

Yuezhou Qu

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Research Interests

Selective inference; Gaussian graphical models; causal inference; machine learning; high-dimensional statistics; scientific applications of statistical methods.

Education

University of Michigan , Ann Arbor, MI	<i>08/2024–Present</i>
M.S. in Applied Statistics	
<i>Selected graduate coursework:</i> Probability (measure-theoretic), Real Analysis, Functional Analysis, Theoretical Statistics, High-Dimensional Statistics, Causal Inference, Bayesian Modeling, Machine Learning.	
University of Michigan , Ann Arbor, MI	<i>08/2021–08/2024</i>
B.S. in Honors Mathematics and Statistics	GPA: 3.73/4.00
Wake Forest University , Winston–Salem, NC	<i>09/2019–08/2021</i>
Applied Mathematics (transfer)	GPA: 3.97/4.00

Research Experience

Undergraduate Research Program in Statistics — University of Michigan *01/2024–Present*
Advisor: Prof. Snigdha Panigrahi

- Selective inference for Gaussian graphical models; implemented randomized and conditional approaches; conducted simulation studies across graph structures to assess coverage–power trade-offs.
- Built reproducible pipelines in R and Python; compared de-biasing strategies and post-selection intervals under sparsity misspecification.

Undergraduate Research Program in Statistics — University of Michigan *01/2023–12/2023*
Advisor: Prof. Yang Chen

- Space-weather forecasting on NASA datasets; modeled geomagnetic storms and geomagnetically induced currents (GICs) using time-series features and machine learning methods; implemented baseline artificial neural network (ANN) models for comparison with the proposed methodology and achieved benchmark performance on held-out temporal splits.
- Publication: Iong, D., McAnear, M., Qu, Y., Zou, S., Toth, G., & Chen, Y. (2024). *Sparse variational contaminated noise Gaussian process regression with applications in geomagnetic perturbations forecasting*. *Data Science in Science*, 3(1), 2383281. <https://doi.org/10.1080/26941899.2024.2383281>

Directed Reading Program (PDEs) — University of Michigan *09/2022–12/2022*
Ph.D. Mentor: Katja Vassilev

- Studied nonlinear dispersive partial differential equations; presented a talk on Schrödinger equations using Fourier analysis.

Research Assistant — LogM Group, University of Michigan
Advisor: Prof. Maria Han Veiga

08/2022–12/2022

- Investigated finite-volume schemes for conservation laws; studied 1D Saint–Venant and Burgers' equations; analyzed stability under varying initial conditions; summarized findings in an internal report and presentation.

Research Assistant — Wake Forest University
Advisor: Prof. Kenneth Berenhaut

08/2020–05/2021

- Explored the concept of *partitioned local depth* for detecting community structure in high-dimensional network data; implemented algorithms, ran toy simulations, and applied the method on small real datasets.
- Based on Prof. Berenhaut's published work: Berenhaut, K. S., Dickson, A., & Linder, C. (2020). *A social perspective on perceived distances reveals deep community structure.* *Proceedings of the National Academy of Sciences*, 117(31), 18397–18403. <https://doi.org/10.1073/pnas.2003634119>

Academic Experience

Grader, MATH 404 (Intermediate Differential Equations), University of Michigan 01/2022–05/2022

Grader, MST 357/657 (Probability), Wake Forest University 09/2020–12/2020

Skills

Programming: R, Python, L^AT_EX, git, MATLAB, Mathematica, C++

Compute: Linux, Slurm/HPC (Great Lakes)