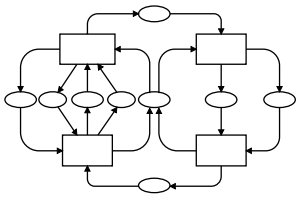
Petri Nets 2000

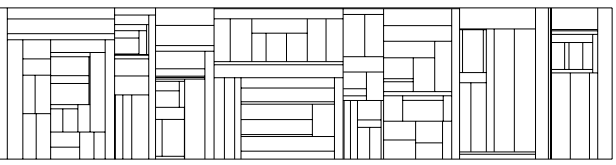


21st International Conference on
Application and Theory of Petri Nets

Aarhus, Denmark, June 26-30, 2000

Programme

DEPARTMENT OF COMPUTER SCIENCE
UNIVERSITY OF AARHUS
Ny Munkegade, Bldg. 540
DK-8000 Aarhus C, Denmark



21st International Conference on Application and Theory of Petri Nets

Aarhus, Denmark, June 26-30, 2000

Organised by the CPN group at the
Department of Computer Science,
University of Aarhus, Denmark

Scientific Programme

Monday

- Introductory Tutorial on Petri Nets (I)
  lectures by Jörg Desel, Kurt Jensen, Wolfgang Reisig, Grzegorz Rozenberg
- Workshop on Software Engineering and Petri Nets
  organised by Mauro Pezzé, Sol Shatz
- Advanced Tutorial on Hardware Design and Petri Nets
  lectures by Jordi Cortadella, Luciano Lavagno, Alexandre Yakovlev

Tuesday

- Introductory Tutorial on Petri Nets (II)
  lectures by Gianfranco Balbo, José Manuel Colom, Grzegorz Rozenberg
- Workshop on Practical Use of High-level Nets
  organised by Kurt Jensen
- Advanced Tutorial on Timed and Hybrid Automata
  lectures by Kim Guldstrand Larsen, Mogens Nielsen, P.S. Thiagarajan
- Meeting on XML/SGML based Interchange Formats for Petri Nets
  organised by Remi Bastide, Jonathan Billington, Ekkart Kindler, Fabrice Kordon, Kjeld H. Mortensen

Wednesday-Friday

- Invited lectures by Jordi Cortadella, Philippe Darondeau, Gregor Engels, Serge Haddad, Kim Guldstrand Larsen, Ole Lehrmann Madsen
- Presentation of 20 submitted papers
- Presentation of 4 submitted tool presentations
- Demonstration of 13 different Petri Net Tools

Introductory Tutorial on Petri Nets (I)

Lectures by Jörg Desel, Kurt Jensen, Wolfgang Reisig, Grzegorz Rozenberg

9.00-9.30	*Informal Introduction to Petri Nets* by Wolfgang Reisig
9.30-10.30	*Elementary Net Systems I* by Grzegorz Rozenberg
10.30-11.00	Coffee break
11.00-11.30	*Elementary Net Systems I (cont.)* by Grzegorz Rozenberg
11.30-12.00	*Place/Transition Nets I* by Jörg Desel
12.00-13.30	Lunch break
13.30-14.30	*Place/Transition Nets I (cont.)* by Jörg Desel
14.30-15.00	Coffee break
15.00-16.30	*High-level Nets I* by Kurt Jensen
16.30-17.00	Coffee break
17.00-18.00	*High-level Nets II* by Kurt Jensen

