COST

Domain Committee "Information & Communication Technologies"

COST Action IC0901

Start Date 30/10/2009

Rich Model Toolkit – An Infrastructure for Reliable Computer System

MONITORING PROGRESS REPORT

Reporting Period: *from 30 October 2009 to 30 April 2011*

This Report is presented to the relevant Domain Committee.
It contains three parts:

I. Management Report *prepared by the COST Office/Grant Holder*
II. Scientific Report *prepared by the Chair of the Management Committee of the Action*
III. Previous versions of the Scientific Report*; i.e., part II of past reporting periods*

The report is a "cumulative" report, i.e. it is updated annually and covers the entire period of the Action.

Confidentiality: the documents will be made available to the public via the COST Action web page except for chapter *II.D. Self evaluation*.

Based on the monitoring results, the COST Office will decide on the following year's budget allocation.

Executive summary (max.250 words):

The Action has strengthened established connections using STSMs and WG meetings. The number of joint publications is substantial. There is a number of newly created and ongoing national and EU proposal supporting the scientific activities. Action members continue to be very active as PC chairs and members of some of the most important conferences in the areas of formal methods, logic for computer science and software and hardware verification.
New tools have been developed in the context of the action by the scientific action members and collaborators, in the areas of verification techniques, decision procedures and synthesis algorithms. Additionally, new features based on techniques emerging from the action have been integrated in long-standing well-established tools. In particular, a new logical format based on Horn-Clauses to represent verification problems has been proposed by members of the action and collaborators, and supported in novel tools. This format has been suggested as the `lingua-franca' for verification problem, which encompasses a semantically unambiguous representation of the system under study and the desired property.

I. Management Report prepared by the COST Office/Grant Holder

I.A. COST Action Fact Sheet

- **COST Action** IC0901,

Rich Model Toolkit - An Infrastructure for Reliable Computer Systems

- **Domain** *ICT*

- **Action details:**

CSO Approval: 26/05/2009 **End date:** 29/10/2013
Entry into force: 26/06/2009 **Extension:**

- **Objectives** *The main objective is making automated reasoning techniques and tools applicable to a wider range of problems, as well as making them easier to use by researchers, software developers, hardware designers, and information system users and developers. The Action coordinates activities on developing infrastructures for automated reasoning about the new notion of Rich Models of computer systems. Rich Models have the expressive power of a large fragment of formalizable mathematics, enabling specification of software, hardware, embedded, and distributed systems. Rich Models support modeling at a wide range of abstraction levels, from knowledge bases and system architecture, to software source code and detailed hardware design. The Action contributes to the construction of Rich-Model Toolkit, a new unified infrastructure that precisely defines the meaning of Rich Models, introduces standardized representation formats, and incorporates a number of automated reasoning tools. Moreover, the Action develops and deploys new tools for automated reasoning that communicate using these standardized formats. The resulting tools will have a wide range of applicability and improved efficiency, helping system developers construct reliable systems through automated reasoning, analysis, and synthesis.*

Parties:

Parties							
Country	Date	Country	Date	Country	Date	Country	Date
Austria	09/07/2010	Belgium	06/06/2011	Czech Republic	31/07/2009	Denmark	03/12/2009
Estonia	08/02/2010	Finland	25/09/2009	France	03/12/2009	Germany	26/06/2009
Israel	26/06/2009	Italy	26/06/2009	Malta	04/11/2010	Norway	22/12/2009
Poland	12/10/2009	Romania	04/08/2009	Serbia	26/06/2009	Slovenia	17/03/2010
Spain	11/07/2009	Sweden	03/12/2009	Switzerland	31/07/2009	United Kingdom	26/06/2009

Total: 20

- **Other participants:**

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- **Working Groups**

We only list here MC members and MC Substitute Members, because the current COST practice does not appear to distinguish on a permanent basis other WG members from general participants of meetings.

WG1. Rich Model Language

Prof. Armin BIERE, Johannes Kepler University, Linz, AT **(Vice Chair of WG 2)**
Dr Hugo HERBELIN, INRIA, FR
Prof. Tobias NIPKOW, Technical University of Munich, DE **(Chair of WG1)**
Dr Luca Luigi PAOLINI, Universita di Torino, IT
Prof. Silvia GHILEZAN, University of Novi Sad, RS
Dr Paul JACKSON, University of Edinburgh, UK **(Vice Chair of WG1)**
Prof. Ian HORROCKS, University of Oxford, UK
Prof. Viktor KUNCAK , Swiss Federal Institute of Technology Lausanne, CH **(Action Chair)**

WG2. Decision Procedures

Dr Stefan RATSCHAN, Institute of Computer Science of the Czech Academy of Sciences, CZ **(STSM Committee Member)**
Prof. Maria Paola BONACINA, University of Verona, IT **(Chair of WG2)**
Prof. Alessandro ARMANDO, University of Genova, IT
Dr Alessandro CIMATTI, IRST Trento, IT

Prof. Marc BEZEM, University of Bergen, NO
Prof. Leszek PACHOLSKI, University of Wroclaw, PL
Dr Gabriel ISTRATE, e-Austria Research Institute, RO
Prof. Predrag JANICIC, University of Belgrade, RS
Prof. Koen CLAESSEN, Chalmers University of Technology, SE
Dr Philipp RUEMMER, Uppsala University, SE
Dr Enric RODRIGUEZ CARBONELL, Technical University of Catalonia, ES **(STSM Committee Member)**
Dr Tarmo UUSTALU , Institute of Cybernetics at TUT, EE
Dr Alessandro CIMATTI , Istituto per la Ricerca Scientifica e Tecnologica , Trento, IT
Dr Daniel KROENING, Oxford University, UK
Dr Rob ARTHAN, Lemma 1, UK

WG3. Analysis

Prof. Tomas VOJNAR, Brno University of Technology, CZ
Prof. Lars BIRKEDAL, IT University of Copenhagen, DK
Prof. Peter SCHNEIDER-KAMP, University of Southern Denmark, DK
Dr Jaan RAIK, Tallinn University of Technology, EE
Prof. Ilkka NIEMELA, Helsinki University of Technology, FI
Dr Tayssir TOUILI, LIAFA, CNRS, FR
Prof. Rupak MAJUMDAR, Max-Planck Institute for Computer Systems, DE
Prof. Andrey RYBALCHENKO, Technical University of Munich, DE **(STSM Committee Chair)**
Dr Gordon PACE, University of Malta, MT
Dr Adrian FRANCALANZA, University of Malta, MT
Dr Marius MINEA, Politehnica University of Timisoara, RO
Prof. Reiner HAHNLE, Chalmers University of Technology, SE
Prof. Natasha SHARYGINA, Universita della Svizera Italiana, CH **(Chair of WG3)**
Prof. Didier BUCHS, University of Geneva, CH
Prof. Holger WACHE, UAS Northwestern Switzerland, CH
Dr Radu CALINESCU, University of Aston, UK
Prof. Jean-Francois RASKIN, Université Libre de Bruxelles, BE
Mr Christian COLOMBO, Univesity of Malta, MT

WG4. Synthesis

Prof. Roderick BLOEM, Graz University of Technology, AT **(Action Vice Chair)**
Prof. Ivan PORRES, Åbo Akademi University, FI
Prof. Keijo HELJANKO, Aalto University, FI **(WG 3 Vice Chair)**
Dr Barbara JOBSTMANN, CNRS/Verimag, FR **(Chair of WG4)**
Prof. Alexander RABINOVICH, Tel Aviv University, IL
Dr Eran YAHAV, Technion, IL
Prof. Peter SESTOFT, IT University of Copenhagen, DK
Dr Cesar SANCHEZ, IMDEA Software, ES **(Grant Holder from 2011)**
Prof. Jean-Francois RASKIN , Université Libre de Bruxelles, BE
Prof. Bernd FINKBEINER , Saarland University, DE

