

# SAYAN CHAKRABARTY

University of Michigan  
Department of Statistics  
WH443, 1085 S University Ave  
Ann Arbor, MI 48109

[sayanc@umich.edu](mailto:sayanc@umich.edu)  
[Personal Website](#)  
[Google Scholar](#)

## RESEARCH INTERESTS

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Scalable inference for large networks and complex data, interpretability for network-assisted blackbox machine learning models, statistical methods for complex data using randomization mechanisms, and applications of machine learning and artificial intelligence in biological sciences and medicine.

## EDUCATION

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**University of Illinois Urbana-Champaign** Champaign, IL  
*PhD in Statistics* 2024  
Advisors: Yuguo Chen and Srijan Sengupta  
Thesis: Subsampling Based Inference for Network Data

**Indian Statistical Institute** Kolkata, India  
*MSTAT with Specialization in Computational Statistics Track* 2018

**St. Xavier's College** Kolkata, India  
*BSC (Honors) in Statistics with Minors in Mathematics and Computer Science* 2016

## POSITIONS

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**University of Michigan** Ann Arbor, MI  
*Postdoctoral Research Fellow in Statistics* 2024 – Present  
Advisors: Professors Elizaveta Levina and Ji Zhu.  
Collaborators: Professors Snigdha Panigrahi, Shelly Flagel and Akbar Awaljee.  
Projects: Subsampling and bootstrap methods for network data, analysis of heterogeneous networks, post-estimation inference for network data, analysis of neurochemical data, algorithms for optimizing dosage of IBD medications.

**University of Illinois Urbana-Champaign** Champaign, IL  
*Graduate Assistant* 2018 – 2024  
PhD research on subsampling-based methods for large networks. Collaborative research on effects of tinnitus and hearing loss on depression in US adults. Held multiple teaching assistant and research assistant positions for the duration of PhD.

**Illinois Statistics Office** Champaign, IL  
*Statistical Consultant* 2020 – 2024  
Provided statistical consultation, designed experiments, and performed statistical analysis for clients from both academia and industry. Collaborated on research projects in medicine, biology, psychology, geology, finance, law, linguistics, engineering, and political science.

**Synchrony Financial** Champaign, IL (Remote)  
*Summer Intern, Information Security and Data Protection Team* Summer 2021  
Analyzed and predicted the number of data breaches and compared the efficacies of multiple data protection measures.

**CHEGG INC.** Kolkata, India  
*Expert Answerer in Statistics and Probability (Freelance)* 2014 – 2016

## PUBLICATIONS

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**Chakrabarty, S.**, Sengupta, S., Chen, Y. (2025). Network Cross-Validation and Model Selection via Subsampling. *Under revision at Journal of the Royal Statistical Society Series B*, arXiv preprint:2504.06903. [Preprint](#).

**Chakrabarty, S.**, Sengupta, S., Chen, Y. (2025). Subsampling Based Community Detection for Large Networks. *Statistica Sinica* (35) 1627 – 1648. [Article](#).

Moran, C., Park, T., Buffenstein, R., **Chakrabarty, S.**, Lindeblad, M., Fortman, J., Adams, C. (2024) Pharmacokinetics of Injectable Meloxicam and Buprenorphine in the Naked Mole-Rat (*Heterocephalus glaber*). *Journal of the American Association for Laboratory Animal Science* (63) 565 – 571. [Article](#)

**Chakrabarty, S.**, Mudar, R., Chen, Y., Husain, F. (2024). Contribution of Tinnitus and Hearing Loss to Depression: NHANES Population Study. *Ear and Hearing* (45) 775 – 786. [Article](#)

Han, M. D., Kwon, T. G., Miloro, M., **Chakrabarty, S.** (2023). What Is the Linear Accuracy of Regional Voxel-Based Registration for Orthognathic Surgery Landmarks?. *Journal of Oral and Maxillofacial Surgery* (81) 546 – 556. [Article](#)

Ghosh, A., SahaRay, R., **Chakrabarty, S.**, Bhadra, S. (2021). Robust Generalised Quadratic Discriminant Analysis. *Pattern Recognition* (117) 107981. [Article](#)

Ongoing:

**Chakrabarty, S.**, Levina, E. (2026+). Network Bootstrap Using Overlapping Partitions.

**Chakrabarty, S.**, Panigrahi, S., Levina, E. (2026+). Network Cross-Validation Using Antithetic Gaussian Randomization.

**Chakrabarty, S.**, Levina, E., Zhu, J. (2026+). Local Feature Importance for Network-Linked Blackbox Prediction Models.

