Xuzhan (Jerry) Tan

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EDUCATION

University of Chicago **Chicago, IL**
Master of Science in Financial Mathematics *Sep 2023 – Dec 2024*
- Courses: Machine Learning, Python, Stochastic Calculus, Option Pricing, Risk Management, Fixed Income, Numerical Methods, Credit Markets, Foreign Exchange, Big Data

Boston University **Boston, MA**
Bachelor of Arts in Economics & Statistics *Sep 2019 – May 2023*
- Major GPA: 3.88/4.0; Award: Magna Cum Laude
- Courses: Financial Derivatives, Linear Models, Regression Analysis, Probability and Stochastic Process, Data Science, Calculus, Macro & Micro-Economics, Econometrics, Financial Risk, Behavioral Economics

SKILLS

Programming: Python (Pytorch, Scikit-learn, Transformers, Pandas, NumPy, Matplotlib, QuantLib), R, Stata, SQL
Knowledge: Machine Learning (Deep Learning), Risk Management, Derivatives, Natural Language Processing, Statistical Modeling, Regular Expression, Portfolio Theory, Microsoft Office, Fixed Income, Credit Markets

EXPERIENCE

Research Affiliates **Newport Beach, CA**
Quantitative Research Intern *Jun 2024 – Aug 2024*
- Developed an algorithm to extract specific sections from SEC filings using advanced regular expressions
- Constructed a neural network model that combines FinBERT's financial contextual embeddings with LSTM, achieving a sample accuracy of 84% and an MSE of 0.17 in classifying financial sentiment across 3 levels
- Implemented Sentence Transformer models to generate similarity scores between firms' SEC filings
- Integrated sentiment scores and similarity scores from SEC filings with stock prices and financial metrics to identify a strong correlation with future stock price movements, proposing innovative trading signals

Manteio Capital **Chicago, IL**
Quantitative Researcher – Project Intern *Jan 2024 – Mar 2024*
- Engineered a sequence-to-sequence Transformer model for forecasting stock returns using technical indicators such as EMA, MACD, and RSI, along with a custom data loader to manage time series data
- Executed a weekly rebalanced long-short strategy, achieving a 14.4% annual return and a Sharpe ratio of 2.34
- Compared customized model performance with other machine learning models, including LightGBM and LSTM

Bank of America **Chicago, IL**
Quantitative Researcher – Project Intern *Oct 2023 – Dec 2023*
- Fine-tuned Hugging Face models like RoBERTa and Longformer to classify financial news into 5 defined levels
- Innovated an automated news scraping system utilizing GoogleNews and Newspaper3k libraries to gather and process online news and commentary, targeting sentiment and brand perception related to Bank of America
- Leveraged large language models like GPT-3.5 Turbo and text-davinci-002 to challenge the fine-tuned models

China Securities Co., Ltd. **Beijing, China**
Quantitative Research Intern *Jun 2023 – Aug 2023*
- Generated technical and fundamental signals through genetic programming techniques, evaluating efficacy using Information Coefficient (IC) tests, successfully producing new factors with high IC values of around 0.1
- Employed Python to estimate idiosyncratic risks of companies using metrics like VaR and Maximum Drawdown
- Conducted backtesting of a monthly-rebalanced long-short equity strategy targeting top and bottom 10 assets based on factor values, yielding an average annual return of 8.7% and a Sharpe ratio of 1.68

ADDITIONAL INFORMATION

Interests: Personal Investment (US stocks, Cryptocurrency), Poker (Texas Hold 'em, Blackjack), Saxophone
Languages: Chinese (Native), English (Fluent), Spanish (Basic)