 12hTD, niveau M2, université de Lorraine, France

Ecole Ingénieur : Isabelle Chrisment, Langage C et Shell, 42hTD, niveau L3 Ingénieur, Telecom Nancy

Ecole Ingénieur : Isabelle Chrisment, Réseaux et Systèmes, 60hTD, niveau M1 Ingénieur, Telecom Nancy

Ecole Ingénieur : Isabelle Chrisment, Réseaux et Systèmes Avancés, 30hTD, niveau M1 Ingénieur, Telecom Nancy

Ecole Ingénieur : Isabelle Chrisment, , Routage Internet, 50hTD, niveau M2 Ingénieur, Telecom Nancy

Master : Isabelle Chrisment, Sécurité des Réseaux et des Applications, 18hTD, niveau M2, université de Lorraine, France

Ecole Ingénieur : Olivier Festor, P2P Algorithms, Protocols and Applications, 12, niveau M2 Ingénieur, Telecom Nancy & ENSEM, France

Ecole Ingénieur : Olivier Festor, Voix sur IP, Protocols and Applications, 9, niveau M2 Ingénieur, Telecom Nancy, France

Ecole Ingénieur : Abdelkader Lahmadi, Elements of Distributed Computing: algorithms and systems, 12, niveau M2 Ingénieur, ENSEM, France

Ecole Ingénieur : Abdelkader Lahmadi, Internet Protocols and Applications, 15, niveau M2 Ingénieur, ENSEM, France

Ecole Ingénieur : Abdelkader Lahmadi, Wireless Sensor Network Programming, 12, niveau M2 Ingénieur, ENSEM, France

Ecole Ingénieur : Abdelkader Lahmadi, Operating Systems and C language programming, 30, niveau M1 Ingénieur, ENSEM & Ecole des Mines de Nancy, France

Ecole Ingénieur : Abdelkader Lahmadi, Real time systems: concepts and programming, 30, niveau M1 Ingénieur, ENSEM & Ecole des Mines de Nancy, France

Ecole Ingénieur : Abdelkader Lahmadi, Relational Database, 20, niveau M1 Ingénieur, ENSEM, France

Ecole Ingénieur : Abdelkader Lahmadi, Java Programming, 50, niveau L1 Ingénieur, ENSEM, France

Ecole Ingénieur : Abdelkader Lahmadi, Computer Architecture ,50, niveau L1 Ingénieur, ENSEM, France

Ecole Ingénieur : Abdelkader Lahmadi, Techniques and Tools for Programming, 50, niveau L1 Ingénieur, Telecom Nancy, France

Licence : Thomas Silverston, De la Puce à l'Internet, 60, niveau L1, université de Lorraine, France

Master : Thomas Silverston, Réseaux Avancés, 87, niveau M2, université de Lorraine, France

Master : Thomas Silverston, Introduction aux Réseaux, 26, niveau M2, université de Lorraine, France

Master : Thomas Silverston, Voix sur IP, Contenu Multimédia, 38, M2, université de Lorraine, France

Licence : Thomas Silverston, Introduction aux Réseaux, 8, L3, université de Lorraine, France

Master : Ye-Qiong Song, Performance evaluation, 20, niveau M2, Université de Lorraine, France

Ecole Ingénieur : Ye-Qiong Song, Networking, 40, niveau M2, ENSEM - Université de Lorraine, France

Ecole Ingénieur : Ye-Qiong Song, Database, 10, niveau M1, ENSEM - Université de Lorraine, France

Ecole Ingénieur : Ye-Qiong Song, Algorithmic and programming (Java), 120, niveau L3, ENSEM - Université de Lorraine, France

### **9.2.2. Supervision**

PhD : Sheila Becker, Conceptual Approaches for Securing Networks and Systems, University of Luxembourg and Université de Lorraine, 10/2012, Thomas Engel, Olivier Festor, Radu State.

PhD in progress : Oussema Dabebbi, Dynamic risk management in Voice over IP services, oct., 2009, Supervised by Remi Badonnel and Olivier Festor

PhD in progress : Martin Barrere, Cooperative Vulnerability Management ,oct., 2010, Supervised by Remi Badonnel and Olivier Festor

PhD in progress : Monitoring and Security in P2P file sharing networks. Juan Pablo Timpanaro, May 2010, Isabelle Chrisment

PhD in progress : César Bernardini, Réseau orienté-contenu basé sur les communautés d'utilisateurs, 01/11/2011, Olivier Festor et Thomas Silverston

PhD in progress : Patrick Olivier Kamgueu, Energy management in WSNs, juin, 2012, Supervised by Emmanuel Nataf and Olivier Festor in France, Thomas Djotio in Cameroun

PhD in progress : Jamila Ben Slimane, Joint allocation of time slot and frequency channels in wireless sensor networks, oct., 2008, Supervised by Ye-Qiong Song and Mounir Frikha

PhD in progress : François Despaux, Delay evaluation in wireless sensor networks for providing QoS, November 2011, Supervised by Ye-Qiong Song and Abdelkader Lahmadi

PhD in progress : Kevin Roussel : Dynamic management of QoS and energy in heterogenous sensor and actuator networks for e-health applications, December 2012, Supervised by Ye-Qiong Song



### 9.2.3. Juries

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

- Rafik Makhoulfi, Ph.D. in Computer Science from Université Technologique de Troyes. Title: *Vers une gestion adaptative des réseaux complexes: cas de la surveillance de données agrégées*, February 2012. (Olivier Festor)
- Fernando Menezes Matos, Ph.D. in Computer Science from University of Coimbra. Title: *QoS for Multi-Domain Services in Next Generation Networks*, June 2012. (Olivier Festor)
- Sivasothy Shanmugalingam, Ph.D. in Computer Science from Telecom et Management Sud Paris. Title: *Convergence of Web and Communication Services*, April 2012. (Olivier Festor)
- Sabina Akhtar, Ph.D. in Computer Science from Université de Lorraine. Title: *Verification of Distributed Algorithms using PlusCal-2*, May 2012. (Isabelle Chrisment)
- Tomas Navarrete Gutierrez, Ph.D in computer Science from Université de Lorraine. Title: *Une architecture de contrôle de systèmes complexes basée sur la simulation multi-agent*, October 2012. (Laurent Ciarletta)
- Fernand Lone Sang, Ph.D. in Computer Science from Université de Toulouse. Title: *Protection des systèmes informatiques contre les attaques par entrées-sorties*, November 2012. (Olivier Festor)
- Damien Roth, Ph.D. in Computer Science from Université de Strasbourg. Title: *Gestion de la mobilité dans les réseaux de capteurs sans fil*, Novembre 2012. (Isabelle Chrisment)
- Raphael Fournier-S'niehotta, Ph.D. in Computer Science from Université Pierre et Marie Curie - Sorbonne Universités. Title: *Détection et analyse d'une thématique rare dans de grands ensembles de requêtes : l'activité pédophile dans le P2P.*, December 2012. (Olivier Festor)
- Hai Anh Tran, Ph.D. in Computer Science from Université Paris Est. Title: *QoE-based Content Distribution Network Architecture*, December 2012. (Olivier Festor)
- Hien Thi Thu Truong, Ph.D. in Computer Science from Université de Lorraine. Title: *Un modèle de collaboration basée sur les contrats et la confiance*, December 2012. (Isabelle Chrisment)
- Aruna Jamdagni In, Ph.D. in Computer Science from University of Technology, Sydney Australia. Title: *Payload-based Anomaly Detection in HTTP Traffic.*, (Isabelle Chrisment)

