ZHIHAO SHAN

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EDUCATION

COLUMBIA BUSINESS SCHOOL GPA: 10.0/10.0 New York, NY
MS, Financial Economics, May 2026 2024 - 2026
Coursework (All at PhD Level): Econometrics and Statistical Inference, Artificial Intelligence (DL & RL), Computing for Business Research, Finance Theory I, Continuous Time Finance, Advanced Derivatives, Financial Econometrics: Time Series, Panel Data, Big Data in Finance, Computational Statistics, Quantitative Investment Process.

NEW YORK UNIVERSITY SHANGHAI GPA: 3.87/4.0 Shanghai, China
BS, Data Science, May 2024 2020 - 2024
Secondary Major: Business & Finance *Honors:* Business and Economics Honors Program
Relevant Coursework: Linear Algebra, Multivariate Calculus, Probability and Statistics, ODE, Stochastic Processes, Optimization, Game Theory, Machine Learning, Reinforcement Learning, Data Structures, Databases, Volatility Modeling, Futures and Options.
Study Abroad: New York University Courant Institute of Mathematical Sciences & Stern School of Business (Sep.2022-May.2023)

PROFESSIONAL EXPERIENCE

HUATAI SECURITIES Shanghai, China
Top 3 Securities Company in China Jun. - Aug.2023
Quantitative Researcher Intern, Proprietary Trading Department

- Developed 1-min frequency trend-following factors for stock-index futures using price-volume data, 5 selected into factor pool
- Constructed factors for SSE 50 futures leveraging implied volatility and order flow imbalance from ETF options and backtest
- Utilized change point detection via Gaussian Process to identify intraday market regime change and adjust strats aggressiveness, add change point detection as additional feature to LSTM and collaborate with colleagues to prove effectiveness in backtesting
- Enhanced Lasso Regression model for index futures price change prediction through non-negative constraints on coefficients using linear factors, profitability performance beat baseline model in trading simulations and selected for real trading
- Implemented CNN model to predict stock index futures price change based on Time Price Opportunity graph

SOOCHOW SECURITIES Shanghai, China
Top 10 Securities Company Research Institute in China Jul. - Oct.2022
Financial Engineering Analyst Intern, Research Institute

- Streamlined stock-selection back testing model by vectorizing loops in NumPy and boost running time by 30%
- Conducted research on stock-selection model based on intraday and overnight momentum and reach 20% long-short annual return before neutralization and 10% long-short annual return after neutralization on out-sample performance tests
- Optimized the intraday and overnight momentum portfolio for long-only constraint under mean-variance criterion via cvxpy
- Designed Value at Risk predicting model using fundamental indicators to estimate VaR in various periods

SENSETIME Shanghai, China
Hong Kong-listed Tech Company focusing on Artificial Intelligence Jun. - Aug.2021
Software Developer Intern, IT Department

- Collaborated with other departments to test new platforms with KALI (Linux virtual machine for web-security test)
- Ameliorated Siem Platform to visualize daily web attacks and vulnerabilities (Python, SQL, HTML)

OTHER EXPERIENCE

Business and Economics Honors Thesis: Deep Reinforcement Learning for Hedging Jan. - May.2024

- Researched on optimizing hedging strategies under trading costs using Deep Reinforcement Learning algorithms
- Trained Soft Actor-Critic agents to maximize mean-variance reward under stochastic volatility market model
- Beat practitioner’s delta and other Deep Reinforcement Learning algorithms (DDPG) in hedging performance

Database Project: Flight ticket reservations system Oct. - Dec.2023

- Developed online flight ticket reservation system using Python (Flask), CSS, HTML and MySQL database
- Built the system from scratch with 4000+ lines of code and dynamically visualize order records

ADDITIONAL INFORMATION

Technical Skills: Python (NumPy, Pandas, PyTorch, Optuna,Talib, gplearn, etc.), R (tidyverse, forecast, rugarch, rmgarch), SQL
Certifications: C++ Programming for Financial Engineering Certificate from Baruch College MFE
Languages: English (fluent), Chinese (native)
Interests: poker, weightlifting, bassoon (university orchestra), soccer (university team), bartending