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I.B. Management Committee member list

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I.C. Overview activities and expenditure

2010 Budget

Total Action Budget: 67'000 €

Meetings

Meeting Type	Date	Place	Total Cost (€)
WG	29/01/2010-30/01/2010	University of Belgrade, RS	6'620.84
WG+MC	20/07/2010-21/07/2010	Edinburgh, UK	17'594.97
WG+MC	18/10/2010-19/10/2010	Lugano, CH	14'603.46
Total			**38'819.27**

STSM

Beneficiary	Date	Host Institution	Early Stage Researcher	Total Cost (€)
Florian Haftmann	18/05/2010-25/05/2010	University of Belgrade, RS	Yes	640.00
Philipp Ruemmer	02-08-2010-09-08-2010	University of Lugano, CH	Yes	930.00
Alejandro Sanchez	30/08/2010-17/09/2010	EPFL, CH	Yes	1'860.00
Florian Lonsing	13/09/2010-27/09/2010	Chalmers University of Technology, SE	Yes	1'560.00
Filip Maric	01/11/2010-08/11/2010	Technische Universitat Munchen, DE	Yes	850.00
Total:				**5'840.00**

Dissemination

Title	Date	Place	Total Cost (€)
Web site and mailing lists	the entire reporting period	http://richmodels.org http://richmodels.epfl.ch	**500**

Others

		Total Cost (€)
FSAC		**6,756.84**

2011 Budget

Total Action Budget: 81'500 €

Meetings

Meeting Type	Date	Place	Total Cost (€)
WG+MC	01/04/2011-03/04/2011	Saarbrücken, Germany	Budgeted: 35'900.00 actual costs: 28'068.29
WG+MC	03/10/2011 - 04/10/2011	Torino (Italy)	24'400.00 (budgeted)
Total Budgeted			60'300.00

STSM

Beneficiary	Date	Host Institution	Early Stage Researcher	Total Cost (€)
Enric Rodriguez-Carbonell	27/03/2011-02/04/2011	University of Bergen, NW	Yes	850.00

Tayssir Touili	16/05/2011-21/05/2011	Brno University of Technology, CZ	Yes	1,300.00
Siert Wieringa	23/05/2011-28/05/2011	TU Graz, AU	Yes	880.00
Total:				**9,600.00**

Dissemination

Title	Date	Place	Total Cost (€)
Web site and mailing lists	the entire reporting period	http://richmodels.org http://richmodels.epfl.ch	**1,00**

2012 Budget

Total Action Budget: 104'400 €

Actual Expenditure: 71,673.59 €

Meetings

Meeting Type	Date	Place	Total Cost (€)
MC+WG	31/03/2012 – 01/04/2012	Tallin, Estonia	19,756.26 (actual)
MC+WG	30/06/2012 – 01/07/2012	Manchester, UK	10,977.88 (actual)
MC+WG	04/11/2012 – 04/11/2012	Haifa, Israel	12,697.71 (actual)
Total			43,431.85 (actual) 74,400.00 (budgeted)

STSM

Beneficiary	Date	Host	Total Cost (€)
Marcus Rabe	05/03/2012 – 26/03/2012	IMDEA Software, ES	1,410
Ronald Toegl	05/03/2012 – 25/03/2012	Department of Computer Science, UK	2,149
Svetlana Jaksic	15/03/2012 – 15/05/2012	Universita di Torino, IT	2,000
Simone Fulvio Rollini	02/09/2012 – 09/09/2012	Viena University of Tecnology, AT	1,300
Corneliu Popeea	10/09/2012 – 14/09/2012	Verimag, FR	660
Hussein Hojjat	04/11/2012 – 17/11/2012	Uppsala University, SE	1,560
Michael Skrzypczak	04/12/2012 – 13/12/2012	Tel Aviv University, IL	1,163
Michael Tautschnig	06/12/2012 – 11/12/2012	TU Munchen, DE	340
Total			10,582 (actual) 8,000 (budgeted)

Schools

Title	Date	Place	Total Cost (€)
2nd Int´l SAT/SMT Summer School	12/06/2012 – 15/06/2012	Trento, IT	10,231 (actual) 10,000 (budgeted)

Dissemination

Title	Date	Place	Total Cost (€)
			0 (actual) 1,000 (budgeted)

2013 Budget

Total Action Budget: 81’500 €

Instrument	Quantity	Budget (€)
Meetings	3	71,370
Training Schools	1	17,520.00
STSMs	7	14,000
Dissemination	1	1,500
Other Expenses Related to Scientific Activities	0	0.00
SCIENTIFIC EXPENDITURE		**104,390.00**
Financial and Scientific Administration and Coordination	13%	13,570
TOTAL EXPENDITURE		**117,960.00**

II. Scientific Report

II.A. Innovative networking

- **Innovative knowledge resulting from COST networking through the Action**
  - Common format for Numerical Transition Systems, and proposal of using Horn Clauses as a universal form to represent many verification problems.
  - New algorithms and tools have been developed for analysis for concurrent programs, heap manipulating programs, new synthesis techniques were introduced.
- **Significant scientific breakthroughs as part of the COST Action**
  - Logic in the form of Horn Clauses has emerged as the common language for representing all elements of many verification problems, including the system, the properties to verify and the proof rules. This breakthrough enables a semantically rich common language for problem exchange and tool comparison. Several groups within the action and from international research groups are pursuing this breakthrough further.
  - Several decision procedures to aid in the verification of heap manipulating programs have been developed, including applications to concurrent verification.
  - A new level of integration of SMT solvers and first-order provers. Untrusted output provers is used to reconstruct formal proofs in the Isabelle/HOL theorem prover. In turn, this step helps establishing Isabelle/HOL as the basis of the rich model toolkit.
  - Members have participated in the SMT-COMP competition of solvers working on standardized SMT format, introducing new solvers into the competition. Members have organized contests on numerical transitions systems.
  - Another hardware competition with standardized format has been organized
  - Common format for LTL Synthesis tools has been discussed. Several theoretical results on quantitative language theory and quantitative synthesis have been established.
  - A common format for transition systems was initiated. Several verifiers developed in the group were connected to it, including those for the C language and for Scala
  - An algorithm combining interpolation-based model-checking loop acceleration was developed and implemented through collaboration between Verimag (FR), EPFL (CH),

    and Brno University of Technology
- **Tangible medium term socio-economic impacts achieved or expected**
  - The action has started a successful activity in co-organizing summer schools, first in the area of synthesis (WG4) and then in decision procedures (WG2)
  - We expect potential for industry adoption of verification techniques and formats.
  - As a major impact, we expect to contribute to a large body of verification problems and benchmarks based on the common formats developed.
- **Spin off ERC Proposals**
  - Jean-Francoise, ULB – ERC Starting Grant 2011
  - Viktor Kuncak, EPFL – ERC Starting Grant 2012
  - David Monniaux, Verimag – ERC Starting Grant 2012
  - Andrey Rybalchenko, Technical University of Munich – ERC Starting Grant 2012
- **Spin off of new EC RTD Framework Programme proposals/projects**
  - Project CESAR
  - Project PINCETTE
  - Charter, http://charterproject.ning.com/

