Aditya Ghosh – Curriculum Vitae

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CONTACT DETAILS

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ADDRESS

Department of Statistics, Stanford University
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EDUCATION

Ph.D. in Statistics, **Stanford University** GPA 4.13 — 2022 – present

- Advised by Stefan Wager (Stanford GSB) & Dominik Rothenhäusler (Stanford Statistics)

Masters of Statistics (M.Stat), **Indian Statistical Institute**, Kolkata — 2020 – 2022

- **Dissertation advisor:** Prof. Bodhisattva Sen (Columbia University)
- **Specialization:** Theoretical Statistics

Bachelor of Statistics (B.Stat), **Indian Statistical Institute**, Kolkata — 2017 – 2020

RESEARCH

My current research spans causal inference, statistical learning, and optimization. I am working on regression discontinuity designs with Guido Imbens and Stefan Wager, and robust causal inference with Dominik Rothenhäusler. I am also interested in reinforcement learning, generative AI, nonparametric statistics, random graphs, random matrices and their applications in statistics.

2. **Ghosh, A.**, Deb, N., Karmakar, B., & Sen, B. (2021+). Efficiency and Robustness of Regression (Un)-Adjusted Rosenbaum's Rank-based Estimator in Randomized Experiments. *Submitted.*

1. **Ghosh, A.** (2019). An asymptotic formula for the Chebyshev theta function. *Notes on Number Theory and Discrete Mathematics*, 25(4), 1-7.

INVITED TALKS

- **Computational and Methodological Statistics**, HTW Berlin, University of Applied Sciences, Berlin, Germany — 2023
  Title: Efficiency and robustness of Rosenbaum's regression (un)-adjusted rank-based estimator in randomized experiments
- **PCM Memorial Lecture**, Indian Statistical Institute, Kolkata — 2022
  Title: The synthetic control method in causal inference
- **D. Basu Memorial Lecture**, Indian Statistical Institute, Kolkata — 2021
  Title: Large low-rank matrix completion
- **Online Reading Group on Functional Data Analysis** — 2021
  Title: Two-sample testing of the equality of mean functions
- **Students' Learning Seminar**, Indian Statistical Institute, Kolkata — 2021
  Title: Matching estimators in causal inference

TEACHING EXPERIENCE

as Instructor, **Stanford University** ExploreCourses

- Stats 302: Qualifying Exam Workshop (Probability). — Summer 2024

as Teaching Assistant, **Stanford University** ExploreCourses

- Stats 200: Introduction to Theoretical Statistics. — Autumn 2024
- Stats 310B/Math 230B: Theory of Probability II. — Winter 2024
- Stats 310A/Math 230A: Theory of Probability I. — Autumn 2023
- Stats 216: Introduction to Statistical Learning. — Winter 2023
- Stats 202: Data Mining and Analysis. — Summer 2023, Autumn 2022

Other experiences

- Trained numerous high school students for mathematical olympiads, entrance examinations of Indian Statistical Institute, Chennai Mathematical Institute, and other competitive exams.
- Maintained a blog (ghoshadi.wordpress.com) aimed at helping high-school students prepare for Mathematical Olympiads and similar competitions.

Awards

Recognitions from the Indian Statistical Institute

- **ISIAA – J. K. Ghosh Memorial Gold Medal** (outstanding performance in M.Stat) 2023
- **ISIAA – Mrs. M. R. Iyer Memorial Gold Medal** (best overall performance in B.Stat) 2021
- **Nikhilesh Bhattacharyya Memorial Gold Medal** (best performance in Statistics in B.Stat) 2021

Others

- **Madhava Mathematics Competition**, received invitation to a prestigious event 2019, 2018
- **Indian National Mathematical Olympiad**, earned a **certificate of merit** from NBHM, Govt. of India (awarded to the top 75 INMO participants in the country) 2016

Older projects & internships

- **Rank and matching based methods in causal inference** 2021
- **Analyzing lower back pain data** with classmates Anik Burman and Soham Das 2020
- **Age-dependent branching processes with/without immigration** with classmates Wribhu Banik and Shouvik Middey 2020
- **Finding anomalies in a coal quality data of Coal India Limited** with classmates Soham Das and Arjama Das 2020
- **Typical distance between two randomly selected vertices of a Erdős-Rényi binomial random graph** with classmate Sayak Chatterjee 2020
- **Method of moments in random matrix theory** 2019
- **Summer Internship in Cryptology**, supported by Microsoft Research India, at the R. C. Bose Centre for Cryptology and Security, Indian Statistical Institute, Kolkata 2019

Languages

{English, Bengali (native), Hindi}, {**R**, Python}, {LaTeX, Markdown, HTML}