

STOC 2003 Schedule

Sunday June 8th, 2003

7:00-9:00 PM **STOC reception** (Trellises Courtyard)

Monday June 9th, 2003

8:00-8:35 AM **Continental breakfast** (Atlas Foyer)

8:35-9:45 AM **Session 1A** (San Diego). Chair: Ashwin Nayak

8:35-8:55 AM Hidden Translation and Orbit Coset in Quantum Computing

Katalin Friedl, Gabor Ivanyos, Frédéric Magniez, Miklos Santha and Pranab Sen

9:00-9:20 AM Classical Deterministic Complexity of Edmonds' problem and Quantum Entanglement

Leonid Gurvits

9:25-9:45 AM Adiabatic Quantum State Generation and Statistical Zero Knowledge

Dorit Aharonov and Amnon Ta-Shma

8:35-9:45 AM **Session 1B** (Royal Palm 1-4). Chair: Rafail Ostrovsky

8:35-8:55 AM Better Streaming Algorithms for Clustering Problems

Moses Charikar, Liadan O'Callaghan and Rina Panigrahy

9:00-9:20 AM Approximation Algorithms for Hierarchical Location Problems

C. Greg Plaxton

9:25-9:45 AM Approximation Schemes for Clustering Problems

W. Fernandez de la Vega, Marek Karpinski, Claire Kenyon and Yuval Rabani

9:45-10:10 AM **Coffee break** (Atlas Foyer)

10:10-11:20 AM **Session 2A** (San Diego). Chair: Leonard Schulman

10:10-10:30 AM Exponential Algorithmic Speedup by a Quantum Walk

Andrew Childs, Richard Cleve, Enrico Deotto, Edward Farhi, Sam Gutmann and Daniel Spielman

10:35-10:55 AM Quantum Time-Space Tradeoffs for Sorting

Hartmut Klauck

11:00-11:20 AM On the Power of Quantum Fingerprinting

Andrew Chi-Chih Yao

10:10-11:20 AM **Session 2B** (Royal Palm 1-4). Chair: Aravind Srinivasan

10:10-10:30 AM Management of Multi-Queue Switches In QoS Networks

Yossi Azar and Yossi Richter

10:35-10:55 AM Constant Factor Approximation of Vertex-Cuts in Planar Graphs

Eyal Amir, Robert Krauthgamer and Satish Rao

11:00-11:20 AM The Online Set Cover Problem

Noga Alon, Baruch Awerbuch, Yossi Azar, Niv Buchbinder and Joseph (Seffi) Naor

11:30-12:30 PM **FCRC Plenary Talk** (Grand Ballroom).

Michael O. Rabin. Provably Unbreakable Encryption: Theory and Implementation.

12:30-2:00 PM **Lunch** (Royal Palm Court)

2:00-3:35 PM **Session 3A** (San Diego). Chair: Luca Trevisan

2:00-2:20 PM Exponential Lower Bound for 2-query Locally Decodable Codes via a Quantum Argument

Iordanis Kerenidis and Ronald de Wolf

2:25-2:45 PM Optimal Probabilistic Fingerprint Codes

Gabor Tardos

2:50-3:10 PM Linear Time Encodable and List Decodable Codes

Venkatesan Guruswami and Piotr Indyk

3:15-3:35 PM Reconstructing Curves in Three (and Higher) Dimensional Space from Noisy Data

Don Coppersmith and Madhu Sudan

2:00-3:35 PM **Session 3B** (Royal Palm 1-4). Chair: Samir Khuller
2:00-2:20 PM Short Path Queries in Planar Graphs in Constant Time
Lukasz Kowalik and Maciej Kurowski

2:25-2:45 PM Integer Priority Queues with Decrease Key in Constant Time and the Single Source Shortest Paths Problem
Mikkel Thorup

2:50-3:10 PM A New Approach to Dynamic All Pairs Shortest Paths
C. Demetrescu and G.F. Italiano

3:15-3:35 PM A Fast Algorithm for Computing Edge Connectivity of Steiner Points
Richard Cole and Ramesh Hariharan

