Amanda Zhang

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EDUCATION

The University of Texas at Austin, Austin, TX May 2026
Bachelor of Science, Mathematics (4.0 GPA)
Data Science Minor, Elements of Computing Certificate
Relevant Coursework: Linear Algebra, Real Analysis, Statistics, Elements of Data Science, Elements of Software Design

SKILLS

Technical Skills: Advanced Python, R, SQL, Data Analysis, Machine Learning, Jupyter Notebooks, Excel, Beginner Java
Languages: Intermediate Chinese

SELECTED PRESENTATIONS

City of Austin Data Project on Metro Bike Activity, Austin, TX March 2024 – May 2024

- Collaborated with a team of 3 to analyze the City of Austin MetroBike data using R to identify usage patterns.
- Developed and implemented algorithms to analyze data through visualizations, exploratory data analysis (EDA), and regression modeling.
- Selected to present key findings to the City of Austin Board due to the quality and rigor of the statistical analysis.

LEADERSHIP

Statistics and Data Science *Undergraduate Course Assistant*, Austin, TX August 2024 – May 2025

- Facilitated student understanding by explaining data science and machine learning concepts to a majority non-technical audience of 60+ students, resolving over 25 technical and conceptual questions per session.
- Evaluated and provided detailed feedback on assignments on R, data visualization, and statistical modeling.

UT Association for Women in Mathematics (AWM), *Vice President,* Austin, TX August 2023 - Present

- Co-led all club operations and event programming with officer team, fostering member engagement.
- Developed and maintained the chapter website using HTML, CSS, and version control (Github) to showcase club activities and accomplishments.

EXPERIENCE

Directed Reading Program (DRP), *Researcher / Presenter*, Austin, TX May 2025 – July 2025

- Studied advanced topics in resampling statistics, particularly the jackknife resampling method in the context of variance estimation of statistics describing network models by critically reading research papers.
- Translated theoretical results into practice by implementing simulations using Python (pandas, NetworkX) to validate theorems and analyze real-world network data.
- Authored and presented a formal research report detailing simulation outcomes, model analyses, and the application of the Efron–Stein inequality to bound variance in network statistics

Longhorn Racing Solar Team, *Data Acquisition Team Member,* Austin, TX August 2024-Present

- Engineered complex Python simulations using PyChrono and other physics-based libraries to model our solar car's system dynamics (battery system, solar array efficiency, and vehicle steering)
- Integrated data from mechanical and electrical subteams to validate model accuracy and inform detailed performance analysis.

Applied Biomedical Science Institute, *Intern***.** Remote May 2024 – August 2024

- Developed and edited R and Python scripts to clean and analyze Next-Generation Sequencing (NGS) data containing millions of sequences to identify mutation patterns.
- Collaborated with ABS colleagues to present results using Aliview and office software.
- Contributed to a research paper by generating publication ready figures and assisting in data interpretation.

Publication

Jinsong Zhang, Jim Sindayen, Miyo Ota, Kara Anasti, Zbignew Mikulski, Angel Gandarilla, Taka Ota, Daniel Ramirez, **Amanda Zhang**, Alamgir Hossain, Michael Reth, Marilyn Diaz, S. Munir Alam and Laurent Verkoczy. Binding Kinetics to Infrequent Broad Neutralizing B-cell Precursors Set Boundaries for Priming Optimal HIV Vaccine-specific Germinal Center Responses (submit to publication soon).