Tan Yang

tanyang@u.nus.edu / jerrycatchtom3@gmail.com

EDUCATION

National University of Singapore Singapore
M.Sc. in Mathematics Aug. 2024-Feb. 2026 (Expected)

Beijing University of Posts and Telecommunications China
B.Sc. in Mathematics and Applied Mathematics Sep.2018 – Jun. 2022

WORK EXPERIENCE

Quantitative Researcher Intern Nov.2022 - Jun.2023 (8 Months)
Trading Team, BloFin Exchange, China

- **Independently designed and developed a fully automated PnL attribution system** for tracking intraday strategy performance, officially deployed and integrated into the trading team's daily operations. The system replaced a manual workflow, reducing daily reporting time to 5 minutes by automating report generation and distribution to traders and researchers.
- **Designed and developed a rapid backtesting framework** to evaluate arbitrage opportunities for specific asset pairs, enabling efficient historical analysis and performance assessment. Implemented a custom MACD-inspired visualization report to enhance strategy evaluation and decision-making.
- **Contributed to the design of statistical analysis components,** including confidence interval evaluation and market depth impact assessment on price jumps, to enhance trading strategy robustness and market microstructure analysis.
- **Analyzed the impact of price precision on arbitrage efficiency**, evaluating its effects on trade execution and slippage across different market conditions. Compiled a series of analytical reports, providing insights to optimize strategy profitability and execution efficiency.

Algorithm Engineer Intern Apr. 2022 - Jun. 2022 (3 Months)
Recommendation & Marketing Algorithms Department, Shushi Yunchuang Technology Co., Ltd. China

- **Conducted a comparative analysis of embedding techniques** in NLP-based recommender systems, evaluating their operational efficiency and predictive performance through empirical testing.
- **Enhanced CTR estimation** by implementing the Wilson correction algorithm, improving prediction accuracy and integrating the optimized model into an online recommender system.
- **Analyzed the DeepFM model based on research papers,** assessing its effectiveness in recommendation scenarios and exploring enhancements for better interpretability and performance.

Financial Data Analyst Intern Dec.2020-Feb.2021 (3 Months)
Investment & Risk Management Department, Zhejiang Wanguan Investment Management Co., Ltd. China

- **Analyzed the impact of traditional energy markets on the new energy vehicle (NEV) sector**, assessing correlations between commodity price fluctuations (e.g., crude oil, lithium) and NEV market performance using statistical modeling and data analysis.
- **Contributed to drawdown risk research**, analyzing historical asset price movements and live trading records to identify key factors influencing portfolio drawdowns.

PROJECT

Data Monitor System **Personal Open Source Project**

- **Designed and developed a real-time data monitoring system for high-frequency trading (HFT) research,** enabling low-latency data ingestion, normalization, and distribution across multiple exchanges.
- **Implemented a high-performance Generator-Consumer architecture**, utilizing Cap'n Proto for ultra-fast serialization and dynamic configuration for scalable exchange data integration, improving data processing efficiency and system modularity.

Undergraduate Thesis: Theoretical and Empirical analysis of Phishing Classification Detection Algorithm
Dec.2021 – Jun.2022| Beijing University of Posts and Telecommunications | Grade: A+
Instructor: Prof. Yuke Huang, School of Science, Beijing University of Posts and Telecommunications

- **Developed a large-scale phishing classification pipeline**, collecting 1M+ records via web scraping, applying real-time data cleaning and vectorization using Word2Vec.
- **Theoretically analyzed deep learning models (DNN, CNN, RNN),** deriving iterative backpropagation equations and evaluating their strengths in feature extraction and training challenges (e.g., vanishing gradient).
- **Implemented a deep neural network (DNN) in PyTorch**, demonstrating the advantages of end-to-end learning over traditional detection methods.