Workshop on Software Engineering and Petri Nets

Organised by Mauro Pezzé, Sol Shatz

9.00	Opening Session
9.10	**Invited Talk** *Neat models of messy problems* Michal Young (University of Oregon, USA)
9.50	*Performance Evaluation for the Design of Agent-Based Systems: A PN Approach* José Merseguer, Javier Campos, Eduardo Mena (University of Zaragoza, Spain)
	Testing Petri Nets for Mobile Robots Using Groebner Basis Angie Chandler (Lancaster University, U.K.), Anne Heyworth (University of Wales, U.K.), Lynne Blair, Derek Seward (Lancaster University, U.K.)
10.40	Coffee break
11.15	*Generating and Exploiting State Spaces of Object-Oriented Petri Nets* Milan Ceska, Vladimir Janousek, Tomas Vojnar (Brno University of Technology, Czech Republic)
	The OCoN Approach for Object-Oriented Distributed Software Systems Modeling Holger Giese, Guido Wirtz (Westfälische Wilhelms Universität, Germany)
	Seamless Object-Oriented Software Development on a Formal Base Stephan Philippi (University Koblenz- Landau, Germany)
12.30	Lunch break
14.00	*Protocol Re-synthesis Based on Extended Petri Nets* Khaled El-Fakih (University of Ottawa, Canada), Hirozumi Yamaguchi (Osaka University, Japan), Gregor v. Bochmann (University of Ottawa, Canada), Teruo Higashino (Osaka University, Japan)
	Towards Modelling and Verification of Concurrent Ada Programs Using Petri Nets A. Burns, A. J. Wellings (University of York, U.K.) F. Burns, A.M. Koelmans, M. Koutny, A. Romanovsky, A. Yakovlev (University of Newcastle upon Tyne, U.K.)
	COALA: A Design Language for Reliable Distributed Systems Engineering Julie Vachon (Swiss Federal Institute of Technology, Switzerland), Nicholas Guelfi (Luxembourg University of Applied Science, Luxembourg)
15.15	Coffee break
15.45	*Supervisory Plug-ins for Distributed Software* Michael Lemmon, Kevin He (University of Notre Dame, USA)
	An Architecture for Adaptive Planning and Scheduling of Software Processes Using Timed Colored Petri Nets N.C. Narendra, Indradeb P. Pal (Hewlett Packard India Software Operations Ltd, India)
	PANEL: What is the future for Petri nets in software engineering?
17.45	Concluding Remarks

Advanced Tutorial on Hardware Design and Petri Nets

Lectures by Jordi Cortadella, Luciano Lavagno, Alex Yakovlev

9.00-9:30	*Introduction to Hardware design and Petri nets* by Alex Yakovlev
9.30-10.00	*Hardware modelling with Petri nets* by Alex Yakovlev
10.00-10.30	*Direct synthesis of Petri nets* by Alex Yakovlev
10.30-11.00	Coffee Break
11.00-12.30	*Logic synthesis of asynchronous circuits from Signal Transition Graphs* by Jordi Cortadella
12.30-14.00	Lunch
14.00-14.30	*Partial order methods for analysis and verification* by Alex Yakovlev
14.30-15.00	*Symbolic methods for analysis and verification* by Jordi Cortadella
15.00-15.30	Coffee Break
15.30-16.00	*Petri nets and Hardware Description Languages* by Luciano Lavagno
16.00-16.30	*Performance analysis* by Alex Yakovlev
16.30-17.00	Coffe Break
17.00-18.00	*Petri net models for Quasi-Static Scheduling in codesign* by Luciano Lavagno

Monday

Introductory Tutorial on Petri Nets (II)

Lectures by Gianfranco Balbo, José Manuel Colom, Grzegorz Rozenberg

9.00-10.30	*Elementary Net Systems II* by Grzegorz Rozenberg
10.30-11.00	Coffee break
11.00-12.00	*Place/Transition Nets II* by José Manuel Colom
12.00-14.00	Lunch break
14.00-15.00	*Timed and Stochastic Nets* by Gianfranco Balbo
15.00-15.30	Coffee break
15.30-16.30	*Introduction to GSPNs* by Gianfranco Balbo

Workshop on Practical Use of High-level Nets

Organised by Kurt Jensen

9.00	Opening Session
9.10	*Executable Petri Net Models for the Analysis of Metabolic Pathways* Hartmann Genrich, Robert Küffner, Klaus Voss (GMD, Germany)
9.50	*Web Based Interfaces for Simulation of Coloured Petri Net Models* Bo Lindstrøm (Univ. of Aarhus, Denmark)
10.30	Coffee break
11.00	*High-level Petri Nets for a Model of Organizational Decision Making* Sven Heitsch, Michael Köhler, Marcel Martens, Daniel Moldt (Univ. of Hamburg, Germany)
11.40	*Specification and Validation of a Concurrent System: An Educational Project* Gérard Berthelot (CEDRIC-IIE, France), Laure Petrucci (ENS de Cachan, France)
12.20	Lunch break
14.00	*Modelling and Analysing a Distributed Dynamic Channel Allocation Algorithm for Mobile Computing Using High-Level Net Methods* Leo Ojala, Nisse Husberg, Teemu Tynjälä (Helsinki Univ. of Technology, Finland)
14.40	*Modelling and Initial Analysis of the Resource Reservation Protocol using Coloured Petri Nets* Maria E. Villapol, Jonathan Billington (Univ. of South Australia, Australia)
15.20	Coffee break
15.50	*Condensed Storage of Multi-Set Sequences* Marko Mäkelä (Helsinki Univ. of Technology, Finland)
16.30	*Compositionality in the GreatSPN Tool and Its Application to the Modelling of Industrial Applications* Simona Bernardi, Susanna Donatelli, Andras Horvath (Univ. di Torino, Italy)

