YU XIA

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EDUCATION

09/18 - 05/22 **NEW YORK UNIVERSITY** New York, NY

The Courant Institute of Mathematical Sciences

B.S. in Mathematics and Data Science

- ***GPA:*** 3.854
- ***Honor:*** magna cum laude, Dean's list for 4 years
- ***Coursework:*** Honor Analysis, Probability & Statistics, Numerical Analysis, Partial Differential Equation, Stochastic Calculus, Causal Inference, Machine Learning, Reinforcement Learning

Publications

- A. Mueller, **Y. Xia**, and T. Linzen. 2022. Causal Analysis of Syntactic Agreement Neurons in Multilingual Language Models. In Proceedings of the 26th Conference on Computational Natural Language Learning (CoNLL), pages 95–109. Association for Computational Linguistics.

Preprints

- **Y. Xia**, C. Wang, J. Mabry, G. Cheng. 2024. Advancing Retail Data Science: Comprehensive Evaluation of Synthetic Data. arXiv. https://arxiv.org/abs/2406.13130. Accepted in KDD 2024 GenAI Evaluation Workshop.
- **Y. Xia**, S. Narayanamoorthy, Z. Zhou, J. Mabry. 2024. Simulation-Based Benchmarking of Reinforcement Learning Agents for Personalized Retail Promotions. arXiv. https://arxiv.org/abs/2405.10469
- **Y. Xia**, A. Arian, S. Narayanasmoorthy, J. Mabry. 2023. RetailSynth: Synthetic Data Generation for Retail AI Systems Evaluation. arXiv. https://arxiv.org/abs/2312.14095. Accepted in the poster session of INFORMS Business Analytics Conference 2024.

TALKS

06/23 **Woman in Data Science Worldwide, Upskill Workshop – Probabilistic Programming 101**

- Introduced Numpyro framework with a simplified Bayesian hierarchical linear regression example in an interactive session.

Research Experience

05/24 - Present **UCLA Trustworthy AI Lab** Remote

Research Assistant, Advisor: Guang Cheng

- Propose evaluation framework for generative models in the retail sector from aspects of fidelity, utility, and privacy
- Implement evaluation framework and report on AutoGAN, CTGAN, TabDDPM, etc.
- Paper accepted by KDD 2024 GenAI Evaluation Workshop.

05/21 - 05/22 **NYU STERN SCHOOL OF BUSINESS** New York, NY

Research Assistant, Advisor: Zhengyuan Zhou

- Reviewed literature on the multi-armed bandit problem; proposed N-agents algorithm
- Extended Exp3 Algorithm to N-agents setting, proved the upper regret bound, and ran simulations
- Led development team of 6 for recommendation app, and implemented bandit algorithm
- Operated a testing environment imitating user behavior with the gym, and tested algorithm efficiency

10/21 - 04/22 **NYU CENTER OF DATA SCIENCE** New York, NY

Research Assistant, Advisor: Tal Linzen

- Compared performances of GPT3 and BERT on syntactic agreement mechanisms
- Wrote neuron-intervention experiment scripts, ran experiments for analysis, and graphed results
- Paper accepted by 26th Conference on Computational Natural Language Learning

Industry Experience

09/22 - Present **Bain & Company, Inc.** San Francisco, CA

Machine Learning Engineer Intern / Machine Learning Engineer

- Evaluate client dataset from retail co. for analysis on price elasticity and promotion effects
- Develop and maintain data pipeline for large-scale feature extraction, generation, and update
- Explore and implement demand forecasting models, including factorization machine and Bayesian hierarchical regression, and wrap them into a simulated environment as a retail synthesizer
- Train bandit and reinforcement learning agents in the environment and compare performances

06/22 - 08/22 **JPMORGAN CHASE & CO.** New York, NY

Quantitative Research Intern

- Evaluated Commodities portfolio P&L with full revaluation pricing and sensitivity pricing
- Wrote a script to conduct a pricing accuracy test and constructed a pipeline to flag weak approximates
- Analyzed pricing accuracy in supply, book, and instrument levels; generated standardized reports

Skills

Python, SQL, Git, AWS, Docker, Latex