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Automata, Languages, and Programming

39th International Colloquium, ICALP 2012
Warwick, UK, July 9-13, 2012
Proceedings, Part I

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ISSN 0302-9743
ISBN 978-3-642-31593-0
DOI 10.1007/978-3-642-31594-7
Springer Heidelberg Dordrecht London New York

e-ISSN 1611-3349
e-ISBN 978-3-642-31594-7

Library of Congress Control Number: 2012940794

CR Subject Classification (1998): F.2, F.1, C.2, H.3-4, G.2, I.2

LNCS Sublibrary: SL 1 – Theoretical Computer Science and General Issues

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Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

This volume contains the papers presented at the 39th International Colloquium on Automata, Languages and Programming (ICALP 2012), held during July 9–13, 2012 at the University of Warwick, UK. ICALP is the main conference and annual meeting of the European Association for Theoretical Computer Science (EATCS) and first took place in 1972. This year the ICALP program consisted of three tracks:

- Track A: Algorithms, Complexity and Games
- Track B: Logic, Semantics, Automata and Theory of Programming
- Track C: Foundations of Networked Computation

In response to the call for papers, the three Program Committees received a total of 432 submissions: 248 for Track A, 105 for Track B, and 79 for Track C. Each submission was reviewed by three or more Program Committee members, aided by sub-reviewers. The committees decided to accept 123 papers for inclusion in the scientific program: 71 papers for Track A, 30 for Track B, and 22 for Track C. The selection was made by the Program Committees based on originality, quality, and relevance to theoretical computer science. The quality of the submissions was very high indeed, and many deserving papers could not be selected.

The EATCS sponsored awards for both a best paper and a best student paper (to qualify for which, all authors must be students) for each of the three tracks, selected by the Program Committees.

The best paper awards were given to the following papers:

Track A: Leslie Ann Goldberg and Mark Jerrum for their paper “The Complexity of Computing the Sign of the Tutte Polynomial (and Consequent #P-hardness of Approximation)”

Track B: Volker Diekert, Manfred Kufleitner, Klaus Reinhardt, and Tobias Walter for their paper “Regular Languages are Church-Rosser Congruential”

Track C: Piotr Krysta and Berthold Vöcking for their paper “Online Mechanism Design (Randomized Rounding on the Fly)”

The best student paper awards were given to the following papers:

Track A: jointly, Shelby Kimmel for her paper “Quantum Adversary (Upper Bound)” and Anastasios Zouzias for his paper “A Matrix Hyperbolic Cosine Algorithm and Applications”

Track B: Yaron Velner for his paper “The Complexity of Mean-Payoff Automaton Expression”

Track C: Leonid Barenboim for his paper “On the Locality of Some NP-Complete Problems”

In addition to the contributed papers, the conference included six invited lectures, by Gilles Dowek (INRIA Paris), Kohei Honda (Queen Mary London), Stefano Leonardi (Sapienza University of Rome), Daniel Spielman (Yale), Berthold Vöcking (RWTH Aachen University), and David Harel (The Weizmann Institute of Science). David Harel's talk was in honor of Alan Turing, since the conference was one of the Alan Turing Centenary Celebration events, celebrating the life, work, and legacy of Alan Turing.

The following workshops were held as satellite events of ICALP 2012 on July 8, 2012:

- Workshop on Applications of Parameterized Algorithms and Complexity (APAC)
- 4th International Workshop on Classical Logic and Computation (CL&C)
- Third Workshop on Realistic models for Algorithms in Wireless Networks (WRAWN)

We wish to thank all the authors who submitted extended abstracts for consideration, the members of the three Program Committees for their scholarly efforts, and all sub-reviewers who assisted the Program Committees in the evaluation process. We thank the sponsors Microsoft Research, Springer-Verlag, EATCS, and the Centre for Discrete Mathematics and its Applications (DIMAP) for their support, and the University of Warwick for hosting ICALP 2012. We are also grateful to all members of the Organizing Committee and to their support staff. The conference-management system EasyChair was used to handle the submissions, to conduct the electronic Program Committee meeting, and to assist with the assembly of the proceedings.

