

SHUBHANGI GHOSH

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EDUCATION

Columbia University

PhD in Statistics, Advised by Prof. Arian , Prof. Haolei Weng

Sep 2022 -

ETH Zürich

M.Sc. Data Science

Sep 2019 - Aug 2022

Indian Institute of Technology Madras

B. Tech, Electrical Engineering

Jul 2015 - Jul 2019

PUBLICATIONS

1. Han Tong, **Shubhangi Ghosh**, Haolin Zou, Arian Maleki. “Imperfect Influence, Preserved Rankings: A Theory of TRAK for Data Attribution”.arXiv preprint, 2025. Submitted to *ICML 2026*
2. **Shubhangi Ghosh**, Yilin Guo, Haolei Weng, Arian Maleki. “Signal-to-noise-ratio aware minimax analysis of sparse linear regression”.arXiv preprint, 2025. Under review at *IEEE Transactions on Information Theory*.
3. Yilin Guo, **Shubhangi Ghosh**, Haolei Weng, Arian Maleki. “A note on the minimax risk of sparse linear regression”. arXiv preprint, 2024. Under Major Revision at *Electronic Journal of Statistics*.
4. **Shubhangi Ghosh**, Luigi Gresele, Julius von Kugelegen, Michel Besserve, Bernhard Schölkopf. “Independent Mechanism Analysis and the Manifold Hypothesis”. NeurIPS Workshop on Causal Representation Learning, 2023.
5. Joanna Sliwa, **Shubhangi Ghosh**, Vincent Stimper, Luigi Gresele, Bernhard Schölkopf. “Probing the Robustness of Independent Mechanism Analysis for Representation Learning” UAI Workshop on Causal Representation Learning, 2022.
6. **Shubhangi Ghosh**, Luigi Gresele, Julius von Kügelgen, Michel Besserve, Bernhard Schölkopf. “On Pitfalls of Identifiability in Unsupervised Learning. A Note on Desiderata for Representation Learning: A Causal Perspective” arXiv preprint, 2022.
7. Subhrajit Samanta, **Shubhangi Ghosh**, and Suresh Sundaram. “A meta-cognitive recurrent fuzzy inference system with memory neurons (mcrfis-mn) and its fast learning algorithm for time series forecasting.” 2018 IEEE Symposium Series on Computational Intelligence (SSCI). IEEE, 2018.

TEACHING

· Columbia University:

As instructor:

Applied Statistics Qualifying Exam review sessions (PhD.), Summer 2025

As Teaching Assistant:

Introduction to Probability and Statistics by Prof. Arian Maleki, Fall 2025

Statistical Inference Theory II (Ph.D.) by Prof. Cynthia Rush, Spring 2024, Spring 2025

Probability Theory (M.S.), Fall 2024

Elementary Stochastic Processes (M.S.) by Prof. Mark Brown, Fall 2023

Nonparametric Statistics (M.S.) by Prof. Arian Maleki, Spring 2023

Introduction to Statistics, Fall 2022

· ETH Zürich:

As Teaching Assistant (led recitations):

Algorithmic Foundations of Data Science by Prof. David Steurer, Spring 2022

TALKS

- Invited talk, IIT Bombay *Department of Mathematics*, Jul 2025
- International Indian Statistics Association (IISA), University of Nebraska-Lincoln, Jun 2025
- New England Statistics Symposium (NESS), Yale University, Jun 2025
- Student seminar, Columbia University, Apr 2025
- Bernoulli IMS World Congress, Bochum, Aug 2024
- Invited talk, IIT Madras *Department of Electrical Engineering*, Jul 2024
- DSI (Data Science Institute) Foundations Workshop, Columbia University, Apr 2024
- Minghui Memorial Conference, Columbia University, Apr 2024

POSTERS

- “Frontiers in Learning under Data Heterogeneity” workshop, University of Florida, Jan 2026
- International Indian Statistics Association (IISA) Student Poster Competition, Kochi, Dec 2024
- DSI Foundations Workshop, Columbia University, Apr 2024
- NeurIPS Causal Representation Learning Workshop, Dec 2023

SERVICE

Reviewer , IEEE Transactions on Information Theory (2024), Bernoulli Journal (2025)	
Panel discussion speaker “Current and recent graduate student perspectives” , GROW conference , Columbia University	<i>Sep 2025</i>
Volunteer , GROW conference , Columbia University	<i>Sep 2025</i>
Organizer , High-Dimensional Stats Reading Group (focused on concentration and asymptotics), Department of Statistics, Columbia University	<i>Jun 2024 - May 2025</i>
Student seminar organizing team , Department of Statistics, Columbia University	<i>Sep 2024 - May 2025</i>
Mentor , Directed Reading Program , Department of Mathematics, Columbia University	<i>Sep 2024 - Dec 2024</i>
Volunteer , GROW conference , Columbia University	<i>Sep 2024</i>
Mentor for first-year PhD students , Department of Statistics, Columbia University	<i>Sep 2024 - Aug 2026</i>
Hack4Good organizing team , Analytics Club ETH Zürich	<i>Jan 2020 - Jan 2021</i>
Correspondent for the university newsletter , The Fifth Estate Indian Institute of Technology Madras	<i>Apr 2017 - Dec 2018</i>
Web-operations coordinator for IIT Madras’ technical festival , Shaastra Indian Institute of Technology Madras	<i>Apr 2016 - Jan 2017</i>

ACADEMIC ACHIEVEMENTS

- Travel award by University of Florida to attend the 2026 “Frontiers in Learning under Data Heterogeneity” workshop
- International Indian Statistics Association (IISA) Student Paper Award 2025
- International Indian Statistics Association (IISA) Student Travel Award 2025
- New England Statistics Symposium (NESS) Student Paper Award 2025
- International Indian Statistics Association (IISA) Student Travel Award 2024
- NTU (Nanyang Technological University, Singapore)-India Connect Research Fellowship, 2018
- 3rd Place, AWS Deep Learning Hackathon, Shaastra IIT Madras 2018
- Awarded Branch change to Dept. of Electrical Engineering, IIT Madras in 2016 (based on GPA obtained in first semester).
- All India Rank 3274, IIT JEE Advanced 2015 (among 0.2 million students shortlisted from IIT JEE Mains 2015)
- All India Rank 363, IIT JEE Mains 2015 (among 1.4 million students)
- INSPIRE Fellowship, 2014 (Top 1% in CBSE Class XII across India)
- Certificate of Merit by HRD Ministry Govt. of India, CBSE Class X, 2012

INTERNSHIPS

Real Time Operating Software development
Supervised by Dr. Regu Kumar, Ms. Alka Soni

Defence Research and Development Organization Bangalore
May 2017–Jul 2017