

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</i> . arXiv ↗ (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. arXiv ↗ R package ↗ (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</i> . arXiv ↗ (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. Journal link ↗ (Older work; derived sharp bounds on the geometric mean of the first n prime numbers.)		
ACADEMIC SERVICES	<ul style="list-style-type: none"> 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: plrd ↗		
ACCOLADES	<ul style="list-style-type: none"> IMS 2025 International Conference on Statistics and Data Science (ICSDS), student travel award 2025 IIASA 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 ↗](http://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

CLASS
PROJECTS

- **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
- **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