Yuling Max Chen

——"*Reality is the projection of effort.*"

LinkedIn
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Education History

University of Waterloo
PhD in Statistics *Sep 2022 – Apr 2026*
Research interests: Reinforcement Learning, Stochastic Control, Quantitative Finance

University of Oxford
MSc in Statistical Science with a Distinction. *Oct 2020 - Oct 2021*
Dissertation: Clustered Auto-Encoded Variational Inverse Reinforcement Learning

University of Toronto
BSc with a High Distinction and cumulative GPA 3.95/4.0 *Sep 2016 - Jun 2020*
Double-Majored in Statistical Science and Math Application in Finance and Economics

Summary of Qualifications

- **Quantitative Skills**: Expertise in statistical learning, quantitative analysis, financial modeling, portfolio optimization, and risk modeling; experienced in data-driven decision-making and financial forecasting.
- **Mathematical Skills**: Solid foundation in stochastic calculus, partial differential equation, numerical methods, Monte Carlo simulation methods, Bayesian modeling and optimization.
- **Technical Skills**: Proficient in Python (PyTorch, Scikit-Learn, Scipy), R and LaTeX; experienced with MATLAB, Tableau, version control (Git, GitHub) and run code on remote GPU clusters using job scheduler (Slurm); skilled in Microsoft Office Suite (Excel, Word, PowerPoint)
- **Soft Skills**: Effective communicator with strong presentation and collaboration abilities; proven track record in time management and teamwork in fast-paced environments.

Selected Working Experience

DRW Trading Group *Summer 2025*
AI Research Intern *Montreal, Canada*

- Researched state-of-the-art machine learning techniques for feature engineering and alpha construction, drawing from academic literature and buy-side industry reports.
- Replicated and implemented prediction models and statistical metrics, refining them to suit specific market sectors or asset classes and improving their backtesting performances.
- Analyzed large-scale financial dataset and high dimensional time series, inferred the time- and frequency-domain patterns and latent market regimes.
- Developed feature blocks from raw financial datasets and improved the model's out-of-sample predictive accuracy by 10%.

Hong Kong Applied Science and Technology Research Institute *Summer 2024*
Machine Learning Researcher Intern and Team Lead *Hong Kong, China*

- Reviewed, summarized and presented the literature of Time Series Anomaly Detection (TSAD) to the team and supervisors, with replication of some existing TSAD models using Python (PyTorch & TensorFlow).
- Project # 1: Developed and fine-tuned a LSTM-based Variational Auto-Encoder as an anomaly detector for overdue elevators in Hong Kong residential buildings, successfully alerting 100% defective signals with low false alarms.
- Project # 2: Configured a LSTM-based Multi-head Attention model to forecast the maximum electricity demand during subway operation cycles. Fine-tuned the model and reduced the predictive error by 77%.
- Led the Artificial Intelligence and Trust Technology summer intern team, fostering collaboration across departments and ensuring timely project delivery through effective communication.

Research Experience

Mean-Variance Portfolio Optimization with Regime-Switching Market *2023-2024*

A Reinforcement Learning model to construct portfolio for optimal return and minimal volatility.

- Applied Hidden Markov Model and filtering method to identify bullish and bearish market regimes, and labeled the financial time series, matching over 90% of the trend.
- Derived an explicit analytical solution following the Dynamic Programming Principle.
- Proposed a Reinforcement Learning Actor-Critic algorithm that boosts accurate convergence of model parameters towards their "grounding truths" in a simulation study.
- Back-tested the model on real market data and achieved high Sharpe Ratio (> 5).

Financial Time Series Prediction *2022-2023*

An assemble of GARCH-type model and deep RNNs for enhanced predictive accuracy.

- Engineered market sentiment features from market-related Reddit postings via Large Language Models (such as ResNet and XLNet) and Attention models (such as Transformer, BERT and Autoformer).
- Extracted time-series features from GARCH-type models via time series analysis techniques.
- Improved prediction accuracy by passing the combined features to the deep RNN layers, reducing the prediction error by 15%.

Honors & Awards

Ontario Graduate Scholarship	2024-2026
Canadian Statistical Student Conference Oral Presentation Award	May 2023
University of Waterloo Doctoral Entrance Award	2022–2023
Passed CFA level 1 exam, with top 10% performance globally.	Jun 2019
In-Course Scholarship of St.Michael's College	2017-2020
Passed FRM level 1 exam.	Nov 2018
University of Toronto Dean's List Scholar	2017-2020