Xianbin Shawn Xu
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EDUCATION

The University of Chicago — Chicago, IL
M.S. in Financial Mathematics, 3.8/4.0 — December 2024
- Courses: Stochastic Calculus, Option Pricing, Portfolio and Risk Management

B.S. in Computational and Applied Mathematics, B.A. in Economics, 3.7/4.0 — June 2023
- Courses: Markov Chain, Differential Equations, Microeconometrics, Fundamentals of Deep Learning.

SKILLS

Programming: R (Proficient), Python (Proficient), MySQL (Intermediate)
Mathematical Knowledge: Statistical Inferences, Time-Series Analysis, Brownian Motions, Econometrics.
Professional Knowledge: Fixed Income Asset, Interest Rate Risk Management, Futures and Options.
Languages: Mandarin Chinese (native language)

PROFESSIONAL EXPERIENCE

Federal Home Loan Bank of Indianapolis — Indianapolis, IN
Market Risk Intern — June 2024
- Streamlined the processing of historical treasury data with Python, improving data accuracy and efficiency.
- Contributed to monthly risk reporting, gaining experience in fixed-income interest rate risk management.
- Collaborated in evaluating duration matching, interest rate risk, and prepayment risk in support of the Director of Market Risk & Reporting.
- Was offered an autumn internship of same position after change of schedule due to visa interview.

CloudQuant — Chicago, IL
Quantitative Researcher—Project Lab, University of Chicago — January 2024 – April 2024
- Provided trading signals using alternative dataset from CloudQuant Liberator API.
- Utilized machine learning methods and statistical inference to identify potential trading opportunities.
- Orchestrated intern team in developing backtesting script with Python.
- Conducted various stress tests and risk parameters to exercise risk control.

Minghong Technology — Shanghai, China
Quantitative Research Intern — July 2023 – August 2023
- Optimized order execution algorithm for position-building of traders in Chinese commodity market.
- Increased implied volatility gain when selling by 0.25% on average comparing with baseline.
- Spearheaded as lead intern for development of backtesting script integrated into the company's pipeline.
- Explored possible order execution strategies with Markov Chain analysis and ARIMA model.

RESEARCH EXPERIENCE

University of Chicago, Becker Friedman Institute for Economics — Chicago, IL
Research Assistant — June 2022 – September 2022
- Searched, cleaned, and processed CDC datasets regarding dental health in America, using R, with over 400,000 annual entries over 20 years.
- Launched and developed economic research project by conducting various visualization, multi-regression, and mlogit regression analyses in R.

University of Chicago, Booth School of Business — Chicago, IL
Research Assistant — June 2021 – March 2022
- Developed algorithms to identify points of congestion using Open Street Map Data and R in order to evaluate savings in transportation cost after tax reform in India.
- Processed and analyzed spatial data with over 400,000 entries.
- Utilized R for map visualization of data analytics.

PROJECTS

Quantitative Trading System, Student Developer (Class Project) — February 2024 – March 2024
- Developed Python trading workflow using historical WRDS data and real-time Quandl data.
- Implemented and back-tested combined trading strategy using put/call implied volatility imbalance, IV skewness, and option-to-stock volume ratio.

Victoria 3 Game Modification Program, Lead Developer — October 2022 – Present
- Expanded beyond base-game in gameplay, aesthetics, balance, and contents in a systematic coding project.
- Used Python re Package and AI tools to automate updates for more than 30 code scripts and files.
- Maintaining a community of 5,000 subscribers with regular updates adding new feature every few months.