Team members participated to the following Habilitation Degree defense committees :

- Pascal Anelli, Habilitation Degree in Computer Science from Université de la Réunion. Title: *Des aléas de la communication: de la transmission au transport*, April 2012. (Olivier Festor)
- Frédéric Weis, Habilitation Degree in Computer Science from Université de Rennes 1. Title: *Exploitation d'approches système dans les réseaux sans fil*, June 2012. (Olivier Festor)
- Ludovic Apvrille , Habilitation Degree in Computer Science from Université de Nice-Sophia Antipolis. Title: *Model-Based Design of Complex Embedded Systems*, December 2012. (Olivier Festor)
- Eric Totel, Habilitation Degree in Computer Science from Université de Rennes 1. Title: *Techniques de Détection d'Erreur Appliquées à la Détection d'Intrusion*, Novembre 2012. (Isabelle Chrisment)
- Laurent Toutain, Habilitation Degree in Computer Science from Université Européenne de Bretagne. Title: *Vers un Internet Polymorphe*, December 2012. (Olivier Festor)

## SCORE Team

## 8. Dissemination

### 8.1. Scientific Animation

- Khalid Benali has been PC member of french conferences (INFORSID'2012 (Montpellier, France)), international conferences (I-ESA'12 (Valencia, Spain), COLLA 2012 (Venice, Italy), SAINT 2012 (Izmir, Turkey), IWEI 2012 (Harbin, China), SYSCO 2012 (Sousse, Tunisie)), and workshops (MEDES 2012 (Addis Ababa, Ethiopia)).
- Nacer Boudjlida is a member of the *prime board* of the program committee of I-ESA'2010 and I-ESA'2012 (International Conference on Interoperability of Enterprise Systems and Applications). He regularly acts for several years as a PC member for many international conferences and workshops (CAiSE, COOP'IS, EMMSAD, SIIE, INFORSID, WWS, etc.).
- Nacer Boudjlida addressed a keynote at the 2011 Join-Med Workshop, Rabat, Morocco.
- Nacer Boudjlida performed an invited tutorial at the second IEEE Intern'l Workshop on Advanced Information Systems for Entreprises, IWAISE'2012, Contantantine, Algeria.
- G r me Canals is the co-chair of the "Mobilit  et Ubiquit " french national working group (GDR I3).
- Fran ois Charoy has been PC member of ICEBE (International Conference on Business Engineering) 2012, CTS 2012 (International Symposium on Collaborative Technologies and Systems), DG.O (International Conference on Digital Government Research) 2012, CEC 2012 (IEEE Conference on Commerce and Electronic Computing), ACIS (Australasian Conference in Information Systems) 2012 and of several workshops. He is member of the editorial board of the Service Oriented Computing and Applications Journal (Springer). He was co-chair of the Second Collaborative Technology for Coordinating Crisis Management Track at WETICE 2012
- Claude Godart is member of the editorial board of "Advance in enterprise systems" and "International Journal of E-adoption" journals, and member of the review board of the International Journal of Next Generation Computing. He has been or is program committee member of BPM (Business Process Management) 2012, BPMDS (Business Process Modelling, Development and Support) 2012, IEEE EDOC (The enterprise computing conference) 2012, CEC (IEEE Conference on Commerce and Enterprise Computing) 2012, IEEE CLOUD Computing 2012, IEEE ICWS (International Conference on Web Services) 2012, IEEE SCC (IEEE International Conference on Services Computing) 2012.
- Claudia-Lavinia Ignat is member of the editorial board of Journal of CSCW (Computer Supported Cooperative Work). She was part of the Reviewing Committee of the CTS 2011 (International Symposium on Collaborative Technologies and Systems) special issue of FGCS (Future Generation Computer Systems) journal. She has been or is PC member of GROUP (International Conference on Supporting Group Work) 2012, CDVE (International Conference on Cooperative Design, Visualization and Engineering) 2012 and 2013, ICEBE (International Conference on Business Engineering) 2012, AINA (International Conference on Advanced Information Networking and Applications) 2012 and the workshop IWCES (International Workshop on Collaborative Editing Systems) in 2012 and 2013.
- G rald Oster was a PC member of CoopIS 2012 (International Conference on Cooperative Information Systems) and MSOP2P 2013 (7th International Workshop on Modeling, Simulation, and Optimization of Peer-to-peer Environments).

- Olivier Perrin has been Co-Chair of the ICSOC PhD symposium, and Program Committee member of ICSOC 2012, WCE (Workshop on Capability based Engineering) workshop at WISE 2012, GRCIS workshop 2012. He was reviewer for BPM 2012. He reviewed in 2012 papers for IEEE Transactions on Services Computing, IEEE Transactions on Software Engineering, IEEE Transactions on the Web, Web Services Handbook, Journal of Intelligent Information Systems, and Software and Systems Modelling journals.
- François Charoy was member of the Administration Council of University de Lorraine until August 2012.
- Claudia-Lavinia Ignat is member of the Inria Nancy-Grand Est COMIPERS researchers committee. She is member of the Inria Nancy - Grand Est center committee. She is in charge of European affairs for Inria Nancy Grand-Est.
- Gérald Oster is member of the Administration Council of TELECOM Nancy.
- Gérôme Canals is invited to the Administration Council of Lorraine University Institute of Technology (IUT Nancy Charlemagne) as head of department.
- Boudjlida Nacer is a member of the Council (“Conseil”) of the Scientific and Technology Faculty (FST) of the University of Lorraine, a member of the directorial board of council of the scientific sector MIAE (Mathematics, Informatics, Automatic, Electronic), as he is a member of the council of the Science and Technology collegium of that FST.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Permanent members of the Score team are leading teachers in their respective institutions. They are responsible of lecture in disciplines like software engineering, database systems, object oriented programming and design, distributed systems, service computing and even more advanced topics at all levels and in all kind of departments in the University. Most of the PhD Students have also teaching duties in the same institutions. As a whole, the Score team accounts for more than 2500 hours of teaching.

- Nacer Boudjlida was the head until June 2012 of the Computer Science department of the Faculty of Sciences and Technologies, University of Lorraine.
- Gérôme Canals is the head of the Computer science department of the Nancy University Institute of Technology (IUT Nancy Charlemagne), and is responsible for the professional licence degree "Web application programming" since sept. 2011.
- Jacques Lonchamp is responsible for the professional licence degree "Free and Open Source Software".
- Claude Godart is head of the Computer Science department of the engineering school ESSTIN of the *Ecoles d'ingénieurs et Cycles préparatoire* at University of Lorraine. He is study director of the master degree *Distributed Services, Security and Networks* of the *Sciences and Technologies Collegium* at University of Lorraine.
- Khalid Benali is responsible for the professional Master degree speciality "Distributed Information Systems" of MIAGE and of its international branch in Morocco.
- Olivier Perrin is responsible of the Certificat Informatique et Internet (C2I) course for DEG collegium of University of Lorraine.
- François Charoy is responsible of the Software Engineering specialisation at the TELECOM Nancy Engineering School of University of Lorraine.
- Gérald Oster is responsible of the 3rd year internship program at the TELECOM Nancy Engineering School of University of Lorraine.