Advanced Tutorial on Timed and Hybrid Automata

Lectures by Kim Guldstrand Larsen, Mogens Nielsen, P.S. Thiagarajan

9.00-9:45	Basic Models for Timed Systems by Mogens Nielsen and P.S.Thiagarajan
10.00-10.45	The Region Technique by Mogens Nielsen andP.S. Thiagarajan
10.45-11.15	Coffee Break
11.15-12.00	Efficient Symbolic Verification of Timed Systems by Kim G. Larsen
12.00-14.00	Lunch
14.00-14.45	Tools and Case Studies by Kim G. Larsen
15.00-15.45	Logics and Preorders for Timed Systems by Kim G. Larsen
15.45-16.15	Coffee Break
16.15-17.00	Hybrid Automata by Mogens Nielsen and P.S.Thiagarajan

Meeting on XML/SGML based Interchange Formats for Petri Nets

Organised by Remi Bastide, Jonathan Billington, Ekkart Kindler, Fabrice Kordon, Kjeld H. Mortensen

19.30	**Introduction** Rémi Bastide, LIS - Universite Toulouse I, France
19.40	**Invited speaker** *XML as an Interchange Format* Anders Møller, BRICS, University of Aarhus, Denmark
20.00	**Presentations**, chaired by Fabrice Kordon • *Towards a Generic Interchange Format for Petri Nets* M. Jüngel, E. Kindler, M. Weber, Humboldt-Universität zu Berlin, Germany • *Separation of Style and Content with XML in an Interchange Format for High-level Petri Nets* T. Mailund, K.H. Mortensen, University of Aarhus, Denmark • *XML and Petri Nets -- Following the Forces* O. Kummer, F. Wienberg, D. Moldt, University of Hamburg, Germany
21.00	Break
21.10	**Invited speaker** *Update on the Status of ISO/IEC 15909 and International Standardardization Processes* Jonathan Billington, University of South Australia, Australia
21.30	**Panel discussion**, chaired by Jonathan Billington

Tool Demonstrations

CASCADE University of Kaiserslautern, Germany
CoopnTools Swiss Federal Institute of Technology, Switzerland
CPN-AMI University Paris 6, France
CPN/Tools University of Aarhus, Denmark
Design/CPN University of Aarhus, Denmark
ExSpect Eindhoven University of Technology, The Netherlands
GreatSPN Dipartimento di Informatica, Universitá di Torino, Italy
INA Humboldt-Universität zu Berlin, Germany
LoLA Humboldt-Universität zu Berlin, Germany
Maria Helsinki University of Technology, Finland
OPMSE National University of Defense Technology, China
Petri Net Kernel Humboldt-Universität zu Berlin, Germany
PetShop Université Toulouse I, France
Renew University of Hamburg, Germany
Snoopy Technical University of Cottbus, Germany
Woflan Eindhoven University of Technology, The Netherlands

