

SODA11 – List of Accepted Papers

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Component Structure Induced by a Random Walk on a Random Graph

Authors: C. Cooper, A. Frieze

The Power of Nondeterminism in Self-Assembly

Authors: N. Bryans, E. Chiniforooshan, D. Doty, L. Kari, S. Seki

Low Rank Matrix-valued Chernoff Bounds and Approximate Matrix Multiplication

Authors: A. Magen, A. Zouzias

Online Scalable Scheduling for the ℓ_k -norms of Flow Time Without Conservation of Work

Authors: J. Edmonds, S. Im, B. Moseley

Online Scheduling on Identical Machines using SRPT

Authors: K. Fox, B. Moseley

A Master Theorem for Discrete Divide and Conquer Recurrence

Authors: M. Drmota, W. Szpankowski

Approximation Through Diplomacy: Compressing 2-Dimensional Rule Lists by Optimal Difference Resolution

Authors: J. Daly, E. Torng, C. Meiners, A. Liu

The Streaming Complexity of Cycle Counting, Sorting By Reversals, and Other Problems

Authors: E. Verbin, W. Yu

On Buffon Machines and Numbers

Authors: P. Flajolet, M. Pelletier, M. Soria

An Online Scalable Algorithm for Minimizing ℓ_k -norms of Weighted Flow Time on Unrelated Machines

Authors: S. Im, B. Moseley

Temperature 1 Self-Assembly: Deterministic Assembly in 3D and Probabilistic Assembly in 2D

Authors: M. Cook, Y. Fu, R. Schweller

Convex Hulls of Hyperspheres and Convex Hulls of Polytopes Lying on Parallel Hyperplanes

Authors: M. Karavelas, E. Tzanaki

Secretary Problems: Laminar Matroid and Interval Scheduling

Authors: S. Im, Y. Wang

Improved Bound for the Union of Fat Triangles

Authors: E. Ezra, B. Aronov, M. Sharir

Range Selection and Median: Tight Cell Probe Lower Bounds and Adaptive Data Structures

Authors: A. Jørgensen, K. Larsen

Ranking with Submodular Valuations

Authors: Y. Azar, I. Gamzu

Optimal pattern matching in LZW compressed strings

Authors: P. Gawrychowski

Wireless Capacity with Oblivious Power in General Metrics

Authors: M. Halldórsson, P. Mitra

On Parity Check (0,1)-Matrix over \mathbb{Z}_p

Authors: N. Bshouty, H. Mazzawi

Approximate Dynamic Programming using Halfspace Queries and Multiscale Monge Decomposition

Authors: G. Miller, R. Peng, R. Schwartz, C. Tsourakakis

Embedding Stacked Polytopes on a Polynomial Sized Grid

Authors: E. Demaine, A. Schulz

Prize-collecting Network Design on Planar Graphs

Authors: M. Bateni, M. Hajiaghayi, D. Marx

New Approximation Algorithms for Minimum Enclosing Convex Shapes

Authors: A. Saha, S. Vishwanathan

Collapse

Authors: G. Rote, U. Zwick

Capacitated Metric Labeling

Authors: M. Andrews, M. Hajiaghayi, H. Karloff, A. Moitra

Phase Transition for Glauber Dynamics for Independent Sets on Regular Trees

Authors: R. Restrepo, D. Stefankovic, J. Vera, E. Vigoda, L. Yang

The Stubborn Problem is Stubborn No More (A Polynomial Algorithm for 3-compatible Colouring and the Stubborn List Partition Problem)

Authors: M. Cygan, M. Pilipczuk, M. Pilipczuk, J. Wojtaszczyk

The Local Lemma is Tight for SAT
Authors: H. Gebauer, T. Szabo, G. Tardos

On belief Propagation Guided Decimation for Random k -SAT
Authors: A. Coja-Oghlan

Randomized Variants of Johnson's Algorithm for MAX SAT
Authors: M. Poloczek, G. Schnitger

Computing Shortest Paths amid Pseudodisks
Authors: D. Chen, H. Wang

Tight Bounds on the Approximability of Almost-satisfiable Horn SAT and Exact Hitting Set
Authors: V. Guruswami, Y. Zhou

The Complexity of Finding Independent Sets in Bounded Degree (hyper)graphs of Low Chromatic Number
Authors: V. Guruswami, A. Sinop

On the Complexity of Time-Dependent Shortest Paths
Authors: L. Foschini, J. Hershberger, S. Suri

Bin Packing via Discrepancy of Permutations
Authors: F. Eisenbrand, D. Palvoelgyi, T. Rothvoss

Coloring Random Graphs Online Without Creating Monochromatic Subgraphs
Authors: T. Mütze, T. Rast, R. Spöhel

Packing tight Hamilton Cycles in 3-uniform Hypergraphs
Authors: A. Frieze, M. Krivelevich, P. Loh

Multi-Parameter Bayesian Algorithmic Mechanism Design
Authors: J. Hartline, R. Kleinberg, A. Malekian

Shortest Non-Crossing Walks in the Plane
Authors: J. Erickson, A. Nayyeri

Towards Optimal Bayesian Algorithmic Mechanism Design
Authors: X. Bei, Z. Huang

Mechanism Design via Correlation Gap
Authors: Q. Yan

Algorithms and Hardness for Subspace Approximation
Authors: A. Deshpande, M. Tulsiani, N. Vishnoi

Faster and Dynamic Algorithms For Maximal End-Component Decomposition And Related Graph Problems In Probabilistic Verification

Authors: K. Chatterjee, M. Henzinger

The Multiple-orientability Thresholds for Random Hypergraphs

Authors: N. Fountoulakis, M. Khosla, K. Panagiotou

Pricing on Paths: A PTAS for the Highway Problem

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Hardness Results for Agnostically Learning Low-Degree Polynomial Threshold Functions