We detail next the teaching activities for our permanent researchers in the tema:

Master: Claudia-Lavinia Ignat, Data replication and consistency maintenance, 15h lectures, M2, University of Lorraine

Master: Claudia-Lavinia Ignat, Java and distributed systems, 12h lectures and 24h exercise classes (Travaux dirigés), M1, ESSTIN, University of Lorraine

### 8.2.2. Supervision

PhD : Karim Dahman, Gouvernance et étude de l'impact du changement des processus métiers sur les architectures orientées services : une approche dirigée par les modèles, Université de Lorraine, 10/2012, François Charoy et Claude Godart

PhD : Hien Thi Thu Truong, Contract-based and Trust-aware Collaboration Model , Université de Lorraine, 12/2012, Pascal Molli et Claudia-Lavinia Ignat

PhD in progress : Luc André, Réplication et Maintien de la Cohérence en Temps Réel dans les Réseaux Pair-à-pair, started in 9/2011, François Charoy et Gérald Oster

PhD in progress : Mehdi Ahmed Nacer, complex CRDT for optimistic replication, started in 9/2011, François Charoy et Pascal Urso

PhD in progress : Elio Goettelman, Exécution en confiance de processus dans le cloud, started in 9/2011, Claude Godart

PhD in progress : Aymen Baouab, Gouvernance et supervision décentralisée des chorégraphies inter-organisationnelles, started in 9/2009, Claude Godart, Olivier Perrin

PhD in progress : Ahmed Bouchami , Sécurité des données collaboratives d'une plateforme PaaS, started in 11/2012, Olivier Perrin

PhD in progress : Adrien Devresse , Study of effective sharing and analysis of very large metadata repositories: application to the High Energy Physics computing community, started on 11/2011, Olivier Perrin

PhD in progress : Yongxin Liao, Title: Semantic annotations for systems interoperability in a PLM environment, University of Lorraine, started in November 2010, Advisors: Nacer Boudjlida (LORIA) and Hervé Panetto (CRAN).

PhD in progress : Badrina Gasmi, Title: Distributed Competence Management, Béjaïa University, Algeria, started in January 2011, Advisors: Nacer Boudjlida and Hassina Talantikite (U. of Béjaïa).

PhD in progress : Faïza Bouchaib, Title: Toward a Generic Model for Competence Management, Béjaïa University, Algeria, started in January 2011, Advisors: Nacer Boudjlida and Hassina Talantikite.

### 8.2.3. Juries

SCORE members were member of the following PhD defense committees:

- Hien Thi Thu Truong, PhD, Université de Lorraine, December 2012 (Claudia-Lavinia Ignat)
- Karim Benouaret, PhD, Université Claude Bernard Lyon 1, October 2012 (Claude Godart)
- Karim Dahman, PhD, Université de Lorraine, October 2012 (François Charoy and Claude Godart)
- Ahmed Gater, PhD, Université de Versailles St Quentin, June 2012 (Claude Godart)
- François Hantry, PhD, Université Claude Bernard Lyon 1, September 2012 (Claude Godart)
- Nguyen Ngoc Chan, PhD, Telecom Sud Paris, December 2012 (François Charoy)
- Issac Garcia Garza, PhD, Université de Grenoble, June 2012 (Olivier Perrin)
- Samir Sebahi, PhD, Université Claude Bernard Lyon 1, March 2012 (Olivier Perrin)
- Nicolas Boissel, PhD, Université de Toulouse, November 2012 (Olivier Perrin)
- M Mohamed Amine CHAABANE, PhD, Université de toulouse, september 2012 (Khalid Benali)

- M. Omar SAKA, PhD, Institut National des Sciences Appliquées de Lyon (INSA-Lyon), March 2012 (Khalid Benali)
- M. PENG Yong, PhD, Institut National des Sciences Appliquées de Lyon (INSA-Lyon), March 2012 (Khalid Benali)
- M. SU Ziyi, PhD, Institut National des Sciences Appliquées de Lyon (INSA-Lyon), March 2012 (Khalid Benali)
- Mr Brahim BATOUCHE, University of Le Havre (F) and Henri Tudor Public Research Center (CRPHT, Luxembourg) (Nacer Boudjlida)
- Khaled Aslan Almoubayed, University of Nantes, November 2012 (Gérald Oster)

SCORE members were members of the following Habilitation defense committee:

- Mme Selmin NURCAN, HDR, Université Paris 1 Panthéon Sorbonne, december 2012 (Khalid Benali)
- Mme Frédérick BENABEN, HDR, Institut National Polytechnique de Toulouse, October 2012 (Khalid Benali)
- HU (Habilitation Universitaire, equivalent to the French HDR) of Salah Baïna, December 2012, EN-SIAS, University Mohammed V- Souissi, Rabat, Morroco (Nacer Boudjlida, reviewer and member of the defense committee)

## ALICE Project-Team

## 7. Dissemination

### 7.1. Scientific Animation

Sylvain Lefebvre was in the following program committees in 2012: SIGGRAPH Asia, EGSR, High Performance Graphics, EUROGRAPHICS Short papers and I3D. He joined the editorial board of TOG as an associate editor. He was also an invited speaker at SIBGRAPI 2012 in Ouro Preto, Brazil.

Bruno Lévy was in the following program committees in 2012: ACM SIGGRAPH, Eurographics, SPM, IEEE SMI, ACM/EG SGP, Pacific Graphic, GMP, DGCI. He was an invited speaker in the EIT ICT labs school and gave an invited tutorial at the Internatinal Meshing Roundtable.

Rhaleb Zayer was in the Program committee of EUROGRAPHICS 2012 (Full papers).

### 7.2. Teaching - Supervision - Juries

#### 7.2.1. Teaching

Sylvain Lefebvre was involved in the following courses:

- Ecole Central Paris - 6h ETD
- Ecole Nationale Supérieure de Géologie - 9h ETD
- Ecole des Mines de Nancy, Introduction à la programmation graphique et de jeux vidéos - 30h ETD
- Université de Lorraine, Mise en place du module d'introduction à la programmation massivement parallèle (OpenCL), M1, 28h ETD en collaboration avec Dmitry Sokolov
- Ecole d'hiver at ENS Lyon - 12h ETD

Samuel Hornus was involved in the following courses:

- "Functional programming with OCaml" at ÉPITECH Nancy (private school training programmers, <http://nancy.epitech.eu/>). Lecture: 9h. Lab work: 18h. 3 student projects.

Dmitry Sokolov was involved in the following courses:

- Algorithmique avancée, 28h, M2 Math de l'UL, France
- Géométrie et représentation dans l'espace, 35h, L2 Informatique de l'UL, France
- Logiques et Modèles de calcul, 30h, M1 Informatique de l'UL, France
- Infographie 76h, M1 Informatique de l'UL, France
- Modèles de perception et raisonnement, 56h, M1 Informatique de l'UL, France
- Parallelisme de données, 15h, M1 Informatique de l'UL, France

Dobrina Boltcheva was involved in the following courses:

- Synthèse d'images, 15h, Licence ISN, IUT Saint-Dié-des-Vosges
- Traitement d'images, 30h, 2A DUT INFO, IUT Saint-Dié-des-Vosges
- Modélisation des systèmes d'informations I, 26h, 1A DUT INFO, IUT Saint-Dié-des-Vosges
- Modélisation des systèmes d'informations II, 20h, 2A DUT INFO, IUT Saint-Dié-des-Vosges
- Conception de structures de données, 38h, 2A DUT INFO, IUT Saint-Dié-des-Vosges
- Outils de génie logiciel, 48h, 2A DUT INFO, IUT Saint-Dié-des-Vosges

Bruno Lévy teaches "Numerical Geometry" in the Nancy School of Geology, and gave courses at "Ecole de Recherche ENS Lyon" and "Conférences de rentrée de l'ENS Cachan".

