

Warren Liu

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EDUCATION

The University of Chicago **Chicago, IL**
Master of Science in Financial Mathematics (3.74/4) **Expected December 2025**

- Courses: Solving PDEs with ML, Multivariate Statistics, Stochastic Calculus, Monte Carlo Simulation, Time Series, Fixed Income, Options Pricing and Numerical Methods, Portfolio and Risk Management

University of Toronto **Toronto, Canada**
Honours Bachelor in Science, Computer Science and Economics (3.72/4) **June 2024**

- Courses: Algorithmic Analysis, Machine Learning, Operating Systems, Computer Networking, Econometrics

SKILLS

Development: Python, Java, C, C++, Linux/Unix, React, Spring Boot/DRF, Docker/Kubernetes

Analytics: PyTorch, pandas/polars, numpy, scikit-learn, SQL, Tableau, matplotlib/plotly

Financial Products: Fixed Income, Equities, Futures, Options, Structured Products

EXPERIENCE

Virtus Investment Partners **Chicago, IL**
Quantitative Researcher, University of Chicago Project Lab **March 2025 - May 2025**

- Built and refined multiprocessing data pipeline to fetch 25+ years of Russell 3000 Constituent returns data, and process and clean raw SEC filings to construct language related measures of textual nuance
- Leveraged computed textual measures to construct a factor investing model and conduct statistical analysis on forward returns over next 24-month period

DV Trading LLC **Chicago, IL**
Quantitative Researcher, University of Chicago Project Lab **October 2024 - December 2024**

- Processed weekly packet captures from CFE market-by-order data feed to construct limit order books for back-testing, and multithreaded parser to yield an 80% reduction in processing time to 2-4 seconds
- Designed and back-tested high-frequency sniping arbitrage strategies for profitable spreads, and conducted statistical analysis on various microstructure-level signals on micro-price movements

University of Toronto, Department of Computer Science **Toronto, Canada**
Teaching Assistant - Various Roles **September 2021 - April 2024**

- Led tutorials and office hours, graded and mentored students on software design and development, Java skills, and basic systems programming for CS Coursework in Software Design and System Programming

RBC Capital Markets, Global Equity Linked Products **Toronto, Canada**
Full Stack Software Developer, Co-op **May 2022 - August 2023**

- Designed and modernized a legacy service leveraging Spring Boot, deployed it on in-house cloud, and configured CI/CD and testing pipeline, further integrating app with ELK stack infrastructure to improve logging and uptime
- Released weekly software features supporting structured product order management, and sales and trading statistics visualization, contributing 15-20 features supporting administrative and pricing functions
- Developed ETL pipeline using Python/MS Server to process millions of transactions for responsive and insightful time-series analytics tools for Americas Structured Products issuance data using Tableau

Statistics Canada, International Accounts and Trade Division **Ottawa, Canada**
Junior Analyst, Co-op **May 2021 - August 2021**

- Collected and analyzed eCommerce import and exports of household and industrial goods and developed a robust data collection methodology to enhance quality of collected data
- Cleaned and visualized data to display customized and fast time-series and aggregated analytics for Canadian exports within 12 different commodity classes using R, Python, and PowerBI

ADDITIONAL INFORMATION

Languages: Mandarin (Native Speaker)

Interests: Motorsports, Cooking, Hiking, Triathlon, Financial Markets, Commodities Markets, Blockchain