STOC 2017 Accepted Papers

- Exponential separation between quantum communication complexity and classical information complexity
  Anurag Anshu, Dave Touchette, Penghui Yao, Nengkun Yu

- Local max-cut in smoothed polynomial time
  Omer Angel, Sebastien Bubeck, Yuval Peres, Fan Wei

- Kernel-based methods for bandit convex optimization
  Sebastien Bubeck, Ronen Eldan, Yin Tat Lee

- Removal Lemmas with Polynomial Bounds
  Asaf Shapira, Lior Gishboliner

- Holographic Algorithm with Matchgates Is Universal for Planar #CSP Over Boolean Domain
  Jin-Yi Cai, Zhiguo Fu

- The Limitations of Optimization from Samples
  Eric Balkanski, Aviad Rubinstein, Yaron Singer

- Communication complexity of approximate Nash equilibria
  Yakov Babichenko, Aviad Rubinstein

- Explicit, almost optimal, epsilon-balanced codes
  Amnon Ta Shma

- Deciding Parity Games in Quasipolynomial Time
  Cristian Calude, Sanjay Jain, Bakhadyr Khoussainov, Wei Li, Frank Stephan

- Uniform Sampling through the Lovasz Local Lemma
  Heng Guo, Mark Jerrum, Jingcheng Liu, Heng Guo

- New Hardness Results for Routing on Disjoint Paths
  Julia Chuzhoy David H. K. Kim, Rachit Nimavat

- Almost-Polynomial Ratio ETH-Hardness of Approximating Densest k-Subgraph
  Pasin Manurangsi

- The integrality gap of the Goemans–Linial SDP relaxation for Sparsest Cut is at least a constant multiple of $\sqrt{\log n}$
  Assaf Naor, Robert Young

- Targeted Pseudorandom Generators, Simulation Advice Generators, and Derandomizing Logspace
  William M. Hoza, Chris Umans

- Fully-Dynamic Minimum Spanning Forest with Improved Worst-Case Update Time
  Christian Wulff-Nilsen

- Geodesic Walks in Polytopes
  Yin Tat Lee, Santosh S. Vempala

- Strongly Refuting Random CSPs Below the Spectral Threshold
  Prasad Raghavendra, Satish Rao, Tselil Schramm
Approximate Near Neighbors for General Symmetric Norms
Alexandr Andoni, Aleksandar Nikolov, Ilya Razenshteyn, Erik Waingarten, Aleksandar Nikolov

Subquadratic Submodular Function Minimization
Deeparnab Chakrabarty, Yin Tat Lee, Aaron Sidford, Sam Chiu-wai Wong

Information-theoretic thresholds from the cavity method
Amin Coja-Oghlan, Florent Krzakala, Will Perkins, Lenka Zdeborova

Kolmogorov complexity version of Slepian-Wolf coding
Marius Zimand

Twenty (simple) questions
Yuval Dagan, Yuval Filmus, Ariel Gabizon, Shay Moran

An efficient reduction from non-malleable to two-source extractors: achieving near-logarithmic min-entropy
Avraham Ben-Aroya, Dean Doron, Amnon Ta-Shma

Streaming Symmetric Norms via Measure Concentration
Jaroslaw Blasiok, Vladimir Braverman, Stephen R. Chestnut, Robert Krauthgamer, Lin F. Yang

Addition is exponentially harder than counting for shallow monotone circuits
Xi Chen, Igor C. Oliveira, Rocco A. Servedio

The Menu-Size Complexity of Revenue Approximation
Moshe Babaioff, Yannai A. Gonczarowski, Noam Nisan

Efficient Empirical Revenue Maximization in Single-Parameter Auction Environments
Yannai A. Gonczarowski, Noam Nisan

Approximate Counting, the Lovasz Local Lemma and Inference in Graphical Models
Ankur Moitra

Towards Optimal Two-Source Extractors and Ramsey Graphs
Gil Cohen

Time-Space Hardness of Learning Sparse Parities
Gillat Kol, Ran Raz, Avishay Tal

Low Rank Approximation with Entrywise $\ell_1$-Norm Error
Zhao Song, David P. Woodruff, Peilin Zhong

On Independent Sets, 2-to-2 Games and Grassmann Graphs
Subhash Khot, Dor Minzer, Muli Safra

Hardness amplification for entangled games via anchoring
Mohammad Bavarian, Thomas Vidick, Henry Yuen

A Reverse Minkowski Theorem
Oded Regev, Noah Stephens-Davidowitz,

Short Presburger arithmetic is in P
Danny Nguyen, Igor Pak
• A Weighted Linear Matroid Parity Algorithm
  Satoru Iwata, Yusuke Kobayashi

• DecreaseKeys are Expensive for External Memory Priority Queues
  Kasper Eening, Kasper Green Larsen, Huacheng Yu