### 7.2.2. Supervision

PhD : Anass Lasram, Exploring and Rendering Synthesized Textures, Université de Lorraine, Finished 10 Dec. 2012, Bruno Lévy and Sylvain Lefebvre

PhD : Vincent Nivoliers, Optimal Sampling of Surfaces, Finished 30 Nov. 2012, Bruno Lévy

PhD in progress : Sergey Podkorytov, Fractal Differential Geometry, Started 1 Sept. 2010, Christian Gentil and Dmitry Sokolov

PhD in progress : Kun LIU, Modèle discret guidé par l'acquisition pour les objets déformables, Started 1 Aug. 2010, Rhaleb Zayer and Bruno Lévy

PhD in progress : Alejandro Patricio GALINDO, Traitement de l'image et video tracking pour l'extraction d'informations pertinentes, Started 15 Sept. 2012, Rhaleb Zayer and Bruno Lévy

PhD in progress : Thomas Joste, Numerical Solvers on the GPU, Bruno Lévy and Sylvain Contassot

PhD in progress : Romain Merland, Voronoi grids for flow simulations in geology, Guillaume Caumon and Bruno Lévy

PhD in progress : David Lopez, Dynamic meshing of free surfaces in fluid simulation, Bruno Lévy

PhD in progress : Jeanne Pellerin, Hybrid meshing for geosciences, Guillaume Caumon and Bruno Lévy

### 7.2.3. Juries

Sylvain Lefebvre was a jury member for the doctoral committee of Ismael Garcia (U. of Girona).

Bruno Lévy was a jury member for the Habilitation theses of Tamy Boubekeur (Telecom Paristech), Jean-Philippe Vandeborre (Telecom Lille 1), Hyewon Seo (Strasbourg LSIT), Ivo Ihrke (Bordeaux) and the Ph.D. theses of Alexandre Coninx (Grenoble), Avinash Sharma (Grenoble), Said Jabrane (UCB Lyon), Jean-March Thierry (Telecom Paristech), Simon Boyé (Bordeaux), Yann Savoye (Bordeaux).

## 7.3. Popularization

Sylvain Lefebvre has continued to animate the "Commission de médiation scientifique" of the Inria Nancy Grand-Est center. He participated in the 2012 science festival, in the "Cordées de la réussite" initiative, presented the software "Mobinet" to high-school teachers, and participated in the prizes ceremony for the Mathematics Olympiads.

Vincent Nivoliers participated to the "Fete de la Science" and "Maths en Jeans" events, by showing demos and giving tutorials.

## **MAGRIT Project-Team**

## **8. Dissemination**

### **8.1. Scientific Animation**

- The members of the team reviewed articles for IEEE Transactions On Robotics, IEEE Transactions on Visualization and Computer Graphics, Medical Image Analysis, International Journal of Computer Vision Signal, Image and Video Processing, Signal Processing Letters.
- M.O. Berger was a member of the program committee of the following conferences: IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2012), International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2012), the IEEE International Symposium on Biomedical Imaging (ISBI) 2012, International Congerence on pattern recognition (ICPR 2012).
- M.O Berger co-organized with Christian Daul (CRAN, Nancy) a one day worshop on medical imaging in Nancy. M.O Berger co-organized with Christian Linte the AE-CAI satellite MICCAI workshop (Augmented Environments and Computer-Assisted Interventions) in Nice.
- Gilles Simon was a member of the program committee of ISMAR 2012, Mobile HCI and Computer Graphics International 2012. He was an invited speaker at the "Journées Réalité Virtuelle et Augmentée", 19-24 February 2012, Ecole Militaire Polytechnique d'Alger.
- P.F. Villard was a member of the program committee of MICCAI 2012,CGVVCVIP 2012 and ISBI 2012.
- E. Kerrien was a member of the program committee of MICCAI 2012.
- Members of the team are members of local management committees (Conseil de Laboratoire and Comité de Centre), and participate on a regular basis, to scientific awareness and mediation actions.

### **8.2. Teaching - Supervision - Juries**

#### **8.2.1. Teaching**

Licence: Mathématiques (analyse complexe, distributions), 20 h, École des Mines de Nancy, France

Licence: Graphic and haptic rendering (30h), IUT Saint-Dié des Vosges, France

Licence: Image processing(30h), IUT Saint-Dié des Vosges, France

Licence: 3D programming (30h), IUT Saint-Dié des Vosges, France

Licence: Object oriented programming (110h),IUT Saint-Dié des Vosges, France

Licence: Outils informatiques et internet, 20 h, L1, Université de Lorraine, France

Licence: Programmation shell-script sous Linux, 30 h, L2, Université de Lorraine, France

Licence: Conception et programmation langage objet, 60 h, L2, Université de Lorraine, France

Licence: Introduction à la programmation objet; conception d'interfaces graphiques, 34 h, L2, Université de Lorraine, France

Licence: Programmation avancée en langage impératif classique, 14 h, L3, Université de Lorraine, France

Licence: Bases géométriques de l'imagerie, 25 h, L3, Université de Lorraine, France

Licence: Programmation et bases de données, 35 h, L3, Université de Lorraine, France

Licence: Modélisation 3D, 40 h, LP, Université de Lorraine, France

Master: Perception et raisonnement, 50 h, M1, Université de Lorraine, France



Master: Réalité augmentée, 30 h, M2, Université de Lorraine, France  
 Master: Réalité augmentée, 24 h, 2A, Télécom-Nancy, Université de Lorraine, France  
 Master: Reconnaissance des formes statistiques, 15 h, M2, Université de Lorraine, France  
 Master: Perception de la structure et du mouvement, 15 h, M2, Université de Lorraine, France  
 Master: Outils pour le traitement et l'analyse d'images, 21 h, 2A, École des Mines de Nancy, France  
 Master: Modélisation et prévision (régression linéaire, séries chronologiques), 48 h, École des Mines de Nancy, France  
 Master: Recherche opérationnelle, 59 h, École des Mines de Nancy, France  
 Master: Initiation au traitement du signal et applications, 21 h, Ecole des Mines de Nancy, France  
 Master: Méthodes et outils pour la conception informatique, 34 h, 2A, Télécom-Nancy, Université de Lorraine, France  
 SUPELEC: Réalité augmentée, 3 h, 3A, SUPELEC Metz, France  
 DIU: Robotique chirurgicale, 1 h, CHU Nancy Univ. Hospital, France.

### 8.2.2. Supervision

PhD in progress: S. Bhat, Learning methods for pose computation, December 2008, Marie-Odile Berger, Frédéric Sur.

PhD in progress: Ahmed Yureidini, Modélisation implicite des vaisseaux sanguins pour la simulation interactive d'actes de radiologie interventionnelle, January 2010, Erwan Kerrien, Stéphane Cotin (Shacra, Lille).

PhD in progress: Nazim Haouchine, Modèles physiques pour la réalité augmentée des organes déformables, Janvier 2012, Marie-Odile Berger, Stéphane Cotin (Shacra, Lille).

### 8.2.3. Juries

- Marie-Odile Berger was reviewer of the PhD of A. Letouzey, Z. Droueche and of the HDR of E. Prados.
- Erwan Kerrien was examiner for the PhD defense of G. Pizaine.