- Project Diamond *(Diagnosis, Error Modelling and Correction for Reliable Systems Design)* http://www.fp7-diamond.eu/
- Project Coconut *(the definition of a formal framework based on a tight integration of design and verification through all refinement steps of an embedded platform design flow, from specifications to logic synthesis and software compilation)* http://www.iaik.tugraz.at/content/research/design_verification/coconut/

- **Spin off of new National Programme proposals/projects**
  - BINCOA: BINary COde Analysis, https://bincoa.labri.fr/trac
  - Cloud Computing - LSCITS, http://www1.aston.ac.uk/eas/research/groups/csrg/research-projects/cloud-computing/
  - Static and Dynamic Verification of Programs with Advanced Features of Concurrency and Unboundedness, Czech Science Foundation P103/10/0306, http://www.fit.vutbr.cz/research/view_project.php.en?id=475
  - Automata and Logic for Symbolic Verification of Software, Czech-French Barrande project MEB 021023, http://www.fit.vutbr.cz/research/view_project.php.en?id=493
  - ToMeSo (Tools and Methods for Scalable Software Verification) (DK)
  - MOREASO (Modular Reasoning about Software) - http://www.itu.dk/people/birkedal/moreaso
  - LIME2 (LightweIght formal Methods for distributed component-based Embedded systems) - http://www.tcs.hut.fi/Research/Logic/LIME2/
  - StMcDes (Symbolic Testing and Model Checking of Distributed Embedded Systems) - http://www.tcs.hut.fi/Research/Logic/StMcDes.shtml
  - MCM (Methods for Constructing and Solving Large Constraint Models) - http://www.tcs.hut.fi/Research/Logic/MCM.shtml
  - MODSAFE (Model-Based Safety Evaluation of Automation Systems) http://www.tcs.hut.fi/Research/Logic/MODSAFE/
  - Secure Type Systems and Deduction - DFG Project http://www4.in.tum.de/proj/theoremprov/local_projects/rs3.html

II.B. Inter-disciplinary networking

Bridging ICT sub-communities. Our action brings together researchers from complementary communities that interact in joint WG meetings.

The Action scope covers the entire spectrum from theory to practice of reasoning about reliable systems. We explore the foundations (logic, types, lambda calculus), specification frameworks for describing systems and properties, algorithms that solve particular decidable or semi-decidable problems (decision procedures, theorem proving approaches), approximate techniques such as abstraction, tools that apply these methods, and methodologies to make tools more usable in practice. The systems considered include hardware, software, and hybrid systems, bringing together communities that tend to usually attend different venues.

The actions brings together three key technical directions of theorem proving and decision procedures, static analysis, and synthesis. This combination encourages emerging techniques and provides new perspectives on the more established ones. A common theme is identifying *common representation formats*; it pervades all three technical directions and is regularly discussed.

The meetings have been very fruitful, given the broad range of communities covered. The diversity of the communities formed inspiring grounds for discussions during meetings, leading to better mutual understanding of the communities.

The initial ties established during the regular meetings have been strengthened with several Short-Term Scientific Missions. They have been effective in establishing new fruitful cooperation between research groups in the actions, in a number of cases connecting groups working on decision procedures as the underlying technology with groups working on their applications or formalizations.

Prospects for broader networking. There is a possibility of connections to **biological and physical sciences**. Particularly relevant are models of embedded systems, which exhibit probabilistic and continuous behaviour that arises in these domains as well. A term cyber-physical systems is increasingly used to describe this domain.

II.C. New networking

- **Additional new members joining the Action during its life**
  - *Countries that officially joined after the kick-off meeting include: Austria, Malta, Slovenia, Estonia, and they increase the number of MC members and substitutes*
  - *Moreover, several new members and new substitute members joined from existing countries, including Germany, France, Sweden, Switzerland, Italy, Estonia, UK substantially strengthening Action's expertise in all work groups*
- **Numbers of individual participants involved in the Action work**
  - *The Action has 49 MC members and MC substitutes out of these, 5 are women and at least 8 early-stage researchers*
  - *Additional work group members are collaborating by attending WG meetings.*
  - *Counting additional groups, and the fact that most of them are leaders of research group, we estimate the number of actively involved personnel to be at least 120.*
- **Involvement of Early Stage Researchers in the Action**
  - *16 (5+3+8) short-term scientific missions were carried out successfully.*
    - *The researchers that travelled on STSMs were all early-stage researchers.*
    - *They subsequently presented their results in WG meetings and obtained feedback from Action members.*
  - *The Action has agreed to a policy of inviting early-stage researchers (typically doctoral students and postdocs) to the Action meetings and currently favours this form of involvement over initiating new summer schools.*
    - *That said, Action members have organized several summer schools in the related area, two of them (2012,2013 SAT/SMT) using COST funds.*
- **Involvement of researchers from outside of COST Countries**
  - Participants from United States have been involved as invited experts or as initiators of related activities in the United States. These include:
    - Natarajan Shankar, Systems Research Institute (SRI), CA, USA
    - Darko Marinov, University of Illinois Urbana-Champaign, IL, USA
    - Sumit Gulwani, Microsoft Research, Redmond, USA
    - Cesare Tinelli, University of Iowa, IO, USA
    - Geoff Sutcliffe, University of Miami, MI, USA
    - Rustan Leino, Microsoft Research, Redmond, USA
    - Nikolaj Biorner, Microsoft Research, Redmond, USA
    - Keneth McMillan, Microsoft Research, Redmond, USA
    - Joe Leslie Hurd, Intel, USA
- **Number of participants from non-COST Countries approved by the CSO**
  - The Action has made no request for participants from non-COST countries that have formal agreement. The Action would be interested in formal participation from USA, but USA provides no funds for researchers to participate in COST. Therefore, researchers from USA have been invited on an occasional basis as experts.
  - The request from South Africa has been approved
- **Advancement and promotion of scientific knowledge through publications and other outreach activities**
  - As an illustration, we list in the annex there were **over 260 publications** (including 2010, 2011 and 2012) involving participants from different institutions that are members of the Action. Many of these are publications in competitive venues.
  - In addition, several Action members are involved in writing or reviewing a handbook in the area (some of the most relevant are listed in the annex)
  - The Action web site started developing a guide to current research results, starting with the overview of current tools and approaches to synthesis*:*
    http://richmodels.epfl.ch/synthesis
- **Activities and projects with COST network colleagues**

- Important connections were established with the related COST Action IC0701 on Verification of Object-Oriented Software
  - *Reiner Haehnle (vice-chair of IC0701) was a MC member of IC0901*
  - *Viktor Kuncak (chair of IC0901) has been an MC member of IC0701*
  - *Bernhard Beckert (chair of IC0701) presented interesting and relevant experience during the WG meeting in Edinburgh*
  - *A joint meeting between IC0701 and IC0901 took place in Torino, October 2011*
- Now IC0701 ended, but connections are explored with further ICT actions. For example, the group in Novi Sad is also a member of the COST Action COST IC1201.
- Among projects that support Action goals are:
  - HATS, www.hats-project.eu
  - KeY, http://www.key-project.org/
  - EternalS, https://www.eternals.eu/
  - ASCENS http://www.ascens-ist.eu
  - SEMACODE (Stratégies d'Évaluation, Machines Abstraites et COntrôle DElimité) INRIA Associate Team Project (Hugo Herbelin, Silvia Ghilezan)
  - LOTIT - LOGIC AND TYPES IN SCIENCE AND INFORMATION TECHNOLOGIES
    a bilateral project between Serbia and France (2012-2013)
  - NewP@ss = New verification & validation methods enabling widespread use of Privacy and@nonymity in electronically secured systems, with NXP and Infineon. Funding Agency: Austrian Research Promotion Agency (FFG)
  - QUAINT = Quantified Decision Procedures and Interpolation for Correction with Roland Jie-Hong Jiang at National Taiwan U. Funding Agency: Austrian Science Fund (FWF)

- **The capacity of the Action members to raise research funds**
  - Action members have been very successful in raising further research funds, as demonstrated by the number and the size of the projects funded
  - The resulting increase in funding will lead to increased pace of research and the number of results in the near future
  - Further joint projects are under preparation

III. Previous scientific report(s)

Only part II.D of the previous report is copied here, because the others, being cumulative, would result in unnecessary repetition.

