

PETRI
NETS
&
ACSD

BRAGA
2010
JUNE 21-25



Programme

acsd2010.di.uminho.pt
petrinets2010.di.uminho.pt

Welcome (1)



João M. Fernandes
Organizer

I am really pleased to host this year in Braga, Portugal both the 31st International Conference on Application and Theory of Petri Nets and Other Models of Concurrency (PETRI NETS 2010) and the 10th IEEE International Conference on Application of Concurrency to System Design (ACSD 2010).

By collocating these two well-established scientific conferences, we are able to join their strongly related scientific communities and to share many activities, like the tutorials, the workshops, the Petri net course, and the keynote speakers.

The tutorials are designed to convey skills and knowledge that will be of immediate academic and industrial use. The workshops touch many emerging fields and provide forums where very tuned scientific and engineering problems are addressed, analysed, and discussed.

Most notably, we have five excellent keynote speakers: David Harel (Distinguished Carl Adam Petri Lecture), Kim Guldstrand Larsen, Gabriel Juhás, Maciej Koutny, and Lars M. Kristensen.

As always, the paper sessions of both conferences present ground-breaking research on a rich variety of topics related to Petri nets and Concurrency.

The logo of the conferences is a "Manjerico", the Portuguese word for "Ocimum minimum L." (Basil Bush in English). This aromatic plant is very popular during the Saint John festivities that take place in Braga during the conference week.

Welcome (2)



Johan Lilius



Wojciech Penczek

PETRI NETS 2010
PC co-chairs

The PETRI NETS conferences serve as an annual meeting place to discuss the progress in the field of Petri nets and related models of concurrency. They provide a forum for researchers to present and discuss both applications and theoretical developments in this area. Novel tools and substantial enhancements to existing tools can also be presented.

The satellite programme of the conference comprises 5 workshops and 2 tutorials. This year, the PETRI NETS conference is co-located with ACS D 2010. The two conferences share five invited speakers.

In this year the total number of the submitted papers to the conference amounted to 50, which included 43 full papers and 7 tool papers. The authors of the papers come from 20 different countries. We thank all the authors who have submitted their papers. Each paper was reviewed by at least four referees.

The PC meeting took place in Warszawa, Poland. At the PC meeting 14 PC members were present who selected 16 papers, classified as: theory papers (10 accepted), application papers (2 accepted), and tool papers (4 accepted). After the conference, some authors will be invited to publish an extended version of their contribution in the journal *Fundamenta Informaticae*.

We wish all the participants a very successful conference.

Welcome (3)



Victor Khomenko



Luís Gomes

ACSD 2010
PC co-chairs

Welcome to ACSD 2010. As on previous occasions, ACSD provides a forum for disseminating theoretical results and advanced methods and tools for the design of complex concurrent systems. The main aim of the conference is to bring theory and practice closer together by informing practitioners of the latest theoretical results, and challenging theoreticians with complex industrial problems. It therefore welcomes both academic and industrial participants.

ACSD 2010 attracted 45 abstract submissions, of which 38 were completed. Each submission was peer-reviewed by members of the PC and/or external reviewers. Almost all papers received 4 reviews, and for some papers additional reviews were requested. Altogether, 153 reviews were written, 51 of which were by external reviewers and the rest was by the PC members. Following the PC discussion

and the final vote, 22 papers were accepted for presentation at the conference and publication in the proceedings. In the programme, the regular papers are given 30-minute presentation slots, and short papers have 15-minute slots.

We would like to wish you a very productive and enjoyable conference. Our goal was to compose an interesting and stimulating programme, and we hope you find the presentations and the proceedings useful for your work.

PETRI NETS 2010

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Scientific Activities in a Glance

Sunday, June 20

Petri Net Course (room 2)

Monday, June 21

Petri Net Course (room 2)

Tutorial 1 (room 1B)

BioPPN Workshop (room 1C)

ART Workshop (room 1A)

Tuesday, June 22

Petri Net Course (room 2)

APNOC+SUMo Workshops (room 1B)

PNSE Workshop (room 1C)

ART Workshop (room 1A)

Tutorial 3 (room 3)

Wednesday, June 23

PETRI NET 2010 Conference (room 1)

ACSD 2010 Conference (room 2)

Thursday, June 24

PETRI NET 2010 Conference (room 1)

ACSD 2010 Conference (room 2)

Friday, June 25

PETRI NET 2010 Conference (room 1)

