Tong Huang

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Education

University of Washington, Seattle, WA
Master of Science in Computational Finance and Risk Management — Sep 2022 – Mar 2024

University of Washington, Seattle, WA
Bachelor of Science in Economics; Minor: Computational Finance — Sep 2018 – Jun 2022
Dean's List 2021-2022

Financial Analysis and Modeling Skills

- Option pricing and hedging: Black-Scholes model, binomial trees, Monte Carlo simulations.
- Portfolio Management: Trading simulation, VaR Calculation, back testing, Mean-Variance Optimization
- Time Series for financial markets

Data Analysis Skills

- Data lifecycle management: Collection, cleaning, visualization, dashboard development

Computer Programming Skills, Industry Tools

- Proficient with: Python, R, Excel, SQL

Experience

Research Assistant — Jun 2023 – Oct 2023
University of Washington, Seattle, WA

- Investigated the profitability of statistical arbitrage trading strategy, identifying a **15%** ROI through optimized pair trading.
- Conducted initial research to identify suitable pairs for mean reversion strategy, focusing on distance, correlation, and cointegration method.
- Applied maximum likelihood estimation to fit the **Ornstein-Uhlenbeck (OU**) process to select pairs, achieving optimal pair ratios.
- Employed a **mean reversion budgeting allocation method** for portfolio optimization, yielding better Sharpe performance than the traditional mean-variance approach by **30%**.
- Successfully deployed the strategy in a live trading environment, continuously monitoring performance and risk.

Projects

Multi-Asset Portfolio Allocation Strategy for Murray Fund, Seattle, WA — Mar 2023 – Jun 2023

- Integrated historical returns and market forecasts, to determine the benchmark set by Fund Evaluators.
- Developed and implemented an optimization model that minimized tracking errors and ensure optimal asset allocations, achieving targeted returns with of 50-60%.
- Recommended adjustments in security selection for asset classes, enhancing the firm's performance to surpass **60**% of the peer funds based on historical insights.
- Actively ensured the final portfolio strategy met all qualifications.

Transaction Fraud Detection, Seattle, WA — Mar 2023 – Jun 2023

- Prepared transaction data from Kaggle for model implementation including transaction amount, location, date, and time.
- Developed and tuned **Random Forest, SVM, and DNN** models to detect fraud transactions with testing ROC AUC score of **0.99**.
- Documented and analyzed the model performance, focusing on key metrics like precision and recall, and providing insights for future model enhancements.

Market and Credit Risk Analysis, Seattle, WA — Jan 2023 - Mar 2023

- Built and maintained a Monte Carlo simulation-based risk model to forecast future Value at Risk (Var) and Expected Shortfall (ES) for bond portfolios.
- Performed detailed quantitative analysis for portfolio performance under fluctuating credit spreads and recovery rate, generating risk profiles that optimized trading strategies across multiple maturities.
- Successfully presented a detailed risk analysis report, identifying critical risk factors affecting bond valuations.

Certifications

- FinTech Bootcamp, University of Washington — Jun 2021 - Nov 2021
    - Exploring topics in: Data Analysis and Machine Learning
        - Used python to analyze stock performance for stock acquisition in a consumer portfolio.