

iFM 2013

12-14.6.2013
Turku, Finland



We dedicate this edition of the integrated Formal Methods conference to Professor Kaisa Sere, Åbo Akademi University (1954-2012).

Program Committee Chairs:

Einar Broch Johnsen, Norway

Luigia Petre, Finland

Organization Committee:

Luigia Petre

Maryam Kamali

Yuliya Prokhorova

Magnus Dahlvik

Nina Rytönen

Tove Österroos

Susanne Ramstedt

Welcome to iFM 2013!

Applying formal methods may involve the modeling of different aspects of a system that are expressed through different paradigms. Correspondingly, different analysis techniques will be used to examine differently modeled system views, different kinds of properties, or simply in order to cope with the sheer complexity of the system. The iFM conference series seeks to further research into hybrid approaches to formal modeling and analysis; i.e., the combination of (formal and semi-formal) methods for system development, regarding modeling and analysis, and covering all aspects from language design through verification and analysis techniques to tools and their integration into software engineering practice.

The 10th International Conference on integrated Formal Methods (iFM 2013) is held in Turku, Finland during 12-14.6.2013. The conference is organized by Department of Information Technologies at Åbo Akademi University.

We have the great pleasure of welcoming four outstanding invited speakers:

- Professor Jean-Raymond Abrial, Marseille, France, with the lecture entitled “From Z to B and then Event-B: Assigning Proofs to Meaningful Programs”
- Professor Susanne Graf, VERIMAG, France, with the lecture entitled “Knowledge for the Distributed Implementation of Constrained Systems”
- Professor Kim Larsen, Aalborg University, Denmark, with the lecture entitled “Priced Timed Automata and Statistical Model Checking”
- Professor Cosimo Laneve, University of Bologna, Italy, with the lecture entitled “An Algebraic Theory for Web Service Contracts”

Program Committee

Einar Broch Johnsen, Norway
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Erika Abraham, Germany
Elvira Albert, Spain
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Michele Loreti, Italy
Dominique Mery, France
Stephan Merz, France
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Steve Schneider, UK
Emil Sekerinski, Canada
Graeme Smith, Australia
Colin Snook, UK
Kenji Taguchi, Japan
Helen Treharne, UK
Heike Wehrheim, Germany
Herbert Wiklicky, UK
Gianluigi Zavattaro, Italy

Lunches are held in the Sodexo EuroCity Restaurant. Please have your coupons for lunch.

All lectures will be held in Auditorium Alpha on the first floor of the ICT building.

Wednesday June 12th

8:00-9:00	Registration open
8:45-9:00	Welcome from the Rector of Åbo Akademi University
Invited lecture	
9:00-10:00	From Z to B and then Event-B: Assigning Proofs to Meaningful Programs <i>Jean-Raymond Abrial</i>
10:00-10:30	Coffee break
Refinement, Integration, Translation	
10:30-11:00	Progress Concerns as Design Guidelines <i>Thai Son Hoang and Simon Hudon</i>
11:00-11:30	Assume-Guarantee Specifications of State Transition Diagrams for Behavioral Refinement <i>Christian Prehofer</i>
11:30-12:00	Translating VDM to Alloy <i>Kenneth Lausdahl</i>
12:00-12:30	Verification of EB3 Specifications using CADP <i>Dimitrios Vekris, Frederic Lang, Catalin Dima and Radu Mateescu</i>
12:30-13:30	Lunch
Invited lecture	
13:30-14:30	Knowledge for the Distributed Implementation of Constrained Systems <i>Susanne Graf</i>
14:30-15:00	Coffee break
Verification	
15:00-15:30	Automated Anonymity Verification of the ThreeBallot Voting System <i>Murat Moran, James Heather and Steve Schneider</i>
15:30-16:00	Compositional Verification of Software Product Lines <i>Jean-Vivien Millo, Krishna Shankara Narayanan, Ganesh Narwane and S Ramesh</i>
16:00-16:30	Deductive Verification of State-space Algorithms <i>Frédéric Gava, Jean Fortin and Michael Guedj</i>
16:30-17:00	Inductive Verification of Hybrid Automata with Strongest Postcondition Calculus <i>Daisuke Ishii, Guillaume Melquiond and Shin Nakajima</i>
17:00-17:30	Remembering Kaisa <i>Emil Sekerinski</i>
19:00-20:30	Welcome reception (Turku city hall)

