Zhuoyang Luo

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EDUCATION

The University of Chicago, Physical Science Division — Chicago, IL

Master of Science in Financial Mathematics | GPA: 3.85/4.00 — Sep 2023 - Dec 2024

- **Coursework:** Stochastic Processes, Option Pricing, Portfolio Theory and Risk Management, Numerical Methods, Big Data

Shanghai University of Finance and Economics (SUFE), School of Economics — Shanghai, China

Bachelor of Economics in Quantitative Economics | GPA: 3.73/4.00 (Top 5%), Major GPA: 3.92/4.00 — Sep 2019 - Jun 2023

- **Coursework:** Probability Theory and Mathematical Statistics, C++, Advanced Algebra, Game Theory, Python
- **Honors & Awards:** Honorary Graduate of Shanghai City(Top 0.01%; 2023), Tyrone Bank Scholarship (Top 1%; 2020-2021), SUFE 1st People Scholarship (Ranked 1st in major; 2020-2021), SUFE Outstanding Student (2020-2021)

Columbia University in the City of New York, Columbia College — New York, NY

Visiting Student | GPA: 3.91/4.0 — Sep 2021 - Jun 2022

Coursework: Ordinary Differential Equations, Global Economics, Data Science in Finance, Time Series Analysis

SKILLS

Coding: Python (Pandas, Numpy, Matplotlib, Scipy, Sklearn), SQL, Linux, Hadoop, C++, R, Spark, Latex

Mathematics: Advanced Calculus, Algebra, Statistics, Mathematical Modeling, Stochastic Process, PCA

EXPERIENCE

Arb Trading Group — Chicago, IL

Quantitative Research Intern, Quantitative Research Department — Jun 2024 - Now

- Developed comprehensive back-testing infrastructure in Python using OOP, enabling robust tracking of daily trade records, P&L, and the calculation of key performance metrics such as drawdowns, upside/downside Beta, and idiosyncratic volatility
- Designed a Directional High-Minus-Low trading strategy with over 50 stocks using Probit-model-based probability scores as ranking index, incorporating multiple technical and momentum factors. Achieved a 65% win rate and a Sharpe ratio of 2.1
- Created a random forest model to enhance trading signals of existing systems using historical data. Incorporated factors such as VIX, SPX, and SPGSCI index changes, achieving a 37% reduction in yearly drawdown and a 25% improvement in return

Huatai Securities Co., LTD — Shanghai, China

Quantitative Research Intern, Quantitative Investment Department — Sep 2022 - Jan 2023

- Established a SMA strategic trading model by examining market trend fluctuations to capture momentum in the Chinese A-share market and performed 8-years of backtests with the index of CSI 300 (win rate of 63% and maximum drawdown of 12.6%)
- Implemented pair-trading model on stocks with best cointegration test performance and correlation index in the Chinese liquor industry; designed trading strategy based on z-score computed from the pairs' spread (unleveraged annual return 32%)

China Securities Co., LTD — Shenzhen, China

Quantitative Research Intern, Derivatives Trading Department — Jun 2022 - Sep 2022

- Constructed the technical factors to forecast daily futures returns using LASSO; reviewed models using K-fold cross-validation with different market states (average RMSE 0.11) along with the prices of 15 key commodity futures from 2010 to 2022
- Implemented a Binomial Tree model enhanced by Gradient Descent for option pricing on targeted commodities; Identified abnormal option values by comparing theoretical and market prices; documented findings using Python

Ping An Securities LTD — Shenzhen, China

Equity Research Intern — Jun 2020 - Sep 2020

- Conducted directional retrieval of text data on Wind database based on similarity matrix calculated from text frequency and keywords; summarized critical information as text reports (C++)
- Co-authored an in-depth research report on China's leading computer enterprises' financial status, history, main business distribution and implemented a DCF model(Excel) to predict the companies' core financial indicators including P/E and P/B

RESEARCH

Research and Application of Natural Language Processing in Finance — Shanghai, China

Advisor: Tianshuo Shi, Ph.D.Student in Management, Harvard University — Jan 2021 - Mar 2021

- Developed a quantitative comparison model using partial center correlation coefficients and an SVR algorithm on US market data (2015-2021) in Python. Created a multivariate linear stock return prediction model using predictors having over 70% business correlation and established backtest on portfolios based on predicted returns, achieving a Sharpe ratio of 1.7