ACSD 2010 Conference (room 2)

Workshops & Tutorials

Monday, June 21

TT1: Decision-diagram techniques for the analysis of Petri nets
09:00-17:30; Room 1B

WS2 - BioPPN: Biological Processes and Petri Nets
09:00-18:00; Room 1C

WS3 - ART: Applications of Region Theory
14:00-17:40; Room 1A

Tuesday, June 22

TT3: State space exploration of Coloured Nets and the ASAP
model checking platform
09:00-17:30; Room 3

WS1 - APNOC: Abstractions for Petri Nets and Other Models of
Concurrency

WS5 - SUMo: Scalable and Usable Model checking for Petri nets
and other models of concurrency
09:00-17:00; Room 1B

WS3 - ART: Applications of Region Theory
09:00-18:00; Room 1A

WS4 - PNSE: Petri Nets and Software Engineering
09:00-17:00; Room 1C

* The end of the events may slightly vary

Scientific Programme

Morning Wednesday, June 23

	PETRI NETS Room 1	ACSD Room 2
08:30-9:00	Opening Session	
09:00-10:00	Invited Speaker: Kim Guldstrand Larsen <i>Verification, Compositionality and Refinements for Real-Time Systems</i>	
10:00-10:30	coffee break	
10:30-11:00	Valmari, Hansen <i>Can Stubborn Sets Be Optimal?</i>	Mokhov, Alekseyev, Yakovlev <i>Automated Synthesis of Instruction Codes in the Context of Micro-Architecture Design</i>
11:00-11:30	Weidlich, Polyvyanny, Mendling, Weske <i>Efficient Computation of Causal Behavioural Profiles Using Structural Decomposition</i>	Wist, Schaefer, Vogler, Wollowski <i>STG Decomposition: Internal Communication for SI Implementability</i>
11:30-12:00	Maréchal, Buchs, Risoldi, Hostettler <i>ALPiNA: A Symbolic Model Checker</i>	Toms, Edwards <i>A Complete Synthesis Method for Block-level Relaxation in Self-timed Datapaths</i>
12:00-12:30		Brej <i>Wagging logic: Implicit Parallelism Extraction Using Asynchronous Methodologies</i>

* Common activities take place in Room 1

Scientific Programme

Afternoon Wednesday, June 23

	PETRI NETS Room 1	ACSD Room 2
14:00-15:00	<p>Invited Speaker: Gabriel Juhás</p> <p><i>Instance Deadlock: A Mystery Behind Frozen Programs</i></p>	
15:00-15:30	coffee break	
15:30-16:00	<p>Wang</p> <p><i>Canonical Transition Set Semantics for Petri Nets</i></p>	<p>Xing, Theelen, Langerak, van de Pol, Tretmans, Voeten</p> <p><i>From POOSL to UPPAAL: Transformation and Quantitative Analysis</i></p>
16:00-16:30	<p>Miner, Babar, Becutti, Donatelli</p> <p><i>GreatSPN Enhanced with Decision Diagram Data Structures</i></p>	<p>Voron, Démoullins, Kordon</p> <p><i>Adaptable Intrusion Detection Systems Dedicated to concurrent Programs: A Petri Net-based Approach</i></p>
16:30-17:00	Tool exhibition	<p>Song, Edwards</p> <p><i>An Asynchronous Routing Algorithm for Clos Networks</i></p>
17:00-17:15		<p>Doyen, Henzinger, Legay, Nickovic</p> <p><i>Robustness of Sequential Circuits</i></p>
17:15-17:30		<p>Ghassemi, Movaghar, Fokkink</p> <p><i>Towards Performance Evaluation of Mobile Ad Hoc Network Protocols</i></p>
17:30-18:30		

* Common activities take place in Room 1

Scientific Programme

Morning Thursday, June 24

	PETRI NETS Room 1	ACSD Room 2
09:00-10:00	Invited Speaker: David Harel <i>Some Thoughts on Behavioral Programming</i>	
10:00-10:30	coffee break	
10:30-11:00	Gusikhin, Klampfl <i>Integrated Process Planning and Supply Chain Configuration for Commodity Assemblies using Petri Nets</i>	Launiainen, Heljanko, Junttila <i>Efficient Model Checking of PSL Safety Properties</i>
11:00-11:30	Petrucci, Choppy, Dedova, Evangelista, Klai, Hong <i>The NEO Protocol for Large-scale Distributed Database Systems: Modelling and Initial Verification</i>	Siirtola <i>Cut-offs with Network Invariants</i>
11:30-12:00	Lohmann, Weinberg <i>Wendy: A Tool to Synthesize Partners for Services</i>	Raffelsieper, Mousavi, Zantema <i>Order-independence of Vector-based Transition Systems</i>
12:00-12:30		Linard, Paviot-Adet, Kordon, Buchs, Charron <i>polyDD: Towards a Framework Generalizing Decision Diagrams</i>