May 2012

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 Zając, Michał
 Zavattaro, Gianluigi
 Zavou, Elli
 Zdeborova, Lenka
 Zelke, Mariano
 Zhang, Chihao
 Zhang, Fuyuan
 Zhang, Jialin
 Zhang, Jiawei
 Zhang, Qin
 Zhang, Shengyu
 Zheng, Colin
 Zheng, Jia
 Zhong, Ning
 Zhou, Yuan
 Zohar, Aviv

Table of Contents – Part I

Track A – Algorithms, Complexity and Games

Unsatisfiability Bounds for Random CSPs from an Energetic Interpolation Method	1
<i>Dimitris Achlioptas and Ricardo Menchaca-Mendez</i>	
The NOF Multiparty Communication Complexity of Composed Functions	13
<i>Anil Ada, Arkadev Chattopadhyay, Omar Fawzi, and Phuong Nguyen</i>	
Quantum Strategies Are Better Than Classical in Almost Any XOR Game	25
<i>Andris Ambainis, Artūrs Bačkurs, Kaspars Balodis, Dmitrijs Kravčenko, Raitis Ozols, Juris Smotrovs, and Madars Virza</i>	
Efficient Submodular Function Maximization under Linear Packing Constraints	38
<i>Yossi Azar and Iftah Gamzu</i>	
Polynomial-Time Isomorphism Test for Groups with No Abelian Normal Subgroups (Extended Abstract)	51
<i>László Babai, Paolo Codenotti, and Youming Qiao</i>	
Clustering under Perturbation Resilience	63
<i>Maria Florina Balcan and Yingyu Liang</i>	
Secretary Problems with Convex Costs	75
<i>Siddharth Barman, Seeun Umboh, Shuchi Chawla, and David Malec</i>	
Nearly Simultaneously Resettable Black-Box Zero Knowledge	88
<i>Joshua Baron, Rafail Ostrovsky, and Ivan Visconti</i>	
Complexity of Complexity and Maximal Plain versus Prefix-Free Kolmogorov Complexity	100
<i>Bruno Bauwens</i>	
On Quadratic Programming with a Ratio Objective	109
<i>Aditya Bhaskara, Moses Charikar, Rajsekar Manokaran, and Aravindan Vijayaraghavan</i>	
De-amortizing Binary Search Trees	121
<i>Prosenjit Bose, Sébastien Collette, Rolf Fagerberg, and Stefan Langerman</i>	

Efficient Sampling Methods for Discrete Distributions	133
<i>Karl Bringmann and Konstantinos Panagiotou</i>	
Approximation Algorithms for Online Weighted Rank Function Maximization under Matroid Constraints	145
<i>Niv Buchbinder, Joseph (Seffi) Naor, R. Ravi, and Mohit Singh</i>	
Improved LP-Rounding Approximation Algorithm for k -level Uncapacitated Facility Location	157
<i>Jaroslav Byrka and Bartosz Rybicki</i>	
Testing Coverage Functions	170
<i>Deeparnab Chakrabarty and Zhiyi Huang</i>	
Sparse Fault-Tolerant Spanners for Doubling Metrics with Bounded Hop-Diameter or Degree	182
<i>T.-H. Hubert Chan, Mingfei Li, and Li Ning</i>	
A Dependent LP-Rounding Approach for the k -Median Problem	194
<i>Moses Charikar and Shi Li</i>	
Node-Weighted Network Design in Planar and Minor-Closed Families of Graphs	206
<i>Chandra Chekuri, Alina Ene, and Ali Vakilian</i>	
Computing the Visibility Polygon of an Island in a Polygonal Domain	218
<i>Danny Z. Chen and Haitao Wang</i>	
Directed Subset Feedback Vertex Set Is Fixed-Parameter Tractable	230
<i>Rajesh Chitnis, Marek Cygan, Mohammadtaghi Hajiaghayi, and Dániel Marx</i>	
Max-Cut Parameterized above the Edwards-Erdős Bound	242
<i>Robert Crowston, Mark Jones, and Matthias Mnich</i>	
Clique Cover and Graph Separation: New Incompressibility Results	254
<i>Marek Cygan, Stefan Kratsch, Marcin Pilipczuk, Michał Pilipczuk, and Magnus Wahlström</i>	
The Inverse Shapley Value Problem	266
<i>Anindya De, Ilias Diakonikolas, and Rocco Servedio</i>	
Zero-One Rounding of Singular Vectors	278
<i>Amit Deshpande, Ravindran Kannan, and Nikhil Srivastava</i>	
Label Cover Instances with Large Girth and the Hardness of Approximating Basic k -Spanner	290
<i>Michael Dinitz, Guy Kortsarz, and Ran Raz</i>	