## 8.3. Popularization

- Members of the team participate on a regular basis, to scientific awareness and mediation actions:
  - Several team members participated to the "Fête de la Science 2012"
  - Gilles Simon chaired a "Café Scientifique" in Nancy on the subject of augmented reality.
  - Erwan Kerrien was an associate researcher to a MATH.en.JEANS workshop, and is a member of the local Scientific Mediation Committee.
- A transdisciplinarity project has been initiated with the IUFM de Lorraine (teacher training institute), in order to assess the relevance of using augmented reality in learning astronomy at primary school. A tangible user interface has been built to allow investigation of astronomical phenomena such as the periodical renewal of the seasons, the phases of the moon, or the regular succession of day and night. The interface has been experienced in two classrooms of 20 and 19 8-year-old and 10-year-old children and compared with traditional physical and virtual models. The questions that were investigated were: is the interface approachable enough to be used by children? Does it facilitate comprehension and learning of the phenomena by direct experience? Does it facilitate children concentration? Preliminary results tend to prove that the AR model allows a better conceptualization and favors learning for younger children. This work will be continued and may lead to one or several academic papers in the education field.
- We have designed and developed a software whose aim is to support students with learning computer programming. This software, named artEoz, enables a pedagogical view of the computer memory, dynamically changing while the user program is running. Using a nice visualization helps to understand the behavior on an object oriented program. This software concerns beginners as well experimented students thanks to its facilities to draw complex data structures. This software is licensed by the APP (French agency for software protection).

## MAIA Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

#### 9.1.1. Conference organization, Program committees, Editorial boards

- Amine Boumaza co-organized the 23rd JET (Journée Evolutionnaire Thématique) held at the University Pierre et Marie Curie in Paris on November 23rd.
- Christine Bourjot was a co-organizer of the ARCO 's (Association pour la Recherche Cognitive) Workshop "ROBOTS & CORPS, Immersion Ecologique & Cognition incarnée", October 2012.
- Christine Bourjot was a board member of AFIA (Association pour l'Intelligence Artificielle).
- Christine Bourjot was a co-organizer of the ARCO and AFIA 's Workshop SCIA 2012 Sciences Cognitives et Intelligence Artificielle, May 2012.
- Olivier Buffet was a member of:
  - the organizing committee of the "*Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes*" 2012 (**JFPDA'12**),
  - the organizing committee of the "*Conférence francophone sur l'apprentissage automatique*" 2012 (**CAp'12**),
  - the editorial board of the "*revue d'intelligence artificielle*" (RIA), and
  - the editorial board of the "Journal of Artificial Intelligence Research" (JAIR).
- Olivier Buffet was a reviewer for the journals: AMAI (Annals of Mathematics and Artificial Intelligence), JAIR (Journal of Artificial Intelligence Research), RIA (Revue d'Intelligence Artificielle); and for the conferences AAAI'12 (National Conference on Artificial Intelligence), ICRA'12 (International Conference on Robotics and Automation), JFPDA'12 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes).
- François Charpillet and Olivier Simonin co-organized the international Workshop PAL Personally Assisted Living at LORIA, November 2012. (**PAL workshop**)
- Vincent Chevrier was a member of the program committee of EUMAS 121 (European Workshop on Multi-Agent Systems) , IAT 11 (Intelligent Agent Technology), RFIA12 (Reconnaissance des Formes et Intelligence Artificielle), JFSMA12 (French conference on MAS).
- Vincent Chevrier was reviewer for RIA journal.
- Vincent Chevrier is the moderator of the mailing list of the French spoken community on multi-agent systems.
- Alain Dutech was a reviewer for JAIR (Journal of Artificial Intelligence Research), RIA (Revue d'Intelligence Artificielle), Journal of Adaptive Behavior; and for the conference JFPDA'12 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes).
- Nazim Fatès was a co-organiser of the ACA (Asynchronous cellular automata) workshop in ACRI 2012, a member of the steering committee of Automata 2012 (Annual workshop on cellular automata), member of the program committee of ACRI 2012, SCW'12 (Spatial computing workshop), ICAART'12, ICIST'12, CAAA'12. He was an ad hoc reviewer for the following journals : *Theoretical Computer Science, Entropy, Advances in Complex Systems*.
- Nazim Fatès was an invited speaker at COLMOT'12, a workshop on "Collective motion in biological systems: from data to models".

- Alexis Scheuer was a reviewer for the IEEE Transactions on Robotics and on Systems, Man, and Cybernetics, for the Elsevier Journals of Robotics and Autonomous Systems and of Artificial Intelligence, and for the International Journal of Advanced Robotic Systems, as well as for the International Conference on Robotics and Automation (ICRA'13) and for the International IFAC Symposium on Robot Control (SYROCO'12).
- Bruno Scherrer was a reviewer for JAIR (Journal Of Artificial Intelligence Research), TAC (Transactions on Automatic Control), ICML'2012 (International Conference on Machine Learning), NIPS'2012 (Neural Information Processing Systems), ECAI'2012 (European Conference on Artificial Intelligence) and JFPDA'2012 (Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes).
- Bruno Scherrer was an invited speaker at a workshop of the CEA-EDF-Inria Summer School on Stochastic Optimization at Cadarache (28 Jun.)
- Olivier Simonin co-organized the International IROS'2012 "Assistance and Service robotics in a human environment" held at Vilamoura, Portugal, October 12th. ([Web page](#))
- Olivier Simonin co-organized the 7th National CAR'2012 Conference (Control Architectures of Robots) at LORIA, May 10-11 2012. ([CAR'2012](#))
- Olivier Simonin was chair and co-organizer of the SASO'2012 Demo&Contest Track (IEEE International Conference on Self-Adaptive and Self-Organizing Systems), Lyon, 2012. [saso2012](#).
- Olivier Simonin was a reviewer for the journals: JAAMAS (Journal of Autonomous Agents and Multi-Agent System), Natural Computing (Springer), the IEEE Robotics and Automation Magazine, RIA (Revue d'Intelligence Artificielle). He also reviewed papers for ICRA'2012 (International Conference on Robotics and Automation).
- Olivier Simonin was a program committee member of SASO'2012 (6th IEEE International Conference on Self-Adaptive and Self-Organizing Systems), ICINCO'2013 (10th Int. Conf. on Informatics in Control, Automation and Robotics), ICAART'2013 (5th Int. Conf. on Agents and AI.) and JF-SMA'2012 (French conference on MAS).
- Vincent Thomas was a board member of ARCO (Association pour la Recherche Cognitive)
- Vincent Thomas was a reviewer of "*Journées Francophones sur la Planification, la Décision et l'Action pour le contrôle de systèmes*" 2012 (JFPDA'2012)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence ISC (Informatique et Sciences Cognitives) : Christine Bourjot, Intelligence Artificielle et Résolution de Problèmes, 25HETD, niveau L3, Université de Lorraine, France

Master M2 SCMN (Sciences Cognitives et Media Numériques) Master SCA: Christine Bourjot, Université de Lorraine.

Master MIAGE (Méthodes Informatiques Appliquées à la Gestion): Christine Bourjot, Extraction Intelligente de Données, 18HETD, niveau M1, Université de Lorraine, France

Master SCA (Sciences Cognitives et Applications): Christine Bourjot, Système Multi-Agent, 20HETD, niveau M2, Université de Lorraine, France

Master : Vincent Chevrier, Modèles et Systèmes Multi-agents, 15CM, M2R, Université de Lorraine, France.

