

# RANDOM-APPROX 2023 Program

Contributed talks are 20 minutes (15m talk + 5m Q&A). Invited talks are 1 hour (+ 10m Q&A)

All the talks will take place in the **Bill Moore Student Success Center (225 North Ave)**.

RANDOM talks and joint sessions: **Clary Theater**.

APPROX talks: **President's Suites A-B**.

Coffee Breaks: "Hall of Success"

(Last updated: September 9, 2023)

## RANDOM

## APPROX

Monday, September 11

8:30-9:00	Coffee				
<b>Session 1A: Monday, 9:00 AM</b>					
9:00-9:15	Optimal Mixing via Tensorization for Random Independent Sets on Arbitrary Trees	Charilaos Efthymiou, Thomas P. Hayes, Daniel Stefankovic, Eric Vigoda			
9:20-9:35	Perfect Sampling for Hard Spheres from Strong Spatial Mixing	Konrad Anand, Andreas Göbel, Marcus Pappik, Will Perkins			
9:40-9:55	Fine Grained Analysis of High Dimensional Random Walks	Roy Gotlib, Tali Kaufman			
10:00-10:15	Rapid mixing of global Markov chains via spectral independence: the unbounded degree case	Antonio Blanca, Xusheng Zhang			
10:20-10:35	Sampling from the Random Cluster model on random regular graphs at all temperatures via Glauber dynamics	Andreas Galanis, Leslie Ann Goldberg, Paulina Smolarova			
<b>Break</b>					
<b>Session 1B: Monday, 11:00 AM</b>					
11:00-11:15	On the Power of Regular and Permutation Branching Programs	Chin Ho Lee, Edward Pyne, Salil Vadhan	A Constant-Factor Approximation for Quasi-bipartite Directed Steiner Tree on Minor-Free Graphs		
11:20-11:35	Range Avoidance for Constant-Depth Circuits: Hardness and Algorithms	Karthik Gajulapalli, Alexander Golovnev, Satyajeet Nagargoje, Sidhant Saraoji	Algorithms for 2-connected network design and flexible Steiner trees with a constant number of terminals		
11:40-11:55	Sampling and Certifying Symmetric Functions	Yuval Filmus, Itai Leigh, Artur Riazanov, Dmitry Sokolov	Tighter Approximation for the Uniform Cost-Distance Steiner Tree Problem		
12:00-12:15	An embarrassingly parallel optimal-space cardinality estimation algorithm	Emin Karayel	Approximation Algorithms for Directed Weighted Spanners		
<b>Lunch (on your own)</b>					
<b>Joint Session 1C: Monday, 2:00 PM</b>					
14:00-15:00	Invited talk: A survey of locally decodable codes		Shubhangi Saraf (U. Toronto)		
<b>Break</b>					
<b>Session 1D: Monday, 3:50 PM</b>					
15:50-16:05	Hardness of the (Approximate) Shortest Vector Problem: A Simple Proof via Reed-Solomon Codes	Huck Bennett, Chris Peikert	Round and Bipartite for Vertex Cover Approximation		
16:20-16:25	Interactive Error Correcting Codes: New Constructions and Impossibility Bounds	Meghal Gupta, Rachel Yun Zhang	Efficient Algorithms and Hardness Results for the Weighted k-server Problem		
16:30-16:45	A Deterministic Construction of a Large Distance Code from the Wozencraft Ensemble	Venkatesan Guruswami, Shilun Li	The (im)possibility of simple search-to-decision reductions for approximation problems		
16:50-17:10	Fast Decoding of Explicit almost Optimal $\epsilon$ -balanced $q$ -ary Codes and Fast Approximation of Expanding $k$ -CSPs	Fernando Granha Jeronimo	Experimental Design for Any $p$ -Norm		

