Aditya Krishnan

Ph.D. Student in Computer Science, Johns Hopkins University
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Research Interests

Sketching & streaming, coreset methods, numerical linear algebra, dimensionality reduction, scalable machine learning, theory of algorithms, optimization

Education

Johns Hopkins University, Whiting School of Engineering — 2018 - Present
Ph.D. in Computer Science
Advisor: Vladimir Braverman

Carnegie Mellon University, School of Computer Science — 2017 - 2018
M.S. in Computer Science
Advisor: Anupam Gupta
Thesis: Pricing Online Metric Matching Algorithms on Trees

Carnegie Mellon University, School of Computer Science — 2013 - 2017
B.S. in Computer Science and Minor in Engineering Studies

Experience

Science Intern, Pinecone — Summer 2021
Advisor: Edo Liberty, CEO and Founder of Pinecone
Designed and implemented a novel, product quantization based, algorithm for vector similarity search.

Publications and Preprints

Authors appear in alphabetical order as in the tradition of mathematics and theoretical computer science unless otherwise mentioned. Where applicable (*) denotes equal contribution of authors.

Projective Clustering Product Quantization, with E. Liberty. *2021. In submission.*

Sublinear Time Spectral Density Estimation, with V. Braverman and C. Musco. *2021. In submission.*

Lifelong Learning with Sketched Structural Regularization, H. Li, A. Krishnan*, J. Wu*, S. Kolouri*, P. K. Pilly and V. Braverman. *Asian Conference on Machine Learning (ACML), 2021.*

Near-Optimal Entrywise Sampling of Numerically Sparse Matrices, with V. Braverman, R. Krauthgamer, and S. Sapir. *Conference on Learning Theory (COLT). PMLR, 2021.*

Schatten Norms in Matrix Streams: Hello Sparsity, Goodbye Dimension, with V. Braverman, R. Krauthgamer, and R. Sinoff. *International Conference on Machine Learning (ICML), 2020.*

Competitively Pricing Parking in a Tree, with M. Bender, J. Gilbert, and K. Pruhs. *Conference on Web and Internet Economics (WINE), 2020.*

On Sketching the q to p Norms, with S. Mohanty and D. P. Woodruff. *International Conference on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), 2018.*

Awards	JHU Computer Science Department Fellowship	2018 - 2019
Talks	**Schatten Norms in Matrix Streams: The Role of Sparsity**	
	ICML 2020, Online	Jul 2020
	JHU CS Theory Seminar, Baltimore	Feb 2020
	Pricing Online Metric Matching Algorithms on Trees	
	CMU, Pittsburgh	May 2018
Teaching	**Introduction to Algorithms, JHU**	Fall 2019,
	Teaching Assistant	Spring 2020
	Approximation Algorithms, JHU	Spring 2021
	Teaching Assistant	
Service	**Seminar Co-Organizer**	
	JHU Theory Seminar Fall 2021	
	Conference Reviewer	
	NeurIPS 2021, ICML 2021, STOC 2021, SODA 2021, RSEML 2021, SOSA 2020, PODS 2020, CSR 2019	
Relevant Coursework	**JHU:** Parallel Programming, Cloud Computing	
	CMU: Algorithms for Big Data, Advanced Algorithms, Graduate Artificial Intelligence, Introduction to Machine Learning, Distributed Systems, Graph Theory	
Skills	Python, LaTeX, C, Java	
References	Edo Liberty, CEO and Founder, Pinecone edo@edoliberty.com	
	Christopher Musco, Assistant Professor, New York University cmusco@nyu.edu	
	Vladimir Braverman, Associate Professor, Johns Hopkins University vova@cs.jhu.edu	