Master SCA (Sciences Cognitives et Applications): Alain Dutech, Apprentissage Numérique, 20HETD, niveau M1, Université de Lorraine, France.

Master : Nazim Fatès, Systèmes communicants, partie automates cellulaires, 10CM, M2R, Université de Lorraine, France.

Master : Alexis Scheuer & Olivier Simonin, Introduction à la robotique mobile, 37,5 HETD, M1 Informatique, Université de Lorraine (UHP), France.

Master SCA (Sciences Cognitives et Applications): Vincent Thomas, Agent Intelligent, 20HETD, niveau M1, Université de Lorraine, France.

Master SCA (Sciences Cognitives et Applications): Vincent Thomas, Game Design et Serious Game, 20HETD, niveau M2, Université de Lorraine, France.

Master Informatique: Vincent Thomas, Optimisation et Systemes Dynamiques Stochastiques, 22HETD, niveau M2, Université de Lorraine, France.

Supelec Metz 5eme année : Olivier Simonin, 15CM “Vie Artificielle”.

### 9.2.2. Supervision

PhD : Tomas Navarrete, Une architecture de contrôle de systèmes complexes basée sur la simulation multi-agent, Université de Lorraine, 24 oct., Vincent Chevrier

PhD in progress : Mihai Andries, “Calcul spatialisé pour l’assistance à la personne: étude d’un réseau de dalles intelligentes”, Oct. 2012, F. Charpillet (advisor), O. Simonin.

PhD in progress : Mauricio Araya, “*Near-Optimal Algorithms for Sequential Information-Gathering Decision Problems*”, Sept. 2009, F. Charpillet (advisor), O. Buffet, V. Thomas.

PhD in progress : Antoine Bautin, “Stratégie d’exploration multi-robot fondée sur les champs de potentiels artificiels”, Oct. 2009, F. Charpillet (advisor), O. Simonin.

PhD in progress : Olivier Bouré, “Robustesse des systèmes multi-agents réactifs: vers une informatique bio-inspirée ?”, Nazim Fatès, Vincent Chevrier (advisor).

PhD in progress : Benjamin Camus, “Un laboratoire virtuel pour la multi-modélisation”, Christine Bourjot, Vincent Chevrier (advisor).

PhD in progress : Timothé Collet, “Apprentissage actif par renforcement pour la classification”, Nov. 2012, O. Pietquin (advisor), O. Buffet

PhD in progress : Mihai AndriesAmndine Dubois, “assistance à la personne en perte d’autonomie: étude de l’apport d’un réseau de Kinectsà la détection et la prévention des chutes”, Oct. 2011, F. Charpillet (advisor).

PhD in progress : Arsène Fansi Tchango, “Suivi multi-caméra en environnement partiellement observé”, Oct. 2011, A. Dutech (advisor), O. Buffet, V. Thomas.

PhD in progress : Nassim Kaldé, “Exploration et reconstruction d’un environnement inconnu par une flottille de robots”, Oct. 2012, F. Charpillet (advisor), O. Simonin.

PhD in progress : Manel Tagorti, “*Approximating the Value Function for Heuristic Search in Factored MDPs*”, Nov. 2011, J. Hoffmann (advisor), B. Scherrer, O. Buffet.

PhD in progress : Mohamed Tlig, “*Reactive coordination for traffic adaptation in large situated multi-agent systems*”, Dec. 2010, O. Simonin (advisor), O. Buffet.

PhD in progress : Jeannot Yazbeck, “*Secure and robust immaterial hanging for automated vehicles*”, Oct. 2010, F. Charpillet (advisor), A. Scheuer.

### 9.2.3. Juries

#### 9.2.3.1. PhD and HDR committees

- Vincent Chevrier was a member of the PhD committee of Jonathan Demange, 20 Dec. UTBM, as a referee; and Shirley Hoet, 17 Dec, UPMC, as a committee member.
- Vincent Chevrier was a member in the HDR committee as a referee of Pascal Ballet, 6 April, Université de Bretagne Occidentale
- François Charpillet was a member (as a referee) of the PhD committee of :
  - Muhammad Ali, 11th July 2012, Laas, University of Toulouse

- Matthieu Warnier, 10th december 2012, Laas, University of Toulouse
- Senthilkumar Chandramohan, 25th september 2012, University of Avignon
- Guogang Wen, 26th october 2012, Lagis, University of Lille
- Mohamed Amine Hamila, 3rd April 2012, University of Valenciennes
- François Gaillard, 2d February 2012, LIFL, University of Lille
- François Charpillet was a member of the PhD committee of :
  - Wissam KHALIL, 2nd february 2012, Lagis, University of Lille
  - Sylvain Raybaud, 5th december 2012, Loria, University of Lorraine
  - Rui Loureiro, 6th december 2012, LAGis, University of Lille
- François Charpillet was a member of the HdR committee of :
  - Amir Hajjam El Hassani, 8 th december 2012, University of Besançon
- Alain Dutech was a member (as a referee) of the PhD committee of Shirley Hoet, 17 Dec, UPMC.
- Nazim Fatès was a member of the PhD committee of Julien Provillard, Université de Nice. The defence was held on the 6th of December in I3S laboratory, Nice.
- Bruno Scherrer was a member of the PhD committee of Jean-François Hren, Université Lille 1, 21 Jun.
- Olivier Simonin was a member of the PhD committee of M. Guezani, UTBM, 4 April.

#### 9.2.3.2. Specialist Committees

- Vincent Thomas was a member of the "Specialist committee" in Université Nancy 2.

### 9.3. Popularization

- Christine Bourjot was co-organizer of the "Forum des Sciences Cognitives", Université de Lorraine, November 2012.
- In the scope of the 2012 celebrations for Alan Turing's hundredth birthday:
  - Nazim Fatès recorded a video on Turing's heritage with Inria's audiovisual service. This video can be accessed on <http://www.youtube.com/watch?v=6awK-FHBntc>.
  - Nazim Fatès was interviewed by the *Eureka* magazine [47] and he was a co-organiser of the three conferences on Turing that the Loria organised in September in Nancy for a large public (see <http://turing2012.loria.fr>).
  - Nazim Fatès participated in recording a program broadcasted in the "Hopital des enfants malades" in Brabois, where the main topic was Turing and Computer Science (see <http://www.loria.fr/news/informatique-aux-enfants-hospitalises-de-brabois>). A paper (with mistakes) appeared in *L'Est republicain* (November 17, 2012) to relate this event.
  - Nazim Fatès gave a talk entitled *Turing, l'intelligence des machines et le jeu* in Lycée Jacques Marquette (Pont-à-Mousson) for the annual meeting of the "Associations des anciens élèves et professeurs" (October 7, 2012).
  - Olivier Simonin was invited to the Journée "Robotique et Numérique" organized by the GDR Robotique for a talk entitled "Robotique bio-inspirée : vers une intelligence collective ?" (see <http://www.gdr-robotique.org/journee.php>).
- Vincent Thomas is preparing, in collaboration with the "Bibliothèque Universitaire du Campus Lettres", an exposition "jeux: les ateliers de la pensée" where the main objective is to promote Game as an interesting subject for academics. This exposition will include vulgarization seminars with specialists of several scientific fields (economy, psychology, computer science) and animations.
- Vincent Thomas is a participant of the Erasmus IP: "Learning Computer Programming in Virtual Environments" involving 8 foreign universities. Its objective is to promote teaching and learning of the fundamentals of computer programming through use of virtual and remote learning environments.