## PRESENTATIONS

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<b>Recent Advances in Random Networks</b> <i>Lightning Talk: Network Bootstrap Using Overlapping Partitions</i> <i>Poster: Network Cross-Validation and Model Selection via Subsampling</i>	Chicago, USA 2026
<b>International Conference on Statistics and Data Science</b> <i>Contributed Talk: Network Bootstrap Using Overlapping Partitions</i>	Seville, Spain 2025
<b>International Conference on Computational and Mathematical Statistics</b> <i>Invited Talk: Network Bootstrap Using Overlapping Partitions</i>	London, UK 2025
<b>International New Researchers' Conference</b> <i>Poster: Network Cross-Validation and Model Selection via Subsampling</i>	Seville, Spain 2025
<b>Joint Statistical Meetings</b> <i>Contributed Talk: Network Bootstrap Using Overlapping Partitions</i>	Nashville, USA 2025
<b>International Indian Statistical Association Conference</b> <i>Invited Talk: Network Bootstrap Using Overlapping Partitions</i>	Lincoln, USA 2025
<b>Department of Statistics, North Carolina State University</b> <i>Course Presentation: Network Corss-Validation and Model Selection via Subsampling</i>	Raleigh, USA 2025
<b>The Michigan Student Symposium for Interdisciplinary Statistical Sciences</b> <i>Contributed Talk: Network Bootstrap Using Overlapping Partitions</i>	Ann Arbor, USA 2025
<b>Symposium on New Frontiers in Reliability and Risk Analysis</b> <i>Invited Poster: Subsampling Based Model Selection for Network Data</i>	Washington, D.C., USA 2023
<b>Joint Statistical Meetings</b> <i>Contributed Talk: Subsampling Based Model Selection for Network Data</i>	Toronto, Canada 2023
<b>International Indian Statistical Association Conference</b> <i>Student Poster: Subsampling Based Community Detection for Large Networks</i>	Golden, USA 2023
<b>Joint Statistical Meetings</b> <i>Invited Talk and Poster: Subsampling Based Community Detection for Large Networks</i>	Washington, D.C., USA 2022
<b>Institute of Mathematical Statistics Annual Meeting</b> <i>Contributed Talk: Subsampling Based Community Detection for Large Networks</i>	London, UK 2022
<b>New England Statistics Symposium</b> <i>Invited Student Talk: Subsampling Based Community Detection for Large Networks</i>	Storrs, USA 2022
<b>Bohrer Workshop</b> <i>Student Talk and Poster: Subsampling Based Community Detection for Large Networks</i>	Champaign, USA 2022

## AWARDS AND ACHIEVEMENTS

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Travel Award, <i>Recent Advances in Random Networks</i> , Institute of Mathematical and Statistical Innovation	2026
Travel Award, <i>International New Researchers' Conference</i> , Institute of Mathematical Statistics	2025
Travel Award, <i>International Indian Statistical Association Conference</i>	2025
Travel Award, <i>Symposium on New Frontiers in Reliability and Risk Analysis: A Tribute to Nozer D. Singpurwalla</i> , George Washington University	2023
Ranked as Excellent in Teaching, <i>University of Illinois Urbana-Champaign</i>	2019
All India Rank 8 in Mathematical Statistics at <i>Indian Institute of Technology Joint Admission Test for Masters</i>	2016
INSPIRE SHE Fellowship, <i>Department of Science &amp; Technology, Govt. of India</i>	2013 – 2018

## TEACHING EXPERIENCE

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<b>Department of Statistics, University of Illinois Urbana-Champaign</b>	Champaign, IL
<i>Instructor</i>	
STAT 200: Introduction to Statistical Analysis	Fall 2019
<i>Discussion Leader</i>	
STAT 400: Statistics and Probability I	Fall 2018, Spring and Summer 2019
<i>Teaching Assistant</i>	
STAT427: Statistical Consulting	Springs 2021, 2022, 2023
STAT578: Doctoral Topic Course - Quantile Regression	Fall 2022
STAT511: Advanced Mathematical Statistics	Fall 2021
STAT430: Graduate Topic course - Deep Learning	Fall 2020
STAT578: Doctoral Topic course - Advanced Bayesian Analysis	Spring 2020
<b>Department of Mathematics, University of Illinois Urbana-Champaign</b>	Champaign, IL
<i>Workshop Co-Host and Student Project Mentor</i>	
PI4 Computation and Data Science Boot Camp	Summer 2019

## PROFESSIONAL SERVICE

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<b>Journal Reviewer</b>	2024 – Present
<i>Journal of American Statistical Association</i>	
<i>Computational Statistics and Data Analysis</i>	
<i>Journal of Computational and Graphical Statistics</i>	
<b>University Service</b>	
<i>Postdoctoral Representative to the Department of Statistics Cultural Committee</i> , University of Michigan	2025 – Present
<i>Founding Chair of the Doctoral Student Seminar Series at the Department of Statistics</i> , University of Illinois Urbana-Champaign	2022
<i>Member of the Statistics Doctoral Student Association at the Department of Statistics</i> , University of Illinois Urbana-Champaign	2021 – 2023
<i>Founding Member of the PhD Student Seminar Series at the Department of Statistics</i> , University of Illinois Urbana-Champaign	2019 – 2020
<b>Working Member</b>	
<i>Membership Committee</i> , International Indian Statistical Association	2025 – Present
<b>Memberships</b>	
<i>American Statistical Association</i>	2021 – Present
<i>Institute of Mathematical Statistics</i>	2022 – Present
<i>International Indian Statistical Association</i>	2022 – Present

## COMPUTING SKILLS

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**Programming Languages:** R, Rcpp, Python, SPSS, SAS, C/C++, Minitab

**Miscellaneous:** Git/GitHub, Slurm, Linux