Conference Program - Day 1

9:00	Opening session
9:30	**Invited Lecture** *Concurrency and State in the Object-Oriented Language BETA* O.L. Madsen (Univ. of Aarhus, Denmark)
10:30	Coffee break
11:00	*Pre and Post-Agglomerations for LTL Model Checking* D. Poitrenaud (Univ. Paris VI, France) J.F. Pradat-Peyre (CEDRIC-CNAM, France)
11:30	*Bisimulation and the Reduction of Petri Nets* P. Schnoebelen (ENS de Cachan, France) N. Sidorova (Eindhoven Univ. of Technology, The Netherlands)
12:00	*Executing Transactions in Zero-Safe Nets* R. Bruni, U. Montanari (Univ. di Pisa, Italy)
12:30	Lunch break
14:00	**Invited Lecture** *Hardware and Petri Nets: Application to Asynchronous Circuit Design* J. Cortadella (Technical Univ. of Catalonia, Spain)
15:00	*Efficient Symbolic State-space Construction for Asynchronous Systems* G. Ciardo, R. Siminiceanu (College of William and Mary, VA, USA) G. Lüttgen (ICASE, VA, USA)
15:30	Coffee break
16:00	*Modelling and Analysis of a DANFOSS Flowmeter System using Coloured Petri Nets* L. Lorentsen, L.M. Kristensen (Univ. of Aarhus, Denmark)
16:30	*Analysing the WAP Class 2 Wireless Transaction Protocol using Coloured Petri Nets* S. Gordon, J. Billington (Univ. of South Australia)
17:00	*Modelling and Analysing the SDL Description of the ISDN-DSS1 Protocol* N. Husberg, T. Tynjälä, K. Varpaaniemi (Helsinki Univ. of Technology, Finland)

Reception at the Town Hall

Wednesday evening at 18.30 all participants and accompanying persons are invited to an informal reception in the Town Hall which is situated next to the Plaza Hotel. We expect the reception to last less than 1 hour.

Conference Program - Day 2

9:00	**Invited Lecture** *UML - A Universal Modelling Language?* G. Engels (Univ. of Paderborn, Germany)
10:00	*Composing Abstractions for Coloured Petri Nets* C. Lakos (Univ. of Adelaide, Australia)
10:30	Coffee break
11:00	*Decidability of Properties of Timed-Arc Petri Nets* D. de F. Escrig, O.M. Alonso (Univ. Complutense, Spain) V.V. Ruiz (Univ. Castilla-La Mancha, Spain)
11:30	*Efficiency of Asynchronous Systems that Communicate Asynchronously* W. Vogler (Univ. of Augsburg, Germany)
12:00	*A Compositional Model of Time Petri Nets* M. Koutny (Univ. of Newcastle, UK)
12:30	Lunch break
14:00	**Invited Lecture** *Region Based Synthesis of P/T-nets and its Potential Applications* P. Darondeau (IRISA, France)
15:00	*Liveness Verification of Discrete Event Systems Modelled by n-Safe Ordinary Petri Nets* K.X. He, M.D. Lemmon (Univ. of Notre Dame, IN, USA)
15:30	Coffee break
16:00	*Reducing k-safe Petri Nets to Pomset-equivalent 1-safe Petri Nets* E. Best (Carl von Ossietzky Univ., Germany) H. Wimmel (Univ. Koblenz-Landau, Germany)
16:30	*Process Semantics of P/T-Nets with Inhibitor Arcs* H.C.M. Kleijn (Leiden Univ., The Netherlands) M. Koutny (Univ. of Newcastle, UK)
17:00	*Process Semantics of Petri Nets over Partial Algebra* J. Desel, G. Juhás, R. Lorenz (Katholische Univ. Eichstätt, D.)

Tool Presentations

16:00	*ExSpect 6.4: An Executable Specification Tool for Hierarchical Colored Petri Nets* P.J.N. de Crom, R.R.H.M.J. Goverde, W.J. Hofman, (Deloitte and Touche Bakkenist, The Netherlands) W.M.P. van der Aalst, K.M. van Hee, H.A. Reijers, R.A. van der Toorn (Eindhoven Univ. of Technology, The Netherlands)
16:20	*LoLA: A Low Level Analyzer* K. Schmidt (Humboldt-Univ. zu Berlin, Germany)
16:40	*Woflan 2.0: A Petri-net-based Workflow Diagnosis Tool* H. Verbeek, W.M.P. van der Aalst (Eindhoven Univ. of Technology, The Netherlands)
17:00	*CASCADE: A Tool Kernel Supporting a Comprehensive Design Method for Asynchronous Controllers* J. Beister, G. Eckstein, R. Wollowski (Univ. of Kaiserslautern)