ANNEXES

- ***Outline of Scientific Programs of Work Group Meetings***

Belgrade, January 29-30, 2010

- **Ralph-Johan Back** (Åbo Akademi University, Turku, Finland): Invariant Based Programming
- **Viktor Kuncak** (EPFL, Lausanne, Switzerland): Towards a Rich Model Toolkit
- **Oliver Kullmann** (Swansea University, United Kingdom): The OKlibrary, an Open-source Research Platform for SAT Solving (and Beyond)
- **Mladen Nikolić** (University of Belgrade, Serbia): A Methodology for Comparison and Ranking of SAT Solvers
- **Ruzica Piskac** (EPFL, Lausanne, Switzerland): Combining Theories with Shared Set Operations
- **Philipp Ruemmer** (Oxford University Computing Laboratory, United Kingdom): The SMT-LIB 2 Standard: Overview and Proposed New Theories
- **Predrag Janičić and Filip Marić** (University of Belgrade, Serbia): Uniform Reduction to SAT and SMT
- **Paul Jackson** (University of Edinburgh, United Kingdom): Proving SPARK VCs with SMT solvers. Implications for the Rich Model Language
- Rich Model Language: Panel Discussion
- **Sascha Boehme** (TU Munich , Germany): Efficient Proof Reconstruction for the SMT Solver Z3
- **Florian Haftmann** (TU Munich, Germany): Integrating Isabelle/HOL and Functional Programming -- Current Trends
- **Marc Bezem** (University of Bergen, Norway): Automating Coherent Logic
- **Moa Johansson** (University of Verona, Italy): Conjecture Synthesis for Inductive Theory Formation
- **Johannes Eriksson** (Åbo Akademi University, Turku, Finland): Automatic Checking of Invariant Diagrams
- **Filip Marić** (University of Belgrade, Serbia): Automated Timetabling using a SAT Encoding
- **Walther Neuper** (Graz University of Technology, Austria): Program Languages with CTP Features?
- **Stefan Ratschan** (Academy of Sciences, Prague, Czech Republic): Deciding Non-linear Numerical Constraints: an Overview
- **Philippe Suter** (EPFL, Lausanne, Switzerland): Decision Procedures for Algebraic Data Types with Abstractions
- **Hugo Herbelin** (INRIA - PPS, Paris, France): Intuitionistically Proving Markov's Principle Thanks to Delimited Control
- **Jelena Ivetic** (University of Novi Sad, Serbia): Intuitionistic Sequent-style Calculus with Explicit Structural Rules

Edinburgh, July 20-21, 2010

- **Ras Bodik:** Next Steps in Partial-Program Synthesis
- **Kim Larsen:** Controller Synthesis from Timed Game Automata – from Theory to Practice
- **Alexander Rabinovich:** Extensions of the Church synthesis Problem
- **Bernd Finkbeiner:** Coordination Logic
- **Georg Hofferek and Roderick Bloem:** Controller Synthesis Using Uninterpreted Functions

- **Tobias Nipkow:** Automatic proof and disproof in Isabelle
- **Natarajan Shankar:** Inference Architectures for Satisfiability Modulo Theories
- Panel on Evaluation Methods for Solvers and Quality Metrics for Solutions
- **Armin Biere and Florian Lonsing :**Extending the BTOR Language
- **Bernhard Beckert:** Formal Verification of System Software
- **Peter Schneider-Kamp:** Towards Complexity and Termination Analysis of Transition Systems
- **Peter Habermehl, Lukas Holik, Adam Rogalewicz, Jiri Simacek and Tomas Vojnar:** A Proposal of a New Automata-based Representation of Heaps
- **Marius Bozga, Radu Iosif, Filip Konecny and Tomas Vojnar:** FLATA: Towards a Toolset for manipulation and analysis of counter automata
- **Stefan Ratschan:** Verification of Mixed Discrete-Continuous Systems
- **Alejandro Sanchez and Cesar Sanchez:** Towards Temporal Verification of Concurrent Data-structures: In Need for Sophisticated Decision Procedures
- **Hossein Hojjat, Viktor Kuncak, Ruzica Piskac and Philippe Suter:** Vepar: A Framework for Automated Reasoning
- **Paul Jackson and Grant Passmore:** Applications of a procedure for solving non-linear arithmetic problems
- **Cristina Borralleras, Salvador Lucas, Albert Oliveras, Enric Rodríguez Carbonell and Albert Rubio:** Solving Non-linear Polynomial Arithmetic via SAT Modulo Linear Arithmetic
- **Timothy Nelson, Dougherty Daniel, Kathi Fisler and Shriram Krishnamurthi:** On the Finite Model Property in Order-Sorted Logic
- **Mariangiola Dezani-Ciancaglini, Silvia Ghilezan, Svetlana Jaksic and Jovanka Pantovic** Types for dynamic web data with RBAC
- **Predrag Janicic and Filip Maric:** Uniform reduction to SMT
- **Maria Paola Bonacina and Moa Johansson:** Towards an Interpolating First-Order Prover

Lugano, October 18-19, 2010

- **Sumit Gulwani**: Program Synthesis for Automating Education
- **Jean-Francois Raskin**: Compositional Algorithms for LTL Synthesis
- **Ashutosh Gupta**: Constraint solving for branching counterexamples
- **Florian Lonsing**: Practical Aspects of Dependency Schemes in QBF Solving
- **Simone Fulvio Rollini**: An Efficient and Flexible Approach to Resolution Proof Reduction
- **Andreas Holzer**: Guided Whitebox Testing
- **Stefano Tonetta**: Formal methods for requirements validation
- **Cesar Sanchez**: Decision Procedures for Concurrent Skiplists
- **Larent Doyen**: Energy Parity Games
- **Alessandro Cimatti**: The NuSMV project: status and roadmap
- **Pavol Cerny**: Algorithmic Verification of Single-Pass List Processing Programs
- **Filip Konecny**: Relational Analysis of Non-deterministic Integer Programs
- **Ruzica Piskac**: Reasoning about Collections - Decision Procedures and Applications
- **Dirk Beyer**: Adjustable-Block Encoding: Towards a Unified Framework for Software Verification
- **Sergio Mover**: Compositional Reachability of Hybrid Systems
- **Hugo Herbelin**: A short and constructive proof of Gödel's completeness theorem
- **Predrag Janicic**: DPLL-Based Theorem Prover for Coherent Logic
- **Alberto Griggio**: A Practical Approach to SMT(LA(Z))

