Zixian (Demitry) FAN

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EDUCATION

The University of Chicago — **Chicago, IL**
Master of Science in Financial Mathematics — **Expected December 2025**

- Courses: Portfolio Theory & Risk Management, Python, Option Pricing, Probability & Stochastic Processes

The University of Hong Kong — **Hong Kong**
B.S. in Statistics, Finance (2nd Major), Computer Science (Minor) — **June 2024**

- Courses: Bayesian Learning, Optimization, Stochastic Process, Differential Equation, Numerical Analysis, Statistical Learning, NLP, Algorithm Design, Advanced Algorithm Analysis, Derivatives, Econometrics, Fixed Income Securities
- Awards: Dean Lists, UBS Financial Elite Challenge (Excellent, top 5%), Young Scientist Scheme, C.V. Starr Scholarship
- Semester Exchange Study at National University of Singapore, concentrate on Statistics and Computer Science

SKILLS

Computing: Python (Tensorflow, PyTorch), Jupyter, C + +, Java, R, SQL, SAS, JSAP, Tableau, Unix/Linux, MS Office
Knowledge: Financial Markets, Machine Learning, Statistical Modeling, Data Analytics, Optimization, Econometrics
Trading Products: Futures (Bond and Equity Index), Commodities, Fixed Income, Equities, Crypto

EXPERIENCE

POLLOCK ASSET MANAGEMENT — **Hong Kong**
Quantitative Research Intern — **June 2024 – August 2024**

- Created partially-hedging strategies for basket of equities by customizing the objective function and hedging ratio function from decomposed series, which adaptively balance the return and volatility, and **reduces overall volatility by 11%**
- Crafted Statistical Arbitrage for cryptos with **1.9 Sharpe**, and formulated crypto-to-equity prediction with **64% Accuracy**
- Developed APIs for asynchronous updates to the company's database (**34% efficiency improvement**) and visualization

ASYMMETRIES TECHNOLOGIES — **Shanghai, China**
Quantitative Strategy Researcher Intern — **February 2024 - April 2024**

- Performed real-time research on crypto with trading desk collaboratively, covering **CTA reversal** (**251% Annualized Return** and **6.5 Sharpe**) and multi-factor strategies, and reproduced 20+ hour-level technical alphas
- Developed analysis scripts to evaluate transaction slippage and cost, then optimized signal trading execution
- Investigated Blur platform's trading mechanism to enhance company's NFT market making strategy

GCI ASSET MANAGEMENT — **Hong Kong**
Quant Research Analyst Summer Intern — **June 2023 - December 2023**

- Detected after-hours opportunities for Asia Index Futures by combining multiple DLs (CNN, LSTM, Attention) and multi-task learning, with **2.02 Sharpe** and **4% Max-Drawdown** for single asset on average
- Designed Relative Value Arbitrage for bond futures through time-series modeling with term structure analysis, and the optimized portfolio guaranteeing **1.6 Sharpe** and was included ~30% of company's new product
- Mined features from snapshot data by tailored Genetic Programming with statistical and logical selection rules

CHINA SECURITIES — **Shenzhen, China**
Industry Research Intern — **June 2022 - September 2022**

- Conducted in-depth research on Visa, Fintech industry and U.S.'s macroeconomic trend, and culminated a 60 pages report
- Collaborated with non-bank research team to produce a 160 pages collective report for Exchanges and Solutions sector

RESEARCH

FACULTY OF SCIENCE, UNIVERSITY OF HONG KONG — **Hong Kong**
Deep Learning Summer Researcher — **June 2023 - October 2023**

- Embedded the Recurrent Dynamics of RNN into Transformer to incorporate recurrent/non-recurrent patterns, then fused it with Uniformer model for video understanding, improved **Accuracy by 4%** comparatively for UCF101

NUS DATA ANALYTICS CONSULTING CENTRE — **Singapore**
Quantitative Research Assistant — **January 2023 - June 2023**

- Customized Singular Spectrum Analysis model for stocks selected from ASX 50 Index, and filtered out noise
- Optimized CNN-LSTM to the obtained series, reduce **MAE/MSE by 17%** from baseline**,** and **1.88 Sharpe** after cost