Rajarshi Bhattacharjee

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RESEARCH INTERESTS

Sublinear Algorithms, Computational Linear Algebra, Online Learning, Caching

EDUCATION

University of Massachusetts Amherst — 2020–Current
Ph.D. in Computer Science, GPA: 4.0/4.0

- Advisor: Prof. Cameron Musco

Indian Statistical Institute — 2015–2017
Master of Technology in Computer Science, Final Aggregate: 85.90 % (First Class with Distinction)

Jadavpur University — 2009–2013
Bachelor of Engineering in Mechanical Engineering, GPA: 7.86/10.00 (First Class)

PUBLICATIONS AND PREPRINTS

(*): alphabetical ordering

1. **Sublinear Time Eigenvalue Approximation via Random Sampling.** (*) Rajarshi Bhattacharjee, Gregory Dexter, Petros Drineas, Cameron Musco and Archan Ray. *Under submission. Preprint at* [arxiv]

2. **Fundamental Limits on the Regret of Online Network-Caching.** Rajarshi Bhattacharjee, Subhankar Banerjee and Abhishek Sinha. ***Proceedings of the ACM on the Measurement and Analysis of Computing Systems**, Vol 4, No. 2, Article 25, 2020. Also published at **ACM SIGMETRICS 2020*** [PDF]

3. **Optimizing the Age-of-Information for Mobile Users in Adversarial and Stochastic Environments.** Abhishek Sinha and Rajarshi Bhattacharjee. ***IEEE Transactions on Information Theory*** [arxiv]

4. **Fundamental limits of age-of-information in stationary and non-stationary environments.** Subhankar Banerjee, Rajarshi Bhattacharjee and Abhishek Sinha. *In 2020 IEEE International Symposium on Information Theory **(ISIT), 2020**.* [arxiv]

5. **Competitive algorithms for minimizing the maximum age-of-information.** Rajarshi Bhattacharjee and Abhishek Sinha. *Workshop on MAthematical performance Modeling and Analysis (MAMA),* **ACM SIGMETRICS 2020**. [PDF]

6. **Online Algorithms for Multiclass Classification Using Partial Labels.** Rajarshi Bhattacharjee and Naresh Manwani. *Proceedings of the Pacific-Asia Conference on Knowledge Discovery and Data Mining **(PAKDD), 2020**.* [arxiv]

RESEARCH EXPERIENCE

University of Massachusetts Amherst — Amherst, MA
Graduate Research Assistant — Fall 2020–Current

- *Estimating eigenvalues* of matrices in sublinear time.
- *caching with machine learned advice.*
- Estimating the maximum *matching* of graphs in a streaming model

- Area: Algorithms, Linear Algebra, Online Learning, Caching, Graph theory

Indian Institute of Technology (IIT) Madras Chennai, India
Project Associate under Prof. Abhishek Sinha July 2019–August 2020

- Online algorithms with *sublinear regret for caching.*
- *Competitive online algorithms* for minimizing the *age-of-information (AoI)* for users in a communication network.
- Area: Online Learning, Age-of-information

Indian Institute of Information Technology (IIIT) Hyderabad Hyderabad, India
Research Assistant under Prof. Naresh Manwani February 2018–May 2019

- Online learning algorithms for the weakly supervised setting of *learning with partial labels.*
- Area: Machine learning, Online Learning

Professional Experience

Deloitte Consulting India Private Limited Hyderabad, India
Business Analyst/Data Scientist August 2017–December 2017

- Worked on delivering machine learning based solutions to clients.

PricewaterhouseCoopers Private Limited Kolkata, India
Consultant September 2013–July 2015

- Worked on development of software modules for different clients using Java, SQL.
- Interacted with clients to understand business requirements, drafted business proposals.

Scholarships and Awards

- Awarded **Sudha and Rajesh Jha Scholarship** at UMass Amherst. (awarded to one student every year)
- **Rashi Ray Memorial Medal** for standing **First** in the order of merit in M.Tech. Computer Science at Indian Statistical Institute
- Awarded **Dean's Fellowship** along with admission to the **PhD program** in Electrical and Systems Engineering at **Boston University**. (declined offer)

Service

Academic service

- **Sub-reviewer**: SODA 2023, STOC 2022, WiOpt 2020. Also helped review papers for IEEE Transactions on Networking, IJCAI, IJCNN.

Other service

- **Mentorship**: Served as a peer mentor to incoming doctoral students
- Part of a group of students interacting with faculty as a part of the faculty hiring process at UMass Amherst.

Relevant Coursework

Advanced Algorithms, Optimization, Machine Learning, Randomized Algorithms, Algorithms with Predictions

Programming Languages

Python, Matlab, Java