

YICHEN JI

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EDUCATION

University of Toronto Ph.D. in Statistics Advisors: Radu Craiu and Monica Alexander	Sep 2024 - Present
University of Chicago M.S. in Statistics GPA: 3.82/4.0 Thesis Advisors: Dacheng Xiu and Per Mykland	Sep 2022 - Jun 2024
University of Toronto B.S. (Hons) in Statistics & Applied Mathematics GPA: 3.87/4.0 Awards: Summer Undergraduate Research Award of Department of Statistical Sciences, Dean's List (all semesters)	Sep 2018 - Jun 2022

RESEARCH EXPERIENCE

Booth School of Business, University of Chicago <i>Supervised by Prof. Dacheng Xiu</i>	Chicago, IL
Project: High-Frequency Factor Models in the Futures Market	Sep 2023 - Present
<ul style="list-style-type: none">Constructed factor portfolios in the futures market and replicated existing risk factor evidence for more than fifty years across diverse countries and asset classes.Revamped traditional monthly factors into five-minute high-frequency factors, offering new experimental evidence beyond equities and extending the proposed methodology's applicability.	
Project: Realized Volatility Prediction with Machine Learning	Oct 2022 - Sep 2023
<ul style="list-style-type: none">Systematized an end-to-end ML pipeline for forecasting realized volatility (RV) in U.S. stocks, utilizing one-minute intraday data across three decades and over ten thousand stocks.Evaluated and compared 15 OLS and ML-based models using out-of-sample R-squared and QLIKE metrics, highlighting the superior predictive accuracy of neural network models against the HAR benchmark.	
Rotman School of Management, University of Toronto <i>Supervised by Prof. Ningyuan Chen</i>	Toronto, Canada
Project: Learning Behavioral Multi-armed Bandit Policies	Jun 2023 - Present
<ul style="list-style-type: none">Developed a numerical optimization algorithm for maximum likelihood estimation in Softmax models.Proved estimator's consistency and asymptotic normality and applied methodology to lab experiment data.Working on hierarchical Bayesian modeling to capture policy heterogeneity and estimate group-level effects.	
Department of Statistics, University of Chicago <i>Supervised by Prof. Per Mykland</i>	Chicago, IL
Project: High-Frequency Jump Detection	Mar 2023 - Sep 2023
<ul style="list-style-type: none">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.	
Department of Statistical Sciences, University of Toronto <i>Supervised by Prof. Scott Schwartz</i>	Toronto, Canada
Project: Bayesian Analysis of Normalizing Flows via Importance Sampling	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

Teaching Assistant, University of Chicago <i>Applications of Hierarchical Linear Models in Longitudinal and Multilevel Research (Graduate)</i>	Apr 2024 - Jun 2024
Grader, University of Chicago <i>Multivariate Statistical Analysis (Graduate)</i>	Apr 2024 - Jun 2024
Teaching Assistant, University of Chicago Booth School of Business <i>Big Data (Undergraduate)</i>	Jan 2024 - Mar 2024
Teaching Assistant, University of Chicago <i>Introduction to Statistical Methods in Economics (Undergraduate)</i>	Jan 2024 - Mar 2024
Grader, University of Chicago <i>Statistical Theory and Methods 1a (Graduate)</i>	Sep 2023 - Dec 2023
Grader, University of Chicago <i>Statistical Models and Methods 1 (Undergraduate)</i>	Apr 2023 - Jun 2023
Teaching Assistant, University of Toronto <i>Calculus with Proofs (Undergraduate)</i>	Sep 2021 - Apr 2022
Student Mentor, University of Toronto Innis College	Sep 2019 - Apr 2021

DEPARTMENTAL SERVICE

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

INTERNSHIP EXPERIENCE

China International Capital Corporation (CICC) <i>Quantitative Research Intern</i>	Jul 2022 - Sep 2022 Shanghai, China
China Alliance of Social Value Investment (CASVI) <i>ESG Research Intern</i>	Jun 2021 - Aug 2021 Shenzhen, China

COMPUTER SKILLS & OTHERS

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