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Abhinav Chakraborty

EDUCATION

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 **Minimax and Adaptive Transfer Learning for Nonparametric Classification under Distributed Differential Privacy Constraints** [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**
Abhinav Chakraborty, Sayak Chatterjee, Sagnik Nandy [Arxiv]

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

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.

AWARDS AND HONORS

2022 **George James Term Award**, *for the 2022 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

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

2021–23 **Teaching Assistant**: The Wharton School, The University of Pennsylvania, Philadelphia
Courses: STAT 4300 (Introduction to Probability), STAT 971 (Introduction to Linear Statistics), STAT 520 (Applied Econometrics)

SKILLS

Quantitative: Data Analytics, Machine Learning, Algorithms, Stochastic Calculus, Multivariate Statistical Analysis, Privacy, Causal Inference, Applied Probability, Bayesian Inference, Time-Series Analysis.

Software and Programming: R, Python, LaTeX. Familiar with Java and MATLAB.

Soft Skills: Strong analytical and problem-solving abilities, Effective communicator and presenter, Strategic thinker, Team player.