## ORPAILLEUR Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

- The scientific animation in the Orpailleur team is based on two seminars, the Team Seminar and the BINGO seminar. The Team Seminar is held at least twice a month and is used either for general presentations of people in the team or for inviting external researchers for general interest. The BINGO seminar is held also at least twice a month and is used for more specific presentations focusing on biological, chemical, and medical topics. Actually, both seminars are active and are useful instruments for researchers in the team.
- Members of the Orpailleur team are all involved, as members or as head persons, in various national research groups (mainly GDR CNRS I3 and BIM).
- The members of the Orpailleur team are involved in the organization of conferences, as members of conference program committees (ECAI, IJCAI, PKDD, ICFA ...), as members of editorial boards, and finally in the organization of journal special issues.
- This year, Dave Ritchie co-organized a workshop on Computational Challenges in Structural Biology (CCSB-2012; <http://ccsb2012.loria.fr>).
- Emmanuel Nauer co-organized a new workshop, called "Cooking with Computers" at ECAI 2012 (Montpellier). This workshop aims at bringing together researchers from every possible fields of artificial intelligence applying their research on food and cooking. The next workshop will take place in 2013 at the ICJAI Conference (August 2013, Beijing, China).
- Amedeo Napoli was one of the co-organizers of the ECAI workshop FCA4AI (What Artificial Intelligence can do for FCA), together with Sergei O. Kuznetsov and Sebastian Rudolph (see the website of the workshop <http://www.fca4ai.hse.ru> and the CEUR proceedings <http://ceur-ws.org/Vol-939/>). Based on the large success of this first workshop, a new edition will take place at the ICJAI Conference in August 2013, Beijing, China.
- Chedy Raïssi was a co-organizer of the "PinSoDa" workshop, joint with the 11th IEEE International Conference on Data Mining (ICDM 2012), Brussels, Belgium. The purpose of this workshop was to encourage principled research that will lead to the advancement of the science of privacy and data protection on social data.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- The members of the Orpailleur team are involved in teaching at all levels of teaching in University of Lorraine (in Nancy for most of them). Actually, most of the members of the Orpailleur team are employed on university positions.
- The members of the Orpailleur team are also involved in student supervision, at all university levels, from under-graduate until post-graduate students.
- Finally, the members of the Orpailleur team are involved in HDR and thesis defenses, being thesis referees or thesis committee members.

## **PAROLE Project-Team**

### **9. Dissemination**

#### **9.1. Scientific Animation**

- The members of the team frequently review articles and papers for Journal of Phonetics, JASA, Acta Acoustica, Computer Speech and Language, Speech communication, TAL, IEEE Journal of Selected Topics in Signal Processing, IEEE Transaction of Information Theory, IEEE Signal Processing Letters, Signal Processing, Multimedia Tools, Pattern Recognition Letters, ICASSP, INTERSPEECH, EURASIP, JEP.
- Member of editorial boards :
  - Speech Communication (J.P. Haton, D. Jouvet)
  - Computer Speech and Language (J.P. Haton)
  - EURASIP Journal on audio, Speech, and Music Processing (Y. Laprie)
- Member of scientific committee of conference :
  - TAIMA, SIIE (K. Smaïli, J.P. Haton)
  - JEP, (I. Illina)
- Member of organisational conference committees :
  - AVSP 2013, (S. Ouni)
- Coordinator of French part of ERASMUS Intensif Programme : Learning Computer Programming in Virtual Environment (I. Illina)
- Reviewer of projects in the European FET (Future and Emerging Technologies) (Y. Laprie).
- Member of “Conseil scientifique IRCOM Consortium corpus oraux et multimodaux” (D. Fohr)
- Member of “Association Française pour la Communication Parlée” (French Association for Oral Communication) board (D. Langlois)
- Member of the lorrain network on specific language and learning disabilities and in charge of the speech and language therapy expertise in the Meurthe-et-Moselle House of Handicap (MDPH) (A. Kipffer-Piquard)
- Member of the Scientific Committee of Télécom- Bretagne, Brest (Jean-Paul Haton)
- The members of the team have been invited as lecturer:
  - Agnès Piquard-Kipffer, Finnish Center of Excellence in Learning and Motivation - (Finlande, Jyväskylä).
  - Agnès Piquard-Kipffer, EHESP, Ecole des Hautes Etudes de Santé Publique - Rennes, Sorbonne Paris Cité Université.
  - David Langlois has presented the Machine Translation domain to students in University of Tunis, in 2012 november.
  - Anne Bonneau has presented “speech sounds” at the 5e congrès jeunes chercheurs "Chamboule tes sens" Nancy, March 2012.
  - Jean-Paul Haton : “Introduction à l’intelligence artificielle”, Ecole Doctorale SIMEM, Caen, 24/04/2012
  - Jean-Paul Haton : “Intelligence artificielle et langue : état des lieux”, Journée “IA et TALN” AFIA-ATALA, Paris, 12/03/2012
  - Jean-Paul Haton : “Automatic Speech Recognition ; past, present and future”, Invited Keynote Speech, EUSIPCO, Bucharest, 28/08/2012

#### **9.2. Teaching - Supervision - Juries**

##### **9.2.1. Teaching**

The professors and associate professors of the team are teaching at Lorraine University.

Teaching activities in relation with the team research domains:

- Analyse, Traitement et reconnaissance de la parole, 30HETD, M1, Université de Lorraine (V. Colotte and D. Langlois),
- Natural Langue Processing (in English), 24HETD,
- M2 Erasmus Mundus, université de Lorraine (K. Smaï),
- école d'orthophonie, faculté de médecine, Université de Lorraine (Agnes Piquard-Kipffer and Anne Bonneau),
- école d'audioprothèse, faculté de pharmacie, Université de Lorraine (Anne Bonneau),

In addition to courses, we highlight the following activities:

- A strong involvement of the team members in education and administration (Lorraine University): Master of Computer Science, IUT, MIAGE, Speech and Language Therapy School of Nancy;
- Coordinator of C2i (Certificat Informatique et Internet) at Lorraine University (V. Colotte).
- Head of MIAGE Maroc (students of Lorraine University but having their courses in Morocco)(K. Smaïli),
- Head of UFR Math-Info at Lorraine University (K. Smaïli),
- Head of Networking Speciality of Lorraine University Master of Computer Science until 1st September (O. Mella).
- co-Director of DU, « Troubles du Langage et des Apprentissages », Lorraine University, Faculté de Médecine (Agnès Piquard-Kipffer)

### 9.2.2. Supervision

Phd : Sylvain Raybaud, "De l'utilisation de mesures de confiance en traduction automatique : évaluation, post-édition et application à la traduction de la parole", Lorraine University, Dec 2012, David Langlois and Kamel Smaïli

Phd : Christian Gillot, "Modèles de langue exploitant la similarité structurelle entre séquences pour la reconnaissance de la parole", Lorraine University, Dec 2012, Christophe Cerisara and Jean-Paul Haton

PhD in progress : Utpala Musti, Acoustic-Visual Synthesis using bimodal selection, September 2009, S. Ouni and V. Colotte

PhD in progress : Julie Busset, Inversion acoustique articulatoire à partir de coefficients cepstraux, to be defended in February 2013

PhD in progress : Motaz Saad, "Etude de comparabilité de corpus multilingues et analyse émotionnelle de leurs contenus", Kamel Smaïli and David Langlois

PhD in progress : Fadoua Bahja, Détection du Fondamental de la Parole : Application à la Voix Pathologique, from Mai 2009, Joseph Di Martino and Elhassane Ibn Elhaj.

