

Debjoy Thakur, Ph.D.

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Google Scholar: <https://scholar.google.com/citations?user=2VVChMUAAAAJ&hl=en>.

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Office: GICT: 220, Ahmedabad University, India.

Research Interests

- High-dimensional Spatial Variable Selection.
- Statistical Learning Theory.
- Spatial Extremes.
- Spatial Genomics and fMRI Data Analysis.
- Network Data.
- Variational Inference.

Education and Research Experience

- **Tenure Track: July 2026 – Present,**
Ahmedabad University.
- **Postdoctoral Lecturer: August 2023 – June 2026,**
Washington University in St. Louis
Research topic: Spatial Variable Selection, Neural Network, and Spatial Extreme.
Supervisor: Prof. Soumendra Lahiri.
- **Visting Scientist: March 2023 – July 2023, ISI, Kolkata, India.**
Research topic: Backfitting, Generalized Additive Model.
Supervisor: Prof. Smarajit Bose.
- **Ph.D. in Statistics: Aug 2019 – May 2023, IIT Tirupati, India.**
Dissertation: *Advancements of Space-Time Modeling in Environmental Statistics*
Specialization: Spatial Statistics. (CGPA: 8.75)
Supervisor: Prof. Ishapathik Das.
- **M.Sc. in Statistics: July 2017 – June 2019, Banaras Hindu University, India.**
Specialization: Statistics and Computing (CGPA: 8.11).
- **B.Sc. in Statistics: May 2014 – April 2017,**
University of Calcutta, Kolkata, India.
Major: Statistics (Percentage:59.5%).

Teaching Experience

Table 1: Teaching Experience During Postdoctoral Lecturer.

Semester	Course	Student Strength	Median Review
Fall 2023	MATH 434 Survival Analysis	11	4.2
Spring 2024	MATH 439 Linear Models	44	4.4
Spring 2024	MATH 493 Probability	19	4.3
Fall 2024	SDS 434 Survival Analysis	8	4.3
Spring 2025	SDS 495 Stochastic Process	49	4.3
Fall 2025	SDS 4120/5120 Survival Analysis	22	4.5
Spring 2026	SDS 4070/5070 Stochastic Process	26	4.8

Research Articles

Published Articles:

1. **Thakur, D.**, and Das, I. (2022). “Statistical assessment of Spatio-temporal impact of COVID-19 lockdown on air pollution using different modeling approaches in India, 2019–2020.” *Regional Statistics (SJR: Q1)*.
2. **Thakur, D.**, Bhattacharya, S., and Das, I. (2022). “Uni-variate and Bi-variate Inverted Exponential-Teissier Distribution in Bayesian and Non-Bayesian framework to Model Stochastic Dynamic Variation of Climate data.” *Theoretical and Applied Climatology (SJR: Q2)*.
3. **Thakur, D.**, Das, I., and Chakravarty, S. (2023). “A spatial copula interpolation in a random field with application in air pollution data.” *Modeling Earth System and Environment (SJR: Q1)*.
4. **Thakur, D.** and Das, I. (2023). “Advancements of Space-Time Modeling in Environmental Statistics”. *Ph.D. Thesis, IIT Tirupati*.
5. **Thakur, D.** (2026). “Variational Approximated Restricted Maximum Likelihood Estimation for Spatial Data.” (<https://arxiv.org/pdf/2604.07635>)(*Accepted in Statistics and Probability Letters*)

Submitted (To be Submitted) Research Articles:

1. **Thakur, D.**, and Lahiri, S. (2025) “Multi-Resolution Analysis of Variable Selection in Spatial Intensity Function for Risky Road in St. Louis.” (<https://arxiv.org/html/2601.00147v1>) (*Revised and Resubmitted in Journal of Royal Statistical Society: A*)
2. **Thakur, D.**, Zhao, L., and Bandyopadhyay, S. (2025). “Local Variable and Neighborhood Selection in Spatial Firearm Fatality in Southeastern USA.” (<https://www.arxiv.org/abs/2601.19044>) (*To be submitted in Journal of Royal Statistical Society: A*)
3. **Thakur, D.**, and Mateu, J. (2026) “Trustworthy Intrinsic Pair Correlation Function Estimation on Riemannian Manifold.” (*To be submitted in Biometrika*)

