

CONTACT DETAILS	Email: ghoshadi@stanford.edu Phone: +1 (650)-382-7711 Webpage: ghoshadi.github.io	ADDRESS	Computing and Data Science (CoDa) 389 Jane Stanford Way, Stanford University Stanford, CA 94305
EDUCATION	Ph.D. in Statistics, Stanford University GPA 4.13/4.00 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) Bachelor of Statistics (B.Stat), Indian Statistical Institute , Kolkata 2017 – 2020		
RESEARCH	My research spans Causal Inference, Statistical Learning, and Optimization. I am currently working on Causal Inference in Dynamic Systems (with Stefan Wager) and Causal Inference under Distribution Shift (with Dominik Rothenhäusler). 5. Ghosh, A. & Wager, S. (2025). Nonparametric Causal Inference in Dynamic Thresholding Designs. TBA. (Summary: For threshold-based policies with carryover effects and dynamic treatment assignments, we show how to measure a dynamic marginal policy effect at the treatment threshold.) 4. Ghosh, A. & Rothenhäusler, D. (2025). Assumption-robust Causal Inference. <i>Submitted. arXiv</i> ↗ (Summary: When it is unclear which covariates to adjust for, we provide valid inference for a sub-population with narrow CIs when at least one of the candidate adjustment sets is valid.) 3. Ghosh, A. , Imbens, G. & Wager, S. (2025). PLRD: Partially Linear Regression Discontinuity Inference. <i>arXiv</i> ↗ <i>R package</i> ↗ (Summary: For treatment rules with an eligibility threshold, our PLRD method delivers narrow yet reliable CIs for the effect at the threshold by solving a minimax problem.) 2. Ghosh, A. , Deb, N., Karmakar, B., & Sen, B. (2022+). Efficiency and Robustness of Rosenbaum's Rank-based Estimator in Randomized Experiments. <i>Submitted. arXiv</i> ↗ (Summary: We derive efficiency and robustness properties of Rosenbaum's rank-based estimator under finite population inference in randomized trials, with or without covariate adjustment.) 1. Ghosh, A. (2019). An asymptotic formula for the Chebyshev theta function. <i>Notes on Number Theory and Discrete Mathematics</i> , 25(4), 1-7. <i>Journal link</i> ↗ (Older work; derived sharp bounds on the geometric mean of the first n prime numbers.)		
ACADEMIC SERVICES	• I help organize the Online Causal Inference Seminar , a weekly seminar on causal inference with participants from all over the world. • Served as a reviewer for: JASA, JRSSB, NeurIPS		
SKILLS	Python, R , Markdown, Git, C (basic), HTML (basic). Authored R package: <i>plrd</i> ↗		
ACCOLADES	• IMS 2025 International Conference on Statistics and Data Science (ICSDS) , student travel award 2025 • IISA conference 2025 , best poster award 2025 • Industrial Affiliates Annual Conference at Stanford , Travel Award 2024 • Selected for Machine Learning in Economics Summer Institute at UChicago Booth 2024		

- **ISIAA – J. K. Ghosh Memorial Gold Medal** (*outstanding performance in Masters*) 2023
- **ISIAA – Mrs. M. R. Iyer Memorial Gold Medal** (*best overall performance in UG*) 2021
- **Nikhilesh Bhattacharyya Memorial Gold Medal** (*best in major (Statistics) in UG*) 2021
- **Madhava Mathematics Competition**, invited to a prestigious summer camp 2019, 2018
- **Indian National Mathematical Olympiad**, earned a *certificate of merit* from **NBHM, Govt. of India** (awarded to the top 75 participants in the country) 2016

TEACHING

As instructor, Stanford University [ExploreCourses](#) [↗](#)

- Stats 302: Qualifying Exam Workshop (Theoretical Statistics). Summer 2025
- Stats 302: Qualifying Exam Workshop (Probability). Summer 2024

As teaching assistant, Stanford University [ExploreCourses](#) [↗](#)

- Stats 209: Introduction to Causal Inference. Fall 2025
- Stats 60: Introduction to Statistical Methods: Precalculus. Spring 2025
- Stats 361: Causal Inference. Winter 2025
- Stats 200: Introduction to Theoretical Statistics. Winter 2026, 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 mathematics olympiads and other math competitions; materials are available at ghoshadi.wordpress.com [↗](#) .

INVITED TALKS

- **IMS International Conference on Statistics and Data Science**, Seville, Spain 2025
Session: Student Award Session 3
Title: Assumption-robust Causal Inference
- **Stanford Causal Science Center (SC²) Conference**, Stanford University 2025
Title: Causal Inference in Dynamic Thresholding Designs
- **Joint Statistical Meeting**, Nashville, Tennessee 2025
Session: Regression Discontinuity Designs with Complex Data
Title: Causal Inference in Dynamic Thresholding Designs
- **Industrial Affiliates Annual Conference**, Stanford University 2024
Title: Practical bias-aware inference in regression discontinuity designs: An asymptotic view
- **Stanford Causal Science Center (SC²) Conference**, Stanford University 2024
Title: Asymptotic bias-aware inference in regression discontinuity designs under higher-order smoothness
- **Computational and Methodological Statistics**, 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

CLASS
PROJECTS

- **SMARTer multi-task fine-tuning of BERT**
 Summary: Engineered a multi-task NLP framework, integrating adversarial regularization, proximal optimization, and low-rank adaptation with randomized task scheduling for stable cross-task training. Joint with Disha Ghandwani and Rahul Kanekar.
- **Inference for data adaptively sampled via REINFORCE**
 Summary: Developed inference methods for adaptively collected data and analyzed the robustness–efficiency trade-offs in variance estimation for long-horizon policy evaluation. Joint with Ivy Zhang.
- **Predicting the number of micro-businesses across the U.S.**
 Summary: Built a forecasting pipeline using GoDaddy panel and Census data, applying ARIMA, GLMs, and varying-coefficient models to link demographics with county-level microbusiness dynamics. Joint with Joshua Kazdan and Yash Nair.
- **Analyzing lower back pain data** Joint with Anik Burman and Soham Das
- **Age-dependent branching processes with/without immigration** Joint with Wribhu Banik and Shouvik Middey
- **Analyzing coal quality data of Coal India Ltd.** Joint with Soham Das and Arjama Das
- **Typical distance between two randomly selected vertices of a Erdős-Rényi binomial random graph** Joint with Sayak Chatterjee