Curriculum Vitæ of Nilanjan Chakraborty

Mailing and Office Address

103 Rolla Building,
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Rolla, MO-65409.
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Education

August 2017- July 2022	Ph.D, Department of Statistics and Probability, Michigan State University, East Lansing, Michigan • Concentration: Statistics and Probability Theory • Dissertation: "Bootstrap based Hypothesis Testing for High Dimensional data" • Advisors: Professor Hira Koul and Professor Lyudmila Sakhanenko
August 2015 - July 2017	Masters in Statistics Department of Statistics, University of Calcutta • Concentration: Probability Theory and Advanced Statistical Inference
August 2012 - July 2015	Bachelors in Statistics Department of Statistics, St. Xaviers College, Calcutta

Positions Held

August 2024 – Present	Assistant Professor (Tenure-track), Department of Mathematics and Statistics (Missouri University of Science and Technology).
August 2022 – June 2024	William Chauvenet Postdoctoral Lecturer, Department of Statistics and Data Science. (Washington University in Saint Louis). Mentors: Professor Soumen Lahiri and Professor Robert Lunde.
August 2017– July 2022	Graduate Teaching Assistant, Department of Statistics and Probability (Michigan State University).

Research Interests:

- Resampling methods

- High Dimensional Time Series

- Robust Inference for High Dimensional Data

- Statistical Analysis of real life Networks

- Neuroimaging

Technical Skills

- Programming languages: `R`.

- Statistical software: extensive experience with `R` and Minitab, moderate experience with Excel.

- Text formatting and office computing: LaTeX, MS-Word and MS-Excel.

- Languages: English, Bengali (native speaker) and Hindi.

Honors and Awards

2021 : William L. Harkness Award for outstanding teaching by a graduate student.
This award is given by the Department of Statistics and Probability and
College of Natural Science at Michigan State University.

2022 : Travel Fellowship awarded by the Graduate School at Michigan State University.

2022 : Dissertation Completion Fellowship awarded by the College of Natural Science
at Michigan State University.

2023 : Travel Funding awarded by NSF for presenting at International Indian Statistical
Association Annual Conference.

2023 : Travel Funding awarded by NSF for presenting at the Workshop on
Stochastic Analysis, Random Fields and Applications.

Papers published in Journals

1. Chakraborty, N. and Sakhanenko, L. (2023). Novel Multiplier Bootstrap Tests for High-dimensional Data with Applications to MANOVA. Computational Statistics & Data Analysis, 178, 107619.

2. Bhattacharjee, M., Chakraborty, N. and Koul, H. (2023). Weighted l1-Penalized Corrected Quantile Regression for High-Dimensional Temporally Dependent Measurement Errors. Journal of Time Series Analysis, 44(5-6), 442-473.

Papers Submitted/to be Submitted for Publication

1. Chakraborty N. and Sakhanenko, L. and Zhu, D.C. (2023). Novel Bootstrap Tests for Parametric Structures of High-dimensional Covariances. (Submitted)

2. Chakraborty, N., Karmakar, S. and Koul, Hira. (2023). Bootstrap based Two-Sample Test for High Dimensional Covariance Matrices.(Submitted)

3. Bhattacharya, A., Chakraborty, N. and Lahiri, S.N. (2023). Jackknifing Subgraph densities Under Induced Random Sampling from Network data. (To be Submitted)

Work in Progress

1. Bhattacharjee, M., Chakraborty, N, Das, S. and Liu, L. (2023). A Bootstrap Based Testing Procedure for Microbiome Data in High Dimensions.

2. Bhattacharjee, M., Chakraborty, N, Das, S. and Wheelock, M.D. (2023). Omnibus Test for Networks with Applications to FMRI Data.

3. Bhattacharya, A., Chakraborty, N. and Lunde, R. (2023) Inference on Network Structures of Hypergraphs under Edge Exchangibility.

4. Bhattacharya, A., Chakraborty, N. and Lahiri, S.N. (2023) Resampling Guarantees for Subgraph Densities Under Independent Vertex Sampling.

5. Li, W., Chakraborty, N. and Lunde, R. (2023) Network Regression in Sparse Graphons and

Random Dot Product Graph.

Presentations at conferences

1. Multiplier Bootstrap based Gaussian Approximation Results with Applications to High Dimensional MANOVA at The 14th International Conference of the ERCIM WG on Computational and Methodological Statistics, December 2021. (This is an Invited talk for the session on Random Matrix theory and it's Applications.)

2. Weighted l1-Penalized Corrected Quantile Regression for High-Dimensional Temporally Dependent Measurement Errors at The 15th International Conference of the ERCIM WG on Computational and Methodological Statistics, December 2022. (This is an Invited talk for the session on Recent advances in Statistical Inference.)

3. A Bootstrap Test for MANOVA in High Dimensions at The Indian International Statistical Association Conference, June 2023. (This is an Invited talk for the session on Statistical Inference for multivariate and High dimensional data.)

4. Weighted l1-Penalized Corrected Quantile Regression for High-Dimensional Temporally Dependent Measurement Errors at The Workshop on Stochastic Analysis, Random Fields and Applications at Michigan State University, August 2023. (This is an Invited talk for the Session on Empirical Processes and its Applications.)

5. Presented a poster(virtually) on "Childhood Sleep Disturbances are Associated with Disrupted Brain Connectivity." at the 9th Annual BRAIN Initiative Meeting, June 2023.

6. Presented a poster on "Childhood Sleep Disturbances are Associated with Disrupted Brain Connectivity." at FLUX Congress, September 2023.

Seminar Talks

1. Departmental Seminar at The Department of Mathematics and Statistics, Washington University in St.Louis, April 2022.

2. Departmental Seminar at The Department of Mathematics, University of Utah, April 2023.

Chairs/Organizer

1. Chaired a session on "Statistical Inference for Complex Data Structures" at The Indian International Statistical Association Conference, June 2023.

2. Organizing a session on " Statistical Methods for Analyzing Complex Data" at The 16th International Conference of the ERCIM WG on Computational and Methodological Statistics, December 2023.

Teaching Activity

- **As an Instructor at Washington University in St. Louis**:

  - Math 3200: Elementary to Intermediate Statistics and Data Analysis (Fall 2023 & Spring 2023)
  - Math 494: Mathematical Statistics (Spring 2023)
  - Math 2200: Elementary Probability and Statistics (Summer 2022 & Fall 2023)

- **As an Instructor at Michigan State University**:

  - STT-315: Intro to Business Statistics (Summer 2020)
  - STT-200: Intro to Statistics (Summer 2019)

- **As a Teaching Assistant at Michigan State University**:

  - STT-200: Intro to Statistics
  - STT-315: Intro to Business Statistics
  - STT-200 (Honors): Intro Statistics with `R`
  - STT-805: Statistical Modeling for Business Analytics
  - STT-201: Intro Statistics with Minitab

Service

I have served as a reviewer of Journal of Non-Parametric Statistics, Journal of Statistical Theory and Practice, Journal of Multivariate Analysis.

References (available upon request):

- Hira.L.Koul (Michigan State University) koul@msu.edu

- Soumendra Lahiri (Washington University in St. Louis) s.lahiri@wustl.edu

- Monika Bhattacharjee (Indian Institute of Technology, Bombay) mbh@math.iitb.ac.in

- Abigail Jager (Washington University in St. Louis) jager@wustl.edu

- Robert Lunde (Washington University in St. Louis) lunde@wustl.edu