

Abhinav Chakraborty

EDUCATION

- 2025– **Founder's Postdoc**, Department of Statistics, Columbia University.
- 2020–2025 **Doctor of Philosophy in Statistics**, The Wharton School, University of Pennsylvania.
Advisor: [T. Tony Cai](#)
- 2018–2020 **Master of Statistics**, Indian Statistical Institute. **Specialization: Probability.**
Ranked 1 in M.Stat, passed in First Division with Distinction
- 2015–2018 **Bachelor of Statistics (Honours)**, Indian Statistical Institute.
Ranked 1 in B.Stat, Passed in First Division with Distinction.

PUBLICATIONS

- 2024 **Reconciling model-X and doubly robust approaches to conditional independence testing**
(Published at **Annals of Statistics**) [[Arxiv](#)][[Journal](#)]
[Ziang Niu*](#), [Abhinav Chakraborty*](#), Oliver Dukes, Eugene Katsevich (*equal contribution)
- 2024 **PrIsing: Privacy-Preserving Peer Effect Estimation via Ising Model**
(Published at **AISTATS 2024**) [[Arxiv](#)] [[PMLR](#)]
[Abhinav Chakraborty](#), Anirban Chatterjee, Abhinandan Dalal

PREPRINTS

- 2024 **Optimal Federated Learning for Functional Mean Estimation under Heterogeneous Privacy Constraints** [[Arxiv](#)]
[Tony Cai*](#), [Abhinav Chakraborty](#), Lasse Vuursteen (*alphabetical order)
- 2024 **Minimax and Adaptive Transfer Learning for Nonparametric Classification under Distributed Differential Privacy Constraints** (Under Major Revision at **JRSSB**)[[Arxiv](#)]
[Arnab Auddy*](#), [Tony Cai](#), [Abhinav Chakraborty](#) (*alphabetical order)
- 2024 **Optimal Federated Learning for Nonparametric Regression with Heterogeneous Distributed Differential Privacy Constraints** [[Arxiv](#)]
[Tony Cai*](#), [Abhinav Chakraborty](#), Lasse Vuursteen (*alphabetical order)
- 2024 **Doubly robust and computationally efficient high-dimensional variable selection**[[Arxiv](#)]
[Abhinav Chakraborty*](#), [Jeffrey Zhang*](#), Eugene Katsevich (*equal contribution)
- 2023 **Federated Nonparametric Hypothesis Testing with Differential Privacy Constraints: Optimal Rates and Adaptive Tests** [[Arxiv](#)]
[Tony Cai*](#), [Abhinav Chakraborty](#), Lasse Vuursteen (*alphabetical order)
- 2023 **PriME: Privacy-aware Membership profile Estimation in networks** (Under Major Revision at **SIMODS**) [[Arxiv](#)]
[Abhinav Chakraborty](#), Sayak Chatterjee, Sagnik Nandy
- 2022 **Optimal Differentially Private Ranking from Pairwise Comparisons** [[Technical Report](#)]
[Tony Cai*](#), [Abhinav Chakraborty](#), Yichen Wang (*alphabetical order)
- 2020 **High dimensional PCA: a new model selection criterion** [[Arxiv](#)]
[Abhinav Chakraborty](#), Soumendu Sundar Mukherjee, Arijit Chakrabarti

AWARDS AND HONORS

- 2025 **IMS Travel Award**, for the 2025 *Frontiers in Statistical Machine Learning (FSML) Workshop*.
- 2025 **Travel Award**, for the *Optimization and Statistical Learning Workshop*, Columbia University.
- 2024 **Lawrence D. Brown Best Student Paper Award**, Wharton School, University of Pennsylvania.
- 2022 & 2024 **George James Term Award**, for the 2022 and 2024 *IMS Annual Meeting*.
- 2020 **ISI Alumni Association J.K. Ghosh Memorial Gold Medal**, Top scorer in *M.Stat* program.
- 2020 **PCM Gold Medal**, Outstanding *M.Stat* student for best Master's Dissertation.
- 2018 **ISI Alumni Association Mrs. M. R. Iyer Memorial Gold Medal**, Top scorer in *B.Stat* program.
- 2018 **Nikhilesh Bhattacharya Gold Medal**, Highest marks in *Statistics for B.Stat (Hons.) Program*.
- 2015 **INSPIRE Scholarship**, Awarded to top 1% students in *Indian School Certificate (ISC) Examination*.
- 2013 Qualified for **Indian National Mathematics Olympiad (INMO) 2014** as a top-30 candidate in the *Regional Mathematics Olympiad (RMO)*.

INTERNSHIPS

- 2024 **Quantitative Research Intern** at Five Rings LLC, NYC
Completed a data analysis and statistical modeling project contributing to the firm's quantitative trading strategies
- 2019 **Optimal Transport in Statistics**, with Prof. [Bodhisattva Sen](#) at Columbia University [[Report](#)]
Studied Parametric Estimation using Wasserstein Distance and multivariate Monge-Kantorovich Depth, Quantiles and Ranks
- 2018 **Skin Lesion Classification for Melanoma Detection**, with Prof. Jian Kang and Prof. Eunjee Lee at University of Michigan
Developed a skin lesion classification model using biomedical images, employing feature extraction, PCA, and stacking of various classifiers.
- 2017 **Form and Performance Analytics for Large Scale Online Assessments** at TCS ion [[Slides](#)]
Investigated questions like effect of time elapsed on accuracy and the suitability of test papers.

TALKS

- 2025 **IISA Conference** in Lincoln (NE), Invited Talk on Federated Transfer Learning.
- 2024 **IMS Annual Meeting**, Bochum, Germany on *Federated Non-parametric Regression* [[Slides](#)]
- 2023 **PhD Student Seminar**, University of Pennsylvania on *Optimal Distributed Private Estimators* [[Slides](#)]
- 2022 **IMS Annual Meeting**, London, UK on *High Dimensional PCA* [[Slides](#)]
- 2020 **P.C. Mahalanobis Gold Medal Presentation**, Indian Statistical Institute, on *Model Selection in High Dimensional PCA* [[Slides](#)]
- 2018 **D. Basu Memorial Presentation**, Indian Statistical Institute, on *MCMC Methods in Bayesian Inference* [[Slides](#)]

TEACHING AND MENTORING

- 2021–24 **Teaching Assistant**: The Wharton School, The University of Pennsylvania, Philadelphia
Courses: Introduction to Probability (STAT 4300), Probability Theory (MATH 6480), Mathematical Statistics (STAT 971), Applied Econometrics (STAT 520)
- 2023 **PhD Peers Program**: The Wharton School, The University of Pennsylvania, Philadelphia
Mentored an incoming Wharton PhD student in navigating the program and transitioning to Penn.