Liyao (Lydia) Li

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EDUCATION

The University of Chicago, Chicago, IL *Master of Science in Financial Mathematics*   **Expected December 2024**

• Courses: Option Pricing, Numerical Methods, Mathematical Foundation of ML, Stochastic Calculus, ML in Finance

Singapore Management University, Singapore *Master of IT in Business*   **February 2017**

Chongqing University, China *Bachelor of Science in Engineer*   **June 2015**

EXPERIENCE

Geneva Trading, Quant Analyst Intern, Chicago, IL   **June 2024 - August 2024**

Developed a Real-Time VaR Estimation Model for Futures Outrights and Calendar Spreads:

- Gathered futures data from an internal data center and constructed continuous and stationary log returns by rolling future outrights and spreads of different maturities.
- Conducted time series analysis on microstructures of return data, including ARCH test and seasonality analysis, to identify suitable candidate models.
- Utilized Python to implement various VaR models, such as parametric, historical, RiskMetrics, Corner-Fisher, GARCH(1,1), and Expected Shortfall. Employed C++ for Monte Carlo simulations.
- Conducted performance analysis and backtesting, including in-sample and out-of-sample hit ratio analysis and Variance Prediction Capability (VPC) analysis.

Flow State Investment - Project Lab, Quant Research Intern, Chicago, IL   **April 2024 - June 2024**

Time Series Momentum Trading Strategy Project:

- Developed three trading strategies: Vanilla Time Series Momentum (TSM), GARCH-adjusted TSM, and Tangency Portfolio-adjusted TSM.
- Implemented a backtesting framework to evaluate strategy performance from 2020 to 2024. Analyzed key performance metrics including cumulative returns, volatility, and rolling Sharpe ratios.
- Conducted comparative analysis with a benchmark buy-and-hold strategy. Construct benchmarks based on factor models. Demonstrated the impact of market regime shift on the performance of different strategies.

China Universal Asset Management, Quant Researcher, Shanghai, China   **July 2018 – July 2023**

- Led a cross-disciplinary team to implement multi-factor model, responsible for model analysis and implementation, performing single and multi-factor tests based on Fama-MacBeth regression to verify interpretability and significance level of factors.
- Collaborate with the investment team to find effective Alpha factors based on RNN algorithm on tick-by-tick limit order book data.
- Conduct volatility and covariance analysis and make market predictions and risk predictions.
- Coordinated with the data team in building automation pipelines for market estimators, building internal factor mart.
- Perform return attribution analysis for different asset classes and report to the board of investments.

Industrial Bank Co., Ltd., Quant Analyst, Shanghai, China   **February 2017 – July 2018**

- Participated in a project of predicting and simulating probability of default (PD) for bank loans.
- Collaborate with the tech team to implement ETL process, mapping terabytes of data into output data base.

SKILLS

- Python, C++, Q, SQL, CUDA, Linux, Unix, Git, Hadoop, Spark, MangoDB, TensorFlow, PyTorch