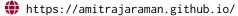
Amit Rajaraman

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Research Interests

Theoretical computer science, Markov chains, inference, optimization, sum-of-squares method

Education

2023-Present	Massachusetts Institute of Tech PhD in Computer Science	nology
2019–2023	Indian Institute of Technology B.Tech. with Honors in Computer Minor in Mathematics	
2017–2019	Sri Chaitanya Junior College, In Intermediate/+2	97.80%
2010-2017	Delhi Public School, Hyderabae Matriculation	I, India 10.0 GPA

Publication(s)

- D. Lee, F. Pernice, **A. Rajaraman**, and I. Zadik, "The Fundamental Limits of Recovering Planted Subgraphs," *arXiv preprint arXiv:2503.15723*, 2025, In submission.
- B. Huang, S. Mohanty, **A. Rajaraman**, and D. X. Wu, "Weak Poincaré Inequalities, Simulated Annealing, and Sampling from Spherical Spin Glasses," *arXiv preprint arXiv:2411.09075*, 2024, To appear in STOC 2025.
- K. Liu, S. Mohanty, P. Raghavendra, A. Rajaraman, and D. X. Wu, "Locally Stationary Distributions: A Framework for Analyzing Slow-Mixing Markov Chains," in 2024 IEEE 65th Annual Symposium on Foundations of Computer Science (FOCS), Los Alamitos, CA, USA: IEEE Computer Society, 2024, pp. 203–215.

 DOI: 10.1109/FOCS61266.2024.00022.
- K. Liu, S. Mohanty, **A. Rajaraman**, and D. X. Wu, "Fast Mixing in Sparse Random Ising Models," in 2024 *IEEE 65th Annual Symposium on Foundations of Computer Science (FOCS)*, Los Alamitos, CA, USA: IEEE Computer Society, 2024, pp. 120–128. ODI: 10.1109/F0CS61266.2024.00018.
- H. Narayanan, A. Rajaraman, and P. Srivastava, "Sampling from convex sets with a cold start using multiscale decompositions," *Probability Theory and Related Fields*, 2024, An extended abstract of this paper appeared in the ACM Symposium on Theory of Computing (STOC) 2023, ISSN: 1432-2064. ODI: 10.1007/s00440-024-01341-w.

Service

■ Teaching Assistantship

2024 **6.S977 (The Sum of Squares Method)** Instructor: Prof. Sam Hopkins

Responsible for holding office hours to answer questions, as well as designing problem sets and preparing notes for the course

2023 CS 228 (Logic for CS) Instructors: Prof. Ashutosh Gupta and Prof. Krishna S.
2020 MA 109 (Calculus I) Instructor: Prof. Ravi Raghunathan

Responsible for conducting tutorial sessions for a batch of students throughout the semester, answering questions through personal interaction, and correcting answer sheets

2021–2022 Mentor, Summer of Science

Guided students interested in topology and graph theory by creating an action plan, recommending resources, having discussions, and reviewing their reports

2020-2023 Notes

Prepared notes for various undertaken courses and other topics, referred to by hundreds of peers, which can be found at amitrajaraman.github.io/notes

Scholastic Achievements

2023 Awarded the Akamai Presidential Fellowship for exemplary academic and research achievements

2019 Secured All India Rank 12 in JEE Advanced among 245,000 aspirants

2019 Secured All India Rank 102 in JEE Main among 1.2 million aspirants

Conferred an AP grade for exceptional performance in

2022 MA214 (Numerical Analysis), awarded to 7 out of 739 students

2020 MA106 (Linear Algebra), awarded to 8 out of 1108 students

2019 CS101 (Computer Programming and Utilization), awarded to 1 out of 1212 students

2019 MA105 (Calculus), awarded to 35 out of 1137 students

PH107 (Quantum Physics and Application), awarded to 12 out of 1115 students

2017 Recipient of the prestigious Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship

Technical Skills

Software T_EX, MATLAB, Git, LEAN

Programming C++, C, Python, Bash, Julia

Select Courses Undertaken

Computer Science Algorithmic Statistics, Discrete Probability and Stochastic Processes, Information Theory, Derandomization and Pseudorandomness

Mathematics Weak Convergence and Martingale Theory, Graph Theory, Combinatorics I, Topics in Algebra II, Real Analysis, Complex Analysis, General Topology