* Common activities take place in Room 1

Scientific Programme

Afternoon Thursday, June 24

	PETRI NETS Room 1	ACSD Room 2
14:00-15:00	Invited Speaker: Maciej Koutny <i>Petri Nets with Localities and Testing</i>	
15:00-15:30	coffee break	
15:30-16:00	Fabre, Chatain <i>Factorization Properties of Symbolic Unfoldings of Colored Petri Nets</i>	Talpin, Ouy, Gautier, Besnard, Cortier <i>Modular Interpretation of Heterogeneous Modeling Diagrams into Synchronous Equations Using Static Single Assignment</i>
16:00-16:30	Rosa-Velardo, de Frutos- Escrig <i>Forward Analysis for Petri Nets with Name Creation</i>	Jose, Pribble, Shukla <i>Faster Embedded Software Synthesis Using Actor Elimination Techniques for Polychronous Formalism</i>
16:30-17:00	Le <i>A Characterization of Combined Traces Using Labeled Stratified Order Structures</i>	Gemünde, Brandt, Schneider <i>A Formal Semantics of Clock Refinement in Imperative Synchronous Languages</i>

* Common activities take place in Room 1

Scientific Programme

Morning Friday, June 25

	PETRI NETS Room 1	ACSD Room 2
09:00-10:00	Invited Speaker: Lars M. Kristensen <i>A Perspective on Explicit State Space Exploration of Coloured Petri Nets - Past, Present, and Future</i>	
10:00-10:30	coffee break	
10:30-11:00	Esparza, Leucker, Schlund <i>Learning Workflow Petri Nets</i>	Crouzen, Hermanns <i>Aggregation Ordering for Massively Compositional Models</i>
11:00-11:30	Carmona, Solé <i>Process Mining from a Basis of State Regions</i>	Brandt, Schneider, Ahuja, Shukla <i>The Model Checking View to Clock Gating and Operand Isolation</i>
11:30-12:00	Petrucci, Kordon, Hillah, Trèves <i>PNML Framework: An Extendable Reference Implementation of the Petri Net Markup Language</i>	Fokkink, Dashti, Wijs <i>Partial Order Reduction for Branching Security Protocols</i>
12:00-12:30		Heidari, Boucheneb <i>Efficient Method for Checking the Existence of a Safety/ Reachability Controller for Time Petri Nets</i>

* Common activities take place in Room 1

Scientific Programme

Afternoon Friday, June 25

	PETRI NETS Room 1	ACSD Room 2
14:00-14:30	Best, Darondeau <i>Separability in Persistent Petri Nets</i>	Katoen, van de Pol, Stoelinga, Timmer <i>A Linear Process-algebraic Format for Probabilistic Systems with Data</i>
14:30-15:00	Oanea, Wolf, Wimmel <i>New Algorithms for Deciding the Siphon-trap Property</i>	Delahaye, Caillaud, Legay <i>Probabilistic Contracts: A Compositional Reasoning Methodology for the Design of Stochastic Systems</i>
15:00-15:30	Closing Session	

* Common activities take place in Room 1

Social Events

Wednesday, June 23

To commemorate the World Cup 2010 fair-play spirit, a football match will be organized just after the Tool Exhibition (at 19:00). The match takes place at Hotel Falperra football ground, which is regularly used for training by professional clubs. We are pretty sure that PETRI NETS & ACSD participants are as good in managing formal models, as they are in playing football.

Thursday, June 24

Buses leave from Hotel Falperra at 17:30 to transport the participants to the social activities

18:00-19:30: Visit to the Municipal Stadium of Braga



20:00-23:30: Conference dinner
Sameiro Eventos
Rotunda Monte do Sameiro
4715-450 Sameiro - Braga
Tel: 253675114 / 253281010

See you at...

PETRI NETS 2011 & ACSD 2011

Kanazawa, Japan

www.jaist.ac.jp/acsd-petrinets2011



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