

Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques

APPROX/RANDOM 2023, September 11–13, 2023,
Atlanta, Georgia, USA

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■ Contents

Preface	
<i>Nicole Megow and Adam Smith</i>	0:xi
Program Committees	
.....	0:xiii
Subreviewers	
.....	0:xv–0:xvii
Authors	
.....	0:xix–0:xxiv

APPROX

On Complexity of 1-Center in Various Metrics	
<i>Amir Abboud, MohammadHossein Bateni, Vincent Cohen-Addad, Karthik C. S., and Saeed Seddighin</i>	1:1–1:19
Probabilistic Metric Embedding via Metric Labeling	
<i>Kamesh Munagala, Govind S. Sankar, and Erin Taylor</i>	2:1–2:10
Approximating Submodular k -Partition via Principal Partition Sequence	
<i>Karthekeyan Chandrasekaran and Weihang Wang</i>	3:1–3:16
Experimental Design for Any p -Norm	
<i>Lap Chi Lau, Robert Wang, and Hong Zhou</i>	4:1–4:21
Approximation Algorithms for Maximum Weighted Throughput on Unrelated Machines	
<i>George Karakostas and Stavros G. Kolliopoulos</i>	5:1–5:17
Facility Location in the Sublinear Geometric Model	
<i>Morteza Monemizadeh</i>	6:1–6:24
Bicriteria Approximation Algorithms for Priority Matroid Median	
<i>Tanvi Bajpai and Chandra Chekuri</i>	7:1–7:22
Approximation Algorithms for Directed Weighted Spanners	
<i>Elena Grigorescu, Nithish Kumar, and Young-San Lin</i>	8:1–8:23
Approximation Algorithms and Lower Bounds for Graph Burning	
<i>Matej Lieskovský, Jiří Sgall, and Andreas Emil Feldmann</i>	9:1–9:17
The (Im)possibility of Simple Search-To-Decision Reductions for Approximation Problems	
<i>Alexander Golovnev, Siyao Guo, Spencer Peters, and Noah Stephens-Davidowitz</i> .	10:1–10:20
Approximating Red-Blue Set Cover and Minimum Monotone Satisfying Assignment	
<i>Eden Chlamtáč, Yury Makarychev, and Ali Vakilian</i>	11:1–11:19

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Efficient Algorithms and Hardness Results for the Weighted k -Server Problem <i>Anupam Gupta, Amit Kumar, and Debmalya Panigrahi</i>	12:1–12:19
A Constant-Factor Approximation for Quasi-Bipartite Directed Steiner Tree on Minor-Free Graphs <i>Zachary Friggstad and Ramin Mousavi</i>	13:1–13:18
Algorithms for 2-Connected Network Design and Flexible Steiner Trees with a Constant Number of Terminals <i>Ishan Bansal, Joe Cheriyan, Logan Grout, and Sharat Ibrahimpur</i>	14:1–14:14
Oblivious Algorithms for the Max- k AND Problem <i>Noah G. Singer</i>	15:1–15:19
A $10/7$ -Approximation for Discrete Bamboo Garden Trimming and Continuous Trimming on Star Graphs <i>Felix Höhne and Rob van Stee</i>	16:1–16:19
Online Matching with Set and Concave Delays <i>Lindsey Deryckere and Seeun William Umboh</i>	17:1–17:17
An Approximation Algorithm for the Exact Matching Problem in Bipartite Graphs <i>Anita Dürer, Nicolas El Maalouly, and Lasse Wulf</i>	18:1–18:21
Tighter Approximation for the Uniform Cost-Distance Steiner Tree Problem <i>Josefine Foos, Stephan Held, and Yannik Kyle Dustin Spitzley</i>	19:1–19:16
Round and Bipartize for Vertex Cover Approximation <i>Danish Kashaev and Guido Schäfer</i>	20:1–20:20
On Minimizing Generalized Makespan on Unrelated Machines <i>Nikhil Ayyadevara, Nikhil Bansal, and Milind Prabhu</i>	21:1–21:13
An AFPTAS for Bin Packing with Partition Matroid via a New Method for LP Rounding <i>Ilan Doron-Arad, Ariel Kulik, and Hadas Shachnai</i>	22:1–22:16
Submodular Norms with Applications To Online Facility Location and Stochastic Probing <i>Kalen Patton, Matteo Russo, and Sahil Singla</i>	23:1–23:22
Independent Sets in Elimination Graphs with a Submodular Objective <i>Chandra Chekuri and Kent Quanrud</i>	24:1–24:22
Improved Diversity Maximization Algorithms for Matching and Pseudoforest <i>Sepideh Mahabadi and Shyam Narayanan</i>	25:1–25:22
Approximating Pandora’s Box with Correlations <i>Shuchi Chawla, Evangelia Gergatsouli, Jeremy McMahan, and Christos Tzamos</i> ..	26:1–26:24
Stable Approximation Algorithms for Dominating Set and Independent Set <i>Mark de Berg, Arpan Sadhukhan, and Frits Spijksma</i>	27:1–27:19
Scalable Auction Algorithms for Bipartite Maximum Matching Problems <i>Quanquan C. Liu, Yiduo Ke, and Samir Khuller</i>	28:1–28:24