## Tuesday, September 12

Coffee				
<b>Session 2A: Tuesday, 9:00 AM</b>				
8:30-9:00				<b>Coffee</b>
9:00-9:15	Efficient Interactive Proofs for Non-Deterministic Bounded Space	<i>Joshua Cook, Ron Rothblum</i>	Oblivious algorithms for the Max-kAND problem	<i>Noah Singer</i>
9:20-9:35	Synergy between Circuit Obfuscation and Circuit Minimization	<i>Russell Impagliazzo, Valentine Kabanets, Ilya Volkovich</i>	Approximating Red-Blue Set Cover and Minimum Monotone Satisfying Assignment	<i>Eden Chlamtac, Yury Makarychev and Ali Vakilian</i>
9:40-9:55	Superpolynomial Lower Bounds for Learning Monotone Classes	<i>Nader Bshouty</i>	Approximating submodular k-partition via principle partition sequence	<i>Karthekeyan Chandrasekaran and Weihang Wang</i>
10:00-10:15	Tighter MA/1 Circuit Lower Bounds From Verifier Efficient PCPs for PSPACE	<i>Joshua Cook, Dana Moshkovitz</i>	Independent Sets in Elimination Graphs with a Submodular Objective	<i>Chandra Chekuri and Kent Quanrud</i>
10:20-10:35	Robustness for Space-Bounded Statistical Zero Knowledge	<i>Eric Allender, Jacob Gray, Saachi Mutreja, Harsha Tirumala, Pengxiang Wang</i>	Stable Approximation Algorithms for Dominating Set and Independent Set	<i>Mark de Berg, Arpan Sadhukhan and Frits Spieksma</i>
<b>Break</b>				
<b>Session 2B: Tuesday, 11:00 AM</b>				
11:00-11:15	On Optimization and Counting of Non-Broken Bases of Matroids	<i>Dorna Abdolazimi, Kasper Lindberg, Shayan Oveis Gharan</i>		
11:20-11:35	NP-hardness of Almost Coloring Almost 3-Colorable Graphs	<i>Yahli Hecht, Dor Minzer, Muli Safra</i>		
11:40-11:55	Private Data Stream Analysis for Universal Symmetric Norm Estimation	<i>Vladimir Braverman, Joel Manning, Zhiwei Steven Wu, Samson Zhou</i>		
12:00-12:15	Extracting Mergers and Projections of Partitions	<i>Swastik Kopparty, Vishvajeet N</i>		
<b>Lunch</b>				
<b>Joint Session 2C: Tuesday, 2:00 PM</b>				
14:00-14:15			Submodular Norms with Applications to Online Facility Location and Stochastic Probing	<i>Kalen R Patton, Matteo Russo and Sahil Singla</i>
14:20-14:35			Approximating Pandora's Box with Correlations	<i>Shuchi Chawla, Evangelia Gergatsouli, Jeremy McMahan and Christos Tzamos</i>
14:40-14:55	Improved Local Computation Algorithms for Constructing Spanners	<i>Rubi Arviv, Lily Chung, Reut Levi, Edward Pyne</i>		
15:00-15:15	On Constructing Spanners from Random Gaussian Projections	<i>Sepehr Assadi, Michael Kapralov, Huacheng Yu</i>		
<b>Break</b>				
<b>Session 2D: Tuesday, 3:50 PM</b>				
15:50-16:05	Giant Components in Random Temporal Graphs	<i>Ruben Becker, Arnaud Casteigts, Pierluigi Crescenzi, Bojana Kodric, Michael Raskin, Malte Renken, Viktor Zamaraev</i>	On Complexity of 1-Center in Various Metrics	<i>Amir Abboud, Mohammadhossein Bateni, Vincent Cohen-Addad, Karthik C. S. and Saeed Seddighin</i>
16:20-16:25	On Connectivity in Random Graph Models with Limited Dependencies	<i>Johannes Lengler, Anders Martinsson, Kalina Petrova, Patrick Schnider, Raphael Steiner, Simon Weber, Emo Welzl</i>	Bicriteria Approximation Algorithms for Priority Matroid Median	<i>Tanvi Bajpai and Chandra Chekuri</i>
16:30-16:45	The full rank condition for sparse random matrices	<i>Amin Coja-Oghlan, Jane Gao, Max Hahn-Klimroth, Joon Lee, Noela Muller, Maurice Rolvien</i>	Facility Location in the Sublinear Geometric Model	<i>Morteza Monemizadeh</i>
16:50-17:10	Evaluating Stability in Massive Social Networks: Efficient Streaming Algorithms for Structural Balance	<i>Vikrant Ashvinkumar, Sepehr Assadi, Chengyuan Deng, Jie Gao, Chen Wang</i>		
<b>Tuesday Evening Outing: Atlanta Beltline</b>				