Conference Dinner

The conference dinner will take place Thursday evening in a restaurant, *Restaurant Friheden*, situated within the local amusement park "Tivoli Friheden" which is located on the border of the forests south of Aarhus. The distance from the Plaza Hotel is only approximately 1 km. You can enter "Tivoli Friheden" at any time during the late Thursday afternoon or early evening. You can visit the different attractions, such as the roller coaster rides and the House of Horrors, sail in the small boats, take a stroll between the flowers and trees, or simply sit down with a cup of coffee or a nice cold beer.
The dinner starts at 19:30 and the menu will consist of courses typical of the Danish cuisine. The first course will consist of a variety of fishes including several kinds of herrings, salmons and shrimp. This will be followed by different kinds of meat including pork, beef and turkey. Finally we will have some cheese, cakes and fruits. This kind of meal is traditionally served with schnapps and beer. However, for those unable (or unwilling) to follow the Danish tradition, there will also be the choice of wine. Tickets for accompanying persons can be bought during the conference. The price is 400 DKK per person (approx. 54 EURO).

Conference Program - Day 3

9:00	**Invited Lecture** *Verification of Timed and Hybrid Systems* K.G. Larsen (Aalborg Univ., Denmark)
10:00	*Improved Question-Guided Stubborn Set Methods for State Properties* L.M. Kristensen (Univ. of Aarhus, Denmark) A. Valmari (Tampere Univ. of Technology, Finland)
10:30	Coffee break
11:00	*User Interface Prototyping Based on UML Scenarios and High-Level Petri Nets* M. Elkoutbi, R. Keller (Univ. de Montréal, Canada)
11:30	*Automatic Code Generation Method Based on Coloured Petri Net Models Applied on an Access Control System* K. Mortensen (Univ. of Aarhus, Denmark)
12:00	*Parametric Stochastic Well-Formed Nets and Compositional Modelling* P. Ballarini, S. Donatelli (Univ. di Torino, Italy) G. Franceschinis (Univ. del Piemonte Orientale, Italy)
12:30	Lunch break
14:00	**Invited Lecture** *Structural Problems in Performance Analysis* S. Haddad (Univ. of Paris-Dauphine, France)
15:00	*Designing a LTL Model-Checker based on Unfolding Graphs* J.-M. Couvreur, S. Grivet (Univ. de Bordeaux, France) D. Poitrenaud (Univ. Pierre et Marie Curie, France)
15:30	Coffee break
16:00	Closing session

Excursion

On Saturday after the conference we offer an excursion to the old fishing town of Ebeltoft. The city of Ebeltoft is located approximately 60 km from Aarhus on the opposite side of the Aarhus bay.

The Frigate "Jylland"

A guided tour on the Frigate Jylland. The frigate Jylland was the Danish Navy's last warship built of oak. At 72 metres it is the world's longest wooden frigate. It was launched on 20th January 1860 and was the first steam driven propeller frigate. Today the Jylland is in dry dock in Ebeltoft, and serves as a museum.

Shopping and Lunch in Ebeltoft

Shopping and lunch in the city centre of Ebeltoft. The lunch will take place at the restaurant "Mellem Jyder".

The Glasmuseum

A guided tour at the Glasmuseum in Ebeltoft. The museum exhibits contemporary, international studio glass and has a collection of over 1,200 objects. The objects are either given to the museum as a gift or are on loan from artists from all over the world, which makes the Glasmuseum quite unique. The artists regularly exchange or supplement their work, enabling themuseum to show current trends in glass and the most up-to-date objects at all times. There are over 600 artists represented at the museum. The Glasmuseum was established in 1986 and is situated in the former Customs and Excise House in the old fishing town of Ebeltoft. It was founded by the Danish glass artist Finn Lynggaard, who lives and runs his studio in Ebeltoft, together with his wife, glass artist Tchai Munch. The museum also runs a glass studio which is a popular attraction. Here it is demonstrated how glass objects are created.

Kalø Vig

If the time and weather permits there will be a walk in the surroundings of the ruinedcastle of Kalø Vig.

Practicalities and Registration for Excursion

The excursion will start around 9.00 a.m and we plan to be back in Aarhus around 17.00 p.m. The price for the excursion will be 60 EURO per person. The price includes the bus transportation to/from Ebeltoft, tickets for the two museums, and lunch at the restaurant (excluding drinks). The bus ride to Ebeltoft takes approximately 1 hour.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