RANDOM

Giant Components in Random Temporal Graphs <i>Ruben Becker, Arnaud Casteigts, Pierluigi Crescenzi, Bojana Kodric, Malte Renken, Michael Raskin, and Viktor Zamaraev</i>	29:1–29:17
On Connectivity in Random Graph Models with Limited Dependencies <i>Johannes Lengler, Anders Martinsson, Kalina Petrova, Patrick Schneider, Raphael Steiner, Simon Weber, and Emo Welzl</i>	30:1–30:22
Synergy Between Circuit Obfuscation and Circuit Minimization <i>Russell Impagliazzo, Valentine Kabanets, and Ilya Volkovich</i>	31:1–31:21
Interactive Error Correcting Codes: New Constructions and Impossibility Bounds <i>Meghal Gupta and Rachel Yun Zhang</i>	32:1–32:14
Optimal Mixing via Tensorization for Random Independent Sets on Arbitrary Trees <i>Charilaos Efthymiou, Thomas P. Hayes, Daniel Štefankovič, and Eric Vigoda</i>	33:1–33:16
Superpolynomial Lower Bounds for Learning Monotone Classes <i>Nader H. Bshouty</i>	34:1–34:20
An Embarrassingly Parallel Optimal-Space Cardinality Estimation Algorithm <i>Emin Karayel</i>	35:1–35:22
Sampling and Certifying Symmetric Functions <i>Yuval Filmus, Itai Leigh, Artur Riazanov, and Dmitry Sokolov</i>	36:1–36:21
Hardness of the (Approximate) Shortest Vector Problem: A Simple Proof via Reed-Solomon Codes <i>Huck Bennett and Chris Peikert</i>	37:1–37:20
Perfect Sampling for Hard Spheres from Strong Spatial Mixing <i>Konrad Anand, Andreas Göbel, Marcus Pappik, and Will Perkins</i>	38:1–38:18
Subset Sum in Time $2^{n/2}/\text{poly}(n)$ <i>Xi Chen, Yaonan Jin, Tim Randolph, and Rocco A. Servedio</i>	39:1–39:18
On Optimization and Counting of Non-Broken Bases of Matroids <i>Dorna Abdolazimi, Kasper Lindberg, and Shayan Oveis Gharan</i>	40:1–40:14
Low-Degree Testing over Grids <i>Prashanth Amireddy, Srikanth Srinivasan, and Madhu Sudan</i>	41:1–41:22
Improved Local Computation Algorithms for Constructing Spanners <i>Rubi Arviv, Lily Chung, Reut Levi, and Edward Pyne</i>	42:1–42:23
Classical Simulation of One-Query Quantum Distinguishers <i>Andrej Bogdanov, Tsun Ming Cheung, Krishnamoorthy Dinesh, and John C. S. Lui</i>	43:1–43:17
On the Power of Regular and Permutation Branching Programs <i>Chin Ho Lee, Edward Pyne, and Salil Vadhan</i>	44:1–44:22
Private Data Stream Analysis for Universal Symmetric Norm Estimation <i>Vladimir Braverman, Joel Manning, Zhiwei Steven Wu, and Samson Zhou</i>	45:1–45:24

Testing Versus Estimation of Graph Properties, Revisited <i>Lior Gishboliner, Nick Kushnir, and Asaf Shapira</i>	46:1–46:18
Efficient Interactive Proofs for Non-Deterministic Bounded Space <i>Joshua Cook and Ron D. Rothblum</i>	47:1–47:22
On the Complexity of Triangle Counting Using Emptiness Queries <i>Arijit Bishnu, Arijit Ghosh, and Gopinath Mishra</i>	48:1–48:22
Fine Grained Analysis of High Dimensional Random Walks <i>Roy Gotlib and Tali Kaufman</i>	49:1–49:22
A Deterministic Construction of a Large Distance Code from the Wozencraft Ensemble <i>Venkatesan Guruswami and Shilun Li</i>	50:1–50:10
NP-Hardness of Almost Coloring Almost 3-Colorable Graphs <i>Yahli Hecht, Dor Minzer, and Muli Safra</i>	51:1–51:12
Extracting Mergers and Projections of Partitions <i>Swastik Kopparty and Vishvajeet N</i>	52:1–52:22
Rapid Mixing of Global Markov Chains via Spectral Independence: The Unbounded Degree Case <i>Antonio Blanca and Xusheng Zhang</i>	53:1–53:19
The Full Rank Condition for Sparse Random Matrices <i>Amin Coja-Oghlan, Jane Gao, Max Hahn-Klimroth, Joon Lee, Noela Müller, and Maurice Rolvien</i>	54:1–54:14
Tighter $MA/1$ Circuit Lower Bounds from Verifier Efficient PCPs for PSPACE <i>Joshua Cook and Dana Moshkovitz</i>	55:1–55:22
Robustness for Space-Bounded Statistical Zero Knowledge <i>Eric Allender, Jacob Gray, Saachi Mutreja, Harsha Tirumala, and Pengxiang Wang</i>	56:1–56:21
On Constructing Spanners from Random Gaussian Projections <i>Sepehr Assadi, Michael Kapralov, and Huacheng Yu</i>	57:1–57:18
Evaluating Stability in Massive Social Networks: Efficient Streaming Algorithms for Structural Balance <i>Vikrant Ashvinkumar, Sepehr Assadi, Chengyuan Deng, Jie Gao, and Chen Wang</i>	58:1–58:23
How to Make Your Approximation Algorithm Private: A Black-Box Differentially-Private Transformation for Tunable Approximation Algorithms of Functions with Low Sensitivity <i>Jeremiah Blocki, Elena Grigorescu, Tamalika Mukherjee, and Samson Zhou</i>	59:1–59:24
Fast Decoding of Explicit Almost Optimal ε -Balanced q -Ary Codes And Fast Approximation of Expanding k -CSPs <i>Fernando Granha Jeronimo</i>	60:1–60:16
Directed Poincaré Inequalities and L^1 Monotonicity Testing of Lipschitz Functions <i>Renato Ferreira Pinto Jr.</i>	61:1–61:18

