Sushant Agarwal

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EDUCATION

- **Northeastern University**, USA — *Sep '22 - Apr '26* (expected)
  PhD in Computer Science
  Advisors: Ravi Sundaram & Rajmohan Rajaraman
  Research Area: Trustworthy Machine Learning
- **University of Waterloo**, Canada — *Sep '17 - Apr '20*
  MS (Research) in Computer Science, Advisor: Shai Ben-David
- **Chennai Mathematical Institute**, India — *Aug '14 - Jul '17*
  BS in Math and Computer Science

INDUSTRY EXPERIENCE

- **Google DeepMind**, *Research Intern under Rishi Saket* — *May '24 - Aug '24*
  · Conducted research on learning via data aggregation, leading to a paper at UAI '25.
- **Microsoft Research**, *Research Intern under Amit Deshpande* — *May '21 - Jan '22*
  · Conducted research on fair ML, leading to a paper at FAccT '22.
- **Codechef, DirectI**, *Software Intern* — *Dec '14 - Apr '15*
  · Wrote editorials in Python and C++ for competitive programming problems.

PUBLICATIONS (CITATIONS: 263, H-INDEX: 7)

*(Authors are ordered alphabetically, unless specified. CO = contribution order, * = Equal contribution)*

- Optimal Fair Learning Robust to Adversarial Distribution Shift [pdf] — **ICML** '25
  S. Agarwal, A. Deshpande, R. Rajaraman, R. Sundaram
- Aggregating Data for Optimal Learning [pdf] — **UAI** '25 (Oral)
  S. Agarwal, Y. Makhija, R. Saket, A. Raghuveer (CO)
- Private Mean Estimation with User-Level Differential Privacy [pdf] — **SODA** '24
  S. Agarwal, G. Kamath, M. Majid, A. Mouzakis, R. Silver, J. Ullman
- On the Power of Randomization in Fair Classification and Representation [pdf] — **FAccT** '22
  S. Agarwal, A. Deshpande
- Towards the Unification and Robustness of Post-hoc Explanations [pdf] — **ICML** '21 (Spotlight)
  S. Agarwal, S. Jabbari, C. Agarwal*, Sohini Upadhyay*, H. Lakkaraju, S. Wu (CO)
- Open Problem: Are all VC-classes CPAC learnable? [pdf] — **COLT** '21
  S. Agarwal, N. Ananthakrishnan, S. Ben-David, T. Lechner, R. Urner
- On Learnability with Computable Learners [pdf] — **ALT** 2020
  S. Agarwal, N. Ananthakrishnan, S. Ben-David, T. Lechner, R. Urner
- On Trade-offs between Fairness, Interpretability, and Privacy in Classification [pdf] — Master's Thesis (Workshops at **AAAI**, **IJCAI** '21)
  S. Agarwal
- Impossibility Results for Fair Data Representations [pdf] — Arxiv
  T. Lechner, S. Ben-David, S. Agarwal, N. Ananthakrishnan (CO)

OTHER EXPERIENCE

- **University of Waterloo**, *Research Assistant under Gautam Kamath* *Feb '22 - Aug '22*
  - Conducted research on privacy auditing of ML algorithms using membership inference attacks.
- **Harvard University**, *Research Intern under Hima Lakkaraju* *Aug '20 - Apr '21*
  - Conducted research on explainable ML, leading to papers at ICML 2021, and FORC 2022.
- **University of Waterloo**, *Research Assistant under Peter Van Beek* *May '20 - Jul '20*
  - Conducted research on Deep reinforcement learning for combinatorial optimization.
- **National University of Singapore**, *Research Intern under Rahul Jain* *May '16 - July '16*
  - Conducted research in quantum complexity theory.

SCHOLASTIC ACHIEVEMENTS

- Coach of Northeastern's ACM-ICPC team for the world finals in Bangladesh (November '22).
- Recipient of the Vector AI Institute Scholarship.
- Recipient of the University of Waterloo Graduate Scholarship.
- Recipient of the INSPIRE Scholarship by Govt. of India.
- Recipient of the CMI Undergraduate Scholarship.
- Stood 2nd in Gujarat state in the Indian National Maths Olympiad '12.
- Obtained a rank in top 0.25 percent of India in JEE Advanced '14.
- Was among 275 students across India to clear Zonal Informatics Olympiad '13.
- Reviewer for COLT, NeurIPS, AISTATS.

RELEVANT COURSEWORK

- **Machine Learning**: Statistical Foundations of ML, Fairness and Interpretability in ML, Privacy in Data Science, Adversarial ML, Deep Learning for Discrete Optimization, Reinforcement Learning, Theory of Clustering, Data Mining and ML, Optimization for Data Science, AI: Law, Ethics & Policy
- **CS Theory**: Complexity Theory, Advanced Algorithms, Advanced Combinatorics & Probabilistic Methods, Topics in Graph Theory, Cryptography, Theory of Computation, Game Theory, Games on Graphs
- **Mathematics:** Linear Algebra, Group Theory, Rings & Fields, Calculus (1, 2, & 3), Real Analysis, Complex Analysis, Differential Equations, Topology, Probability Theory, Discrete Mathematics
- **Programming:** Programming in Python, Functional Programming, Concurrent Programming

TECHNICAL STRENGTHS

- **Programming:** Python, C++, Haskell, ML frameworks like Pytorch & Tensorflow