• Approximating Rectangles by Juntas and Weakly-Exponential Lower Bounds for LP Relaxations of CSPs
  Pravesh K. Kothari, Raghu Meka, Prasad Raghavendra

• A Simpler and Faster Strongly Polynomial Algorithm for Generalized Flow Maximization
  Neil Olver, László A. Végh

• Linear Matroid Intersection is in quasi-NC
  Rohit Gurjar, Thomas Thierauf

• Compression of Quantum Multi-Prover Interactive Proofs
  Zhengfeng Ji

• Randomized Polynomial Time Identity Testing for Noncommutative Circuits
  V. Arvind, Pushkar S Joglekar, Partha Mukhopadhyay, S. Raja

• Beyond Minhash for Similarity Search
  Tobias Christiani, Rasmus Pagh

• Quantum algorithm for tree size estimation, with applications to backtracking and 2-player games
  Andris Ambainis, Martins Kokainis

• Surviving in Directed Graphs: A Polylogarithmic Approximation for Two-Connected Directed Steiner Tree
  Fabrizio Grandoni, Bundit Laekhanukit

• The non-cooperative tile assembly model is not intrinsically universal or capable of bounded Turing machine simulation
  Pierre-tienne Meunier, Damien Woods

• Dynamic Spanning Forest with Worst-Case Update Time: Adaptive, Las Vegas, and $O(n^{1/2-\epsilon})$-Time
  Danupon Nanongkai, Thatchaphol Saranurak

• Katyusha: The First Direct Acceleration of Stochastic Gradient Methods
  Zeyuan Allen-Zhu

• A Time- and Message-Optimal Distributed Algorithm for Minimum Spanning Trees
  Gopal Pandurangan, Peter Robinson, Michele Scquizzato

• Optimal mean-based algorithms for trace reconstruction
  Anindya De, Ryan O’Donnell, Rocco A. Servedio

• How Well Do Local Algorithms Solve Semidefinite Programs?
  Zhou Fan, Andrea Montanari

• Distributed Exact Shortest Paths in Sublinear Time
  Michael Elkin
• The Computational Complexity of Ball Permutations
  Scott Aaronson, Adam Bouland, Greg Kuperberg, Saeed Mehraban

• Efficient quantum tomography II
  Ryan O’Donnell, John Wright

• Stability of Service under Time-of-Use Pricing
  Shuchi Chawla, Nikhil R. Devanur, Alexander E. Holroyd, Anna R. Karlin, James Martin, Balasubramanian Sivan

• Lossy Kernelization
  Daniel Lokshtanov, Fahad Panolan, Saket Saurabh, Ramanujan Sridharan

• Real Stable Polynomials and Matroids: Optimization and Counting
  Damian Straszak, Nisheeth K. Vishnoi, Damian Straszak

• Algorithmic and optimization aspects of Brascamp-Lieb inequalities, via Operator Scaling
  Ankit Garg, Leonid Gurvits, Rafael Oliveira, Avi Wigderson

• Finding Even Cycles Faster via Capped k-walks
  Sren Dahlgaard, Mathias Bæk Tejs Knudsen, Morten Stöckel

• Efficient Massively Parallel Methods for Dynamic Programming
  Sungjin Im, Benjamin Moseley, Xiaorui Sun

• Beyond Talagrand: New Lower Bounds for Testing Monotonicity and Unateness
  Xi Chen, Erik Waingarten, Jinyu Xie

• An Adaptive Sublinear-Time Block Sparse Fourier Transform
  Volkan Cevher, Michael Kapralov, Jonathan Scarlett, Amir Zandieh

• Almost-Linear-Time Algorithms for Markov Chains and New Spectral Primitives for Directed Graphs
  Michael B. Cohen, Jonathan Kelner, John Peebles, Richard Peng, Anup B. Rao, Aaron Sidford, Adrian Vladu

• Finding Local Minima for Nonconvex Optimization in Linear Time
  Naman Agarwal Zeyuan Allen-Zhu, Brian Bullins, Elad Hazan, Tengyu Ma, Naman Agarwal

• Simple Mechanisms for Subadditive Buyers via Duality
  Yang Cai, Mingfei Zhao

• Average-Case Fine-Grained Hardness
  Marshall Ball, Alon Rosen, Manuel Sabin, Prashant Nalini Vasudevan

• Faster Space-Efficient Algorithms for Subset Sum and k-Sum
  Nikhil Bansal, Shashwat Garg, Jesper Nederlof, Nikhil Vyas

• A quantum linearity test for robustly verifying entanglement
  Anand Natarajan, Thomas Vidick, Anand Natarajan

• A Generalization of Permanent Inequalities and Applications in Counting and Optimization
  Nima Anari, Shayan Oveis Gharan
• A Polynomial Restriction Lemma with Applications
  Valentine Kabanets, Daniel M. Kane, Zhenjian Lu

