Anirban Chatterjee

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Education

Ph.D. in Statistics, *The Wharton School, University of Pennsylvania, Philadelphia, United States*
Expected Graduation: May 2025
Advisor: Dr. Bhaswar B. Bhattacharya

Master of Statistics, *Indian Statistical Institute, Kolkata, India*
Graduated: 2020
First Division with Distinction, Specialization: Probability

Bachelor of Statistics (Hons.), *Indian Statistical Institute, Kolkata, India*
Graduated: 2018
First Division with Distinction

Publications

Journal Publications

- **Anirban Chatterjee**, Bhaswar B. Bhattacharya (2024). Boosting the Power of Kernel Two-Sample Tests. *Biometrika* (to appear).
- **Anirban Chatterjee**, Sagnik Nandy, Ritwik Sadhu (2024). Detecting planted partition in sparse multilayer networks. *Information and Inference: A Journal of the IMA*.
- Bhaswar B. Bhattacharya, **Anirban Chatterjee**, Svante Janson (2023). Fluctuations of subgraph counts in graphon based random graphs. *Combinatorics, Probability and Computing*.
- **Anirban Chatterjee**, Rajat Subhra Hazra (2022). Spectral properties for the Laplacian of a generalized Wigner matrix. *Random Matrices: Theory and Applications*.

Conference Publications

- Abhinav Chakraborty, **Anirban Chatterjee**, Abhinandan Dalal (2024). PrIsing: Privacy-Preserving Peer Effect Estimation via Ising Model. In *Proceedings of The 27th International Conference on Artificial Intelligence and Statistics*.

Preprints

- **Anirban Chatterjee**, Ziang Niu, Bhaswar B. Bhattacharya (2024). A Kernel-Based Conditional Two-Sample Test Using Nearest Neighbors (with Applications to Calibration, Regression Curves, and Simulation-Based Inference). *arXiv e-prints*
- **Anirban Chatterjee**, Soham Dan, Bhaswar B. Bhattacharya (2024). Higher-Order Graphon Theory: Fluctuations, Degeneracies, and Inference. *arXiv e-prints*
- **Anirban Chatterjee**, Jiaoyang Huang (2024). Fluctuation of the Largest Eigenvalue of a Kernel Matrix with application in Graphon-based Random Graphs. *arXiv e-prints*

Ongoing Projects

- **A new Measure for Conditional Mean Independence with applications in Variable Selection.**
  Joint work with: Bhaswar B. Bhattacharya and Ziang Niu.
- **Difference in Difference method analysis using Quadruple Matching.**
  Joint work with: Bhaswar B. Bhattacharya, Siyu Heng, Hannah A. Jin, Bikram Karmakar and Dylan Small.
- **Asymptotic Relative Efficiency of Kernel-Based Two Sample Tests.**
  Joint work with: Bhaswar B. Bhattacharya, Nabarun Deb and Bodhisattva Sen.
- **Asymptotics of Pattern Density in Random Permutations.**
  Joint work with: Bhaswar B. Bhattacharya, Sayan Das and Sumit Mukherjee.
- **BBP Phase Transition in the eigenvalues of Random Kernel Matrices.**
  Joint work with: Jiaoyang Huang, David Kogan and Sagnik Nandy

Industry Experience

Project Team Member, TCS ion *Form and Performance Analytics for Large Scale Online Assessments, 2017*

- Collaborated with a multidisciplinary team to design and implement performance analytics for large-scale online assessment platforms used by educational institutions.
- Conducted in-depth statistical analysis on assessment data, identifying key metrics to evaluate student performance across various parameters.
- Presented findings and insights to senior management, contributing to strategic decisions on improving efficacy of online assessments.

Teaching and Mentoring

Teaching Assistant, The Wharton School, University of Pennsylvania

- **STAT 432 - Mathematical Statistics** (2023, 2022)
- **STAT 961 - Statistical Methodology** (2022)

Graduate Mentor (2022): Undergraduate Research in Probability and Statistics, University of Pennsylvania.

Professional Service

- Reviewer for journals: *Journal of the American Statistical Association*, *Biometrika*, *Annals of Applied Probability*, *Bernoulli*, *Stochastic Processes and their Applications*, *Annales de l'Institut Henri Poincaré*

Technical Skills

- **Programming Languages**: R, Python, C
- **Tools and Software**: LaTeX

Awards & Honors

- **Dean's List for Toppers** (2016 - 2020), Indian Statistical Institute, Kolkata

Conferences & Workshops

Bernoulli-IMS 11th World Congress in Probability and Statistics, *Bochum, Germany, 2024*

- Topic: Higher Order Graphon Theory: Fluctuations and Inference.

Lawrence D. Brown Student Workshop, University of Pennsylvania, *Philadelphia, USA, 2024*

- Topic: Higher Order Graphon Theory: Fluctuations and Inference.

Joint Statistical Meeting, *Toronto, Canada, 2023*

- Topic: Clustering Network Vertices in Sparse Contextual Multilayer Networks.

ASU Seminar, Indian Statistical Institute, *Kolkata, India, 2023*

- Topic: Higher Order Graphon Theory: Fluctuations and Inference.

IMS Annual Meeting, *London, UK, 2022*

- Topic: Fluctuations of Subgraph counts in Graphon based Random Graphs.

P.C.M. Gold Medal Presentation, Indian Statistical Institute, *Kolkata, India, 2020*

- Topic: Graphon Estimation.