Authors: I. Diakonikolas, R. O'Donnell, R. Servedio, Y. Wu

Improved Deterministic Algorithms for Decremental Transitive Closure and Strongly Connected Components

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An Almost Optimal Unrestricted Fast Johnson-Lindenstrauss Transform

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An Intersection Model for Multitolerance Graphs: Efficient Algorithms and Hierarchy

Authors: G. Mertzios

Succinct Convex Greedy Drawing of 3-Connected Plane Graphs

Authors: X. He, H. Zhang

A Subexponential Lower Bound for the Random Facet Algorithm for Parity Games

Authors: O. Friedmann, T. Hansen, U. Zwick

Tight Hardness Results for Minimizing Discrepancy

Authors: M. Charikar, A. Newman, A. Nikolov

Matroid Secretary Problem in the Random Assignment Model

Authors: J. Soto

A Complete Resolution of the Keller Maximum Clique Problem

Authors: W. Myrvold, J. Debroni, J. Eblen, M. Langston, P. Shor, D. Weerapurage

A Nonlinear Approach to Dimension Reduction

Authors: L. Gottlieb, R. Krauthgamer

Approximating the Statistics of Various Properties in Randomly Weighted Graphs

Authors: Y. Emek, A. Korman, Y. Shavitt

Fast, Precise and Dynamic Distance Queries

Authors: Y. Bartal, L. Gottlieb, T. Kopelowitz, M. Lewenstein, L. Roditty

Implicit Flow Routing on Terrains with Applications to Surface Networks and Drainage Structures

Authors: M. de Berg, H. Haverkort, C. Tsirogiannis

Exponential Time Improvement for Min-Wise Based Algorithms

Authors: A. Shiftan, G. Feigenblat, E. Porat

Multicommodity Facility Location under Group Steiner Access Cost

Authors: L. Poplawski, R. Rajaraman

Overlap Properties of Geometric Expanders

Authors: J. Fox, M. Gromov, V. Lafforgue, A. Naor, J. Pach

Improved Dynamic Algorithms for Maintaining Approximate Shortest Paths Under Deletions

Authors: A. Bernstein, L. Roditty

The Maximum Size of a Sidon Set Contained in a Sparse Random Set of Integers

Authors: Y. Kohayakawa, S. Lee, V. Rödl

Approximate Nearest Neighbor Search for Low Dimensional Queries

Authors: S. Har-Peled, N. Kumar

Hitting time results for Maker-Breaker games

Authors: S. Ben-Shimon, A. Ferber, D. Hefetz, M. Krivelevich

Random Access to Grammar Compressed Strings

Authors: P. Bille, G. Landau, R. Raman, K. Sadakane, S. Satti, O. Weimann

Optimal Bounds for Johnson-Lindenstrauss Transforms and Streaming Problems with Low Error

Authors: T. Jayram, D. Woodruff

Online Stochastic Matching: Online Actions Based on Offline Statistics

Authors: V. Manshadi, S. Gharan, A. Saberi

On Graph Crossing Number and Edge Planarization

Authors: J. Chuzhoy, Y. Makarychev, A. Sidiropoulos

Randomized Diffusion for Indivisible Loads

Authors: P. Berenbrink, C. Cooper, T. Friedetzky, T. Friedrich, T. Sauerwald

I/O-Efficient Contour Queries on Terrains

Authors: P. Agarwal, T. Moelhave, B. Sadri

Risk-Averse Stochastic Optimization: Probabilistically-Constrained Models and Algorithms for Black-Box Distributions

Authors: C. Swamy

Generalized Machine Activation Problems

Authors: J. Li, S. Khuller

Computing Replacement Paths in Surface Embedded Graphs

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The Dichotomy of List Homomorphisms for Digraphs

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Persistent Predecessor Search and Orthogonal Point Location on the Word RAM

Authors: T. Chan

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Authors: V. Braverman, A. Meyerson, R. Ostrovsky, A. Roytman, M. Shindler, B. Tagiku

Efficient Sketches for the Set Query Problem

Authors: E. Price

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Bounding the Randomized Decision Tree Complexity of Read-Once Boolean Functions

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A Simple and Fast 2-approximation for the One-warehouse Multi-retailers Problem

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Mobile Geometric Graphs: Detection, Coverage and Percolation
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Faster Quantum Algorithm for Evaluating Game Trees
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Known Algorithms on Graphs of Bounded Treewidth are Probably Optimal
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Fast Convergence of Natural Bargaining Dynamics on Exchange Networks
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Local Smoothness and the Price of Anarchy in Atomic Splittable Congestion Games
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Improved Approximation Results for Stochastic Knapsack Problems
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The Rigidity Transition in Random Graphs
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On the Randomness Requirements of Rumor Spreading
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An Algorithmic Decomposition of Claw-free Graphs Leading to an $O(n^3)$ -algorithm for the Weighted Stable Set Problem
Authors: Y. Faenza, G. Oriolo, G. Stauffer

Minimum Cuts and Shortest Non-Separating Cycles via Homology Covers
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Triangulating the Square: Quadrees and Delaunay Triangulations are Equivalent
Authors: M. Löffler, W. Mulzer

Online Vertex-Weighted Bipartite Matching and Single-bid Budgeted Allocations
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Code Equivalence and Group Isomorphism
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Towards an SDP-based Approach to Spectral Methods: A Nearly-Linear Time Algorithm for Graph Partitioning and Sparsification

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Dimensionality Reduction: Beyond the Johnson-Lindenstrauss Bound

Authors: Y. Bartal, B. Recht, L. Schulman

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Authors: V. Williams

Dichotomy for Holant* Problems of Boolean Domain

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