YICHEN JI

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EDUCATION

University of Toronto Sep 2024 - Present
Ph.D. in Statistics
Advisors: Radu Craiu and Monica Alexander
Awards: Doctoral Recruitment Award

University of Chicago Sep 2022 - Jun 2024
M.S. in Statistics
Thesis Advisors: Dacheng Xiu and Per Mykland
Awards: 25% Merit-based Tuition Scholarship

University of Toronto Sep 2018 - Jun 2022
B.S. (Hons) in Statistics & Applied Mathematics
GPA: 3.87/4.0
Awards: Summer Undergraduate Research Award (SURA), Dean's List (all semesters)

RESEARCH EXPERIENCE

Booth School of Business, University of Chicago Chicago, IL
Supervised by Prof. Dacheng Xiu
Project: Continuous-Time Fama-MacBeth Regressions Sep 2023 - May 2024

- Collected and pre-processed intraday futures data across five asset classes over twenty years.
- Replicated five key risk factors from the literature and constructed their intraday factor portfolios according to the proposed methodology, which provided new empirical evidence beyond the U.S. equity market to futures markets that distinguishes the significance of continuous and jump risk premia.

Thesis Project: Large-Scale Realized Volatility Prediction with Machine Learning Oct 2022 - May 2024

- Systematized an end-to-end ML pipeline for forecasting realized volatility (RV) in U.S. stocks using one-minute intraday data over ten thousand stocks spanning more than two decades.
- Implemented and evaluated the predictive accuracy of fifteen econometric and machine learning models by out-of-sample R^2 and $QLIKE$ objectives.

Learning Behavioral Multi-armed Bandit Policies Toronto, Canada
Supervised by Prof. Ningyuan Chen
Rotman School of Management, University of Toronto Jun 2023 - Sep 2023

- Developed a numerical optimization algorithm for maximum likelihood estimation in Softmax models, and applied the proposed method to lab experiment data.

High-Frequency Jump Detection Chicago, IL
Supervised by Prof. Per Mykland
Department of Statistics, University of Chicago Mar 2023 - Sep 2023

- Conducted an extensive literature review on jump tests, jump regression, pre-averaging, and Lasso variants.
- Performed Monte Carlo comparison between ten price jump tests by evaluating their size and power under various sampling frequencies, volatility persistence, and microstructure noise conditions; revealed significant disparities in jump number and timing identification in identical datasets.

Bayesian Analysis of Normalizing Flows via Importance Sampling Toronto, Canada
Supervised by Prof. Scott Schwartz
Department of Statistical Sciences, University of Toronto May 2022 - Jul 2022

- Proposed a Bayesian learning model employing normalizing flows neural networks based on SWA-Gaussian (SWAG) and likelihood re-weighting for uncertainty quantification.
- Gave a departmental talk on the methodology and experiment results on regression and 2D density estimation.

TEACHING EXPERIENCE

TA, University of Toronto Jan 2025 - Apr 2025, Jan 2026 - Apr 2026
STA414/2104: Statistical Methods for Machine Learning II

TA, University of Toronto Sep 2025 - Dec 2025
STA355: Theory of Statistical Practice

TA, University of Toronto Sep 2024 - Dec 2024
STA237: Probability, Statistics and Data Analysis I

TA, University of Chicago Apr 2024 - Jun 2024
Applications of Hierarchical Linear Models in Longitudinal and Multilevel Research (Graduate)

Grader, University of Chicago Apr 2024 - Jun 2024
Multivariate Statistical Analysis (Graduate)

TA, University of Chicago Booth School of Business Jan 2024 - Mar 2024
Big Data (Undergraduate)

TA, University of Chicago Jan 2024 - Mar 2024
Introduction to Statistical Methods in Economics (Undergraduate)

Grader, University of Chicago Sep 2023 - Dec 2023
Statistical Theory and Methods 1a (Graduate)

Grader, University of Chicago Apr 2023 - Jun 2023
Statistical Models and Methods 1 (Undergraduate)

TA, University of Toronto Sep 2021 - Apr 2022
Calculus with Proofs (Undergraduate)

DEPARTMENTAL SERVICE

Member of Local Organizing Committee, The Fast and Curious II: MCMC in Action Conference, Department of Statistical Sciences, University of Toronto 2025
Dean's Student Advisory Committee, Physical Science Division, University of Chicago 2023
Advisory Chair Search Committee, Department of Statistical Sciences, University of Toronto 2022
UTQAP Cyclical Program Review, Department of Mathematics, University of Toronto 2022

PROFESSIONAL EXPERIENCE

China International Capital Corporation (CICC) Jul 2022 - Sep 2022
Quantitative Research Intern Shanghai, China

China Alliance of Social Value Investment (CASVI) Jun 2021 - Aug 2021
ESG Research Intern Shenzhen, China

COMPUTER SKILLS & OTHERS

Programming Python, R, MATLAB, SQL, Stan, Bash
Python PyTorch, Keras, Sklearn, NumPy, SciPy, Pandas
Interests Photography (UofT Varsity Videographer), Basketball (UChicago CSSA Team Player)