Mingyi (Iris) Jiang

QUANTITATIVE FINANCE · DATA SCIENCE

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Skills

Programming	Proficient in R, MATLAB, SQL, Excel/VBA and SAS (Certified Advanced Programmer for SAS 9)
	Experience in Python, C, Scheme, C++, JAVA and Unix/Linux
Financial Engineering	Option Pricing Modelling, Monte Carlo Simulation, Time Series Analysis, Stochastic Process
Data Science	Exploratory Data Analysis, Data Visualization, Principal Component Analysis, Regression Modelling
Markup	TEX, HTML, Markdown
Languages	English, Mandarin

Education

Candidate for Master of Quantitative Finance *Sept. 2022 - Exp Dec. 2023*

UNIVERSITY OF WATERLOO *Waterloo, Canada*

Bachelor of Mathematics *Sept. 2017 - Apr. 2022*

UNIVERSITY OF WATERLOO *Waterloo, Canada*

- Majors in Mathematical Finance and Statistics
- Minors in Pure Mathematics and Combinatorics & Optimization

Research Experience

Undergraduate Research Assistant *May. 2020 - Dec. 2020*

UNIVERSITY OF WATERLOO, SUPERVISED BY PROF. BEN FENG *Waterloo, Canada*

- In-depth study on efficient nested simulation for pricing exotic options and variable annuities
- Completed the theoretical properties and proofs for kernel-based Monte Carlo method for American option pricing

Undergraduate Research Assistant *Jan. 2020 - Apr. 2020*

UNIVERSITY OF WATERLOO, SUPERVISED BY PROF. BEN FENG *Waterloo, Canada*

- In-depth study on pricing and hedging of large portfolios of variable annuities
- Analyzed, updated and maintained the R package vamc (A Monte Carlo Valuation Framework for Variable Annuities)
- Working paper: ”vamc: An R Package for Variable Annuity Valuation by Monte Carlo Simulation”

Working Experience

Risk Modeling Analyst *May. 2022 - Present*

TD BANK GROUP *Toronto, Canada*

- Comparison study in the cause of change in probability of default during COVID period
- Developed machine learning models to analyze the change in probability of default using random forest and XGBoost

Execution Trader *Sep. 2021 - Dec. 2021*

ONESIXTYTWO DIGITAL CAPITAL *Toronto, Canada*

- Designed back tests for the Market Neutral Funding Rate strategy using object oriented programming
- Reformatted the code for exposure tables, reducing computation time from 1 minute and a half to 10 sec per table
- In-depth analysis on possible crypto trading opportunities

Risk Modeling Analyst *May. 2021 - Aug. 2021*

TD BANK GROUP *Toronto, Canada*

- Developed statistical models to forecast probability of default, exposure at default, loss given default, etc. using regression analysis
- Conducted robustness tests, sensitivity tests to validate existing models using SAS, SQL and VBA

Quantitative Research
Jan. 2020 - Apr. 2020

OneSixtyTwo Capital — *Toronto, Canada*

- Developed a portfolio optimization strategy reducing $\sim$ 30% portfolio dimension while maintaining the tracking error below 10^{-7}, reducing $\sim$25% execution cost
- Designed various portfolio analysis and construction functions using R (block bootstrapping, principal component analysis, etc)
- Conducted exploratory data analysis visualizing and reporting portfolio performance
- Built up R packages for report templates (portfolio analysis, factor exposure analysis, etc.)

Financial Engineering
Jan. 2019 - Apr. 2019

IBM Canada Lmt. — *Toronto, Canada*

- Significantly improved regression test efficiency by analyzing, merging and removing 300+ test cases under Linux environment
- Validated financial model functions according to clients' request and created validation spreadsheets and benchmarks for RiskWatch model verification and regression test using Excel/VBA
- Generated formal financial specs explaining the model validation process
- Developed strong problem-solving abilities by debugging and polishing existing model validation code
- Created a 14-page formal financial work report with an in-depth study on interest rate risk scenario analysis in asset-liability management

Financial Analyst Assistant
May. 2018 - Aug. 2018

Industrial and Commercial Bank of China — *Nanjing, China*

- Aggregated large datasets (40,000+ pieces) using Excel and Pivot Tables to meet business requirements
- Generated quarterly Financial Management and Investment Risk Monitoring Analysis reports and Comprehensive Risk Management reports
- Regraded 180 clients of ICBC in the internal grading management system based on their credit
- Outreached and successfully invited the 5 biggest Chinese asset management companies' managers to ICBC's non-performing assets bidding conferences

Activities

Bayesian Risk Management Case Competition - Second Place
Oct. 2019

University of Waterloo — *Waterloo, Canada*

- Conducted in-depth analysis and prediction on the company's profitability using discounted cash flow model and linear regression model
- Collaborated with 3 other students and delivered a 10-minute presentation, achieving the second place

BDO New Venture Competition - Semi-Finalist
Sept. 2017 - Apr. 2018

BDO Canada — *Waterloo, Canada*

- Analyzed business environment with business models (PEST, Poter's Five Forces) to build up a new business called LocFresh
- Conducted market research and investigated potential customers through online surveys and in-person interviews
- Collaborated with 4 other students and created a 15-page formal business report presenting findings on LocFresh's potential market, competitiveness, revenue model, etc.
- Demonstrated excellent public speaking skills, delivering a 10-minute presentation, reaching semi-finals (top 45 among 250 groups)

Awards

2021	University of Waterloo President's Research Award	*Waterloo, Canada*
2020	Mitacs Research Training Award	*Waterloo, Canada*
2020	University of Waterloo President's Research Award	*Waterloo, Canada*
2017	University of Waterloo President's Scholarship of Distinction	*Waterloo, Canada*

Interests

- Go, Robotics, Model Airplanes, Basketball, Guitar and Old Movies
- Jiangsu Provincial Teenager GO Contest - First Place
- Jiangsu Provincial WER (World Educational Robot) Contest - First Price
- Jiangsu Provincial Wireless Model Airplanes Race - First Price