Space-Constrained Interval Selection	302
<i>Yuval Emek, Magnús M. Halldórsson, and Adi Rosén</i>	
Polynomial Time Algorithms for Branching Markov Decision Processes and Probabilistic Min(Max) Polynomial Bellman Equations	314
<i>Kousha Etessami, Alistair Stewart, and Mihalis Yannakakis</i>	
Succinct Indices for Range Queries with Applications to Orthogonal Range Maxima	327
<i>Arash Farzan, J. Ian Munro, and Rajeev Raman</i>	
Universal Factor Graphs	339
<i>Uriel Feige and Shlomo Jozeph</i>	
Parameterized Approximation via Fidelity Preserving Transformations	351
<i>Michael R. Fellows, Ariel Kulik, Frances Rosamond, and Hadas Shachnai</i>	
Backdoors to Acyclic SAT	363
<i>Serge Gaspers and Stefan Szeider</i>	
Dominators, Directed Bipolar Orders, and Independent Spanning Trees	375
<i>Loukas Georgiadis and Robert E. Tarjan</i>	
Hardness of Approximation for Quantum Problems	387
<i>Sevag Gharibian and Julia Kempe</i>	
The Complexity of Computing the Sign of the Tutte Polynomial (and Consequent #P-hardness of Approximation)	399
<i>Leslie Ann Goldberg and Mark Jerrum</i>	
Stochastic Vehicle Routing with Recourse	411
<i>Inge Li Gørtz, Viswanath Nagarajan, and Rishi Saket</i>	
The Online Metric Matching Problem for Doubling Metrics	424
<i>Anupam Gupta and Kevin Lewi</i>	
Approximating Sparse Covering Integer Programs Online	436
<i>Anupam Gupta and Viswanath Nagarajan</i>	
Streaming and Communication Complexity of Clique Approximation . . .	449
<i>Magnús M. Halldórsson, Xiaoming Sun, Mario Szegedy, and Chengu Wang</i>	
Distributed Private Heavy Hitters	461
<i>Justin Hsu, Sanjeev Khanna, and Aaron Roth</i>	

A Thirty Year Old Conjecture about Promise Problems	473
<i>Andrew Hughes, A. Pavan, Nathan Russell, and Alan Selman</i>	
Minimum Latency Submodular Cover	485
<i>Sungjin Im, Viswanath Nagarajan, and Ruben van der Zwaan</i>	
Constant-Time Algorithms for Sparsity Matroids	498
<i>Hiro Ito, Shin-Ichi Tanigawa, and Yuichi Yoshida</i>	
CRAM: Compressed Random Access Memory	510
<i>Jesper Jansson, Kunihiko Sadakane, and Wing-Kin Sung</i>	
Improving Quantum Query Complexity of Boolean Matrix Multiplication Using Graph Collision	522
<i>Stacey Jeffery, Robin Kothari, and Frédéric Magniez</i>	
Faster Fully Compressed Pattern Matching by Recompression	533
<i>Artur Jeř</i>	
NNS Lower Bounds via Metric Expansion for l_∞ and <i>EMD</i>	545
<i>Michael Kapralov and Rina Panigrahy</i>	
Quantum Adversary (Upper) Bound	557
<i>Shelby Kimmel</i>	
Solving PLANAR k -TERMINAL CUT in $O(n^{c\sqrt{k}})$ Time	569
<i>Philip N. Klein and Dániel Marx</i>	
Fixed-Parameter Tractability of Multicut in Directed Acyclic Graphs . . .	581
<i>Stefan Kratsch, Marcin Pilipczuk, Michał Pilipczuk, and Magnus Wahlström</i>	
Preserving Terminal Distances Using Minors	594
<i>Robert Krauthgamer and Tamar Zondiner</i>	
A Rounding by Sampling Approach to the Minimum Size k -Arc Connected Subgraph Problem	606
<i>Bundit Laekhanukit, Shayan Oveis Gharan, and Mohit Singh</i>	
Classical and Quantum Partition Bound and Detector Inefficiency	617
<i>Sophie Laplante, Virginie Lerays, and Jérémie Roland</i>	
Testing Similar Means	629
<i>Reut Levi, Dana Ron, and Ronitt Rubinfeld</i>	
The Parameterized Complexity of k -Edge Induced Subgraphs	641
<i>Bingkai Lin and Yijia Chen</i>	