PhD in progress : Othman Lachhab, Reconnaissance de la Parole Continue : Application au Rehaussement de la Voix Pathologique, from November 2010, Joseph Di Martino and Elhassane Ibn Elhaj.

PhD in progress : Cyrine Nasri, "Une alternative à l'alignement standard des séquences de traduction", Kamel Smaïli

PhD in progress : Arseniy Gorin, Handling trajectories and speaker consistency in automatic speech recognition, October 2011, D. Jouvét.

PhD in progress : Alex Mesnil, "Modélisation bayésienne hiérarchique et parcimonieuse pour le langage naturel", Emmanuel Vincent and Kamel Smaïli

PhD in progress : Dung Tran, Uncertainty handling for noise-robust automatic speech recognition, December 2012, E. Vincent and D. Jouvét.



PhD in progress : Luiza Orosanu, Speech recognition for communication help for deaf or hard of hearing people, December 2012, D. Jouvét.

### **9.2.3. Juries**

Participation in PhD thesis Jury for Fethi Bougares (Maine University, November 2012), D. Jouvét, reviewer.

Participation in PhD thesis Jury for Camille Fauth (Strasbourg University, December 2012), Y. Laprie, reviewer.

Participation in Selection committee at ENSSAT Rennes University, may 2012 (V. Colotte, O. Mella, Y. Laprie).

## **9.3. Popularization**

the movie “Je peux voir les mots que tu dis” has been selected for the “13ème Festival du Film de Chercheur”

Participation in TV broadcast news (FR3) about voice forensic examinations (Y. Laprie).

## SEMAGRAMME Team

# 8. Dissemination

## 8.1. Scientific Animation

- Maxime Amblard:
  - Head of the preoperative project SLAM: Schizophrenia and Language: Analyze and Modeling—MSH–Lorraine.
  - Vice-treasurer of the Association pour le Traitement Automatique des Langues (ATALA)
  - Head of the master Sciences Cognitives et Applications of University de Lorraine (until July 2012). He was responsible for the application to degree habilitation of the new version of the master mention Science Cognitive et ApplicationA, Université de Lorraine.
  - Member Opération Poste team <sup>5</sup> (until June 2012).
  - Member of the comité de sélection McF 4058 at LIPN – Université Paris 13
- Philippe de Groote:
  - Member of the editorial board of the journal *Higher-Order and Symbolic Computation*.
  - Area editor of the *FoLLI Publications on Logic, Language and Information* (LNCS subline).
  - Member of the ESSLLI standing committee.
  - Member of the scientific committee of the international conference on Logical Aspects of Computational Linguistics (LACL) 2012 and of the international conference on Traitement Automatique de Langues Naturelles (TALN) 2012.
- Bruno Guillaume:
  - Member (elected) of the “Pôle scientifique” IAEM of Université de Lorraine
  - Member of the COMPIERS Inria Nancy Grand-Est
- Guy Perrier:
  - Member of the editorial board of the journal *Traitement Automatique des Langues*.
  - Member of the scientific committee of the international conference on on Traitement Automatique de Langues Naturelles (TALN) 2012.
- Sylvain Pogodalla:
  - Member of the editorial board of the journal *Traitement Automatique des Langues*.
  - Head of the Commission des Développements Technologiques (CDT) of the Nancy Inria Research Center.
  - Coordinator of the POLYMNIE ANR Project.
  - Local coordinator of the Erasmus Mundus Master program Language and Communication Technologies for the Université de Lorraine.
  - Member of the scientific committee of the International Conference on Logical Aspects of Computational Linguistics (LACL) 2012.
  - Member of the jury of the ATALA Dissertation prize (dissertation prize of the French Association pour le Traitement Automatique des Langues).

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<sup>5</sup><http://postes.smai.emath.fr/>

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence: Maxime Amblard, *Penser les algorithmes*, 25h, L1, Université de Lorraine, France  
 Licence: Maxime Amblard, *Introduction au Traitement Automatique des Langues*, 25h, L2, Université de Lorraine, France  
 Licence: Maxime Amblard, *Algorithmique avancée*, 62.5h, L2, Université de Lorraine, France  
 Licence: Maxime Amblard, *Formalismes de représentation et raisonnement*, 25h, L3, Université de Lorraine, France  
 Licence: Guy Perrier, *Outils conceptuels*, 37.5h, L3, Université de Lorraine, France  
 Master: Maxime Amblard, *Algorithmique pour l'Intelligence Artificielle*, 45h, M1, Université de Lorraine, France  
 Master: Maxime Amblard, *Discourse and Dialogue*, 25h, M2, Université de Lorraine, France  
 Master: Philippe de Groote (with Benoît Crabbé), *Structures informatiques et logiques pour la modélisation linguistique*, 18h, M2, Parisian Master of Research in Computer Science, France  
 Master: Philippe de Groote (with Kamel Smaïli), *Logique et statistiques pour la modélisation des langues*, 50h, M2, Université de Lorraine, France  
 Master: Bruno Guillaume, *Grammatical Formalisms*, 25h, M2, Université de Lorraine, France  
 Master: Guy Perrier, *Initiation au TAL*, 37.5h, M1, Université de Lorraine, France  
 Master: Guy Perrier, *Programmation pour le TAL*, 37.5h, M1, Université de Lorraine, France  
 Master: Guy Perrier, *Tools and algorithms for NLP*, 44h, M2, Université de Lorraine, France  
 Master: Sylvain Pogodalla, *Computational Semantics*, 25h, M2, Université de Lorraine, France  
 Master: Sai Qian, *Applications of Natural Language Processing*, 37.5h, M2, Université de Lorraine, France  
 Master: Sai Qian, *Algorithmique pour l'Intelligence Artificielle*, 22h, M1, Université de Lorraine, France

### 8.2.2. Supervision

Ekaterina Lebedeva, *Expression de la dynamique du discours à l'aide de continuations*, Université de Lorraine, defended on April 6 2012, Philippe de Groote [9]  
 Aleksandre Maskharashvili, *Generation and Discourse with Abstract Categorical Grammars*, since November 2012, Philippe de Groote and Sylvain Pogodalla  
 Florent Pompigne, *Modélisation logique de la langue et Grammaires Catégorielles Abstraites*, since September 2008, Philippe de Groote and Sylvain Pogodalla  
 Sai Qian, *Investigation of variable accessibility in natural language semantic modelization*, since September 2009, Maxime Amblard and Philippe de Groote

### 8.2.3. Juries

Guy Perrier was member of the PhD committee of François-Régis Chaumartin, Université Paris Diderot, September 25 2012  
 Guy Perrier was member of the PhD committee of Christian Gillot, Université de Lorraine, December 12 2012  
 Philippe de Groote was member of the PhD committee of Pierre Bourreau, University of Bordeaux 1, June 29 2012

## 8.3. Popularization

Maxime Amblard is member of the editorial board of *Interstices*.  
 Maxime Amblard supervised a group of Phd students for vulgarization of science with drama, Journée internationales Hubert Curien, Nancy, 3-4-5 September 2012.  
 Guy Perrier and Bruno Guillaume are interviewed in the scientific TV program "C à Savoir" on France 3 Lorraine channel. The program is available at <http://tinyurl.com/semagramme-france3>.