Roshni Sahoo

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she/her

Research Interests

My research addresses policy questions in sustainable development (poverty alleviation, public health) through the design and implementation of statistical frameworks that account for modern data and deployment concerns. My work draws upon causal inference, machine learning, and optimization.

Education

Stanford University 9/2020 - 6/2026
Ph.D. in Computer Science.
Committee: Emma Brunskill, Lihua Lei, Gregory Valiant, Stefan Wager (advisor).

Massachusetts Institute of Technology 9/2016 - 6/2020
B.S. in Computer Science and Engineering; Mathematics.
Minor in Literature.
GPA: 4.9/5.0.

Awards

Rising Star in ISyE-MS&E-IOE, Georgia Tech	2025
Rising Star in Data Science, University of Chicago	2023
Future Leader in Data Science, University of Michigan	2023
Phi Beta Kappa Honor Society	2020
IEEE Eta Kappa Nu (HKN) Honor Society	2019

Fellowship and Grants

Stanford Diversifying Academia, Recruiting Excellence Fellowship ($54,800 support for 2 years)	2024
Spectrum Population Health Sciences Pilot Grant Recipient ($12,000)	2023
Stanford Data Science Scholar Fellowship ($79,380 support for 1 year)	2022
McCoy Family Center for Ethics in Society Graduate Fellowship ($3000)	2021
NSF Graduate Research Fellowship	2020

Job Market Paper

1. **Sahoo, Roshni**, Joshua Blumenstock, Paul Niehaus, Leo Selker, Stefan Wager. (2025) The Cost of Ending Extreme Poverty. Draft available upon request.

Preprints

$\alpha\beta$ indicates alphabetical author order, † denotes trainee author.

1. **Sahoo, Roshni**, Joshua Blumenstock, Paul Niehaus, Leo Selker, Stefan Wager. (2025) The Cost of Ending Extreme Poverty. Draft available upon request.
2. ($\alpha\beta$) Guan, Amy†, Marissa Reitsma, **Roshni Sahoo**, Joshua Salomon, Stefan Wager. (2025) Data Fusion for High-Resolution Estimation. *Arxiv e-prints*, *abs/2508.14858*.

3. ($\alpha\beta$) Lei, Lihua, **Roshni Sahoo**, Stefan Wager. (2023) Policy Learning under Biased Sample Selection. *Arxiv e-prints*, *abs/2304.11735*.
4. **Sahoo, Roshni**, Lihua Lei, Stefan Wager. (2022) Learning from a Biased Sample. *Arxiv e-prints*, *abs/2209.01754*. Minor Revision at *Management Science*.

Publications

1. **Sahoo, Roshni**, Stefan Wager. (2025) Policy Learning with Competing Agents. *Arxiv e-prints*, *abs/2204.01884*. Forthcoming in *Operations Research*.
2. **Sahoo, Roshni**, Shengjia Zhao, Alyssa Chen, Stefano Ermon. (2021) Reliable Decisions with Threshold Calibration. *Advances in Neural Information Processing Systems.*
3. Zhao, Shengjia, Michael P. Kim, **Roshni Sahoo**, Tengyu Ma, Stefano Ermon. (2021) Calibrating Predictions to Decisions: A Novel Approach to Multi-Class Calibration. *Advances in Neural Information Processing Systems.*
4. Gilitschenski, Igor, **Roshni Sahoo**, Wilko Schwarting, Alexander Amini, Sertac Karaman, Daniela Rus. (2020) Deep Orientation Uncertainty Learning based on a Bingham Loss. In *International Conference on Learned Representations*.

