Ziqi Mu

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Education

Duke University, Durham, NC expected 05/2027
Master of Science in Statistical Science
Relevant Courses: Theory of Statistical Inference, Programming of Statistical Science, Predictive Modeling and Statistical Learning

University of Rochester, Rochester, NY 05/2025
B.S. in Statistics and Physics, GPA: 3.85/4.00 Deans List (All Semesters)
Relevant Courses: Bayesian Inference, Advanced Statistical Methodology, Sampling Techniques, Applied Boundary Value Problems, Applied Statistical Methods, Linear Algebra

Research Experience

University of Rochester Medical Center Rochester, NY
Research Assistance 06/2025 – 08/2025
Advisor: Prof. Michael B. Sohn

- Investigating microbiome response to diet perturbations in murine models under different nutritional conditions.
- Applied CLR transformation and dimensionality reduction (LASSO, linear mixed models) to high-dimensional data. Visualized microbiome dynamics and inter-species relationships using methods such as heatmaps, co-occurrence graphs, and alluvial plots.

University of Rochester Rochester, NY
Undergraduate Researcher, Senior Thesis on Galaxy Evolution 04/2024 – 05/2025
Advisors: Prof. Segev BenZvi, Prof. Kelly Douglass

- Classified ∼18M galaxies from DESI Year 1 into cosmic environments using V^2 and VoidFinder catalogs; prepared datasets for statistical analysis.
- Performed nonparametric Bayesian inference with Pólya tree priors to test for differences in the distribution of galaxy properties (e.g., stellar mass, color) across galaxy environments.
- Interpreted results indicating enhanced star formation and delayed quenching in underdense regions; presented statistical findings at two departmental symposia (Aug 2024, May 2025). Authored a 30-page thesis synthesizing cosmological context with statistical modeling to draw conclusions about galaxy evolution. Available via this link.

Independent Projects

Statistical Modeling in Health and Astrophysics Rochester, NY
Independent Projects, Mentor: Dr. Aruni Jayathilaka 10/2023 – 12/2023; 09/2024 – 05/2025

- Applied logistic and multinomial logistic regression in R to solve classification problems in health and astronomy.
- *Brain Stroke Risk Prediction:* Identified key stroke predictors (e.g., BMI, glucose, hypertension) using ∼5,000 clinical records; presented a poster at UPSTAT 2025, University of Rochester Medical Center.

- *Stellar Classification:* Plotted H–R diagram and applied multinomial logistic regression to classify star categories (e.g., Main Sequence, White Dwarfs) using features such as luminosity and temperature.

Internship Experience

Data Analyst Intern, JD Logistics Beijing, China
06/2023 – 08/2023

- Computed Kaplan–Meier estimators in Python for equipment reliability analysis. Proofread statistical chapters on operations research and warehouse performance in two high school-level textbooks. Collaborated with a 5-member data analytics team in weekly review meetings.

Teaching Experience

Elements of Probability and Mathematical Statistics Course Rochester, NY
Teaching Assistant 09/2023 – 12/2023

- Facilitated weekly RStudio laboratory sessions after attending planning meetings with the Professor, reviewing lecture materials, guiding 20 students through laboratory assignments, addressing coding inquiries, resolving assignment issues, assisting with exam proctoring, and ensuring accurate attendance records.

Skills

Programming: R, Python, Minitab, SQL, LaTeX, Mathematica, Overleaf, Git, Excel
Languages: English (Fluent), Mandarin (Native)