Activity Report 2011

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2.2. Highlights

André Seznec has been awarded an ERC advanced investigator grant for 2011-2016 called DAL, Defying Amdahl’s Law.

André Seznec won the 3rd Championship Branch Prediction in both the conditional branch prediction track and the indirect branch prediction track.
CAIRN Project-Team

2.2. Highlights

Daniel Menard and Steven Derrien defended their "Habilitation à Diriger des Recherches (HDR)" thesis in 2011.
2.2. Highlights

Sandrine Blazy received the 2011 La Recherche award in Information Sciences for her contributions to the CompCert verified C compiler, together with Zaynah Dargaye, Xavier Leroy and Jean-Baptiste Tristan.
2.4. Highlights

The main headline of 2011 is the release of the Polychrony toolset in open-source under GPL v2.0 and EPL licenses in July. It is the result of a process initiated several years ago and conducted in close collaboration with INRIA’s DTI in order to precisely define the perimeter of the license and identify the best-suited licensing terms compatible with its users and potential contributors.
S4 Project-Team

2.2. Highlights

The three main achievements of the S4 team during 2011 are:

- The non-standard semantics of hybrid systems (Section 6.2) and its application to the compilation of hybrid data-flow synchronous languages.
- The modal interface theory (Section 6.3) and its implementation in the Mica toolbox (Section 5.1).
- Several results on the separability and the distributability of Petri nets (Section 6.1).
TASC Project-Team

2.2. Highlights

- **Best student paper** for M. Pelleau et al. at the 17th International Conference on Principles and Practice of Constraint Programming (CP 2011) for *Octogonal Domains for Continuous Constraints* (see [22]).

- **Google Focused Research Awards** (see item *Mathematical Optimization*) for providing explanation-based user-oriented features in constraint solvers given to N. Jussien.


**BEST PAPER AWARD:**
[22] 17th International Conference on Principles and Practice of Constraint Programming (CP’11). M. PELLEAU, C. TRUCHET, F. BENHAMOU.
VERTECS Project-Team

2.2. Highlights

FoSSaCS paper [18] and TACAS paper [17] seriously improve the state of the art and may have a strong impact. [18] proposes an approximate determinization procedure for timed automata, successfully adapted in [17] for off-line test generation from timed automata, and is promising for other observability problems (diagnosis, implementability,...).
ASPI Project-Team (section vide)
I4S Team

2.2. Highlights

• Prize: M. Döhler has received the IRIS PRize of Excellence 2011 in the context of European project FP7 IRIS.
2.3. Highlights

- ERC Grant awarded to Erwan Faou for his project GEOPARDI
- Nicolas Crouseilles has defended his ‘Habilitation à diriger les recherches’ in January (14th January 2011).
FLUMINANCE Project-Team (section vide)
SAGE Project-Team

2.2. Highlights

- The team Sage, with the LMNO at the University of Caen, was chosen by the scientific committee ddm.org to organize the 21th international conference on Domain Decomposition (DD21) in Rennes, 25-29 June 2012 (co-chair J. Erhel and T. Sassi).

- The software GPREMS and the modules DGMRES, AGMRES are now used by the SME Fluorem (Lyon) to solve large linear systems. The CPU time was reduced from 12 hours in 2007 to 15 minutes in 2011. Very large systems, which were intractable in 2007, are now solved in 10 hours.
SERPICO Team (section vide)
SYMBIOSE Project-Team (section vide)
VISAGES Project-Team (section vide)
ACES Project-Team (section vide)
ASAP Project-Team

2.3. Highlights

1. A.-M. Kermarrec received the Monpetit Award from the French Academy of Science in 2011.
2. D. Imbs received the best student paper award with [38], see below.

BEST PAPER AWARD:
D. IMBS, M. RAYNAL.
2.2. Highlights

This year the ASCOLA team has produced several particularly notable results in the academic realm as well as concerning the transfer of academic results to industry.

We have contributed several first-rate results on new programming language features. We have shown, in particular, how to define the Java security model using aspects [21], how to integrate Object-Oriented programming, Event-Based Programming and Aspect-Oriented Programming [24], and have extended results on the preservation of formal properties in the presence of aspects [17] (see Sec. 6.1 for details).

Based on ASCOLA’s results on virtual machine management (developed under the lead of Jean-Marc Menaud), the start-up EasyVirt was founded in July 2011. EasyVirt develops and distributes software solutions for the management and optimization of data centers in active cooperation with the ASCOLA team (see Sec. 7.1).
ATLANMOD Team

2.3. Highlights

- Team consolidation after the change of the team leader. The level of activity of the team has not been affected by the process.
- New projects and technology transfer actions that guarantee the funding for the immediate future and offer new insights on interesting industrial problems.
- Opening of new research lines with the integration of new PhD Students. In particular, we would like to mention a new line on the use of models to improve the security of information systems in collaboration with F. Cuppens (Télécom Bretagne).
- Very good ratio of number of published papers per faculty member of the team.
- International team. AtlannoMod has members from eight different nationalities. All these different research backgrounds are definitely a plus for the team.
CIDRE Project-Team (section vide)
DIONYSOS Project-Team (section vide)
2.2. Highlights

The Laboratoire d’Excellence (Labex) CominLabs was selected as the only Labex in France in the area of software for the first Labex competition held in 2010 (Labex are Excellence Centers within the framework of Investissements d’Avenir; 100 have been selected in all disciplines). CominLabs gathers ten labs from Bretagne and Nantes in the sector of telecommunications and information systems, with an overall amount of 500 researchers (“équivalents chercheurs”) and a funding of 14M Euros for a duration of 10 years; 1.4M Euros was provided for the first year. Albert Benveniste is the Scientific Director of CominLabs.
KERDATA Team

2.2. Highlights

Gilles Kahn/SPECIF PhD Thesis Award 2011. Bogdan Nicolae, former PhD student in the KerData Team (defense on November 30, 2010) won the 2nd Prize at the 2011 Gilles Kahn/SPECIF PhD Thesis Award for his thesis entitled BlobSeer: Towards efficient data storage management for large-scale, distributed systems.