• On the Complexity of Local Distributed Graph Problems
  Mohsen Ghaffari, Fabian Kuhn, Yannic Maus

• Formula Lower Bounds via the Quantum Method
  Avishay Tal

• A Strongly Polynomial Algorithm for Bimodular Integer Linear Programming
  Stephan Artmann, Robert Weismantel, Rico Zenklusen

• Settling the Complexity of Leontief and PLC Exchange Markets under Exact and Approximate Equilibria
  Jugal Garg, Ruta Mehta, Vijay V. Vazirani, Sadra Yazdanbod

• Online Service with Delay
  Yossi Azar, Arun Ganesh, Rong Ge, Debmalya Panigrahi

• Approximate Modularity Revisited
  Uriel Feige, Michal Feldman, Inbal Talgam-Cohen

• An SDP-Based Algorithm for Linear-Sized Spectral Sparsification
  Yin Tat Lee, He Sun

• Strongly Exponential Lower Bounds for Monotone Computation
  Toniann Pitassi, Robert Robere

• Beating 1-1/e for Ordered Prophets
  Melika Abolhassani, Soheil Ehsani Banafati, Hossein Esfandiari, MohammadTaghi HajiAghayi, Robert Kleinberg, Brendan Lucier

• Decremental Single-Source Reachability in Planar Digraphs
  Giuseppe F. Italiano, Adam Karczmarz, Jakub Lacki, Piotr Sankowski

• Exponential Separations in the Energy Complexity of Leader Election
  Yi-Jun Chang, Tsvi Kopelowitz, Seth Pettie, Ruosong Wang, Wei Zhan

• Provable learning of Noisy-or Networks
  Sanjeev Arora, Rong Ge, Tengyu Ma, Andrej Risteski

• Non-Malleable Codes and Extractors for Small-Depth Circuits, and Affine Functions
  Eshan Chattopadhyay, Xin Li

• Probabilistic Rank and Matrix Rigidity
  Josh Alman, Ryan Williams

• Sum of squares lower bounds for refuting any CSP
  Pravesh K. Kothari, Ryuhei Mori, Ryan O’Donnell, David Witmer

• Improved Non-Malleable Extractors, Non-Malleable Codes and Independent Source Extractors
  Xin Li
• Algorithms for Stable and Perturbation-Resilient Problems
  Haris Angelidakis, Konstantin Makarychev, Yury Makarychev

• Quantum entanglement, sum of squares, and the log rank conjecture
  Boaz Barak, Pravesh Kothari, David Steurer

• Pseudorandomness of Ring-LWE for Any Ring and Modulus
  Chris Peikert, Oded Regev, Noah Stephens-Davidowitz

• Algorithmic Discrepancy Beyond Partial Coloring
  Nikhil Bansal, Shashwat Garg

• Learning from Untrusted Data
  Moses Charikar, Jacob Steinhardt, Gregory Valiant

• Bernoulli Factories and Black-Box Reductions in Mechanism Design
  Shaddin Dughmi, Jason Hartline, Bobby Kleinberg, Rad Niazadeh

• Online and Dynamic Algorithms for Set Cover
  Anupam Gupta, Ravishankar Krishnaswamy, Amit Kumar, Debmalya Panigrahi

• Trace reconstruction with exp(O(n^{1/3})) samples
  Fedor Nazarov, Yuval Peres

• Equivocating Yao: Constant-Rounds Adaptively Secure Multiparty Computation in the Plain Model
  Ran Canetti, Oxana Poburinnaya, Muthuramakrishnan Venkitasubramaniam

• Succinct Hitting Sets and Barriers to Proving Algebraic Circuits Lower Bounds
  Michael A. Forbes, Amir Shpilka, Ben Lee Volk

• Non-Interactive Delegation and Batch NP Verification from Standard Computational Assumptions
  Zvika Brakerski, Justin Holmgren, Yael Tauman Kalai, Justin Holmgren

• Synchronization Strings I: “Near-MDS” Codes for Insertions and Deletions Over Large Alphabets
  Bernhard Haeupler, Amirbehshad Shahrasbi

• Sampling Random Spanning Trees Faster than Matrix Multiplication
  David Durfee, Rasmus Kyng, John Peebles

• Sampling Random Spanning Trees Faster than Matrix Multiplication
  Anup B. Rao, Sushant Sachdeva

• Pseudodeterministic Constructions in Subexponential Time
  Igor Carboni Oliveira, Rahul Santhanam

• Non-separable Hamiltonian Systems for Undirected Multicommodity Flow and Stochastic Matrix
  Inequalities
  Jonah Sherman

• Homomorphisms are a good basis for counting small subgraphs
  Radu Curticapean, Holger Dell, Dániel Marx