Saarbücken, April 1-3, 2011

- **Tom Henzinger:** Quantitative reactive models
- **Adrian Francalanza:** Reasoning about explicit resource management in message passing

concurrency
- **Radu Calinescu:** Quantitative verification of adaptive IT systems
- **Ran Ji:** Provably correct compilation of an abstract behavioural modelling language
- **Jesper Bengtson:** Separation logic for OO programs in Coq
- **Jasmin Blanchette:** Link between interactive and automated theorem provers
- **Philipp Ruemmer:** Craig interpolation for integer arithmetic, uninterpreted functions, and the theory of arrays
- **Alessandro Armando:** SMT-based symbolic model checking of administrative access control policies
- **Eran Yahav**: Synthesis of memory fences
- **Aliaksei Tsitovich:** From constructive to inductive proofs of termination
- **Chantal Keller:** Cooperation between SAT, SMT provers and Coq
- **Tayssir Touili:** On model checking networks of pushdown systems
- **George Candea:** Invited Talk: S2E: A Platform for In-Vivo Multi-Path Analysis of Software Systems
- **Radu Iosif:** Numerical Transition Systems Competition
- **Tomáš Vojnar:** Two new tool prototypes for shape analysis
- **Alejandro Sánchez:** Deductive Temporal Verification of Parametrized Concurrent Systems
- **Filip Maric:** Verified efficient unsatisfiability proof checking for SAT
- **Darko Marinov:** Systematic Software Testing Using Test Abstractions
- **Tuomas Launiainen:** Efficient model checking of PSL safety properties
- **Denis Trček:** On Rich Models Issues for Trust Management & Qualitative Algebra
- **Christian von Essen:** Synthesizing Systems with Optimal Average-Case Behavior for Ratio Objectives
- **Alexis Marechal:** Verifying Design Patterns using Symbolic Model Checking
- **Stefan Ratschan:** Numerical constraint solving based on linear relaxations
- **Ruslán Ledesma Garza:** Analysis and Verification of Higher Order Functional Programs: An Automata Theoretic Approach
- **Johannes Kinder:** Static Analysis of x86 Executables
- **Ruzica Piskac:** Software Synthesis using Automated Reasoning
- **Rupak Majumdar:** Verification for control

Turin, October 3-4 2011

- **Roberto Bagnara:** The Automatic Synthesis of (Linear) Ranking Functions for Termination Analysis
- **Francesco Alberti**: Array-based systems and parameterized verification
- **Cesar Sanchez:** Parametrized Invariance for Fully Symmetric Systems
- **Alexander Rabinovich:** The Church Synthesis Problem with metric
- **Silvia Ghilezan:** Resource control calculi
- **Silvio Ghilardi:** Interpolation in array theories
- **Maria Paola Bonacina:** Towards interpolation in an SMT solver with integrated superposition
- **Bernd Finkbeiner:** Reactive Safety
- **Adrian Francalanza**: Distributed System Contract Monitoring

- **Alessandro Cimatti:** From Satisfiability to Verification Modulo Theories
- **Stefano Tonetta:** VMT techniques
- **Ruzica Piskac:** Synthesis of Code Snippets using Automated Reasoning
- **Christoph Weidenbach:** A General Framework for Effective Reasoning in Propositional and First-Order Logic
- **Alberto Griggio:** Effective Word-Level Interpolation for Software Verification
- **Radu Iosif:** The Numerical Transition Systems Library

Tallinn, 31 March 2012-1 April 2012

- **Alastair F. Donaldson, Leopold Haller, Daniel Kroening, Philipp Rümmer :***Software Verification Using k-Induction* [abstract]
- **Alejandro Sánchez, César Sánchez** *A Decision Procedure for Skiplists with Unbounded Height and Length* [abstract]
- **Maria Paola Bonacina, Moa Johansso**n *Interpolation for resolution, superposition and DPLL(Gamma+T)* [abstract]
- **Jean-Christophe Filliâtre** *Combining Interactive and Automated Theorem Proving in Why3* (invited talk) [abstract]
- **Jesper Bengtson, Jonas Braband Jensen, Lars Birkedal** *A framework for higher-order separation logic in Coq* [abstract]

A. **Jasmin Blanchette** *Sharing the Burden of (Dis)proof with Nitpick, Quickcheck, and Sledgehammer* (invited talk) [abstract]

B. **Sergey Grebenshchikov, Nuno Lopes, Corneliu Popeea, Andrey Rybalchenko** *Synthesizing Software Verifiers from Proof Rules* [abstract]

- **Keijo Heljanko, Kari Kähkönen, Tuomas Launiainen** *Building a modern concolic tester* [abstract]
- **Predrag Janicic, Vesna Marinkovic** *Automated Synthesis of Geometric Construction Procedures* [abstract]
- F**u Song, Tayssir Touili** *Efficient CTL Model-Checking for Pushdown Systems* [abstract]
- **Claudio Sacerdoti, Enrico Tassi** *Unification in the Matita ITP* [abstract]
- **Chad E. Brown** *Using Satallax to Generate Proof Terms for Conjectures in Coq* (invited talk) [abstract]
- **Jasmin Blanchette, Andrei Paskevich** *TFF1: The TPTP Typed First-Order Form with Rank-1 Polymorphism* [abstract]
- **Rob Arthan** *Now f is continuous (exercise!)* [abstract]
- **Nelma Moreira, David Pereira, Simão Melo de Sousa** *Deciding Regular Expression (In-)Equivalence in Coq* [abstract]

- **Pierre Boutillier** *A dependent pattern matching compiler that preserves programmers' intuition* [abstract]
- **Serdar Tasiran** *Generalizing Reduction and Abstraction to Simplify Concurrent Programs: The QED Approach* (invited talk) [abstract]
- **Jean-Francois Raskin** *Strategy synthesis for quantitative games*
- **Stefan Ratschan** *Physical/Software Systems and their Formal Safety Verification* [abstract]
- **Julian Samborski-Forlese** *Translation of RLTL into Buchi Automata* [abstract]

Manchester, 30 June 2012-1 July 2012

- **Leonardo de Moura** (invited talk): *Regression Tests and the Inventor's Dilemma*
- **A. Zeljic, Ph. Rümmer**: *Experiments with Automated Strategy Selection in a Theorem Prover*
- **M. P. Bonacina and N. Dershowitz** *Abstract Canonical Inference: On Fairness in Theorem Proving*
- **M. Nikolic, P. Janicic:** C*DCL-Based Abstract State Transition System for Coherent Logic*
- **C. Colombo, G. Pace:** *Monitoring-Oriented Compensation Programming*
- **D. Monniaux, J. Henry, M. Moy, L. Gonnord:***Path-focused analysis of numerical transitions*
- **P. Jackson:** *Better Real Arithmetic Provers for Hybrid Systems Verification*
- **Hélène Kirchner** *(invited talk): A Rewriting Point of View on Strategies*
- **B. Beckert, D. Bruns, V. Klebanov, P.H. Schmitt, C. Scheben, M. Ulbrich***: Secure Information Flow for Java: A Dynamic Logic Approach*
- **S. Ratschan:** *Certificates for Reachability and Progress of Discrete and Continuous Systems*
- A**. Niemetz, M. Preiner, F. Lonsing, M. Seidl and A. Biere:** *Scalable Certificate Extraction for QBF*
- **S. Wieringa**: *Reviewing the Results of the Hardware Model Checking Competition 2011*
- **M. Seidl:** *Model Checking UML Models: State-of-the-Art and Challenges*
- **S. Falke, F. Merz, C. Sinz***:Simplification Techniques in Software Bounded Model Checking*
- **E. Jahren**: *SAT-based Techniques for the Car Sequencing Problem*
- **A. Bauer, P. Baumgartner, M. Norrish***: Reasoning with Data-Centric Business Processes*

