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 ℓ_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 Eenberg, 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 Łacki, 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