3:35-4:05 PM **Afternoon coffee break** (Atlas Foyer)

4:05-4:50 PM **Session 4A** (San Diego). Chair: Luca Trevisan
4:05-4:25 PM The Computational Complexity of Some Julia Sets
Robert Rettinger and Klaus Weihrauch

4:30-4:50 PM Time-Space Tradeoff Lower Bounds for Integer Multiplication and Graphs of Arithmetic Functions
Martin Sauerhoff and Philipp Woelfel

4:05-4:50 PM **Session 4B** (Royal Palm 1-4). Chair: Avrim Blum
4:05-4:25 PM Boosting in the Presence of Noise
Adam Kalai and Rocco A. Servedio

4:30-4:50 PM Learning Juntas
Elchanan Mossel, Rocco Servedio, Ryan O'Donnell

5:00-6:00 PM **Knuth Prize Lecture** (San Diego). Miklos Ajtai. Random Lattices.

9:00-10:00 PM **STOC Business Meeting** (Royal Palm 1-4)

Tuesday June 10th, 2003

8:00-8:35 AM **Continental breakfast** (Atlas Foyer)

8:35-9:45 AM **Session 5A** (San Diego). Chair: Leonard Schulman
8:35-8:55 AM Generating Random Regular Graphs
J.H. Kim and V.H. Vu

9:00-9:20 AM The Threshold for Random k-SAT is $2^k(\ln 2 + o(1))$
Dimitris Achlioptas and Yuval Peres

9:25-9:45 AM Random Knapsack in Expected Polynomial Time
Rene Beier and Berthold Voecking

8:35-9:45 AM **Session 5B** (Royal Palm 1-4). Chair: Sanjeev Khanna
8:35-8:55 AM Server Scheduling in the L_p Norm: A Rising Tide Lifts All Boats
Nikhil Bansal and Kirk Pruhs

9:00-9:20 AM Work-Competitive Scheduling for Cooperative Computing with Dynamic Groups
Chryssis Georgiou, Alexander Russell and Alex A. Shvartsman

9:25-9:45 AM A Tight Time Lower Bound for Space-Optimal Implementations of Multi-Writer Snapshots
Panagiota Fatourou, Faith Fich and Eric Ruppert

9:45-10:10 AM **Coffee break** (Atlas Foyer)

10:10-11:20 AM **Session 6A** (San Diego). Chair: Santosh Vempala
10:10-10:30 AM Randomly Coloring Graphs of Girth at Least Five
Thomas P. Hayes

10:35-10:55 AM Evolving Sets and Mixing
Ben Morris and Yuval Peres

11:00-11:20 AM Modified Log-Sobolev Inequalities, Mixing and Hypercontractivity
Sergey Bobkov and Prasad Tetali

10:10-11:20 AM **Session 6B** (Royal Palm 1-4). Chair: Michel Goemans
10:10-10:30 AM On the Fractal Behavior of TCP
Anna C. Gilbert and Howard Karloff

10:35-10:55 AM On the Limits of Cache-Obliviousness
Gerth Stlting Brodal and Rolf Fagerberg

11:00-11:20 AM A Sublinear Algorithm for Weakly Approximating Edit Distance
Tugkan Batu, Funda Ergun, Joe Kilian, Avner Magen, Sofya Raskhodnikova, Ronitt Rubinfeld and Rahul Sami

11:30-12:30 PM **FCRC Plenary Talk** (Grand Ballroom).
Michael Flynn. Computer Architecture and Technology: Some Thoughts on the Road Ahead.

