Xinya Xu

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EDUCATION

University of Michigan, Ann Arbor, Michigan, United States Expected Graduation: Dec 2024
BS, Honor Mathematics, Honor Data Science & Statistics
Relevant Coursework: Probability, Theoretical Statistics, Combinators, Real & Complex Analysis, Numerical Differential Equation, Regression Analysis, Data Structures and Algorithms, Machine Learning, Deep Learning
School Clubs: Quantitative Investment Society, Michigan Data Science Team (Project committee member)

SKILLS & INTERESTS

- **Interests**: Badminton (10+ years), STEM tutoring (5+ years), Photography, Cooking, Sudoku
- **Programming Languages**: Python (NumPy, Seaborn, Pandas, Matplotlib, Scipy, Scikit-Learn), C++, R
- **Technologies / Tools**: SQL, KDB/Q+, Hive, PyTorch, TensorFlow, Keras

INTERNSHIP EXPERIENCE

JP Morgan
QR Markets Summer Analyst Jun – Aug 2024
- Developed a comprehensive daily volume prediction model for fungible SPX/SPXW option products, employing advanced data handling techniques using KDB/Q+ for data extraction, segmentation, and preprocessing
- Utilized Python to uncover trading data patterns influenced by factors such as seasonality, option maturity, and the volume distribution across different moneyness levels, further enhancing the model's precision
- Engineered a two-step prediction pipeline that incorporated an exponential linear regression model, utilizing a monthly rolling window approach for dynamic updating based on a moving average technique
- Contributed to algorithmic trading execution by improving spread calculation efficiency and accuracy, significantly enhancing operational performance and strategic decision-making for both traders and QR

Guotai Junan Securities Jul – Dec 2023
Quantitative Market Research Intern
- Undertook exhaustive research on industry reports and academic papers on high-frequency trading and investor behavior, translating concepts such as Factor Seasonality into programming language with Python
- Developed a market indicator program using time series analysis and fractal theory via Python, employed the Hurst Exponent for analysis of long-term memory and randomness in market prices of China A-shares
- Performed a comparative study of trading patterns between the coal and the TMT industry, employing the Hurst Exponent to analyze drivers of trading behavior, enhancing market review and predictive capabilities

Mindinone Assets Jul – Aug 2023
Quantitative Research Summer Analyst
- Conducted comprehensive reviews of research reports on high-frequency trading factors focusing on volatility, defined 80+ price-volume factors with statistical and signal processing methods using C++
- Optimized factors through statistical feature engineering, resulting in a 1% improvement in the overall performance of trading models by effectively selecting and combining top-performing factors via Python

SELECTED PROJECTS

Inferring Trait-Relevant Tissues with Joint Network Latent Factor Model (R) Jan 2024 – Present
- Introduced a set of gene-level latent factors motivated by network latent space models, implemented a two-step algorithm which first estimates gene-level latent factors and then utilized the estimated latent factors to rank the importance of tissues with regards to the examined disease outcome
- Investigated different configurations of early stopping and data weighting strategies to mitigate issues related to overfitting and data class imbalance on actual, simulated and synthetic data with different sparsity levels

Electronic Trading Market Simulation (C++) May – Jun 2023
- Utilized priority queues to efficiently manage and process trading orders following a market making strategy, automating order matching and median-price updating after analyzing trading data
- Performed backtracking to explore trading strategies that enable traders to achieve the highest profits

Factor Model Analysis and Strategy Simulation (Python) Feb – May 2023
- Applied OLS and rolling OLS to research and visualize the relationship between AAPL, macroeconomic, and Fama-French factors, after analysis on macroeconomic and fundamental data
- Compared the explanatory power of macroeconomic, fundamental and combined models, simulated a top-down smart beta strategy and visualized the YOY returns achieved by the strategy in the market

ACTIVITIES

Meta Data Challenge Finalist
- Explored and analyzed large datasets via Python (NumPy, Pandas, Seaborn), designed experiments considering statistical significance, sources of bias, target populations and potential for positive results
- Presented a data-driven product pitch, including data visualizations, business strategy, and content recommendations to Data Scientists and Data Engineers on launching a new video product ‘Zuckflix’