Converting Online Algorithms to Local Computation Algorithms.....	653
<i>Yishay Mansour, Aviad Rubinfeld, Shai Vardi, and Ning Xie</i>	
Assigning Sporadic Tasks to Unrelated Parallel Machines	665
<i>Alberto Marchetti-Spaccamela, Cyriel Ruten,</i> <i>Suzanne van der Ster, and Andreas Wiese</i>	
A Tight Lower Bound for Planar Multiway Cut with Fixed Number of Terminals	677
<i>Dániel Marx</i>	
The Power of Recourse for Online MST and TSP	689
<i>Nicole Megow, Martin Skutella, José Verschae, and Andreas Wiese</i>	
Geometry of Online Packing Linear Programs	701
<i>Marco Molinaro and R. Ravi</i>	
Self-assembly with Geometric Tiles	714
<i>Bin Fu, Matthew J. Patitz, Robert T. Schweller, and Robert Sheline</i>	
Quasi-polynomial Local Search for Restricted Max-Min Fair Allocation	726
<i>Lukas Polacek and Ola Svensson</i>	
Strictly-Black-Box Zero-Knowledge and Efficient Validation of Financial Transactions	738
<i>Michael O. Rabin, Yishay Mansour, S. Muthukrishnan, and</i> <i>Moti Yung</i>	
Parameterized Tractability of Multiway Cut with Parity Constraints ...	750
<i>Daniel Lokshtanov and M.S. Ramanujan</i>	
Set Cover Revisited: Hypergraph Cover with Hard Capacities.....	762
<i>Barna Saha and Samir Khuller</i>	
On the Limits of Sparsification	774
<i>Rahul Santhanam and Srikanth Srinivasan</i>	
Certifying 3-Connectivity in Linear Time	786
<i>Jens M. Schmidt</i>	
Epsilon-Net Method for Optimizations over Separable States	798
<i>Yaoyun Shi and Xiaodi Wu</i>	
Faster Algorithms for Privately Releasing Marginals	810
<i>Justin Thaler, Jonathan Ullman, and Salil Vadhan</i>	
Stochastic Matching with Commitment	822
<i>Kevin P. Costello, Prasad Tetali, and Pushkar Tripathi</i>	

*Rademacher-Sketch: A Dimensionality-Reducing Embedding for
Sum-Product Norms, with an Application to Earth-Mover Distance* 834
Elad Verbin and Qin Zhang

A Matrix Hyperbolic Cosine Algorithm and Applications 846
Anastasios Zouzias

Author Index 859

Table of Contents – Part II

Invited Talks

On Multiple Keyword Sponsored Search Auctions with Budgets	1
<i>Riccardo Colini-Baldeschi, Monika Henzinger, Stefano Leonardi, and Martin Starnberger</i>	
A Theory Independent Curry-De Bruijn-Howard Correspondence	13
<i>Gilles Dowek</i>	
Standing on the Shoulders of a Giant: One Persons Experience of Turings Impact	16
<i>David Harel</i>	
Session Types and Distributed Computing	23
<i>Kohei Honda</i>	
Algorithms, Graph Theory, and the Solution of Laplacian Linear Equations	24
<i>Daniel A. Spielman</i>	
Randomized Mechanisms for Multi-unit Auctions (Extended Abstract)	27
<i>Berthold Vöcking</i>	

