Soumyakanti Pan

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Education

University of California Los Angeles — *Los Angeles, USA*
Ph.D., *Biostatistics* — *2021 - 2025 (expected)*

- *Thesis Title:* Bayesian Modeling and Inference for Complex Dependent Non-Gaussian Data
- *Thesis Advisor:* Prof. Sudipto Banerjee

Indian Statistical Institute — *Kolkata, India*
M.Stat., *Statistics* — *2019 - 2021*

- First Division with Distinction

Indian Statistical Institute — *Kolkata, India*
B.Stat. (Honours), *Statistics* — *2016 - 2019*

- First Division

Professional Experience

2021-Present **Graduate Student Researcher,** UCLA Biostatistics
2023-2024 **Teaching Assistant,** UCLA Biostatistics
2021-2023 **Special Reader,** UCLA Biostatistics
2019-2021 **Instructor for Competitive Mathematics,** RKMV Narendrapur
2019 **Short-term Trainee,** National Institute of Biomedical Genomics, India

Awards & Achievements

2024 **Dissertation Year Award,** UCLA Division of Graduate Education — *USD 39,487*
USD 20,000 in fellowship & USD 19,487 in tuition grant
2024 **Summer Mentored Research Fellowship,** UCLA Graduate Division — *USD 6,000*
2022 **Summer Mentored Research Fellowship,** UCLA Graduate Division — *USD 6,000*
2021 **University Fellowship,** UCLA Division of Graduate Education — *USD 14,863*
2016-2021 **Stipend and contingency grant,** Indian Statistical Institute
2015 **2nd position,** Advanced Mathematical Ability Test, Calcutta Mathematical Society

Scholarly Manuscripts

Published

1. **Pan, S.**, Das, D., Ramachandran, G., & Banerjee, S. (2024). Bayesian hierarchical modeling and inference for mechanistic systems in industrial hygiene. *Annals of Work Exposures and Health*, *68*(8), 834–845. DOI: 10.1093/annweh/wxae061

Preprints

2. **Pan, S.** & Banerjee, S. (2024). spStack: Practical Bayesian geostatistics using predictive stacking in R. DOI: (In Process)

1. **Pan, S.**, Zhang, L., Bradley, J. R., & Banerjee, S. (2024). Bayesian inference for spatial-temporal non-Gaussian data using predictive stacking. DOI: 10.48550/arXiv.2406.04655

Software

1. **spStack**: Bayesian Geostatistics Using Predictive Stacking.

   Fast Bayesian inference for Gaussian and non-Gaussian geospatial models without using MCMC algorithms. This R package is written in C++ with calls to FORTRAN routines for optimized linear algebra operations. Available from **CRAN**.

Conference Presentations

1. **UCLA-UCI-KAUST Meeting.** Los Angeles, USA, March 2023. *Talk.*
2. **Joint Statistical Meetings.** Toronto, Canada, August 2023.

   Topic Contributed Paper session: Recent advances in uncertainty quantification for complex systems.
3. **The Bayesian Young Statisticians Meeting, *j-ISBA*.** Virtual Meeting, November 2023. *Short Talk.*
4. **Theory and Foundations of Statistics in the Era of Big Data.** Tallahassee, USA, April 2024. *Poster.*

Research Experience

UCLA - Department of Biostatistics *Los Angeles, USA*

Advisor: Prof. Sudipto Banerjee *Sep. 2021 - Present*

- Dissertation: "Bayesian Modeling and Inference for Complex Dependent Non-Gaussian Data"

Indian Statistical Institute - Human Genetics Unit *Kolkata, India*

Advisor: Prof. Saurabh Ghosh *2020-2021*

- Masters Thesis: "Distribution-free correlation based tests to differentiate between related populations"

National Institute of Biomedical Genomics *Kalyani, India*

Advisor: Dr. Samsiddhi Bhattacharjee *2019*

- Title: "Nonparametric estimation of alternate density for mixture modeling with applications to large-scale multiple testing in genomics"

Teaching Experience

Spring 2024	**BIOS 250C: Multivariate Biostatistics,** Teaching Assistant	*UCLA*
Winter 2024	**BIOS 250B: Linear Statistical Models,** Teaching Assistant	*UCLA*
Fall 2023	**BIOS 241: Spatial Modeling and Data Analysis,** Teaching Assistant	*UCLA*
Fall 2021, 22	**BIOS 255A: Measure Theoretic Probability,** Special Reader	*UCLA*
Winter 22,23	**BIOS 255B: Advanced Probability and Statistics,** Special Reader	*UCLA*
2019-2021	**Topics in Competitive Mathematics,** Instructor, RKMV Narendrapur	*India*

Technical Skills

Programming	R, C++, and integration via R's Native Interface, Julia
Other	Cluster Computing, Git, CI, UNIX-command line, LaTeX

Professional Development

Professional Memberships

- International Society for Bayesian Analysis (ISBA).
- American Statistical Association (ASA).
- International Indian Statistical Association (IISA).

Peer Review

- Annals of Applied Statistics.