Hanyang Jiang

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Education

Georgia Institute of Technology — Atlanta, USA
PhD in Machine Learning (Advisor: Yao Xie) — *2022 - 2026 (Expected)*

University of Chicago — Chicago, USA
Master in Computational and Applied Mathematics — *2021*

Peking University — Beijing, China
Bachelor in Statistics — *2019*

Publications

- Hanyang Jiang, Ashwin Pananjady, Rina Barber, Yao Xie, Assumption-lean predictive inference with banded dependence: Leave-a-window-out jackknife, In prep.
- Hanyang Jiang, Yao Xie, Spatial Conformal Inference through Localized Quantile Regression. In submission to ***International Conference on Learning Representations (ICLR)***, Sep 2025.
- Chen Xu*, Hanyang Jiang* (co-first author), Yao Xie, Conformal prediction for multi-dimensional time-series. ***International Conference on Machine Learning (ICML spotlight, top 3.5%)***, Feb 2024.
- Hanyang Jiang, Yuehaw Khoo and Haizhao Yang, Reinforced Inverse Scattering. ***SIAM Journal on Scientific Computing (SISC)***, Aug 2024.
- Hanyang Jiang, Yao Xie, Feng Qiu, Spatio-temporal conformal prediction for power outage data. ***IEEE International Symposium on Information Theory (ISIT)***, June 2025.
- Hanyang Jiang, Yao Xie, A Graph-Prediction-Based Approach for Debiasing Underreported Data. ***IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)***, Dec 2023.
- Hanyang Jiang, Henry Yuchi, Elizabeth Belding, Ellen Zegura, Yao Xie, Mobile Internet Quality Estimation using Self-Tuning Kernel Regression. ***Data-Centric Machine Learning Research workshop (DMLR) at ICML 2023***, June 2023.

Skills

- **Knowledge**: Trustworthy AI, Reinforcement Learning, Deep Learning, Spatio-temporal Modeling, Large Language Model
- **Programming**: Python, Pytorch, SQL, R, Matlab

Work Experience

Amazon — Bellevue, USA
Applied Scientist Intern — *May 2025 - Aug 2025*

- Designed, implemented, and deployed a temporal Graph Attention Network (GAT) with online uncertainty estimates, validating its performance through comprehensive benchmarking of treatment effect forecasts against real-world laboratory data.
- Optimized model efficiency and restructured data pipeline, achieving a 4x speedup in training and preprocessing.

Argonne National Laboratory — Chicago, USA
Research Aide Technical — *May 2024 - Aug 2024*

- Developed a robust uncertainty quantification method for predicting statewide power outage numbers during extreme weather events, achieving target coverage with a 20% to 30% improvement over other methods.

Research Experience

Accelerating Diffusion LLM Inference

- Design a novel post-training parallel decoding algorithm for Diffusion LLMs (e.g., LLaDA) that utilize planning to significantly increase inference efficiency on various benchmark datasets (e.g. MATH, gsm8k).

Reinforcement Learning-Driven Adaptive Sensing and Reconstruction

- Develop a Deep Reinforcement Learning framework to automate data acquisition strategies for inverse scattering, achieving superior reconstruction fidelity compared to traditional expert-driven heuristics.

Multidimensional Uncertainty Quantification

- Develop a rapid uncertainty quantification method for multidimensional data, and construct significantly tighter prediction regions in higher dimensions while enjoying coverage guarantees.

Mobile Internet Quality Estimation

- Develop a self-adaptive kernel regression model to forecast mobile internet quality across the state, also establish a 90% confidence prediction region for any location.