

Aditya Krishnan

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

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Research Interests	Sketching & streaming, coresets methods, numerical linear algebra, dimensionality reduction, scalable machine learning, theory of algorithms, optimization	
Education	Johns Hopkins University , Whiting School of Engineering Ph.D. in Computer Science Advisor: Vladimir Braverman	2018 - Present
	Carnegie Mellon University , School of Computer Science M.S. in Computer Science Advisor: Anupam Gupta Thesis: Pricing Online Metric Matching Algorithms on Trees	2017 - 2018
	Carnegie Mellon University , School of Computer Science B.S. in Computer Science and Minor in Engineering Studies	2013 - 2017
Experience	Science Intern , Pinecone Advisor: Edo Liberty , CEO and Founder of Pinecone <i>Designed and implemented a novel, product quantization based, algorithm for vector similarity search.</i>	Summer 2021
Publications and Preprints	<p><i>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.</i></p> <p>Projective Clustering Product Quantization, with Edo Liberty. 2021. <i>In submission.</i></p> <p>Sublinear Time Spectral Density Estimation, with Vladimir Braverman and Christopher Musco. <i>ACM Symposium on Theory of Computing (STOC)</i>, 2022.</p> <p>Lifelong Learning with Sketched Structural Regularization, Haoran Li, A. Krishnan*, Jingfeng Wu*, Soheil Kolouri*, Praveen K. Pilly and Vladimir Braverman. <i>Asian Conference on Machine Learning (ACML)</i>, 2021.</p> <p>Near-Optimal Entrywise Sampling of Numerically Sparse Matrices, with Vladimir Braverman, Robert Krauthgamer, and Shay Sapir. <i>Conference on Learning Theory (COLT)</i>. PMLR, 2021.</p> <p>Schatten Norms in Matrix Streams: Hello Sparsity, Goodbye Dimension, with Vladimir Braverman, Robert Krauthgamer, and Roi Sinoff. <i>International Conference on Machine Learning (ICML)</i>, 2020.</p> <p>Competitively Pricing Parking in a Tree, with Max Bender, Jacob Gilbert, and Kirk Pruhs. <i>Conference on Web and Internet Economics (WINE)</i>, 2020.</p>	

On [Sketching the \$q\$ to \$p\$ Norms](#), with Sidhanth Mohanty and David P. Woodruff.
International Conference on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), 2018.

Awards	JHU MINDS TRIPODS Data Science Fellowship	Summer 2022
	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	Teaching Assistant Introduction to Algorithms (JHU) Fall '19, Spring '20, Spring '22 Approximation Algorithms (JHU) Spring '21	
Service	Seminar Co-Organizer JHU Theory Seminar Fall '21, Spring '22	
	Conference Reviewer ICML 2022, 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, 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	