Track B – Logic Semantics, Automata and Theory of Programming

Algebraic Synchronization Trees and Processes	30
<i>Luca Aceto, Arnaud Carayol, Zoltán Ésik, and Anna Ingólfssdóttir</i>	
Streaming Tree Transducers	42
<i>Rajeev Alur and Loris D’Antoni</i>	
Causal Graph Dynamics	54
<i>Pablo Arrighi and Gilles Dowek</i>	
Degree Lower Bounds of Tower-Type for Approximating Formulas with Parity Quantifiers	67
<i>Albert Atserias and Anuj Dawar</i>	
Monadic Datalog Containment	79
<i>Michael Benedikt, Pierre Bourhis, and Pierre Senellart</i>	

A Machine-Independent Characterization of Timed Languages	92
<i>Mikołaj Bojańczyk and Sławomir Lasota</i>	
Regular Languages of Infinite Trees That Are Boolean Combinations of Open Sets	104
<i>Mikołaj Bojańczyk and Thomas Place</i>	
Toward Model Theory with Data Values	116
<i>Mikołaj Bojańczyk and Thomas Place</i>	
Robust Reachability in Timed Automata: A Game-Based Approach	128
<i>Patricia Bouyer, Nicolas Markey, and Ocan Sankur</i>	
Minimizing Expected Termination Time in One-Counter Markov Decision Processes	141
<i>Tomáš Brázdil, Antonín Kučera, Petr Novotný, and Dominik Wojtczak</i>	
Prefix Rewriting for Nested-Words and Collapsible Pushdown Automata	153
<i>Christopher Broadbent</i>	
A Saturation Method for Collapsible Pushdown Systems	165
<i>Chris Broadbent, Arnaud Carayol, Matthew Hague, and Olivier Serre</i>	
Regular Languages Are Church-Rosser Congruential	177
<i>Volker Diekert, Manfred Kufleitner, Klaus Reinhardt, and Tobias Walter</i>	
Time and Parallelizability Results for Parity Games with Bounded Treewidth	189
<i>John Fearnley and Sven Schewe</i>	
Nominal Completion for Rewrite Systems with Binders	201
<i>Maribel Fernández and Albert Rubio</i>	
Discrete Generalised Polynomial Functors	214
<i>Marcelo Fiore</i>	
Computing Game Metrics on Markov Decision Processes	227
<i>Hongfei Fu</i>	
Deciding First Order Properties of Matroids	239
<i>Tomáš Gavenčíak, Daniel Král, and Sang-il Oum</i>	
Pebble Games with Algebraic Rules	251
<i>Anuj Dawar and Bjarki Holm</i>	
Exponential Lower Bounds and Separation for Query Rewriting	263
<i>Stanislav Kikot, Roman Kontchakov, Vladimir Podolskii, and Michael Zakharyashev</i>	

Lattices of Logical Fragments over Words (Extended Abstract)	275
<i>Manfred Kufleitner and Alexander Lauser</i>	
On the Expressive Power of Cost Logics over Infinite Words	287
<i>Denis Kuperberg and Michael Vanden Boom</i>	
Coalgebraic Predicate Logic	299
<i>Tadeusz Litak, Dirk Pattinson, Katsuhiko Sano, and Lutz Schröder</i>	
Algorithmic Games for Full Ground References	312
<i>Andrzej Murawski and Nikos Tzevelekos</i>	
Two-Level Game Semantics, Intersection Types, and Recursion Schemes	325
<i>C.-H. Luke Ong and Takeshi Tsukada</i>	
An Automata-Theoretic Model of Idealized Algol (Extended Abstract)	337
<i>Uday S. Reddy and Brian P. Dunphy</i>	
Towards a Unified Theory of Operational and Axiomatic Semantics	351
<i>Grigore Roşu and Andrei Ştefănescu</i>	
Loader and Urzyczyn Are Logically Related	364
<i>Sylvain Salvati, Giulio Manzonetto, Mai Gehrke, and Henk Barendregt</i>	
Languages of Profinite Words and the Limitedness Problem	377
<i>Szymon Toruńczyk</i>	
The Complexity of Mean-Payoff Automaton Expression	390
<i>Yaron Velner</i>	

