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 Bozelli 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 Schalthöfer
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