Haifa, 4 November 2012

- **Pavol Cerny** *(invited talk):* Quantitative Abstraction Refinement
- **Hana Chockler** *(invited talk): P*INCETTE project: validation of changes and upgrades in

large software systems

- **Yaron Velner**: *Finite-State and Pushdown Games with Multi-dimensional Mean-Payoff Objectives*
- **Silvia Ghilezan:** *Privacy for Linked Data*
- **Simone Rollini:** *Interpolant Strength in Model Checking*
- **Alejandro Sánchez:** *Assisted Verification of Invariance for Parametrized Systems*
- **Maria Paola Bonacina:** *Interpolation for resolution and superposition*
- **Philippe Suter:** *Reductions for Synthesis Procedures*
- **Pavle Subotic:** *Logico-Numerical Max-Strategy Iteration*
- **Markus Rabe:** *Information flow analysis and temporal logics*

- ***2010 Publications with Authors from Different Institutions Networking Through Action***

1. Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger, Barbara Jobstmann: Robustness in the Presence of Liveness. CAV 2010
2. Roderick Bloem, Alessandro Cimatti, Karin Greimel, Georg Hofferek, Robert Könighofer, Marco Roveri, Viktor Schuppan, Richard Seeber: RATSY - A New Requirements Analysis Tool with Synthesis. CAV 2010
3. Peter Habermehl, Radu Iosif, Tomás Vojnar: Automata-based verification of programs with tree updates. Acta Inf. (ACTA) 47(1):1-31 (2010)
4. Parosh Aziz Abdulla, Yu-Fang Chen, Lorenzo Clemente, Lukás Holík, Chih-Duo Hong, Richard Mayr, Tomás Vojnar: Simulation Subsumption in Ramsey-Based Büchi Automata Universality and Inclusion Testing. CAV 2010:132-147
5. Bohuslav Krena, Zdenek Letko, Tomás Vojnar, Shmuel Ur: A platform for search-based testing of concurrent software. PDATAD 2010:48-58
6. Parosh Aziz Abdulla, Yu-Fang Chen, Lukás Holík, Richard Mayr, Tomás Vojnar: When Simulation Meets Antichains. TACAS 2010:158-174
7. Jan Schwinghammer, Hongseok Yang, Lars Birkedal, François Pottier, Bernhard Reus: A Semantic Foundation for Hidden State. FOSSACS 2010:2-17
8. Derek Dreyer, Georg Neis, Lars Birkedal: The impact of higher-order state and control effects on local relational reasoning. ICFP 2010:143-156
9. Derek Dreyer, Georg Neis, Andreas Rossberg, Lars Birkedal: A relational modal logic for higher-order stateful ADTs. POPL 2010:185-198
10. Tayssir Touili, Byron Cook, Paul Jackson: Computer Aided Verification, 22nd International Conference, CAV 2010, Edinburgh, UK, July 15-19, 2010. Proceedings CAV 2010
11. Pierre Ganty, Rupak Majumdar, Benjamin Monmege: Bounded Underapproximations. CAV 2010:600-614
12. Michael Emmi, Rupak Majumdar, Roman Manevich: Parameterized verification of transactional memories. PLDI 2010:134-145
13. Mark Marron, Rupak Majumdar, Darko Stefanovic, Deepak Kapur: Shape Analysis with Reference Set Relations. VMCAI 2010:247-262
14. Alexander Malkis, Andreas Podelski, Andrey Rybalchenko: Thread-Modular Counterexample-Guided Abstraction Refinement. SAS 2010:356-372
15. Mark Jenkins, Joël Ouaknine, Alexander Rabinovich, James Worrell: Alternating Timed Automata over Bounded Time. LICS 2010:60-69
16. Eran Yahav, Mooly Sagiv: Verifying safety properties of concurrent heap-manipulating programs. ACM Trans. Program. Lang. Syst. (TOPLAS) 32(5) (2010)

17. Angelo Chiappini, Alessandro Cimatti, Luca Macchi, Oscar Rebollo, Marco Roveri, Angelo Susi, Stefano Tonetta, Berardino Vittorini: Formalization and validation of a subset of the European Train Control System. ICSE (2) 2010: 109-118
18. Marc Bezem, Robert Nieuwenhuis, Enric Rodríguez-Carbonell: Hard problems in max-algebra, control theory, hypergraphs and other areas. Inf. Process. Lett. 110(4): 133-138 (2010)
19. César Sánchez, Martin Leucker: Regular Linear Temporal Logic with Past. VMCAI 2010
20. Jasmin Christian Blanchette, Koen Claessen: Generating Counterexamples for Structural Inductions by Exploiting Nonstandard Models. LPAR (Yogyakarta) 2010: 127-141
21. Wolfgang Ahrendt, Bernhard Beckert, Martin Giese, Philipp Rümmer: Practical Aspects of Automated Deduction for Program Verification. KI 24(1): 43-49 (2010)
22. Daniel Kroening, Natasha Sharygina, Aliaksei Tsitovich, Christoph M. Wintersteiger: Termination Analysis with Compositional Transition Invariants. CAV 2010: 89-103
23. Jad Hamza, Barbara Jobstmann, and Viktor Kuncak. Synthesis for regular specifications over unbounded domains. In *FMCAD*, 2010.
24. Milos Gligoric, Tihomir Gvero, Vilas Jagannath, Sarfraz Khurshid, Viktor Kuncak, and Darko Marinov. Test generation through programming in UDITA. ICSE 2010
25. Krishnendu Chatterjee, Luca de Alfaro, Vishwanath Raman, César Sánchez: Analyzing the Impact of Change in Multi-threaded Programs. FASE 2010: 293-307
26. Martin Leucker, César Sánchez: Regular Linear-Time Temporal Logic. TIME 2010: 3-5
27. Mariangiola Dezani-Ciancaglini, Silvia Ghilezan, Svetlana Jaksic, Jovanka Pantovic: Types for role based access control of dynamic web data, WFLP'10.

2011 Publications with Authors from Different Institutions Networking Through Action

28. Parosh Aziz Abdulla, Jonathan Cederberg, Tomás Vojnar: Monotonic Abstraction for Programs with Multiply-Linked Structures. RP 2011: 125-138
29. Ignasi Abío, Robert Nieuwenhuis, Albert Oliveras, Enric Rodríguez-Carbonell: BDDs for Pseudo-Boolean Constraints - Revisited. SAT 2011: 61-75
30. Edward Aftandilian, Samuel Z. Guyer, Martin T. Vechev, Eran Yahav: Asynchronous assertions. OOPSLA 2011: 275-288
31. Jade Alglave, Alastair F. Donaldson, Daniel Kroening, Michael Tautschnig: Making Software Verification Tools Really Work. ATVA 2011: 28-42
32. Jade Alglave, Daniel Kroening, John Lugton, Vincent Nimal, Michael Tautschnig: Soundness of Data Flow Analyses for Weak Memory Models. APLAS 2011: 272-288
33. Vince Bárány, Lukasz Kaiser, Alexander Rabinovich: Expressing cardinality quantifiers in monadic second-order logic over chains. J. Symb. Log. 76(2): 603-619 (2011)
34. Jesper Bengtson, Jonas Braband Jensen, Filip Sieczkowski, Lars Birkedal: Verifying Object-Oriented Programs with Higher-Order Separation Logic in Coq. ITP 2011: 22-38
35. Alexis Bès, Alexander Rabinovich: Decidable Expansions of Labelled Linear Orderings. Logical Methods in Computer Science 7(2) (2011)
36. Armin Biere, Florian Lonsing, Martina Seidl: Blocked Clause Elimination for QBF. CADE 2011: 101-115
37. Armin Biere: Preprocessing and Inprocessing Techniques in SAT. Haifa Verification Conference 2011: 1
38. Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger, Barbara Jobstmann: Specification-centered robustness. SIES 2011: 176-185
39. Roderick Bloem, Krishnendu Chatterjee, Karin Greimel, Thomas A. Henzinger, Barbara Jobstmann: Specification-centered robustness. SIES 2011: 176-185
40. Maria Paola Bonacina, Christopher Lynch, Leonardo Mendonça de Moura: On Deciding Satisfiability by Theorem Proving with Speculative Inferences. J. Autom. Reasoning 47(2): 161-189 (2011)
41. Maria Paola Bonacina, Moa Johansson: On Interpolation in Decision Procedures. TABLEAUX

