Yixiao Wang

CV

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EDUCATION

Duke University Durham, NC, United States
M.S., Statistics; GPA: 4.0/4.0, Ranking: 1/45 Aug. 2024 - May. 2026
University of Science and Technology of China, School of the Gifted Young Hefei, Anhui, China
B.S., Mathematics; GPA: 3.91/4.0 (WES Converted), Ranking: 9/92 Sep. 2020 - Jul. 2024

- **Honors:** Outstanding Graduate, China Petroleum Scholarship (2023) – Top 3 in the School of the Gifted Young at USTC, Excellent Teaching Assistant (2023), Silver Prize for Outstanding Student Scholarship (2021-2022), Excellent President of the School Club (2022).
- **Coursework**: Probability Theory (Original & Advanced, Honors, both A+), Advanced Probability Theory (A+), Mathematical Statistics (Original & Advanced, Honors, both A+), Bayesian Analysis, Time Series Analysis (A), Stochastic Processes (A-), Predictive Inference (A), Statistical Inference (A), Functional Analysis (A-), Real Analysis (A-), Complex Analysis, Mathematical Analysis I (A+), II (A), III (A-), Abstract Algebra (A-), Linear Algebra I (A+), II (A-), Fundamentals of Algebra (A), Differential Equations (A+), Operations Research, Differential Geometry (A), Fundamentals of Geometry (A), Machine Learning Theory & Algorithms (A), Data Structures and Databases (A), C Programming (A+), R Programming (A), Python Programming (A), MATLAB (A-), Linux (A-).
- **Research Interests:** Statistical and Machine Learning, Deep Learning, Generative Models, with a focus on both theoretical foundations and real-world applications.

RESEARCH

Enhanced Cyclic Coordinate Descent | Co-First Author (In Progress) Dec. 2024 - Present
Supervised by Assistant Professor Aditya Devarakonda at **Wake Forest University**.

- Proposed and developed a novel Taylor expansion-based approximation method to replace block coordinate descent (BCD) in GLM with elastic net/LASSO, ensuring convergence while accelerating computation, achieving a 3–4× speedup over Glmnet in R so far.

Stability-guided Adaptive Diffusion Acceleration | Co-First Author (ICML 2025 Submission) Jan. 2025 - Present
Collaborated with Professor Yiran Chen's group at **Duke University**.

- Proposed a unified framework to accelerate ODE-based sampling models (including diffusion and flow-matching models) via stability-guided skipping strategies and principled approximations for intermediate states and noise.

Trimmed Mean for Partially Observed Functional Data | Bachelor's Thesis Feb. 2024 - May. 2024
Supervised by Associate Professor Xiaohong Lan at **University of Science and Technology of China**.

- Defined the Trimmed Mean for partially observed functional data.
- Proved strong consistency of depth function for partially observed functional data and the trimmed mean.
- Thesis: arXiv | Code: GitHub.

PROJECTS

- **Airbnb Price Prediction in New York City**: Predicted Airbnb prices by boosting and preprocessing cluster information and achieved top 5 out of 137 participants.
- **Basketball Breakdown: NCAA Shiny App**: An R shiny app displays information of NCAA basketball.
- **LSTM-GRU Hybrid Network**: Designed an LSTM-GRU hybrid network, inspired by GoogLeNet, achieving a 30% error rate reduction over standard LSTM models.

TEACHING, LEADERSHIP & OUTREACH

- **Linear Algebra B1** | *Excellent Teaching Assistant*: Ranked in the top 3 at USTC, among over 1000 TAs.
- **Probability Theory Seminar** | *Presenter*: Focused on random matrix analysis using the moment method.
- **Origami Club, USTC** | *President*: Excellent President of the School Club. Organized USTC's first origami exhibition and led weekly origami tutorials, club recruitment and advertisement.
- **Hefei Chunyu Parent Support Center for Intellectually Disabled Children** | *Volunteer*

ADDITIONAL INFORMATION

Language: Chinese (Mandarin and Sichuanese dialect), English (TOEFL 103 with 23 in Speaking).
Programming & Software Skills: Python, Latex, etc.
Interests: Origami, click here to see my artwork.