

BOYUAN SU

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EDUCATION

- Expected 12/26 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance
 - **Expected Coursework:** Machine learning and computational statistics, stochastic calculus & dynamic asset pricing, computing in finance, risk and portfolio management
- 09/22 – 06/25 **UNIVERSITY COLLEGE LONDON** London, UK
B.S. in Mathematics
 - **Coursework:** Probability and statistics, advanced probability, machine learning and artificial intelligence, measure theory, numerical methods, stochastic processes
 - Honors: top 5% out of approximately 300 students

EXPERIENCE

- 07/24 - 08/24 **SHENWAN HONGYUAN SECURITIES** Beijing, China
Quantitative Analyst Intern (Python, SQL)
 - Used Requests/bs4 to scrape 10 years' barrier option price/cost data; visualized via Matplotlib; analyzed price behavior near barrier levels; discovered volatility spike on approach
 - Used binary tree, finite difference method and Monte Carlo simulation to price exotic options; Compared simulation outputs with market quotes; found max 5% differences
 - Designed trading strategy using pool of technical indicators; applied feature importance and Shapley Value to select top indicators (momentum, RSI, Bias Ratio)
 - Predicted daily barrier option returns via regularized kernel and LSTM; directional strategy achieved Sharpe 1.5 ex costs in backtesting
- 07/23 - 08/23 **HUAXI SECURITIES** Shanghai, China
Quantitative Analyst Intern (Python)
 - Decomposed individual stock risks via Barra risk factor analysis in Chinese A-Share market; fitted regression coefficients on liquidity, volatility, earnings growth, and momentum factors
 - Engineered government policy factor; boosted model's R-squared by 20%
 - Studied stationarity of stock prices and returns; used Augmented Dickey-Fuller test for hypothesis testing; spotted non-stationarity in prices and stationarity in return of 90% symbols
 - Selected impactful features from existing pool; applied hard filters of IC 0.05
 - Used PCA on some features to condense set; mitigated RNN models' curse of dimensionality

PROJECTS

- 06/25 - 07/25 **Cross Section Stock Selection Strategy (Python)** New York, NY
 - Constructed more than 100 alpha signals for US equities based on price and volume inputs; achieved low collinearity between features
 - Built backtesting framework and factor management system; adopted vectorized computation and multiprocessing to accelerate factor generation and backtesting process by more than 3.5x
 - Combined alpha signals through deep learning models including MLP, ResNet, LSTM, and Transformer; achieved out-of-sample Sharpe of 1.5
- 06/23 - 07/23 **CALIFORNIA INSTITUTE OF TECHNOLOGY** Pasadena, CA
Research on Option Pricing and Hedging Strategies (Python)
 - Collected recent 8 years of FTSE 100 index data; used Pandas to build dataframes for index prices and rolling volatility
 - Preprocessed abnormal values via heatmap and outlier analysis; produced cleaned dataset for pricing research
 - Led group of 4 to analyze volatility smile and interest rate processes' impact on prices; used GARCH models to fit implied volatility
 - Adopted Vasicek model to convert constant rates into stochastic rates; bridged gap between fitted prices and live quotes by 17 %

COMPUTATIONAL SKILLS / OTHER

Programming Languages: Python (NumPy, Pandas, Matplotlib, Seaborn, sk-learn), SQL, Java, C++

Languages: English (fluent), Mandarin (native)