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42. Ahmed Bouajjani, Marius Bozga, Peter Habermehl, Radu Iosif, Pierre Moro, Tomás Vojnar: Programs with lists are counter automata. Formal Methods in System Design 38(2): 158-192 (2011)
43. Marco Bozzano, Alessandro Cimatti, Oleg Lisagor, Cristian Mattarei, Sergio Mover, Marco Roveri, Stefano Tonetta: Symbolic Model Checking and Safety Assessment of Altarica models. ECEASST 46 (2011)
44. Thomas Brihaye, Véronique Bruyère, Laurent Doyen, Marc Ducobu, Jean-François Raskin: Antichain-Based QBF Solving. ATVA 2011: 183-197
45. Angelo Brillout, Daniel Kroening, Philipp Rümmer, Thomas Wahl: Beyond Quantifier-Free Interpolation in Extensions of Presburger Arithmetic. VMCAI 2011: 88-102
46. Angelo Brillout, Daniel Kroening, Philipp Rümmer, Thomas Wahl: An Interpolating Sequent Calculus for Quantifier-Free Presburger Arithmetic. J. Autom. Reasoning 47(4): 341-367 (2011)
47. Angelo Brillout, Daniel Kroening, Philipp Rümmer, Thomas Wahl: Beyond Quantifier-Free Interpolation in Extensions of Presburger Arithmetic. VMCAI 2011: 88-102
48. Angelo Brillout, Daniel Kroening, Philipp Rümmer, Thomas Wahl: An Interpolating Sequent Calculus for Quantifier-Free Presburger Arithmetic. J. Autom. Reasoning 47(4): 341-367 (2011)
49. Lubos Brim, Jakub Chaloupka, Laurent Doyen, Raffaella Gentilini, Jean-François Raskin: Faster algorithms for mean-payoff games. Formal Methods in System Design 38(2): 97-118 (2011)
50. Daniele Campana, Alessandro Cimatti, Iman Narasamdya, Marco Roveri: An Analytic Evaluation of SystemC Encodings in Promela. SPIN 2011: 90-107
51. Krishnendu Chatterjee, Rupak Majumdar: Minimum Attention Controller Synthesis for Omega-Regular Objectives. FORMATS 2011: 145-159
52. Krishnendu Chatterjee, Thomas A. Henzinger, Barbara Jobstmann, Rohit Singh: QUASY: Quantitative Synthesis Tool. TACAS 2011: 267-271
53. Chih-Hong Cheng, Barbara Jobstmann, Christian Buckl, Alois Knoll: On the Hardness of Priority Synthesis. CIAA 2011: 110-117
54. Chih-Hong Cheng, Saddek Bensalem, Barbara Jobstmann, Rongjie Yan, Alois Knoll, Harald Ruess: Model Construction and Priority Synthesis for Simple Interaction Systems. NASA Formal Methods 2011: 466-471
55. Chih-Hong Cheng, Saddek Bensalem, Yu-Fang Chen, Rongjie Yan, Barbara Jobstmann, Harald Ruess, Christian Buckl, Alois Knoll: Algorithms for Synthesizing Priorities in Component-Based Systems. ATVA 2011: 150-167
56. HOL. FroCoS 2011: 12-27
57. Alessandro Cimatti, Alberto Griggio, Andrea Micheli, Iman Narasamdya,Marco Roveri: Kratos - A Software Model Checker for SystemC. CAV 2011: 310-316
58. Alessandro Cimatti, Alberto Griggio, Roberto Sebastiani: Computing Small Unsatisfiable Cores in Satisfiability Modulo Theories. J. Artif. Intell. Res. (JAIR) 40: 701-728 (2011)
59. Alessandro Cimatti, Iman Narasamdya, Marco Roveri: Boosting Lazy Abstraction for SystemC with Partial Order Reduction. TACAS 2011: 341-356
60. Alessandro Cimatti, Marco Roveri, Angelo Susi, Stefano Tonetta: Formalizing requirements with object models and temporal constraints. Software and System Modeling 10(2): 147-160 (2011)
61. Koen Claessen, Ann Lillieström: Automated Inference of Finite Unsatisfiability. J. Autom. Reasoning 47(2): 111-132 (2011)
62. Koen Claessen: The Anatomy of Equinox - An Extensible Automated Reasoning Tool for First-Order Logic and Beyond - (Talk Abstract). CADE 2011: 1-3
63. Koen Claessen, Ann Lillieström, Nicholas Smallbone: Sort It Out with Monotonicity - Translating between Many-Sorted and Unsorted First-Order Logic. CADE 2011: 207-221
64. Michael Codish, Yoav Fekete, Carsten Fuhs, Peter Schneider-Kamp: Optimal Base Encodings for Pseudo-Boolean Constraints. TACAS 2011: 189-204

