

LICS 2015 Program

Monday 6 July 2015

Session 1 10:25-12:30 (ROOM1: Gold Room)

Petri Nets

Chair: Petr Jančar

- 10:25 Michael Blondin, Alain Finkel, Stefan Göller, Christoph Haase and Pierre McKenzie
Reachability in Two-Dimensional Vector Addition Systems with States is PSPACE-Complete
- 10:50 Tomas Brazdil, Stefan Kiefer, Antonin Kucera and Petr Novotný
Long-Run Average Behaviour of Probabilistic Vector Addition Systems
- 11:15 Jérôme Leroux and Sylvain Schmitz
Demystifying Reachability in Vector Addition Systems
- 11:40 Paul Brunet and Damien Pous
Petri Automata for Kleene Allegories
- 12:05 Dominic Hughes and Willem Heijltjes
Complexity Bounds for Sum-Product Logic via Additive Proof Nets and Petri Nets

Session 2 10:25-12:30 (ROOM4: Hiei)

Foundations of Programming Languages

Chair: Ugo Dal Lago

- 10:25 Daniel R. Licata and Guillaume Brunerie
A Cubical Approach to Synthetic Homotopy Theory
- 10:50 Tim Disney and Cormac Flanagan
Game Semantics for Type Soundness
- 11:15 Jennifer Hackett and Graham Hutton
Programs for Cheap!
- 11:40 Guillaume Munch-Maccagnoni and Gabriel Scherer
Polarised Intermediate Representation of λ Calculus with Sums
- 12:05 Beniamino Accattoli and Claudio Sacerdoti Coen
On the Relative Usefulness of Fireballs

Session 3 15:00-16:15 (ROOM1: Gold Room)

Bisimilarity

Chair: Yuxi Fu

- 15:00 Andrzej Murawski, Steven Ramsay and Nikos Tzevelekos
Bisimilarity in Fresh-register Automata
- 15:25 Wojciech Czerwiński and Petr Jančar
Branching Bisimilarity of Normed BPA Processes Is in NEXPTIME
- 15:50 Chaodong He and Mingzhang Huang
Branching Bisimilarity on Normed BPA Is EXPTIME-complete

Session 4 16:45-18:00 (ROOM1: Gold Room)

Formal Languages

Chair: Luke Ong

- 16:45 Fabian Reiter
Distributed Graph Automata
(Kleene Award Winner)
- 17:10 Thomas Place
Separating Regular Languages with Two Quantifier Alternations
- 17:35 Mikolaj Bojanczyk
Star Height via Games

Tuesday 7 July 2015

Session 5 10:25-12:30 (ROOM1: Gold Room)

Game Graphs and Game Semantics

Chair: Andy Pitts

- 10:25 Takeshi Tsukada and Luke Ong
Nondeterminism in Game Semantics via Sheaves
- 10:50 Simon Castellan, Pierre Clairambault and Glynn Winskel
The Parallel Intensionally Fully Abstract Games Model of PCF
- 11:15 Krishnendu Chatterjee, Zuzana Komárková and Jan Křetínský
Unifying Two Views on Multiple Mean-Payoff Objectives in Markov Decision Processes
- 11:40 Lorenzo Clemente and Jean-François Raskin
Multidimensional beyond Worst-case and Almost-sure Problems for Mean-payoff Objectives
- 12:05 Krishnendu Chatterjee, Monika Henzinger and Veronika Loitzenbauer
Improved Algorithms for One-Pair and k-Pair Streett Objectives

Session 6 15:00-17:05 (ROOM1: Gold Room)

Databases

Chair: TBA

- 15:00 Tomasz Gogacz and Jerzy Marcinkowski
The Hunt for a Red Spider: Conjunctive Query Determinacy Is Undecidable
- 15:25 Michael Benedikt, Thomas Colcombet, Balder Ten Cate and Michael Vanden Boom
The Complexity of Boundedness for Guarded Logics
- 15:50 Antoine Amarilli and Michael Benedikt
Finite Open-World Query Answering with Number Restrictions
- 16:15 Meghyn Bienvenu, Stanislav Kikot and Vladimir Podolskii
Tree-like Queries in OWL 2 QL: Succinctness and Complexity Results
- 16:40 Diego Figueira and Leonid Libkin
Path Logics for Querying Graphs: Combining Expressiveness and Efficiency

Wednesday 8 July 2015

Session 7 10:25-12:30 (ROOM1: Gold Room)

Modal and Second-Order Logic

Chair: Matteo Mio

- 10:25 Facundo Carreiro
PDL Is the Bisimulation-invariant Fragment of Weak Chain Logic
- 10:50 Sebastian Enqvist, Fatemeh Seifan and Yde Venema
Monadic Second-Order Logic and Bisimulation Invariance for Coalgebras
- 11:15 Felix Canavoi, Erich Grädel, Simon Leßenich and Wied Pakusa
Defining Winning Strategies in Fixed-point Logic
- 11:40 Michael Benedikt, Balder Ten Cate and Michael Vanden Boom
Interpolation with Decidable Fixpoint Logics
- 12:05 Anupam Das and Colin Riba
A Complete Axiomatisation of MSO on Infinite Trees

