Leiru Long

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EDUCATION

GEORGIA INSTITUTE OF TECHNOLOGY **Atlanta, GA**
Master of Science in Quantitative and Computational Finance *Aug. 2023 – Dec. 2024*
- GPA: 3.66 / 4

FUDAN UNIVERSITY **Shanghai, China**
Bachelor of Science in Data Science *Sep. 2019 – Jun. 2023*
- GPA: 3.52 / 4

EXPERIENCE

BOSERA ASSET MANAGEMENT **Shenzhen, China**
Quantitative Research Intern *May. 2024 – Aug. 2024*
- Designed an end-to-end multi-factor stock selection framework by leveraging a Temporal Convolutional Network on time series data in PyTorch to generate composite trading signals for portfolio management.
- Enhanced signal accuracy and mitigated factor decay by querying 80+ GB of financial data in SQL to integrate 400+ alpha factors into a deep learning model. Applied hierarchical clustering to synthesize signals and adjust for market regime shifts.
- Created a 1.3 Sharpe ratio equity trading strategy with the above model, achieving a 22.3% annual excess return by investing in CSI 300 index components, significantly outperforming the benchmark.
- Constructed a back-testing framework based on object-oriented programming (OOP) principles with SQL for data retrieval, leveraging Pandas and NumPy for vectorized computations, boosting back-testing speed by 5x.

PINESTONE ASSET MANAGEMENT **Shanghai, China**
Quantitative Research Intern *Jan. 2023 – May. 2023*
- Developed 9 event-driven alpha signals by text mining using NLP for keyword extraction in large alternative datasets covering key events such as financing news, shareholder meetings, and 10-K filing changes.
- Engineered a Python-based event study model using linear regression and t-tests to detect delayed market responses and abnormal stock returns, validated through correlation analysis and visualizations.
- Built a robust data pipeline with parallel processing to integrate event-driven signals into the trading signal database.

Equity Quantitative Trading Intern *Nov. 2022 – Jan. 2023*
- Increased trading system execution speed by 50% by optimizing code architecture using OOP principles, reducing time complexity, and minimizing redundant operations to enhance overall trading efficiency.
- Collaborated with frontend developers to build 4 real-time dashboards using FastAPI, visualized key trading indicators and risk metrics, enabling the team to monitor fund performance and manage risk in real-time.
- Identified abnormal data patterns through advanced data analysis and visualization techniques, improving risk control and leading to a 10% decrease in net risk exposure for a market-neutral fund.

ACADEMIC PROJECTS

LLM-Driven Sentiment-Based Stock Selection Strategy
- Deployed FinGPT, a finance-focused large language model (LLM), to review over 40 million financial forum posts related to CSI 1000 index components from 2019 to 2023, performing three-class sentiment analysis.
- Created and integrated sentiment-driven stock selection factors, such as emotional consistency and sentiment fluctuation, into a weekly rebalanced equity trading strategy for the CSI 1000 index, accomplishing a 13.95% annualized excess return.

Algorithmic Options Trading
- Created an options trading strategy through time series analysis, focusing on theta decay and volatility mean reversion, built a back-testing system for validation, and tested strategy forward using Geometric Brownian Motion and Merton models.
- Achieved 100% win rate, 18.6% annualized return, and 6.88 Sharpe ratio via back-testing and forecasting on SPY options.

Recognition of Risk Indicators in Spammers
- Managed project roadmap and led a team of 4 to develop a spammer detection system leveraging machine learning techniques, improving content moderation accuracy by devising and extracting 27 predictive features across four categories.
- Delivered the top-performing model in the group with a high-risk detection accuracy of 88.8% using the Random Forest.

SKILLS

Programming: Python (Pandas, Numpy, PyTorch, TensorFlow, Scikit-learn), SQL, R, MatLab, C/C++, Git
Cloud & Databases: Azure, AWS, GCP, MySQL, MongoDB, MSSQL