Imon Banerjee

PhD Student, Department of Statistics, Purdue University

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Education

Indian Statistical Institute (ISI) — *Kolkata, India*

Graduation — *2013-2018*

- **Bachelor of Statistics**, BSTAT— *2016*
- **Master of Statistics**, MSTAT — *2018*

Purdue University — *West Lafayette, Indiana, USA*

Postgraduation — *2018-current*

- **PhD in Statistics**, *Supervisors : Dr. VA Rao, Dr. H Honnappa*.
- **Selected Courses**: *Divide and Recombine, Large Deviations, Machine Learning in Finance, Dynamic Programming, Hands on Learning Theory, Differential Privacy, Theory of Random Matrices and Multivariate Statistics, Martingales*

Submitted/Published Manuscripts

1. Offline Estimation of Controlled Markov Chains: Minimax Nonparametric Estimators and Sample Efficiency — *https://arxiv.org/pdf/2211.07092.pdf*

I Banerjee, H Honnappa, VA Rao — *2022*

2. Meta Learning of Sparse PCA's — *https://arxiv.org/abs/2208.08938*

I Banerjee, J Honorio — *2022*

3. PAC-Bayes Bounds on Variational Tempered Posteriors for Markov Models — *Approximate Bayesian Inference, Entropy 23 (3), 313*

I Banerjee, VA Rao, H Honnappa — *2021*

4. On Convergence of the Class Membership Estimator in Fuzzy k-Nearest Neighbor Classifier — *IEEE Transactions on Fuzzy Systems 27 (6), 1226-1236*

I Banerjee, SS Mullick, S Das — *2018*

Current Projects

5. Histogram based optimal estimation for controlled Markov chains

I Banerjee, H Honnappa, VA Rao

6. Fair Combinatorial Logistic Regression: Sparsistency and Sample complexity

I Banerjee, J Honorio

7. A Variational Approach to Thompson Sampling for Offline Bandits

I Banerjee, P Jaiswal

Internships

Optimal Design of Experiments using Neural network Surrogate Modelling — *Argonne National Laboratory*

I Banerjee, S Leyffer, K Narayanan — *Summer 2022*

Predicting Probability of 90-Days Past Due For 2 and 3 Years of Loan Tenure — *Transunion*

I Banerjee, R Paul, D Mukherjee — *Summer 2017*

Teaching Experience

1. Instructor

Purdue University

- STAT 503: Statistical Methods in Biology, Summer 2021 **(Primary Instructor)**
- STAT 225: Introduction to Probabaility, Spring 2019 — Summer 2020

2. Teaching Assistant

Purdue University

- STAT 503: Statistical Methods in Biology, Fall 2021 — Spring 2022
- STAT 225: Introduction to Probabaility, Fall 2020 — Spring 2021
- STAT 512: Applied Regression Analysis, Fall 2018
- STAT 301: Elementary Statistical Methods, Fall 2018

Administrative Responsibilities

2022-2023 **Grant Reviewer**, Grant Review and Allocation Committee, PGSG
2022-2023 **Senator, Department of Statistics**, Purdue Graduate Student Government
2020-2021 **Networking Committee**, National Institute of Statistical Sciences, Graduate Student Network
2019-2021 **Member**, Safety Committee

Skills & Interests

Coding R, Python (pandas/pytorch/matplotlib), C/C++, LaTeX, SAS
Interests MDP's, Reinforcement Learning, Bayesian Consistencies, Variational Inference, Random Graphs

Talks

October 2022 **(Invited)** Informs Annual Conference
January 2022 **(Contri.)** International Indian Statistical Association virtual Mini Conference
September 2020 **(Contri.)** NISS Graduate Student Conference

Class Projects

High Frequency Pair Trading

I Banerjee, KS Nagaraju, R Zhuang, K Lee, X Wang *2020*

An Analysis of New Car Prices

I Banerjee, D Arthur, Qifan Song *2018*

Effects of Cognitive Load on Memory of Individuals

I Banerjee, R Bhattacharya, S Chakraborty, DD Roy *2016*

Critical Statistical Analysis of Consumer Satisfaction Index by RBI

I Banerjee, R Bhattacharya, S Chakraborty, S Maity *2016*

Personal

Spoken Languages English, Bengali, Deutsch, Hindi

Personal Interests

- Proficient in Arduino. Made multiple projects using MQTT.
- Reading Novels and Stories.
- Learning Piano.
- Motorcycle touring.