65. Christian Colombo, Adrian Francalanza, Rudolph Gatt: Elarva: A Monitoring Tool for Erlang. RV 2011: 370-374
66. Christian Colombo, Adrian Francalanza, Rudolph Gatt: Elarva: A Monitoring Tool for Erlang. RV 2011: 370-374
67. Byron Cook, Andreas Podelski, Andrey Rybalchenko: Proving program termination. Commun. ACM 54(5): 88-98 (2011)
68. Eva Darulova, Viktor Kuncak: Trustworthy numerical computation in Scala. OOPSLA 2011: 325-344
69. Alastair F. Donaldson, Alexander Kaiser, Daniel Kroening, Thomas Wahl: Symmetry-Aware Predicate Abstraction for Shared-Variable Concurrent Programs. CAV 2011: 356-371
70. Alastair F. Donaldson, Leopold Haller, Daniel Kroening, Philipp Rümmer: Software Verification Using k-Induction. SAS 2011: 351-368
71. Alastair F. Donaldson, Leopold Haller, Daniel Kroening, Philipp Rümmer: Software Verification Using k-Induction. SAS 2011: 351-368
72. Kamil Dudka, Petr Peringer, Tomás Vojnar: An Easy to Use Infrastructure for Building Static Analysis Tools. EUROCAST (1) 2011: 527-534
73. Kamil Dudka, Petr Peringer, Tomás Vojnar: Predator: A Practical Tool for Checking Manipulation of Dynamic Data Structures Using Separation Logic. CAV 2011: 372-378
74. Tomás Dzetkulic, Stefan Ratschan: Incremental Computation of Succinct Abstractions for Hybrid Systems. FORMATS 2011: 271-285
75. Antti Eero Johannes Hyvärinen, Tommi A. Junttila, Ilkka Niemelä: Grid-Based SAT Solving with Iterative Partitioning and Clause Learning. CP 2011: 385-399
76. Christian von Essen, Barbara Jobstmann: Synthesizing Systems with Optimal Average-Case Behavior for Ratio Objectives. iWIGP 2011: 17-32
77. Grigory Fedyukovich, Ondrej Sery, Natasha Sharygina: Function Summaries in Software Upgrade Checking. Haifa Verification Conference 2011: 257-258
78. Jan Fiedor, Bohuslav Krena, Zdenek Letko, Tomás Vojnar: A Uniform Classification of Common Concurrency Errors. EUROCAST (1) 2011: 519-526
79. Jan Fiedor, Vendula Hrubá, Bohuslav Krena, Tomás Vojnar: DA-BMC: A Tool Chain Combining Dynamic Analysis and Bounded Model Checking. RV 2011: 375-380
80. Emmanuel Filiot, Naiyong Jin, Jean-François Raskin: Antichains and compositional algorithms for LTL synthesis. Formal Methods in System Design 39(3): 261-296 (2011)
81. Adrian Francalanza, Andrew Gauci, Gordon J. Pace: Distributed System Contract Monitoring. FLACOS 2011: 23-37
82. Peter Franek, Stefan Ratschan, Piotr Zgliczynski: Satisfiability of Systems of Equations of Real Analytic Functions Is Quasi-decidable. MFCS 2011: 315-326
83. Adrian Francalanza, Julian Rathke, Vladimiro Sassone: Permission-Based Separation Logic for Message-Passing Concurrency. Logical Methods in Computer Science 7(3) (2011)
84. Adrian Francalanza, Andrew Gauci, Gordon J. Pace: Distributed System Contract Monitoring. FLACOS 2011: 23-37
85. Carsten Fuhs, Jürgen Giesl, Michael Parting, Peter Schneider-Kamp, Stephan Swiderski: Proving Termination by Dependency Pairs and Inductive Theorem Proving. J. Autom. Reasoning 47(2): 133-160 (2011)
86. Silvia Ghilezan, Jelena Ivetic, Pierre Lescanne, Silvia Likavec: Intersection Types for the Resource Control Lambda Calculi. ICTAC 2011: 116-134
87. Ashutosh Gupta, Corneliu Popeea, Andrey Rybalchenko: Predicate abstraction and refinement for verifying multi-threaded programs. POPL 2011: 331-344
88. Ashutosh Gupta, Corneliu Popeea, Andrey Rybalchenko: Solving Recursion-Free Horn Clauses over LI+UIF. APLAS 2011: 188-203
89. Ashutosh Gupta, Corneliu Popeea, Andrey Rybalchenko: Threader: A Constraint-Based Verifier for Multi-threaded Programs. CAV 2011: 412-417
90. Tihomir Gvero, Viktor Kuncak, Ruzica Piskac: Interactive Synthesis of Code Snippets. CAV

2011: 418-423
91. Peter Habermehl, Lukás Holík, Adam Rogalewicz, Jirí Simácek, Tomás Vojnar: Forest Automata for Verification of Heap Manipulation. CAV 2011: 424-440
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- ***Organisation of International Conferences and Workshops***
  - Reiner Hähnle was co-PC chair of IJCAR 2010
  - Radu Calinescu was PC co-chair of
    - ICECCS 2010 (http://web.comlab.ox.ac.uk//ICECCS2010/), Monterey 2010 (http://www.montereyworkshop.org/home.html);
    - advisory committee co-chair of ADAPTIVE-2010 (http://www.iaria.org/conferences2010/ADAPTIVE10.html),
    - ICAS-2010 (http://www.iaria.org/conferences2010/ICAS10.html),
    - ADAPTIVE-2011 (http://www.iaria.org/conferences2011/ADAPTIVE11.html),
    - ICAS-2011 (http://www.iaria.org/conferences2011/ICAS11.html);
    - co-organiser of a 2011 Cloud Computing Summer School (https://sites.google.com/site/cloudcomputingsummerschool2011/)
  - Tomas Vojnar , PC of:
    - FOSSACS 2012, SV-COMP 2012 (competition)
    - MEMICS 2011 workshop (http://www.memics.cz/2011/), ATVA´11, INFINITY´´11, SOFSEM´11
    - GandALF´10, SOFSEM´10
  - Roderick Bloem was
    - Chair for Austrian Rigorous Systems Engineering Society
    - Chair for FMCAD 10
  - Lars Birkedal was PC Member of
    - MFCS12, ICFP´12, FOSSACS´12,
    - MFCS´11, CALCO´11, Lola´11
    - Co-Organizer for the Dagstuhl Seminar on Modelling, Controlling, and Reasoning about State. http://www.dagstuhl.de/en/program/calendar/semhp/?semnr=10351

- Peter Schneider-Kamp was a PC-Chair of the 11th International Workshop on Termination (WST 2010) http://www.imada.sdu.dk/~petersk/WST2010/ , also PC Member of:
    - FLOPS´12, PPDP´12, WLPE´12, WST´12, IWIL´12 MFCS12, ICFP´12

- Ilkka Niemelä was a PC Chair of JELIA 2010 (12th European Conference on Logics in Artificial Intelligence) http://jelia2010.tkk.fi/. Also PC Member of:
    - INAP´11, LPNMR´111, NMR´10, LaSH´10.
- Tayssir TOUILI was a Co-chair of CAV 2010 http://www.liafa.jussieu.fr/~touili/cav2010/. Also PC Member of:
    - AVoCS´12, SPIN´12, VECOS´12, LATA´12
    - CAV´11, GandALF´11, VECOS´11 (co-chair)
    - TACAS´10, POPL´10, VECOS´10
- Barbara Jobstamann was a co-chair for MEMOCODE 2010 http://www-memocode2010.imag.fr/. Also, PC Member of:
    - SIES´12, MEMOCODE´12, LPAR-18 2012, iWIGP´12,
    - FMCAD´11 (tutorial co-chair), MEMOCODE´11 (co-chair), ICE´11, LAFT´11, iWIGP´11,
    - FMCAD´10, HVC´10, MEMOCODE´10 (program co-chair), FMICS´10, ICE´10.
- Rupak Majumdar was a Program Co-Chair of TACAS 2010, http://tacas10.in.tum.de/
- Eran Yahav was
    - co-organizer LFX 2010 http://research.ihost.com/lfx2010/
    - co-organizer PSY 2010 http://research.ihost.com/psy2010/
    - Also PC Member of APLAS´12, SYNTH´12, PSY´12 (co-organizer), SAS´12 , WoDet´12, VMCAI´12, ISMM´12, PLDI´12.
- Enric Rodríguez Carbonel was
    - PC co-chair of the 2nd International Workshop on Numerical and Symbolic Abstract Domains (NSAD'10) (http://www.di.ens.fr/nsad2010/), September 13, 2010, Perpignan (France)
- Viktor Kuncak was PC chair of the 13th International Conference on Verification, Model-Checking, and Abstract Interpretation (VMCAI 2012). Also, PC Member of:
        - CAV´12, OOPSLA´12, CSL´12, VSTTE´12, POPL´12
        - RV´11, FMCAD´11, RV´11, CSL´11, POPL´11, PLDI´11, CADE´11, ESOP ´11, VMCAI´11, SAS´11
        - IJCAR´10, PEPM´10, PLDI´10, ABZ´10, JTRES´10, BYTECODE´10

- César Sánchez was PC co-chair of TIME´12, and PC Member of FMCAD´12 and TIME ´11.