12:30-2:00 PM **Lunch** (Royal Palm Court)

2:00-3:35 PM **Session 7A** (San Diego). Chair: Sanjeev Arora
2:00-2:20 PM New Degree Bounds on Polynomial Threshold Functions
Ryan O'Donnell and Rocco Servedio

2:25-2:45 PM Sampling Lower Bounds via Information Theory
Ziv Bar-Yossef

2:50-3:10 PM 3CNF Properties are Hard to Test
Eli Ben-Sasson, Prahladh Harsha and Sofya Raskhodnikova

3:15-3:35 PM Derandomizing Polynomial Identity Tests Means Proving Circuit Lower Bounds
Valentine Kabanets and Russell Impagliazzo

2:00-3:35 PM **Session 7B** (Royal Palm 1-4). Chair: Michel Goemans
2:00-2:20 PM Simpler and Better Approximation Algorithms for Network Design
Anupam Gupta, Amit Kumar and Tim Roughgarden

2:25-2:45 PM Meet and Merge: Approximation Algorithms for Confluent Flows
Jiangzhuo Chen, Rajmohan Rajaraman and Ravi Sundaram

2:50-3:10 PM Optimal Oblivious Routing in Polynomial Time
Yossi Azar, Edith Cohen, Amos Fiat, Haim Kaplan and Harald Raecke

3:15-3:35 PM Primal-Dual Meets Local Search: Approximating MST's with Nonuniform Degree Bounds
J. Konemann and R. Ravi

3:35-4:00 PM **Afternoon coffee break** (Atlas Foyer)

4:00-5:35 PM **Session 8A** (San Diego). Chair: Rafail Ostrovsky
4:00-4:20 PM The Worst-Case Behavior of Schnorr's Algorithm Approximating the Shortest Nonzero Vector in a Lattice
Miklos Ajtai

4:25-4:45 PM New Lattice Based Cryptographic Constructions
Oded Regev

4:50-5:10 PM Lower Bounds on the Efficiency of Encryption and Digital Signatures
Rosario Gennaro, Yael Gertner and Jonathan Katz

5:15-5:35 PM Non-interactive and Reusable Non-malleable Commitment Schemes
Ivan Damgaard and Jens Groth

4:00-5:35 PM **Session 8B** (Royal Palm 1-4). Chair: Santosh Vempala
4:00-4:20 PM The Intrinsic Dimensionality of Graphs
Robert Krauthgamer and James R. Lee

4:25-4:45 PM A Tight Bound on Approximating Arbitrary Metrics by Tree Metrics
Jittat Fakcharoenphol, Satish Rao and Kunal Talwar

4:50-5:10 PM On Average Distortion of Embedding Metrics into the Line and into l_1
Yuri Rabinovich

5:15-5:35 PM On Metric Ramsey-Type Phenomena
Yair Bartal, Nathan Linial, Manor Mendel and Assaf Naor

