

## **SODA08 – Papers Accepted for Presentation**

The paper title and/or authors listed appear as originally received during the submission process. All paper titles and authors will be listed correctly in the final printed program.

*No updates will be made to this posting.*

Weak epsilon-nets and interval chains

Noga Alon and Haim Kaplan and Gabriel Nivasch and Micha Sharir and Shakhar Smorodinsky

Optimal Universal Graphs with Deterministic Embedding

Noga Alon and Michael Capalbo

The Hiring Problem and Lake Wobegon Strategies

Andrei Broder and Adam Kirsch and Ravi Kumar and Michael Mitzenmacher and Eli Upfal and Sergei Vassilvitskii

Recognizing Partial Cubes in Quadratic Time

David Eppstein

Efficient reductions among lattice problems

Daniele Micciancio

Maximum overhang

Mike Paterson and Yuval Peres and Mikkel Thorup and Peter Winkler and Uri Zwick

Earth-Mover Distance over High Dimensional Spaces

Alexandr Andoni and Piotr Indyk and Robert Krauthgamer

Graph Balancing: A Special Case of Scheduling Unrelated Parallel Machines

Tomas Ebenlendr and Marek Krčal and Jiri Sgall

Incentive Compatible Regression Learning

Ofer Dekel and Felix Fischer and Ariel D. Procaccia

Metric Clustering via Consistent Labeling

Robert Krauthgamer and Tim Roughgarden

Nondecreasing paths in a weighted graph, or: How to optimally read a train schedule

Virginia Vassilevska

Cutting Cycles of Rods in Space: Hardness Results and Approximation Algorithms

Boris Aronov and Mark de Berg and Chris Gray and Elena Mumford

Iterated Rounding Algorithms for the Smallest k-Edge Connected Spanning Subgraph

Harold Gabow and Suzanne Gallagher

Real-Time Indexing over Fixed Finite Alphabets  
Amihod Amir and Igor Nor

Algorithms for the Coalitional Manipulation Problem  
Michael Zuckerman and Ariel D. Procaccia and Jeffrey S. Rosenschein

Improved Algorithms for Fully Dynamic Geometric Spanners and Geometric Routing  
Lee-Ad Gottlieb and Liam Roditty

Fully Polynomial Time Approximation Schemes for Stochastic Dynamic Programs  
Nir Halman, Diego Klabjan, Chung-Lun Li, James Orlin and David Simchi-Levi

On the Value of Coordination in Network Design  
Susanne Albers

On Clustering to Minimize the Sum of Radii  
Matt Gibson and Gaurav Kanade and Erik Krohn and Imran Pirwani and Kasturi  
Varadarajan

Price Based Protocols For Fair Resource Allocation: Convergence Time Analysis and  
Extension to Leontief Utilities  
Ashish Goel and Hamid Nazerzadeh

The Effect of Induced Subgraphs on Quasi-Randomness  
Asaf Shapira and Raphael Yuster

Holographic Algorithms With Unsymmetric Signatures  
Jin-Yi Cai and Pinyan Lu

Strongly Polynomial and Fully Combinatorial Algorithms for Bisubmodular Function  
Minimization  
S. Thomas McCormick and Satoru Fujishige

Better bounds for online load balancing on unrelated machines  
Ioannis Caragiannis

Estimators and Tail Bounds for Dimension Reduction in  $l_{1-\alpha}$   $(0 < \alpha \leq 2)$   
Using Stable Random Projections  
Ping Li

Reconstructing Phylogenetic Trees with Very Short Branches  
Ilan Gronau and Shlomo Moran and Sagi Snir

The UGC hardness threshold of the  $L_p$  Grothendieck problem  
Assaf Naor

Concatenated codes can achieve list-decoding capacity  
Venkatesan Guruswami and Atri Rudra

On the Connectivity of Dynamic Random Geometric Graphs  
Josep Diaz and Dieter Mitsche and Xavier Perez

Universality of random graphs  
Domingos Dellamonica Jr. AND Yoshiharu Kohayakawa AND Vojtech Rodl AND Andrzej Rucinski

Greedy Drawings of Triangulations  
Raghavan Dhandapani

Approximation Algorithms for Labeling Hierarchical Taxonomies  
Yuval Rabani and Leonard Schulman and Chaitanya Swamy

Fast approximation of the permanent for very dense problems.  
Mark Huber and Jenny Law