Track C – Foundations of Networked Computation

On the Locality of Some NP-Complete Problems	403
<i>Leonid Barenboim</i>	
Growing Half-Balls: Minimizing Storage and Communication Costs in CDNs	416
<i>Reuven Bar-Yehuda, Erez Kantor, Shay Kutten, and Dror Rawitz</i>	
Super-Fast Distributed Algorithms for Metric Facility Location	428
<i>Andrew Berns, James Hegeman, and Sriram V. Pemmaraju</i>	
Preventing Unraveling in Social Networks: The Anchored k -Core Problem	440
<i>Kshipra Bhawalkar, Jon Kleinberg, Kevin Lewi, Tim Roughgarden, and Aneesh Sharma</i>	

Edge Fault Tolerance on Sparse Networks	452
<i>Nishanth Chandran, Juan Garay, and Rafail Ostrovsky</i>	
Incentive Ratios of Fisher Markets	464
<i>Ning Chen, Xiaotie Deng, Hongyang Zhang, and Jie Zhang</i>	
Computational Complexity of Traffic Hijacking under BGP and S-BGP	476
<i>Marco Chiesa, Giuseppe Di Battista, Thomas Erlebach, and Maurizio Patrignani</i>	
Efficiency-Revenue Trade-Offs in Auctions	488
<i>Ilias Diakonikolas, Christos Papadimitriou, George Pierrakos, and Yaron Singer</i>	
Deterministic Network Exploration by Anonymous Silent Agents with Local Traffic Reports	500
<i>Yoann Dieudonné and Andrzej Pelc</i>	
A QPTAS for ε -Envy-Free Profit-Maximizing Pricing on Line Graphs	513
<i>Khaled Elbassioni</i>	
Minimizing Rosenthal Potential in Multicast Games	525
<i>Fedor V. Fomin, Petr Golovach, Jesper Nederlof, and Michał Pilipczuk</i>	
Multiparty Proximity Testing with Dishonest Majority from Equality Testing	537
<i>Ran Gelles, Rafail Ostrovsky, and Kina Winoto</i>	
Anonymous Card Shuffling and Its Applications to Parallel Mixnets	549
<i>Michael T. Goodrich and Michael Mitzenmacher</i>	
Byzantine Agreement with a Rational Adversary	561
<i>Adam Groce, Jonathan Katz, Aishwarya Thiruvengadam, and Vassilis Zikas</i>	
Random Hyperbolic Graphs: Degree Sequence and Clustering Extended Abstract	573
<i>Luca Gugelmann, Konstantinos Panagiotou, and Ueli Peter</i>	
Topology-Aware VM Migration in Bandwidth Oversubscribed Datacenter Networks	586
<i>Navendu Jain, Ishai Menache, Joseph (Seffi) Naor, and F. Bruce Shepherd</i>	
Counting Arbitrary Subgraphs in Data Streams	598
<i>Daniel M. Kane, Kurt Mehlhorn, Thomas Sauerwald, and He Sun</i>	

<i>k</i> -Chordal Graphs: From Cops and Robber to Compact Routing via Treewidth	610
<i>Adrian Kosowski, Bi Li, Nicolas Nisse, and Karol Suchan</i>	
Contention Issues in Congestion Games	623
<i>Elias Koutsoupias and Katia Papakonstantinou</i>	
Online Mechanism Design (Randomized Rounding on the Fly)	636
<i>Piotr Krysta and Berthold Vöcking</i>	
Online Packing with Gradually Improving Capacity Estimations and Applications to Network Lifetime Maximization	648
<i>Marcel Ochel, Klaus Radke, and Berthold Vöcking</i>	
Distributed Algorithms for Network Diameter and Girth	660
<i>David Peleg, Liam Roditty, and Elad Tal</i>	
Author Index	673