Wednesday June 11th, 2003

- 8:00-8:35 AM **Continental breakfast** (Atlas Foyer)
- 8:35-9:45 AM **Session 9A** (San Diego). Chair: Günter Rote
8:35-8:55 AM Touring a Sequence of Polygons
Moshe Dror, Alon Efrat, Anna Lubiw and Joseph S. B. Mitchell
- 9:00-9:20 AM Well-Separated Pair Decomposition for the Unit-Disk Graph Metric and its Applications
Jie Gao and Li Zhang
- 9:25-9:45 AM α -Shapes and Flow Shapes are Homotopy Equivalent
Tamal K. Dey, Joachim Giesen, Matthias John
- 8:35-9:45 AM **Session 9B** (Royal Palm 1-4). Chair: Avrim Blum
8:35-8:55 AM Reducing Truth-telling Online Mechanisms to Online Optimization
Baruch Awerbuch, Yossi Azar, and Adam Meyerson
- 9:00-9:20 AM Near-Optimal Network Design with Selfish Agents
Elliot Anshelevich, Anirban Dasgupta, Eva Tardos and Tom Wexler
- 9:25-9:45 AM Pricing Network Edges for Heterogeneous Selfish Users
Richard Cole, Yevgeniy Dodis and Tim Roughgarden
- 9:45-10:10 AM **Coffee break** (Atlas Foyer)
- 10:10-11:20 AM **Session 10A** (San Diego). Chair: David Eppstein
10:10-10:30 AM Sublinear Geometric Algorithms
Bernard Chazelle, Ding Liu and Avner Magen
- 10:35-10:55 AM Distinct Distances in Three and Higher Dimensions
Boris Aronov, János Pach, Micha Sharir and Gábor Tardos
- 11:00-11:20 AM Cutting Triangular Cycles of Lines in Space
Boris Aronov, Vladlen Koltun and Micha Sharir
- 10:10-11:20 AM **Session 10B** (Royal Palm 1-4). Chair: Sanjeev Khanna
10:10-10:30 AM OPT versus LOAD in Dynamic Storage Allocation
Adam L. Buchsbaum, Howard Karloff, Claire Kenyon, Nick Reingold and Mikkel Thorup
- 10:35-10:55 AM Consistent Load Balancing Via Spread Minimization
Robert D. Kleinberg and F. Thomson Leighton
- 11:00-11:20 AM A Stochastic Process on the Hypercube with Applications to Peer-to-Peer Networks
Micah Adler, Eran Halperin, Richard M. Karp and Vijay V. Vazirani
- 11:30-12:30 PM **FCRC Plenary Talk** (Grand Ballroom).
Barbara Liskov. Issues in Peer-to-Peer Computing.
- 12:30-2:00 PM **Lunch** (Royal Palm Court)
- 2:00-3:35 PM **Session 11A** (San Diego). Chair: Sanjeev Arora
2:00-2:20 PM Polylogarithmic Inapproximability
Eran Halperin and Robert Krauthgamer
- 2:25-2:45 PM A New Multilayered PCP and the Hardness of Hypergraph Vertex Cover
Irit Dinur, Venkatesan Guruswami, Subhash Khot and Oded Regev
- 2:50-3:10 PM Extractors: Optimal Up to Constant Factors
Chi-Jen Lu, Omer Reingold, Salil Vadhan and Avi Wigderson
- 3:15-3:35 PM Randomness-efficient Low Degree Tests and Short PCPs via Epsilon-Biased Sets
Eli Ben-Sasson, Madhu Sudan, Salil Vadhan and Avi Wigderson

2:00-3:35 PM **Session 11B** (Royal Palm 1-4). Chair: Samir Khuller
2:00-2:20 PM Uniform Hashing in Constant Time and Linear Space
Anna Östlin and Rasmus Pagh

2:25-2:45 PM Almost Random Graphs with Simple Hash Functions
Martin Dietzfelbinger and Philipp Woelfel

2:50-3:10 PM Dynamic Rectangular Intersection with Priorities
Haim Kaplan, Eyal Molad and Robert E. Tarjan

3:15-3:35 PM Space Efficient Dynamic Stabbing with Fast Queries
Mikkel Thorup

3:35-4:00 PM **Afternoon coffee break** (Atlas Foyer)

4:00-5:35 PM **Session 12A** (San Diego). Chair: Ashwin Nayak
4:00-4:20 PM Lower Bounds on the Amount of Randomness in Private Computation
Anna Gal and Adi Rosen

4:25-4:45 PM Cell Probe Lower Bounds for the Partial Match Problem
T. S. Jayram, Subhash Khot, Ravi Kumar and Yuval Rabani

4:50-5:10 PM Two Applications of Information Complexity
T. S. Jayram, Ravi Kumar and D. Sivakumar

5:15-5:35 PM Bounded-Concurrent Secure Two-Party Computation Without Setup Assumptions
Yehuda Lindell

4:00-5:35 PM **Session 12B** (Royal Palm 1-4). Chair: Michel Goemans
4:00-4:20 PM Approximate Counting by Dynamic Programming
Martin Dyer

4:25-4:45 PM Testing Subgraphs in Directed Graphs
Noga Alon and Asaf Shapira

4:50-5:10 PM On the Sample Size of k -Restricted Min-Wise Independent Permutations and Other k -Wise Distributions
Toshiya Itoh, Yoshinori Takei and Jun Tarui

5:15-5:35 PM A Proof of Alon's Second Eigenvalue Conjecture
Joel Friedman