Research Articles in Preparation:

1. **Thakur, D.**, Das, I., and Bandyopadhyay, D. (2025) “Non-Gaussian Deep Neural Network: Application to Periodontal Health.” (*To be submitted in Electronic Journal of Statistics*)
2. **Thakur, D.**, Lahiri, S., Nychka, D., and Bandyopadhyay, S. (2024) “Fast Simulation of Spatial Stream Flow using Neural Network.” (*To be submitted in Annals of Applied Statistics*)
3. **Thakur, D.**, Sidney, N., and Lahiri, S. (2025) “Local Variable Selection in Spatial Regression: Local LASSO.” (*To be submitted in Journal of Computational and Graphical Statistics*)
4. Lahiri, S., and **Thakur, D.**, “Ordinary Least-Square Based Spatial Variogram Estimation.”
5. **Thakur, D.** “Local Spatial Deep Indicator Kriging for Non-Stationary Spatial Surface.” (*Submitted in Sankhya: A*)

Conference/ Workshop Presentations

- **Thakur, D.**, and Das, I. “Geo-Spatial Cluster based Hybrid Spatio-Temporal Copula Interpolation.” In *MedGU 2022*.
- **Thakur, D.**, Das, I., and Chakravarty, S. (2022). “A spatial copula interpolation in a random field with application in air pollution data.” In *IISA 2022*.
- **Thakur, D.**, Lahiri, S., Nychka, D., and Bandyopadhyay, S. (2024) “Threshold Exceedance Modeling for Spatial Extreme Data Using Neural Network.” In *Extremes 2024*.
- **Thakur, D.**, Sidney, N., and Lahiri, S. (2025) “Variable Selection in Spatial Regression: Local LASSO”. In *EVA 2025, CASE 2025*.
- **Thakur, D.**, Sidney, N., and Lahiri, S. (2025) “Multi-Resolution Analysis of Variable Selection in Spatial Intensity Function for Risky Road in St. Louis”. In *Missouri ASA Statistics Day 2025*.

Invited Speaker/ Session Chairing / Session Organization

- Extremes 2024, Colorado School of Mines, Colorado, USA.
- IISA 2024, Cochin University of Science and Technology, India.
- IISA 2025, University of Nebraska Lincoln, USA.
- Graduate Student Seminar, 2026, Washington University in St. Louis.
- Statistics Colloquium Series, 2026, University of Alaska Fairbanks.

Awards/ Achievements

- **INSPIRE DST** Fellowship 2014-2018.
- GATE **AIR 21** in Statistics.
- IISA 2022 Student Paper Competition **Finalist**.

- **NSF Travel Award** in EVA 2025.

Review Experience

Spatial Statistics, Journal of Statistics and Data Mining, Statistics in Medicine, Environmetrics.

Packages

- **R-Packages:** `localLASSO`. (Not Published Yet)
- **Python-Packages:** `gdpdenCNN`. (Not Published Yet)

Other Informations

- **Software:** LaTeX, Overleaf, R, Python.
- **Languages:** English (Fluent), Bengali, Hindi.

Students Supervision

- Xinyue Ha (Master's Student).
- Lyrian Zhao (Master's Student).
- Krisha Anant (Master's Practicum).

References

1. Prof. Ishapathik Das, Associate Professor of Mathematics and Statistics in IIT Tirupati, India (Ph.D. Supervisor).
Email: `ishapathik@iittp.ac.in`.
2. Prof. Soumendra N. Lahiri, Professor of Statistics and Data Science in Washington University in St. Louis, USA (Postdoctoral Research Mentor).
Email: `s.lahiri@wustl.edu`.
3. Prof. José. Figuerola-López, Professor of Statistics and Data Science of Washington University in St. Louis, USA (Postdoctoral Teaching Mentor).
Email: `figuerola-lopez@wustl.edu`.
4. Prof. Soutir Bandopadhyay, Professor of Applied Mathematics and Statistics in Colorado School of Mines, USA (Postdoctoral Research Collaborator).
Email: `sbandyopadhyay@mines.edu`.