ACM Student Research Competition at ICS 2011. Matthieu Dorier, Master intern at KerData in Summer 2011 (and now a PhD student there), was awarded the 2nd Prize at the ACM Student Research Competition organized in the framework of the ICS 2011 Conference (http://ics-conference.org/, Tucson, Arizona, May 2011), for his poster entitled Damaris - Using Dedicated I/O Cores for Scalable Post-petascale HPC Simulations [16].

2.5. Highlights

- Pierre Riteau won one of the three Best Poster Awards in the PhD Forum of the IPDPS 2011 conference.
TRISKELL Project-Team

2.2. Highlights

- Gerson Sunyé, Damien Pollet, Yves Le Traon and Jean-Marc Jézéquel received the Most Influential Paper Award of MODELS 2011, the 14th International Conference on Model Driven Engineering Languages and Systems. Their paper entitled “Refactoring UML Models”, being published at the Models conference in 2001, has been selected as one of two papers to receive this award of a most influential paper after ten years [57].

- The Diva European project has been a real success as stated by the assessment of the final review: Excellent progress (the project has fully achieved its objectives and technical goals for the period and has even exceeded expectations).
DREAM Project-Team (section vide)
2.2. Highlights

Amaury Dame received a runner-up award from the GdR Robotique for the best 2010 Ph.D. thesis in robotics.
METISS Project-Team

2.2. Highlights

Rémi Gribonval was awarded the 2011 Blaise Pascal Award of the GAMNI-SMAI by the French Academy of Sciences.

Rémi Gribonval obtained in 2011 a Starting Grant from the European Research Council.

Our group organized and participated in the PASCAL ‘CHiME’ Speech Separation and Recognition Challenge, aiming to evaluate speech separation, feature extraction and speech recognition algorithms in everyday listening conditions. The challenge attracted 13 groups worldwide, which is a major success compared to previous events in this field. For datasets and detailed results, please see http://www.dcs.shef.ac.uk/spandh/chime/challenge.html.

For his contributions to the field, Emmanuel Vincent will be awarded the 2012 SPIE ICA Unsupervised Learning Pioneer Award.
MIMETIC Team

2.2. Highlights

- Accepted papers in major venues:
  - "Imperceptible Relaxation of Collision Avoidance Constraints in Virtual Crowds" accepted at ACM Siggraph Asia 2011 (acceptance rate 17%) [4]
  - "The Director’s Lens: An Intelligent Assistant for Virtual Cinematography" accepted at ACM Multimedia 2011 (acceptance rate 17%) [16]
- Organization of the Symposium "Simulation of Sports Motions" co-located with CASA in Chengdu, China (May, 26-28 2011).
TEMICS Project-Team

2.5. Highlights

The paper “Online dictionaries for image prediction” [41] by Mehmet Turkan and Christine Guillemot has been among the 8 nominated for the best student paper award at IEEE-ICIP, Sept. 2011. The paper “Lossy compression of distributed sparse sources: a practical scheme” by G. Coluccia, E. Magli, A. Roumy and V. Toto-Zarasoa [26] has received the Best Paper Award “Francesco Carassa” 2011 awarded by GTTI (Gruppo Italiano Telecomunicazioni e Teoria dell’Informazione).
TEXMEX Project-Team

2.2. Highlights

- **TEXMEX** has co-organized the MediaEval 2011 evaluation campaign tasks on Violent Scenes Detection and on Spoken Web Search.

- **TEXMEX** has successfully participated in two tasks of Trecvid 2011, the main benchmark in automatic video analysis and retrieval organized by the National Institute of Technology.
  1. In the Semantic Indexing task, we have contributed to the submission of the Quaero consortium, jointly with LIG and Karlsruhe Institute of Technology. This submission was ranked 3rd out of 19 participants.
  2. In the Copy Detection task, our joint submission with the LEAR project-team was ranked approximately 3rd out of 21 participants, with respect to search quality.

- Gwénothèque Lecorvé was awarded the best Ph.D. award of the French Speech Communication Association.
2.2. Highlights

2.2.1. A new Virtual Reality room

This year, our virtual reality room is renewed. It is composed of a new wall with four faces (front, two sides and ground), an ART tracker to track user position and a Yamaha sound rendering system linked to Genelec speakers with 10.2 format sound controlled by the user position. The dimension is 9.6 m wide, 2.9 m deep and 3.1 m high. This new equipment allowed us to become a key partner of the VISIONAIR european project which aims at creating a European infrastructure that should be a unique, visible and attractive entry towards high-level visualization facilities open to a wide set of research communities.

2.2.2. Runner-up award at IEEE 3DUI

Jérôme Ardouin, PhD student, obtained the 2nd best short paper award for his paper entitled "Design and Evaluation of Methods to Prevent Frame Cancellation in Real-Time Stereoscopic Rendering", presented at the IEEE 3DUI conference 2011 [10].

2.2.3. Two presentations at Siggraph E-Tech

The Joyman [33] has been demonstrated in Siggraph Asia while the Virtual Crepe Factory has been presented in Siggraph [14].