Comparing the strength of query types in property testing: The case of testing  $k$ -colorability  
Ido Ben-Eliezer and Tali Kaufman and Michael Krivelevich and Dana Ron

Designing Networks with Good Equilibria  
Ho-Lin Chen and Tim Roughgarden and Gregory Valiant

Embedding Metric Spaces in their Intrinsic Dimension  
Ittai Abraham and Yair Bartal and Ofer Neiman

Sampling Algorithms and Coresets for  $L_p$  Regression  
A. Dasgupta and P. Drineas and B. Harb and R. Kumar and M. W. Mahoney

Improved Algorithmic Versions of the Lovasz Local Lemma  
Aravind Srinivasan

Geodesic Delaunay Triangulations and Witness Complexes in the Plane  
Jie Gao and Leonidas J. Guibas and Steve Oudot and Yue Wang

Two-phase Greedy Algorithms for Some Classes of Combinatorial Linear Programs  
Ulrich Faigle and Britta Peis

Rapid Mixing of Gibbs Sampling on Graphs that are Sparse on Average  
Elchanan Mossel and Allan Sly

Broadcast Scheduling: Algorithms and Complexity

Jessica Chang and Thomas Erlebach and Renars Gailis and Samir Khuller

Geometric clustering: fixed-parameter tractability and lower bounds with respect to the dimension

Sergio Cabello and Panos Giannopoulos and Christian Knauer and Gunter Rote

Approximating General Metric Distances Between a Pattern and a Text

Klim Efremenko and Ely Porat

Computing Large Matchings Fast

Ignaz Rutter and Alexander Wolff

Empty-Ellipse Graphs

Olivier Devillers and Jeff Erickson and Xavier Goaoc

Space-Efficient Dynamic Orthogonal Point Location, Segment Intersection, and Range Reporting

Guy E. Blelloch

L(2,1)-labelling of graphs

Frederic Havet and Bruce Reed and Jean-Sebastien Sereni

A Fractional Model for the Border Gateway Protocol (BGP)

Penny Haxell and Gordon Wilfong

Fast Load Balancing via Bounded Best Response

Baruch Awerbuch and Yossi Azar and Rohit Khandekar

Ultra-Low-Dimensional Embeddings for Doubling Metrics

T-H. Hubert Chan and Anupam Gupta and Kunal Talwar

Approximating TSP on Metrics with Bounded Global Growth

T-H. Hubert Chan and Anupam Gupta

SPREAD: An Adaptive Scheme for Redundant and Fair Allocations in Dynamic Heterogeneous Storage Systems

Christian Scheideler and Mario Vodisek

Fast dimension reduction using rademacher series on dual BCH codes

Nir Ailon and Edo Liberty

A Near-Linear Time Algorithm for Computing Replacement Paths in Planar Directed Graphs

Yuval Emek and David Peleg and Liam Roditty

On stars and Steiner stars

Adrian Dumitrescu and Csaba D. Toth

Minimum weight convex Steiner partitions

Adrian Dumitrescu and Csaba D. Toth

Splay Trees, Davenport-Schinzel Sequences, and the Deque Conjecture

Seth Pettie

Yet another algorithm for dense Maxcut: Go Greedy

Claire Mathieu and Warren Schudy

Arc-disjoint in-trees in directed graph

Naoyuki Kamiyama and Naoki Katoh and Atsushi Takizawa

Improved Distance Sensitivity Oracles Via Random Sampling

Aaron Bernstein and David Karger

Linked Decompositions of Networks and the Power of Choice in Polya Urns

Henry Lin and Christos Amanatidis and Martha Sideri and Richard M. Karp and Christos H. Papadimitriou

A Nearly Linear Time Algorithm For The Half Integral Disjoint Paths

Ken-ichi Kawarabayashi and Bruce Reed

Deterministic Random Walks on Regular Trees

Joshua Cooper and Benjamin Doerr and Tobias Friedrich and Joel Spencer

Fast Asynchronous Byzantine Agreement and Leader Election with Full Information

Bruce Kapron and David Kempe and Valerie King and Jared Saia and Vishal Sanwalani

Analysis of Greedy Approximations with Nonsubmodular Potential Functions

Ding-Zhu Du and Ronald L. Graham and Panos M. Pardalos and Peng-Jun Wan and Weili Wu and Wenbo Zhao

