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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

2026 **Optimal differentially private ranking from pairwise comparisons** (Published at **Journal of the American Statistical Association**) [Arxiv] [Journal]
T. Tony Cai*, Abhinav Chakraborty*, Yichen Wang* (*alphabetical order)

2025 **Minimax and adaptive transfer learning for nonparametric classification under distributed differential privacy constraints** (Published at **Journal of the Royal Statistical Society: Series B**) [Arxiv] [Journal] [Supplement]
Arnab Auddy*, T. Tony Cai*, Abhinav Chakraborty* (*alphabetical order)

2025 **When Data Can't Meet: Estimating Correlation Across Privacy Barriers** (Published at **NeurIPS 2025** (Spotlight)) [OpenReview]
Abhinav Chakraborty, Arnab Auddy, T. Tony Cai

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

2026 **Stability and Accuracy Trade-offs in Statistical Estimation** [Arxiv]
Abhinav Chakraborty*, Yuetian Luo*, Rina Foygel Barber (*equal contribution)

2026 **Comparing three learn-then-test paradigms in a multivariate normal means problem** [Arxiv] Abhinav Chakraborty*, Junu Lee*, Eugene Katsevich (*equal contribution)

2025 **The Cost of Adaptation under Differential Privacy: Optimal Adaptive Federated Density Estimation** [Arxiv]
Tony Cai*, Abhinav Chakraborty, Lasse Vuursteen (*alphabetical order)

2025 **Asymptotic Normality of Subgraph Counts in Sparse Inhomogeneous Random Graphs** [Arxiv] Sayak Chatterjee, Anirban Chatterjee, Abhinav Chakraborty, Bhaswar B. Bhattacharya

2024 **Optimal Federated Learning for Functional Mean Estimation under Heterogeneous Privacy Constraints** (Under Major Revision at **JRSSB**) [Arxiv]
Tony Cai*, Abhinav Chakraborty, Lasse Vuursteen (*alphabetical order)

2024 **Optimal Federated Learning for Nonparametric Regression with Heterogeneous Distributed Differential Privacy Constraints** (Under Minor Revision at **JASA**)[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

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).*

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.