Jia Si

Phone: 617-803-5339 | Email: jiasi@brandeis.edu | LinkedIn: https://www.linkedin.com/in/jia-si228

EDUCATION

Brandeis University Waltham, MA
Master of Science in Business Analytics & Master of Science in Finance, GPA: 3.9/4.0 09/2022 - 12/2024
Activities: Teaching Assistant of Computer Simulations and Risk Assessment, Options and Derivatives; Orientation Leader

Boston University Boston, MA
Master of Laws in Banking and Financial Law; GPA: 3.85/4.0 09/2019 - 01/2021

Hunan University Hunan, China
Bachelor of Economics and Laws; GPA: 3.54/4.0 09/2015 - 07/2019

INDUSTRY EXPERIENCE

Phoenix Crypto Capital LLC Dover, DE
Quantitative Researcher Intern 02/2024 - 09/2024

- **Data and Feature Engineering**: Collected and ensured the quality of cryptocurrency data from sources such as Messari and Glassnode, utilizing APIs to retrieve critical metrics like price, market cap, transaction volume, and other on-chain data. Designed and implemented visualizations for data property comparison, driving actionable insights for model refining. Engineered a feature set of 55 coin-level and macroeconomic factors for model training and strategy development.
- **Machine Learning Development**: Deployed Logistic Regression and LightGBM using a two-stage training scheme to forecast returns for 11 crypto assets. Achieved hit-ratio performance exceeding 60% over rolling cross-validation and backtesting.
- **Pair-trading Strategy**: Created dynamic pair-trading strategies for crypto portfolio based on time-varying quantiles. Leveraged quantile momentums for position adjust and portfolio rebalance, with long-term returns outperforming single-asset strategies.

State Street Global Advisors Boston, MA
Quantitative Field Project Analyst 08/2023 - 12/2023

- **Data Pipeline Design**: Designed a high-performance data pipeline to process 10 years of asset price and macroeconomic data at a monthly frequency, enabling precise multi-asset rotation strategies.
- **Momentum Forecast and Validation**: Developed linear momentum detection models using 1, 3, 6, and 12-month moving average excess returns as inputs, leveraging Information Correlation and Pearson Correlation for model refinement and weights rebalancing. Ensured model robustness through randomized data splitting.
- **Regime-based Adaptive Asset Allocation**: Applied K-means clustering with customized financial metrics to identify four distinct market regimes. Integrated regime forecasting into asset allocation, dynamically adapting asset weights to market shifts.
- **Portfolio Optimization**: Built efficient-frontier based portfolios integrating momentum and regime signals, optimized for volatility and drawdown. Outperformed benchmarks with information ratio 1.0 and hit ratio 63% on backtest validation.

Bank of China Baotou, China
Credit Risk Analyst 12/2021 - 06/2022

- **Financial Analysis**: Evaluating liquidity and solvency across 5 key dimensions in current ratio, quick ratio, D/E ratio, debt to assets ratio, and Interest Coverage Ratio to assess clients' financial health.
- **Business Analysis**: Researched and dissected the business models, major transaction agreements, and financing agreements of clients qualitatively to identify key drivers influencing business performance.
- **Scenario Test**: Developed Excel-based multi-scenario analysis models, integrating key drivers and stress factors to assess clients' ability to meet obligations under adverse conditions; calculated impact expectations using relevant risk metrics.
- **Credit Risk Management**: Collaborated with the Banking Team and Risk team to complete Quarterly Reviews and Annual Reviews for credit risk management and monitor risk levels.

RESEARCH PROJECT EXPERIENCE

Equity and Fixed Income Portfolio Optimization 04/2023 - 06/2023

- **Advanced Return Forecasting**: Applied two-stage DDM, Fama-French factor model, and Free Cash Flow approach to forecast returns for 3 high-return equities, ensuring a diversified candidate portfolio with data from yfinance.
- **Bond Valuation and Yield Forecasting**: Performed bond valuation using hybrid time series cross-sectional regressions, incorporating duration, convexity, and forecasted 10-year Treasury yields for holding period returns predictions of 2 bonds.
- **Portfolio Optimization**: Constructed the efficient frontier via Solver in Excel by integrating forecasted returns and covariance matrices. Created the optimal portfolio by maximizing the Sharpe ratio to achieve a targeted risk-return profile.

Index Tracking ETF Designation 09/2022 - 12/2022

- **Data Cleaning and Optimization**: Preprocessed stock time series data and eliminated assets with insufficient features, and utilized EWMA covariance analysis to select 30 assets minimizing tracking error between training and testing periods via LASSO.
- **Index Tracking Strategy**: Aligned asset weights with the NASDAQ100, employing proportional scaling and niche industry weighting. Achieved a close match between forecasted and realized tracking error, validating the robustness of the strategy.

PROFESSIONAL SKILLS

- Computer Skills: Python (Sklearn, Pandas, Scipy), SQL, R, SAS, Power BI, Excel (VBA, PivotTable), PowerPoint, Word
- Certificate: Chartered Financial Analyst (CFA) Level II Candidate