Improved Algorithms for Orienteering and Related Problems

Chandra Chekuri and Nitish Korula and Martin Pal

Competitive Queue Management for Latency Sensitive Packets

Amos Fiat and Yishay Mansour and Uri Nadav

Exact and Efficient 2D-Arrangements of Arbitrary Algebraic Curves

Arno Eigenwillig and Michael Kerber

Online Assignment in a distributional model with applications to Adwords Allocations

Gagan Goel and Aranyak Mehta

Computing Excluded Minors

Isolde Adler and Martin Grohe and Stephan Kreutzer

A Tight Lower Bound for Parity in Noisy Communication Networks

Chinmoy Dutta and Yashodhan Kanoria and D. manjunath and Jaikumar Radhakrishnan

Unconditionally Reliable Message Transmission in Directed Networks

Bhavani Shankar and Prasant Gopal and Kannan Srinathan and C. Pandu Rangan

Approximating Geometric Coverage Problems

Thomas Erlebach, Erik Jan van Leeuwen

Why Simple Hash Functions Work: Exploiting the Entropy in a Data Stream

Michael Mitzenmacher and Salil Vadhan

Catalan Structures and Dynamic Programming in  $H$ -minor-free graphs

Frederic Dorn and Fedor V. Fomin and Dimitrios M. Thilikos

Fast Algorithms for Finding Proper Strategies in Game Trees

Peter Bro Miltersen and Troels Bjerre Sorensen

Maintaining Deforming Surface Meshes

Siu-Wing Cheng and Tamal K. Dey

Clustering for Metric and Non-Metric Distance Measures

Marcel R. Ackermann and Johannes Blömer and Christian Sohler

On Distance to Monotonicity and Longest Increasing Subsequence of a Data Stream

Funda Ergun and Hossein Jowhari

Online Make-to-Order Joint Replenishment Model: Primal Dual Competitive Algorithms

Niv Buchbinder and Tracy Kimbrel and Retsef Levi and Konstantin Makarychev and Maxim Sviridenko

Approximating Connected Facility Location Problems via Random Facility Sampling and Core Detouring

Friedrich Eisenbrand and Fabrizio Grandoni and Thomas Rothvoss and Guido Schaefer

Finding one tight cycle

Sergio Cabello and Matt DeVos and Jeff Erickson and Bojan Mohar

Succinct Approximate Convex Pareto Curves

Ilias Diakonikolas and Mihalis Yannakakis

Adaptive Local Ratio

Julian Mestre

Algorithms for Distributed, Functional Monitoring  
Graham Cormode and S. Muthukrishnan and Ke Yi

Fast Edge Splitting and Edmonds' Arborescence Construction for Unweighted Graphs  
Anand Bhalgat and Ramesh Hariharan and Telikepalli Kavitha and Debmalya Panigrahi

Matroid Intersection, Pointer Chasing, and Young's Seminormal Representation of  $S_n$   
Nicholas J. A. Harvey

Product growth in finite groups  
Laszlo Babai and Nikolay Nikolov and Laszlo Pyber

Trace reconstruction with constant deletion probability and related results  
Thomas Holenstein and Michael Mitzenmacher and Rina Panigrahy and Udi Wieder

Finding an Optimal Tree Searching Strategy in Linear Time  
Shay Mozes and Krzysztof Onak and Oren Weimann

Fully Dynamic Algorithm for Graph Spanners with Poly-logarithmic update time.  
Surender Baswana and Soumojit Sarkar

Tight Lower Bounds for Selection in Randomly Ordered Streams  
Amit Chakrabarti and Sudipto Guha and T. S. Jayram and Mihai Patrascu

Ascending Auctions for Integral (Poly)Matroids with Concave Increasing Separable Values  
Sushil Bikhchandani and Sven de Vries and James Schummer and Rakesh V. Vohra

Non-Clairvoyant Scheduling with Precedence Constraints  
Julien Robert and Nicolas Schabanel

(Almost) Optimal Coordination Mechanisms for Unrelated Machine Scheduling  
Yossi Azar and Kamal Jain and Vahab Mirrokni

Distributed broadcast in unknown radio networks  
Gianluca DE MARCO

Coresets, Sparse Greedy Approximation, and the Frank-Wolfe Algorithm  
Kenneth L. Clarkson

