Justin (Zetian) Li

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Education

Stanford University - Institute for Computational and Mathematical Engineering (ICME) *Stanford, California - United States*

Master of Science in Computational and Mathematical Engineering *September 2024 - 2026 June (expected)*

- **Concentration/Track**: Mathematical & Computational Finance (MCF)

University of Waterloo - Faculty of Mathematics *Waterloo, Ontario - Canada*

Bachelor of Mathematics - Graduated with Dean's List *September 2019 - 2024 (expected)*

- **Majors**: Pure Mathematics, Statistics, Mathematical Finance
- **Minor**: Computer Science
- **Cumulative Average & GPA**: 91 (out of 100) & 3.95 (out of 4.0)
- **Awards/Scholarship**: $20,000 (Mathematics Undergraduate Research Award, University of Waterloo President's Scholarship)
- **Coursework**: Object-Oriented Programming, Algorithm and Data Structures, Machine Learning, Time Series Forecasting (99%), Advanced Regression (91%), Stochastic Processes 1 & 2 (97%), Mathematical Statistics (100%), Neural Network (91%), Financial Mathematics, Computational Statistics (95%), Advanced Optimization (97%), Measure Theory (97%), Functional Analysis, Database (93%)

Skills Set

Programming or Software	Python, C/C++, R, SQL, Bash, Matlab, Scheme, Java, TypeScript, VBA, Linux, Git, Excel
Knowledge or Libraries	Numpy, Pandas, Matplotlib, Scikit-Learn, Market Making, Algorithmic Trading, Concurrent Computing
Spoken Languages	English, Cantonese, Mandarin

Work/Intern Experience

Quantitative Analyst Intern (GAFE) - Interest Rates | Scotiabank

Sept 2023 – Dec 2023 | Toronto, Ontario - Canada

- Assist the development and testing of cutting-edge derivatives pricing models and distributed analytical system, contributing to improved market efficiency and profitability
- Develop quantitative tools by concurrent computing for trading desks, data-driven decision making and trading strategies. Optimized existing systems for concurrency
- Performed in-depth analysis of interest rate swaps and optimized portfolios, aiding in risk management and financial performance improvement.

Quantitative Researcher Intern - Credit Algorithmic Trading | UBS Securities LLC

October 2022 – December 2022 | New York, NY - US

- Leveraged expertise in machine learning, probability theory, and statistics to design and develop algorithmic trading systems that improved market efficiency and profitability.
- Conducted in-depth research into algorithmic trading, automated market making, optimized existing models, and incorporated probabilistic forecasting into trading strategies.
- Contributed to both proprietary and agency trading by implementing algorithms to execute trades and manage risk.
- Applied market impact analysis, market making techniques, risk management principles, and market signal identification to inform algorithmic trading decisions.

Data Scientist Intern | Liberty Mutual

January 2022 – April 2022 | Toronto, Ontario - Canada

- Utilized Python, C++, and SQL to create automated data processing tools for the actuary team, streamlining data updates, premium/loss table generation, and internal file processing.
- Design and build predictive models that met business goals. Contributed to monthly database reconciliation and resolved data discrepancies.

Academic Research Experience

Research Assistant | Area: Bayesian Inference & Dimension Reduction *Supervisor: Liqun Diao*

University of Waterloo *May 2023 – April 2024*

- Collaborating with the researchers and writing the Bayesian Methods and Dimension Reduction parts of the research paper
- Collaborated on the preparation of research reports and academic papers by implementing algorithms, designing data collection protocols, and ensuring data quality.
- Employing state-of-the-art inference techniques, including Markov Chain Monte Carlo (MCMC), Dirichlet Process Mixture Models (DPMM) to estimate model parameters and latent variables.

Research Assistant | Area: Self-Similar Stochastic Process *Supervisor: Shen Yi*

University of Waterloo *Sept 2023 – Dec 2023*

- Engaging in theoretical investigations to prove mathematical theorems in research papers, and explore new approaches to solve challenging problems in probability theory.
- Construct and implement the probabilistic models based on the ideas from research papers, conduct simulations and analysis for probabilistic models.