Bias Reduction for Sum Estimation <i>Talya Eden, Jakob Bæk Tejs Houen, Shyam Narayanan, Will Rosenbaum, and Jakub Tětek</i>	62:1–62:21
On the Composition of Randomized Query Complexity and Approximate Degree <i>Sourav Chakraborty, Chandrima Kayal, Rajat Mittal, Manaswi Paraashar, Swagato Sanyal, and Nitin Saurabh</i>	63:1–63:23
Sampling from the Random Cluster Model on Random Regular Graphs at All Temperatures via Glauber Dynamics <i>Andreas Galanis, Leslie Ann Goldberg, and Paulina Smolarova</i>	64:1–64:12
Range Avoidance for Constant Depth Circuits: Hardness and Algorithms <i>Karthik Gajulapalli, Alexander Golovnev, Satyajeet Nagargoje, and Sidhant Saraogi</i>	65:1–65:18
Testing Connectedness of Images <i>Piotr Berman, Meiram Murzabulatov, Sofya Raskhodnikova, and Dragos Ristache</i>	66:1–66:15

■ Preface

This volume contains the papers presented at the 26th International Conference on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2023) and the 27th International Conference on Randomization and Computation (RANDOM 2023), which were organized at Georgia Institute of Technology, Atlanta, GA, USA, September 11-13, 2023. APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally-difficult problems, and the 2023 edition was the 26th in the series. RANDOM is concerned with applications of randomness to computational and combinatorial problems, and the 2023 edition was the 27th in the series. Prior to 2003, APPROX took place in Aalborg (1998), Berkeley (1999), Saarbrücken (2000), Berkeley (2001), and Rome (2002), while RANDOM took place in Bologna (1997), Barcelona (1998), Berkeley (1999), Geneva (2000), Berkeley (2001), and Harvard (2002). Since 2003, APPROX and RANDOM have been co-located, taking place in Princeton (2003), Cambridge (2004), Berkeley (2005), Barcelona (2006), Princeton (2007), Boston (2008), Berkeley (2009), Barcelona (2010), Princeton (2011), Boston (2012), Berkeley (2013), Barcelona (2014), Princeton (2015), Paris (2016), Berkeley (2017), Princeton (2018), and Boston (2019). In 2020, 2021, and 2022, the conferences were held online. We were delighted to return to an in-person event in 2023!

Topics of interest for APPROX include approximation algorithms, hardness of approximation, small space, sub-linear time and streaming algorithms, online algorithms, approaches that go beyond worst case analysis, distributed and parallel approximation, embeddings and metric-space methods, mathematical-programming methods, spectral methods, combinatorial optimization, algorithmic game theory, mechanism design and economics, computational-geometry problems, approximate learning. Those at RANDOM include the design and analysis of randomized algorithms, randomized complexity theory, pseudorandomness and derandomization, random combinatorial structures, random walks/Markov chains, expander graphs and randomness extractors, probabilistic proof systems, random projections and embeddings, error-correcting codes, average-case analysis, smoothed analysis, property testing, computational learning theory, and the role of (pseudo)randomness in other areas of computer science such as cryptography, data privacy, and quantum information.

The volume contains 28 contributed papers selected by the APPROX Program Committee out of 62 submissions, and 38 contributed papers selected by the RANDOM Program Committee out of 67 submissions. We would like to thank all the authors who submitted papers, the members of the program committees, and the external reviewers. We are grateful for the guidance of the steering committees: Jarosław Byrka, Samir Khuller, Monaldo Mastrolili, Laura Sanità, Chaitanya Swamy, László Végh, Virginia Vassilevska Williams, and David P. Williamson for APPROX, and Oded Goldreich, Raghu Meka, Cris Moore, Anup Rao, Omer Reingold, Dana Ron, Ronitt Rubinfeld, Amit Sahai, Ronen Shaltiel, Alistair Sinclair, and Paul Spirakis for RANDOM.



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0:xvii

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