Stochastic Analyses for Online Combinatorial Optimization Problems  
Naveen Garg and Anupam Gupta and Stefano Leonardi and Piotr Sankowski

A Constant Factor Approximation Algorithm for k-Median Clustering with Outliers  
Ke Chen

Auctions for Structured Procurement

Matthew C. Cary and Abraham D. Flaxman and Jason D. Hartline and Anna R. Karlin

In-Place 2-d Nearest Neighbor Search

Timothy M. Chan and Eric Y. Chen

A local algorithm for finding dense subgraphs

Reid Andersen

Almost Euclidean subspaces of  $\ell_1^N$  via expander codes

Venkatesan Guruswami and James R. Lee and Alexander Razborov

On the Bichromatic  $k$ -Set Problem

Timothy M. Chan

The power of memory in randomized broadcasting

Robert Elsässer and Thomas Sauerwald

A Deterministic Sub-linear Time Sparse Fourier Algorithm via Non-adaptive Compressed Sensing Methods

M. A. Iwen

A plant location guide for the unsure

Barbara M. Anthony and Vineet Goyal and Anupam Gupta and Viswanath Nagarajan

Provably Good Multicore Cache Performance for Divide-and-Conquer Algorithms

Guy E. Blelloch and Rezaul A. Chowdhury and Phillip B. Gibbons and Vijaya Ramachandran and Shimin Chen and Michael Kozuch

Dimension Augmentation and Combinatorial Criteria for Efficient Error-resistant DNA Self-Assembly

Holin Chen and Ashish Goel and Chris Luhrs

Set Connectivity Problems in Undirected Graphs and the Directed Steiner Network Problem

Chandra Chekuri and Guy Even and Anupam Gupta and Danny Segev

On Distributing Symmetric Streaming Computations

Jon Feldman and S. Muthukrishnan and Anastasios Sidiropoulos and Cliff Stein and Zoya Svitkina

Distribution-sensitive Point Location in Convex Subdivisions

Sebastien Collette and Vida Dujmovic and John Iacono and Stefan Langerman and Pat Morin

Ranged Hash Functions and the Price of Churn  
James Aspnes and Muli Safra and Yitong Yin

On Properties of Random Dissections and Triangulations  
Nicla Bernasconi and Konstantinos Panagiotou and Angelika Steger

Improved string reconstruction over insertion-deletion channels  
Krishnamurthy Viswanathan and Ram Swaminathan

On the Approximability of Influence in Social Networks  
Ning Chen

Parallel Monotonicity Reconstruction  
Michael Saks and C. Seshadhri

An algorithm for improving graph partitions  
Reid Andersen and Kevin Lang

Quasirandom Rumor Spreading  
Benjamin Doerr and Tobias Friedrich and Thomas Sauerwald

The complexity of game dynamics: BGP oscillations, sink equilibria, and beyond  
Alex Fabrikant and Christos H. Papadimitriou

Sampling Stable Marriages: Why Spouse-Swapping Won't Work  
Nayantara Bhatnagar and Sam Greenberg and Dana Randall

Balls and bins with structure: Balanced allocations on hypergraphs  
P. Brighten Godfrey

Robust Cost Colorings  
Takuro Fukunaga and Magnus M. Halldorsson and Hiroshi Nagamochi

Dynamic Optimality for Skip Lists and B-Trees  
Karim Douieband Prosenjit Bose and Stefan Langerman

PageRank and the Random Surfer model  
Prasad Chebolu and Pall Melsted

Explicit constructions for compressed sensing of sparse signals  
Piotr Indyk

Declaring Independence via the Sketching of Sketches  
Piotr Indyk and Andrew McGregor

Delaunay graphs of point sets in the plane with respect to axis-parallel rectangles

Xiaomin Chen and Janos Pach and Mario Szegedy and Gabor Tardos

Load-Balanced Facility Location

Zoya Svitkina

Bounded Leg Distance and Reachability Oracles

Ran Duan and Seth Pettie

Charity Auctions on Social Networks

Arpita Ghosh and Mohammad Mahdian

Minimizing average latency in oblivious routing

Prahladh Harsha and Thomas Hayes and Hariharan Narayanan and Harald Raecke and

Jaikumar Radhakrishnan

Noisy sorting without resampling

Mark Braverman and Elchanan Mossel

On Allocations that Maximize Fairness

Uriel Feige