Sirui Zhang

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EDUCATION

Cornell University, College of Engineering
Master of Engineering in Financial Engineering, **GPA: 3.5**   **Expected Dec 2025**

University of Illinois at Urbana-Champaign, College of Liberal Arts and Sciences
Bachelor of Science in Mathematics and Economics, Minor in Computer Science, **GPA: 3.84**   **May 2024**

Related Coursework: Probability and Statistics, Linear Programming, Econometrics, Data Structures, Database, Stochastic Calculus, Fixed Income Securities and Interest Rate Option, Machine Learning, Quantitative Method for Risk Management, Big Data Technology, Monte Carlo Simulation, Optimization in Finance, Portfolio Management, Numerical Method, Linear Algebra

SKILLS

Technical: Python(pandas, numpy, scikit-learn, tensorflow, matplotlib), R, SQL, C++, Java, Matlab, Tableau, Bloomberg
Certificate: Financial Data Science Certificate *(In Progress)*

EXPERIENCE

Quantitative Financial Summer Analyst*, BH Asset Management LLC,* New York, NY   **May to Aug 2024**
- Developed stock trend predictions using a Random Forest Classifier for MSCI EAFE based on technical indicators, achieving 78% accuracy in monthly forecasts, with 0.72 F1 score, validated with fundamental data.
- Designed Python classes for Absolute, Relative, and Replacement shock on the volatility surface for stress testing.
- Automated the integration of market value and transaction data using VBA; generated SQL queries for portfolio holdings and used Bloomberg PORT for performance analysis, improving efficiency by 30%.
- Analyzed 20+ energy industry stocks, conducted factor analysis using PCA, and applied Z-scores to evaluate ESG scores; performed scenario testing on the impact of the 2024 election.

Quantitative Research Internship*, BigQuant,* Chengdu, China   **Aug to Dec 2023**
- Optimized parameters of a Double-Moving Average strategy using Particle Swarm Optimization, achieving a 10.31% annual return in backtesting, outperforming the average of 2.11%.
- Designed an automated grid trading strategy in Python and implemented an LSTM-based regression model to predict price trends, customizing grid width and trade quantity to improve profits.
- Created a sentiment factor using financial news analyzed by a Transformer (BERT) model for index return prediction, achieving an IC of 0.13.
- Built a parallelized algorithm to test 50+ indicators; conducted research on correlation, IC, and return metrics for robust performance evaluation; visualized results using Matplotlib.

Quantitative Risk Summer Analyst*, China Construction Bank,* Chengdu, China   **May to Aug 2023**
- Developed a Python-based AHP model framework to assess credit risk in electrical energy projects, considering internal rate of return and payback period, and new factors including wind speed and land flatness.
- Built a default probability prediction pipeline using Logistic Regression with LASSO for feature selection and XGBoost for enhanced performance.
- Calibrated implied volatility using the Newton-Raphson method and developed Python classes for bond and option pricing, incorporating Black-Scholes and Monte Carlo methods.
- Constructed modules for calculating Greeks and VaR metrics; visualized VaR incident concentrations for risk insight.

PROJECTS & RESEARCH

LLMs in Bond Pricing: Collaborated with a professor to price bonds using the Merton model and incorporated LLMs to process real-time issuer data, comparing pricing accuracy with traditional methods.
Portfolio Optimization Project: Researched on Mean-Variance Optimization with Machine Learning-Based Return Prediction and Multi-Factor Risk Indicators including CVaR, sentimental factor, and Hidden Markov Model (HMM) Volatility Levels.
Faces Consulting: Advised non-technical clients on UI/UX design and strategies to boost app engagement, retention, and user base. Conducted data analysis to assess and improve app performance.

LEADERSHIP & INTERESTS

Vice President of Chinese Engineering Student Association (2021-2022); Guitar; Hiking; Camping; Fishing; Swimming