

Structural Aspects of Rationality

December 13-14, 2009

All sessions to be held in CS101.

13 December 2009

12:30-14:00	Lunch (CSE Lawns)
14:00-14:15	Opening Remarks
	<i>Eric Pacuit</i>
14:15-15:15	Paradoxes of Interactive Rationality
15:15-15:45	Coffee Break
	<i>Mamoru Kaneko</i>
15:45-16:45	Transpersonal Understanding through Social Roles, and Emergence of Cooperation
16:45-17:00	Coffee Break
	<i>Olivier Roy</i>
17:00-18:00	Whereof one cannot speak, thereof one must be silent: A comment on the existence of universal structures
19:30-	Dinner (CSE Lawns)

14 December 2009

9:15-10:15	<i>Anuj Dawar</i> The Descriptive Complexity of Parity Games
10:15-10:30	Coffee Break
	<i>Lukasz Kaiser</i>
10:30-11:30	Playing games when states have rich structure
11:30-12:00	Coffee Break
	<i>Jérôme Renault</i>
12:00-13:00	Reliability and Privacy of Communication Using Multicast in General Neighbor Networks
13:00-14:30	Lunch (CSE Lawns)
	<i>Marie Laclau</i>
14:30-15:00	Repeated games in networks, communication, and Folk theorems
	<i>Ashutosh Trivedi</i>
15:00-15:30	Games on Probabilistic Timed Automata
15:30-16:00	Coffee Break
	<i>Florian Horn</i>
16:00-16:30	How do we remember the past in randomised strategies?
	<i>Sunil Simon</i>
16:30-17:00	On strategic reasoning in games with resource bounded players
	<i>Soumya Paul</i>
17:00-17:30	What can imitation achieve ?
17:30-	Closing Remarks
19:30-	Dinner (CSE Lawns)

Foundations of Software Technology and Theoretical Computer Science

December 15-17, 2009

All Invited talks in CS101, Sessions A in CS 101, Sessions B in CS102.

15 December 2009

08:00-09:00 Registration

Invited Talk: *R. Ravi*

09:00-10:00 Iterative Methods in Combinatorial Optimization

Chair: *Ravi Kannan*

10:00-10:30 Coffee Break

10:30-12:30

Session 1A

Chair: *Piyush P. Kurur*

Session 1B

Chair: *R. Ramanujam*

Vikraman Arvind, Pushkar Joglekar and Srikanth Srinivasan.

Arithmetic Circuits and the Hadamard Product of Polynomials

Parosh Abdulla, Yu-Fang Chen, Lukáš Holík and Tomáš Vojnar.

Mediating for Reduction (on Minimizing Alternating Buchi Automata)

Mark Braverman, Stephen Cook, Pierre McKenzie, Rahul Santhanam and Dustin Wehr.

Fractional Pebbling and Thrifty Branching Programs

Mikołaj Bojańczyk and Szymon Toruńczyk.

Deterministic Automata and Extensions of Weak MSO

Abhinav Kumar, Satyanarayana Lokam, Vijay M. Patankar and Jayalal M.N. Sarma.

Using Elimination Theory to construct Rigid Matrices

Jérémie Cabessa, Jacques Duparc, Alessandro Facchini and Filip Murlak.

The Wadge Hierarchy of Max-Regular Languages

Chandan Saha, Ramprasad Saptharishi and Nitin Saxena.

The Power of Depth 2 Circuits over Algebras.

Stéphanie Delaune, Steve Kremer and Olivier Pereira.

