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
- *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**, 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.

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.

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 to for large scale of feature extraction, generation and update
- Explore and implement demand forecasting models, including factorization machine, 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 script to conduct pricing accuracy test and constructed pipeline to flag weak approximates
- Analyzed pricing accuracy in supply, book, and instrument level; generated standardized reports

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

Research Assistant, Advisor: Zhengyuan Zhou
- Reviewed literatures on 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 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