JANET ZHANG

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Ph.D. candidate in Statistics with extensive research, modeling, and consulting experience in machine learning, time series forecasting, and optimization

EDUCATION

North Carolina State University – Ph.D. candidate, Department of Statistics, Raleigh, NC — Anticipated Dec 2023
University of Wisconsin-Madison – M.S. in Statistics, Madison, WI — Aug 2017 - May 2019
Nankai University – B.S. in Statistics, School of Mathematical Sciences, Tianjin, China — Aug 2014 - May 2017

EXPERIENCE

Graduate Researcher — Sep 2022 – Current
Meta Platforms, Inc. & North Carolina State University — Raleigh, NC

- Automated human-decision based reconciliation strategy with robust theoretical guarantee for short-term and long-term budget planning, reducing the time of each planning from weeks to hours for the Meta Infrastructure team
- Optimized the strategy with Bootstrapping and validated it with advanced time series models (ARNN, BSTS, Prophet, SARIMA, TBATS, etc.) against multiple criteria (MAE, RMSE and MAPE)
- Reduced MAE by 10% for short-term forecasting and 70% for long-term forecasting on real-world data

Graduate Research Assistant — Aug 2019 – Current
North Carolina State University — Raleigh, NC

- Dissertation research on enhancing the sample efficiency of time series forecasting models
  - Reduced error by 3% using 95% fewer samples than existing methods when evaluated on stock market data
- Dissertation research on developing an efficient zeroth-order global optimization algorithm
  - Reduced error by 99.99% while using only 2% run time compared to competing methods
- Provided consultancy on tax analytics and automation, specializing in factor analysis and missing data imputation

Research Data Scientist Intern — May 2022 – Aug 2022
Meta Platforms, Inc. — Menlo Park, CA

- Designed and implemented Python API to streamline the sensitivity analysis of capacity planning, integrating time series, ML, backtesting, and SQL, slashing industrial-level analysis development time by up to several weeks.
- Used by Meta's infrastructure foundation team, hardware team, and strategy team, etc.

Graduate Researcher — Jan 2019 - May 2019
National Wildlife Health Center (NWHC) & University of Wisconsin-Madison — Madison, WI

- Collaborated with NWHC's quantitative ecologist to estimate the abundance of white-tailed deer
- Developed advanced mark and recapture models (Lincoln–Petersen / Chapman, MARK, Bayesian inference)

PUBLICATION & PRESENTATIONS

- Zhang, X., & Ghosh, S. (2022). Dual Efficient Forecasting Framework for Time Series Data. *arXiv preprint: 2210.15780.*
- Wan, R., Zhang, X., & Song, R. (2021). Multi-objective model-based reinforcement learning for infectious disease control. In *Proceedings of the 27th ACM SIGKDD Conference* (pp. 1634-1644).
- Li, Q., Yao, K., & Zhang, X. (2020). A change-point detection and clustering method in the recurrent-event context. *Journal of Statistical Computation and Simulation*, *90*(6), 1131-1149.
- Presentation on Multi-Objective Reinforcement Learning for Infectious Disease Control with Application to COVID-19 Spread[J]. ACM Conference on Health, Inference, and Learning, Apr 2021
- Presentation on Abundance Estimation of White-tailed Deer in Shenandoah National Park. National Wildlife Health Center of the United States Geological Survey, Madison, Wisconsin, May 2019

GRANTS & AWARDS

- Meta Platforms, Inc: Funding for Research on Time Series Forecasting Reconciliation — Sep 2022
- George Mason University: Best Narrative - Cherry Blossom Prediction Competition — May 2022
- National Training Program of Innovation and Entrepreneurship (China): First Prize for Undergraduates — May 2017

SKILLS & INTERESTS

- Programming Skills: Python, R, SQL, LaTeX, SAS, JAGS
- Technical Skills: Statistical research & consulting, Machine Learning, Time Series, Prediction, Quantitative modeling, Bayesian analysis, Optimization, Statistical Inference
- Interests: Chinese dance, Reading, Swimming, Volunteer activities