Simulation based security in the applied pi calculus

12:30-14:00 Lunch (CSE Lawns)

Invited Talk: *Anuj Dawar*

14:00-15:00 Structure and Specification as Sources of Complexity

Chair: *Anil Seth*

15:00-15:30 Coffee Break

15:30-17:00

Session 2A

Chair: *Jaikumar Radhakrishnan*

Samir Datta, Prajakta Nimbhorkar, Thomas Thierauf and Fabian Wagner.
Graph Isomorphism for $K_{\{3,3\}}$ -free and K_5 -free graphs is in Log-space

John Hitchcock, A Pavan and N. V. Vinodchandran.
Kolmogorov Complexity in Randomness Extraction

Marc Kaplan, Iordanis Kerenidis, Sophie Laplante and Jérémie Rolan.
Non-Local Box Complexity and Secure Function Evaluation

Session 2B

Chair: *Kamal Lodaya*

Tomáš Brázdil, Javier Esparza and Stefan Kiefer.
On the Memory Consumption of Probabilistic Pushdown Automata

Mark Kattenbelt and Michael Huth.
Verification and refutation of probabilistic specifications via games

Mathieu Tracol, Marcus Größer and Christel Baier.
Recurrence and Transience for Probabilistic Automata

17:15-18:00

Special Session on “Remembering Rajeev Motwani”

Chair: *Somenath Biswas*

19:30-

Dinner (CSE Lawns)

16 December 2009

Invited Talk: *Kim G. Larsen*

09:00-10:00

Priced Timed Automata: Theory and Tools

Chair: *Madhavan Mukund*

10:00-10:30

Coffee Break

10:30-12:30

Session 3A

Chair: *Navin Goyal*

Stéphane Bessy, Fedor Fomin, Serge Gaspers, Christophe Paul, Anthony Perez, Saket Saurabh and Stéphan Thomassé .

Kernels for Feedback Arc Set In Tournaments

Fedor Fomin, Daniel Lokshtanov, Venkatesh Raman and Saket Saurabh.
Subexponential Algorithms for Partial Cover Problems

Anuj Dawar and Stephan Kreutzer.
Domination Problems in Nowhere-Dense Classes of Graphs

Session 3B

Chair: *Dietmar Berwanger*

Laurent Braud.
Covering of ordinals

Julien Cristau.
Automata and temporal logic over arbitrary linear time

Alexander Rabinovich.
Synthesis of Finite-state and Definable Winning Strategies

Joachim Kneis, Alexander Langer and Peter Rossmanith.
A Fine-grained Analysis of a Simple Independent Set Algorithm.

Soumya Paul and Sunil Easaw Simon.
Nash Equilibrium in Generalised Muller Games

12:30-14:00 Lunch (CSE Lawns)

14:00-15:30

Session 4A

Chair: *Venkatesh Raman*

Session 4B

Chair: *Sanjiva Prasad*

Konstantinos Georgiou, Avner Magen and Iannis Tourlakis.

On the Tightening of the Standard SDP for Vertex Cover with ℓ_1 Inequalities

Tomáš Brazdil, Vojtech Forejt, Jan Krčál, Jan Křetínský and Antonín Kučera.

Continuous-Time Stochastic Games with Time-Bounded Reachability

Chien-Chung Huang and Zoya Svitkina.

Donation Center Location Problem

Laura Bozzelli, Axel Legay and Sophie Pinchinat.

On Timed Alternating Simulation for Concurrent Timed Games

Rohit Khandekar, Guy Kortsarz and Zeev Nutov.

Approximating Fault-Tolerant Group-Steiner Problems

Ankur Taly and Ashish Tiwari.

Deductive Verification of Continuous Dynamical Systems

15:30-16:00 Coffee break

16:00-17:00 IARCS Business Meeting

19:30- Conference Banquet (Institute Guest House Lawns)

17 December 2009

Invited Talk: *Avi Wigderson*

09:00-10:00 Randomness extractors – applications and constructions

Chair: *Satya Lokam*

10:00-10:30 Coffee break

10:30-12:00

Session 5A

Chair: *Amit Kumar*

Session 5B

Chair: *Deepak D'Souza*

Mostafa Ammar, Deeparnab Chakrabarty, Atish Das Sarma, Subrahmanyam Kalyanasundaram and Richard J. Lipton.