Session 8 15:00-17:05 (ROOM1: Gold Room)

Category Theory and Domains

Chair: Ichiro Hasuo

- 15:00 Kenji Maillard and Paul-André Melliès
A Fibrational Account of Local States
- 15:25 Jiri Adamek, Stefan Milius, Robert Myers and Henning Urbat
Varieties of Languages in a Category
- 15:50 Abbas Edalat
Extension of Domain Maps in Differential and Integral Calculus
- 16:15 Arno Pauly and Matthew de Brecht
Descriptive Set Theory in the Category of Represented Spaces
- 16:40 Chris Heunen and Bert Lindenhovius
Domains of Commutative C^ -subalgebras*

Session 9 15:00-17:05 (ROOM4: Hiei)

Constraints, Unification, and Knowledge Representation

Chair: Andrzej Murawski

- 15:00 Catarina Carvalho, Florent Madelaine and Barnaby Martin
From Complexity to Algebra and Back: Digraph Classes, Collapsibility and the PGP
- 15:25 Bartek Klin, Eryk Kopczyński, Joanna Ochremiak and Szymon Toruńczyk
Locally Finite Constraint Satisfaction Problems
- 15:50 Victor Dalmau, Laszlo Egri, Benoit Larose, Arash Rafiey and Pavol Hell
Descriptive Complexity of List H -coloring Problems in Logspace: a Refined Dichotomy
- 16:15 Adria Gascon, Manfred Schmidt-Schauss and Ashish Tiwari
One Context Unification Problems Solvable in Polynomial Time
- 16:40 Tomer Kotek, Mantas Simkus, Helmut Veith and Florian Zuleger
Extending ALCQIO with Trees

Thursday 9 July 2015

Session 10 10:25-12:30 (ROOM1: Gold Room)

Computability and Proofs

Chair: Dale Miller

- 10:25 Nathanael Ackerman, Cameron Freer and Robert Lubarsky
Feedback Turing Computability, and Turing Computability as Feedback
- 10:50 Joerg Endrullis, Clemens Grabmayer and Dimitri Hendriks
Regularity Preserving but not Reflecting Encodings
- 11:15 Arnold Beckmann and Norbert Preining
Hyper Natural Deduction
- 11:40 Ugo Dal Lago, Claudia Faggian, Benoit Valiron and Akira Yoshimizu
Parallelism and Synchronization in an Infinitary Contexts
- 12:05 Amar Hadzihasanovic
A Diagrammatic Axiomatisation for Qubit Entanglement

Session 11 15:00-17:05 (ROOM1: Gold Room)

Randomization and Probabilities

Chair: Radha Jagadeesan

- 15:00 Benoît Monin and Andre Nies
A Unifying Approach to the Gamma Question
- 15:25 Annabelle McIver, Carroll Morgan and Tahiry Rabehaja
Abstract Hidden Markov Models: a Monadic Account of Quantitative Information Flow
- 15:50 Arnaud Carayol and Olivier Serre
How Good Is a Strategy in a Game With Nature?
- 16:15 Albert Atserias and Jose Balcazar
Entailment among Probabilistic Implications
- 16:40 Raphaëlle Crubillé and Ugo Dal Lago
Metric Reasoning About Lambda-Terms: The Affine Case

Friday 10 July 2015

Session 12 10:25-12:30 (ROOM1: Gold Room)

Complexity

Chair: Paul-Andre Mellies

- 10:25 Laura Bozzelli and David Pearce
On the Complexity of Temporal Equilibrium Logic
- 10:50 Matthias Baaz, Alexander Leitsch and Giselle Reis
A Note on the Complexity of Classical and Intuitionistic Proofs
- 11:15 Antonia Lechner, Joel Ouaknine and James Worrell
On the Complexity of Linear Arithmetic with Divisibility
- 11:40 Erich Grädel, Łukasz Kaiser, Wied Pakusa and Svenja Schalhöfer
Characterising Choiceless Polynomial Time with First-Order Interpretations
- 12:05 Andreas Krebs and Oleg Verbitsky
Universal Covers, Color Refinement, and Two-variable Counting Logic: Lower Bounds for the Depth

Session 13 10:25-12:30 (ROOM4: Hiei)

Automata

Chair: Nikos Tzevelekos

- 10:25 Borja Balle, Prakash Panangaden and Doina Precup
A Canonical Form for Weighted Automata and Applications to Approximate Minimization
- 10:50 Naoki Kobayashi and Xin Li
Automata-Based Abstraction Refinement for muHORS Model Checking
- 11:15 Krishnendu Chatterjee, Thomas Henzinger and Jan Otop
Nested Weighted Automata
- 11:40 Lorenzo Clemente and Sławomir Lasota
Timed Pushdown Automata Revisited
- 12:05 Udi Boker, Thomas Henzinger and Jan Otop
The Target Discounted-Sum Problem