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, Finance Theory I, Computing for Business Research, Advanced Derivatives, Financial Econometrics: Time Series, Empirical Asset Pricing, Big Data in Finance, Computational Statistics (Deterministic and Stochastics optimization, Monte Carlo Methods, Graphical Models).

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 factors on stock index futures, 15-min factors on ferrous futures, 5 selected into factor database
- Implemented change point detection based on Gaussian Process and to improve LSTM model performance on predicting stock index futures price change, cooperate with colleagues to prove effectiveness of change point detection
- Enhanced Lasso 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
- Built 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

- 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
- Reconstructed 20-day reversal factor using industry and style factors and boost Sharpe of long-short portfolio by 20%+
- Designed Value at Risk predicting model using fundamental indicators to estimate VaR in various periods
- Streamlined stock-selection back-testing model by vectorizing loops in NumPy and boost running time by 30%

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

- Research 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

Reinforcement Learning Research Project: Elevator Group Control Optimization Oct. - Dec.2023

- Led research team on improving elevator group control system performance using deep reinforcement learning
- Built elevator agent and environment and employ A2C and PPO algorithm to optimize agent action
- Surpassed performance of baseline PPO algorithm by twisting Deep Q-Network for multi-discrete action space

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 Program
Languages: English (fluent), Chinese (native)
Interests: poker, weightlifting, bassoon (university orchestra), soccer (university team), bartending