Selected Talks

1. *Data Fusion for High-Resolution Estimation*
   Joint Statistical Meetings 8/2025
   International Conference on Statistics and Data Science 6/2025
   American Causal Inference Conference 5/2025
2. *Data Leakage in Recommendation System A/B Tests*
   Bridging Industry and Academia in Causal Data Science Workshop 11/2024
   Omega-Causal, Google Research, NYC 7/2024
3. *The Cost of Ending Extreme Poverty*
   AI in Social Science Conference, University of Chicago 9/2025
   Statistics Seminar, Stanford University 7/2025
   Emma Brunskill Group Meeting 6/2025
   Workshop on AI and Analytics for Social Good, University of Maryland 5/2025
   Guest Lecture Stanford CS 106EA 2/2025
   Machine Learning in Economics Summer Conference, University of Chicago 8/2024
   Bravo/SNSF Workshop on Using Data to Make Decisions, Brown University 7/2024
   Algorithmic Fairness Seminar, Stanford University 4/2024
   Machine Learning Lunch, Stanford University 4/2024
   Econometrics Lunch, Stanford University 4/2024
4. *Policy Learning under Biased Sample Selection.*
   INFORMS Annual Meeting 10/2024
   Interactive Causal Learning Conference 11/2023
   Causal Data Science Meeting 11/2023
   Econometrics Lunch, Stanford University 10/2023
   Cornell Causal Reading Group, Cornell Tech 10/2023
   Emma Brunskill Group Meeting, Stanford University 5/2023
   Machine Learning Lunch, Stanford University 4/2023
   Causal Inference Seminar, Stanford University 4/2023
5. *Learning from a Biased Sample*
   BIRS Workshop on Bridging Prediction and Intervention Problems in Social Systems 6/2024
   FDA Statistical Assessment Methodology and Diagnostic Biomarkers Meeting (SAMDB) 3/2024

Rising Stars in Data Science, University of Chicago 11/2023
ACM EAAMO 10/2023
INFORMS Annual Meeting 10/2023
Joint Statistical Meetings 8/2023
Data Science for Social Good Summer Program, Stanford University 8/2023
MIDAS Future Leaders Summit, University of Michigan 4/2023
Machine Learning Lunch, Stanford University 11/2022
Algorithmic Fairness Seminar, Stanford University 10/2022
Causal Inference Seminar, Stanford University 9/2022

6. *Policy Learning with Competing Agents.*
Causal Science Conference, Stanford University 11/2022
ACM EAAMO 10/2022
Algorithmic Fairness Seminar, Stanford University 4/2022
Causal Inference Seminar, Stanford University 4/2022
Machine Learning Lunch, Stanford University 3/2022

7. *Deep Orientation Uncertainty Learning based on a Bingham Loss.*
Schlumberger Robotics and Intelligent Automation Webinar 6/2020

Academic Service

Research Mentees

Amy Guan 9/2023 - 6/2025
Melissa Liu 6/2023 - 9/2023

Outreach

Stanford FAST (Future Advancers of Science and Technology), Mentor 9/2021 - 9/2023
Stanford Graduate Women in Computer Science, Chair 9/2022 - 9/2023
Stanford Computing and Society, Organizer 12/2020 - 4/2023
Stanford CS Mentorship Program, Mentor 9/2020 - 9/2021
Stanford First-Generation and/or Low-Income (FLI) Mentorship Program, Mentor 9/2020 - 9/2021

Reviewing

Journals (13): (# of papers in parentheses) Biometrika (3), Communications in Statistics - Simulation and Computation (1), Journal of the American Statistical Association (1), Journal of Econometrics (1), Journal of the Royal Statistical Society: Series B (3), Management Science (1), Operations Research (2), Quantitative Economics (1).
Conferences: FORC 2023, ACM FAccT (2023, 2024, 2025), NeurIPS 2025 (Workshop Proposals), NeurIPS 2023 (Conference), NeurIPS 2023 (Ethics), WiML (2023, 2024), ICLR (2024, 2025).

Committees

Marketing Committee Lead, Stanford Data Science Conference 2023

Other

Session Chair, International Conference of Statistics and Data Science. 2025
Discussant of "Principal-Agent Hypothesis Testing," International Seminar of Selective Inference. 2022
Panelist for Stanford AI4ALL. 2022

Teaching

Exploring Artificial Intelligence (CS 106EA), Stanford University, Course Assistant	1/2025 - 3/2025
Machine Learning (CS229), Stanford University, Course Assistant	9/2024 - 12/2024
Introduction to Deep Learning (6.S191), MIT, Teaching Assistant	1/2020
Elements of Software Construction (6.031), MIT, Lab Assistant	2/2018 - 6/2018

Industry Experience

Google Research, Algorithms and Optimization Team, Student Researcher Supervised by Jennifer Brennan, Jean Pouget-Abadie.	6/2024 - 9/2024
Two Sigma, Software Engineering Intern	6/2019 - 8/2019
Cruise Automation, Software Engineering Intern	6/2018 - 8/2018
Northrop Grumman, Machine Learning Intern	6/2017 - 8/2017