Thursday June 13th

8:00-9:00	Registration open
Invited lecture	
9:00-10:00	Priced Timed Automata and Statistical Model Checking <i>Kim Guldstrand Larsen</i>
10:00-10:30	Coffee break
Reachability and Model Checking	
10:30-11:00	Improved Reachability Analysis in DTMC via Divide and Conquer <i>Songzheng Song, Lin Gui, Jun Sun, Yang Liu and Jin Song Dong</i>
11:00-11:30	Solving Games Using Incremental Induction <i>Andreas Morgenstern, Manuel Gesell and Klaus Schneider</i>
11:30-12:00	Model-Checking Software Library API Usage Rules <i>Fu Song and Tayssir Touili</i>
12:00-12:30	Formal Modelling and Verification of Population Protocols <i>Dominique Mery and Michael Poppleton</i>
12:30-13:30	Lunch
Usability and testing	
13:30-14:00	Detecting Vulnerabilities in Java-Card Bytecode Verifiers using Model-Based Testing <i>Aymerick Savary, Marc Frappier and Jean-Louis Lanet</i>
14:00-14:30	Integrating Formal Predictions of Interactive System Behaviour with User Evaluation <i>Rimvydas Rukšėnas, Paul Curzon and Michael D. Harrison</i>
14:30-15:00	Automatic Inference of Erlang Module Behaviour <i>Ramsay Taylor, Kirill Bogdanov and John Derrick</i>
15:00-15:10	Coffee break
Distributed systems	
15:10-15:40	Integrating Proved State-Based Models for Constructing Correct Distributed Algorithms <i>Manamiary Bruno Andriamiarina, Dominique Mery and Neeraj-Kumar Singh</i>
15:40-16:10	Quantified Abstractions of Distributed Systems <i>Elvira Albert, Jesús Correas, German Puebla and Guillermo Román-Díez</i>
16:25	Bus to Herrankukkaro
16:25-24:00	Social event

Friday June 14th

8:00-9:00	Registration open
Invited lecture	
9:00-10:00	An Algebraic Theory for Web Service Contracts <i>Cosimo Laneve</i>
10:00-10:30	Coffee break
Semantics	
10:30-11:00	A Compositional Automata-based Semantics for Property Patterns <i>Kalou Cabrera Castillos, Frederic Dadeau, Jacques Julliand, Bilal Kanso and Safouan Taha</i>
11:00-11:30	A Formal Semantics for Complete UML State Machines with Communications <i>Shuang Liu, Yang Liu, Étienne André, Christine Choppy, Jun Sun, Bimlesh Wadhwa and Jin Song Dong</i>
11:30-12:00	From Small-step Semantics to Big-step Semantics, Automatically <i>Stefan Ciobaca</i>
12:00-12:30	Program Equivalence by Circular Reasoning <i>Dorel Lucanu and Vlad Rusu</i>
12:30-13:30	Lunch
System-Level Analysis	
13:30-14:00	Structural Transformations for Data-Enriched Real-Time Systems <i>Ernst-Ruediger Olderog and Mani Swaminathan</i>
14:00-14:30	Deadlock Analysis of Concurrent Objects: Theory and Practice <i>Elena Giachino, Carlo A. Grazia, Cosimo Laneve, Michael Lienhardt and Peter Y. H. Wong</i>
14:30-15:00	Broadcast, Denial-of-Service, and Secure Communication <i>Roberto Vigo, Flemming Nielson and Hanne Riis Nielson</i>
15:00-15:30	Characterizing Fault-Tolerant Systems by Means of Simulation Relations <i>Ramiro Demasi, Pablo Castro, Tom Maibaum and Nazareno Aguirre</i>
15:30	Closing
15:30-16:00	Coffee and goodbyes

Program at a glance

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08:00-09:00	Registration open	08:00-09:00	Registration open	08:00-09:00	Registration open
08:45-09:00	<u>Welcome from the Rector of Åbo Akademi University</u>				
09:00-10:00	Invited lecture: JR Abrial	09:00-10:00	Invited lecture: K Larsen	09:00-10:00	Invited lecture: C Laneve
10:00-10:30	Coffee break	10:00-10:30	Coffee break	10:00-10:30	Coffee break
10:30-12:30	Refinement, Integration, Translation	10:30-12:30	Reachability and Model Checking	10:30-12:30	Semantics
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Lecture Notes in
Computer Science

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