Algorithms for Message Ferrying on Mobile ad hoc Networks

Christof Löding and Karianto Wong.
On Nondeterministic Unranked Tree Automata with Sibling Constraints

*Rohit Khandekar, Kirsten Hildrum,
Sujay Parekh, Deepak Rajan, Jay
Sethuraman and Joel Wolf.*

Bounded Size Graph Clustering with
Applications to Stream Processing
Problem

*Stéphane Demri, Marcin Jurdziński,
Oded Lachish and Ranko Lazic.*

The covering and boundedness prob-
lems for branching vector addition sys-
tems

André Madeira and S. Muthukrishnan.
Functionally Private Approximations
of Negligibly-Biased Estimators

M. Praveen and Kamal Lodaya.

Modelchecking counting properties of
1-safe nets with buffers in para-
PSPACE

12:15-12:30 Closing Session

12:30-14:00 Lunch (CSE Lawns)

20:00- Dinner (Institute Guest House Lawns)

Workshop on Algorithms for Processing Massive Data Sets

December 18-20, 2009

All sessions to be held in CS101.

17 December 2009

19:30- Dinner along with FSTTCS delegates (Institute Guest House Lawns)

18 December 2009

Session I, Chair : *Michael Mahoney*

Joel Tropp

08:45-09:45 Finding structure with randomness: Stochastic algorithms for computing approximate matrix decompositions

09:45-10:15 Coffee Break

Session II, Chair : *Joel Tropp*

Michael Mahoney

10:15-11:15 Linear Algebra methods for heavy tailed informatics graphs

Inderjit Dhillon

11:15-12:15 Guaranteed Rank Minimization via Singular Value Projection

12:15-14:00 Lunch (CSE Lawns)

Session III, Chair : *Andrew McGregor*

Jelani Nelson

14:00-14:55 A Space-Optimal Algorithm for Sketching Small Moments

David Woodruff

14:55-15:40 Moments and Sampling

15:40-16:10 Coffee Break

Session IV, Chair : *David Woodruff*

Rina Panigrahy

16:10-16:40 Estimating PageRank on Graph Streams

Krzysztof Onak

16:40-17:20 Approximate Pattern Matching and the Query Complexity of Edit Distance

19:30- Dinner (Institute Guest House Lawns)

19 December 2009

Session V, Chair : *Christian Sohler*

- 08:45-09:45 *Sudipto Guha*
Beyond the Moraines: New Directions in Streaming
- 09:45-10:30 *Andrew McGregor*
Annotations in Data Streams
- 10:30-11:00 Coffee Break

Session VI, Chair : *Pankaj Agarwal*

- 11:00-11:45 *Christian Sohler*
Comp. Geometry
- 11:45-12:15 *Christiane Lammersan*
Comp. Geometry
- 12:15-14:00 Lunch (CSE Lawns)

Session VII, Chair : *Piotr Indyk*

- 14:00-14:45 *Pankaj Agarwal*
Comp. Geometry
- 14:45-15:15 *Dan Feldman*
Comp. Geometry
- 15:15-15:40 Coffee Break

Session VIII, Chair : *Sudipto Guha*

- 15:40-16:40 *Piotr Indyk*
Compressed Sensing
- 16:40-17:00 Coffee Break
- 17:00- Open Problems Session (**Session Chair : *Sudipto Guha***)
- 19:30- Workshop Dinner (Institute Guest House Lawns)

20 December 2009

Session IX, Chair : *Paul Beame*

08:45-09:30 *Amit Chakrabarti*
Lower Bounds: Round Elimination

09:30-10:15 *T.S. Jayram*
Information Complexity and the Geometry of Communication

10:15-10:40 Coffee Break

Session X, Chair : *T.S. Jayram*

10:40-11:25 *Paul Beame*
Lower bounds for read/write stream algorithms

11:25-12:10 *Matthias Westermann*
The Power of Online Reordering

12:10-12:40 *Ely Porat*
Real time pattern matching

12:40- Lunch (CSE Lawns)

19:30- Dinner (Institute Guest Dining Hall)