## Wednesday, September 13

Coffee							
Session 3A: Wednesday, 9:00 AM							
8:30-9:00							
9:00-9:15	Low-Degree Testing Over Grids	Prashanth Amireddy, Srikanth Srinivasan, Madhu Sudan	On Minimizing Generalized Makespan on Unrelated Machines	Nikhil Ayyadevara, Nikhil Bansal and Milind Prabhu			
9:20-9:35	Testing versus estimation of graph properties, revisited	Lior Gishboliner, Nick Kushnir, Asaf Shapira	Approximation algorithms for maximum weighted throughput on unrelated machines	George Karakostas and Stavros Kollaopoulos			
9:40-9:55	Directed Poincaré Inequalities and $\$L^1\$$ Monotonicity Testing of Lipschitz Functions	Renato Ferreira Pinto Jr.	An AFPTAS for Bin Packing with Partition Matroid via a New Method for LP Rounding	Ilan Doron-Arad, Ariel Kulik and Hadas Shachnai			
10:00-10:15	Bias Reduction for Sum Estimation	Talya Eden, Jakob Houen, Shyam Narayanan, Will Rosenbaum, Jakub Tětek	A $10/7$ -approximation for discrete bamboo garden trimming and continuous trimming on star graphs	Felix Höhne and Rob van Stee			
10:20-10:35	Testing Connectedness of Images	Piotr Berman, Meiram Murzabulatov, Sofya Raskhodnikova, Dragos Ristache	Online Matching with Set and Concave Delays	Lindsey Deryckere and Seeun William Umboh			
Break							
Joint Session 3B: Wednesday, 11:00 AM							
11:00-12:00	<i>Invited talk:</i> Welfare and Fairness in Combinatorial Allocation Problems			Jan Vondrak (Stanford University)			
Lunch							
Joint Session 3C: Wednesday, 2:00 PM							
14:00-14:15	Subset Sum in time $\$2^{\{n/2\}} / \text{poly}(n)\$$	Xi Chen, Yaonan Jin, Tim Randolph, Rocco A. Servedio					
14:20-14:35	How to Make Your Approximation Algorithm Private: A Black-Box Differentially-Private Transformation for Tunable Approximation Algorithms of Functions with Low Sensitivity	Jeremiah Blocki, Elena Grigorescu, Tamalika Mukherjee, Samson Zhou					
14:40-14:55			Approximation Algorithms and Lower Bounds for Graph Burning	Matej Lieskovský, Jiří Sgall and Andreas Emil Feldmann			
15:00-15:15			Probabilistic Metric Embedding via Metric Labeling	Kamesh Munagala, Govind S. Sankar and Erin Taylor			
Break							
Session 3D: Wednesday, 3:50 PM							
15:50-16:05	On the Composition of Randomized Query Complexity and Approximate Degree	Sourav Chakraborty, Chandrima Kayal, Rajat Mittal, Manaswi Paraashar, Swagato Sanyal, Nitin Saurabh	An Approximation Algorithm for the Exact Matching Problem in Bipartite Graphs	Anita Dürre, Nicolas El Maalouly and Lasse Wulf			
16:20-16:25	Classical simulation of one-query quantum distinguishers	Andrej Bogdanov, Tsun Ming Cheung, Krishnamoorthy Dinesh, John C. S. Lui	Improved Diversity Maximization Algorithms for Matching and Pseudoforest	Sepideh Mahabadi and Shyam Narayanan			
16:30-16:45	On the Complexity of Triangle Counting using Emptiness Queries	Arijit Bishnu, Arijit Ghosh, Gopinath Mishra	Scalable Auction Algorithms for Bipartite Maximum Matching Problems	Quanquan C. Liu, Yiduo Ke and Samir Khuller			
End of conference. See you at RANDOM/APPROX 2024!							