

Jhanvi Kapoorchand Garg

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EDUCATION

- 2021 - 2025 Ph.D. in Statistics, **Texas A&M University, College Station**
Advisor: Dr. Quan Zhou. GPA: 3.916/4.0
- 2019 - 2021 Masters in Mathematics, **Indian Statistical Institute, Kolkata**
First Division with Distinction (Graduated with Highest Honor)
- 2016 - 2019 Bachelors in Mathematics (Honors), **Indian Statistical Institute, Kolkata**
First Division

SKILLS

- Programming Languages C/C++, R, Matlab, Python, SAS, SQL
- Technical Software \LaTeX
- Professional Skills Machine Learning, Deep Learning, Reinforcement Learning, Mathematical/Statistical Modeling, Time Series, Optimization, Big Data Analytics, Data Visualization, Data Manipulation
- Research Focus Stochastic Control and Optimal Stopping, Generative AI, Multimodal Sampling, Bayesian Modeling and Inference
- Relevant Courses Mathematical Tools in Finance, Applied Statistics and Data Analysis, Linear Models, Advanced Stochastic Processes, Stochastic Calculus, Reinforcement Learning, Measure Theoretic Probability, Statistical Computation in R, Statistical Methodology, Advanced Bayesian Computation, High dimensional Probability, Statistical Learning Theory

WORK EXPERIENCE

- Data & Statistical Sciences Intern - Daiichi Sankyo Inc** May 2024 - Aug 2024
- Utilized Bayesian Dynamic Borrowing to demonstrate enhanced clinical effectiveness of a breast cancer drug by effectively leveraging data from previous clinical trials
- Statistical Consultant - Los Alamos National Laboratory** Aug 2023 - Present
- Analyzing large amounts of vibrational data to extract key signatures relating to mechanical state and integrity of micro reactors
 - Analyzing when a micro reactor is damaged and locating these damages spatially using a machine learning
- Teaching Assistant - Texas A&M University, College Station** Aug 2021 - Present
- Teaching assistant for Probability for Statistics, Mathematical Statistics I, Mathematical Statistics II, Introduction to Linear Model, Multivariate Analysis and Statistical Learning Theory, Statistical Methods in Finance
- Instructor - Texas A&M University, College Station** July 2022 - Aug 2022
- Taught Elementary Statistical Inference course for Undergraduate students
- Data Science Intern - Sixth Energy Technologies** May 2018 - July 2018
- Analyzed building management system data to evaluate operational efficiency of building's systems and energy consumption patterns
 - Analyzed fuel tank dataset, encompassing identification of refills, thefts/leak detection, and prediction employing exponential smoothing and ARIMA models
- Data Science Intern - Indian Institute of Management, Ahmedabad** Nov 2017 - Jan 2018
- Conducted a survey and analyzed the data regarding the adoption and usage of electric vehicles in India

PUBLICATIONS

- Garg, Jhanvi**, Zhang, Xianyang, and Zhou, Quan (2024). "Soft-constrained Schrödinger Bridge: a Stochastic Control Approach". In: *International Conference on Artificial Intelligence and Statistics*. PMLR, pp. 4429–4437.

- Dong, Xuejun, Mott, Dale A, **Garg, Jhanvi**, Zhou, Quan, Sunoj VS, John, and McKnight, Benjamin M (2023). "Rapid measurement and statistical ranking of leaf drought tolerance capacity in cotton". In: *bioRxiv*, pp. 2023–08.
- De Angelis, Tiziano, **Garg, Jhanvi**, and Zhou, Quan (2022). "A quickest detection problem with false negatives". In: *arXiv preprint arXiv:2210.01844*.

WORKING PAPERS AND PACKAGES

Sampling from Multimodal Distributions using tempering idea

- Devising non convex optimization and sampling algorithms that are faster and has better convergence
- Can be employed in generative AI to sample images and texts that look similar to training dataset
- Widely used in all kinds of computational problems in statistics and machine learning

Hierarchical Bayesian for Metadata-Based Multi-Task Bandits

- Utilizing Bayesian Hierarchical Model to enhance recommendation systems by incorporating weighted metadata from people's profiles
- Demonstrate superior performance in terms of regret metric in ad recommendations

SSLLabelGuide - R Package

- R Package to implement a semi supervised learning algorithm (The code is available in GitHub)

CONFERENCES

Artificial Intelligence and Statistics 2024 (AISTATS) 2024

Poster: Soft-constrained Schrödinger Bridge: a Stochastic Control Approach"

Seminar on Stochastic Processes (SSP) 2023

Poster: A quickest detection problem with false negatives

Conference on Advances in Data Science (CAMDA) 2022

Poster: A quickest detection problem with false negatives

SCHOLARSHIPS AND GRANTS

2021 Lechner Graduate Grant , Texas A&M University, College Station

2019 Master's Scholarship, Indian Statistical Institute, Kolkata

2016 Bachelor's Scholarship, Indian Statistical Institute, Kolkata

REFeree SERVICE

SIAM Journal on Control and Optimization

REFERENCES



Dr. Quan Zhou (advisor) - quan@stat.tamu.edu



Dr. Dileep Kalathil (committee member) - dileep.kalathil@tamu.edu



Dr. Prathiba Batley (manager) - prathiba.batley@daichisankyo.com

WORK AUTHORIZATION

Eligible to work in US for 12 months under curricular practical training(CPT) and 36 months under optional practical training (OPT)