SHUPENG (WAYNE) GUAN

(201) 600-3740 // wayneguan@nyu.edu // linkedin.com/in/wayneguan

EDUCATION

08/23 - 01/25 **NEW YORK UNIVERSITY** New York, NY
The Courant Institute of Mathematical Sciences
M.S. in Mathematics in Finance

- ***coursework:*** object-oriented programming, deep learning, machine learning, data-driven modelling, time-series, statistical arbitrage, cryptocurrency and blockchain, scientific computing, mortgage-backed securities, market microstructure, stochastic calculus, equity derivatives

09/21 - 07/23 **UNIVERSITY OF BIRMINGHAM** Birmingham, UK
B.S. in Mathematics With Honours (First Class)

- ***Coursework:*** applied statistics, statistics in economics, integer programming and combinatorial optimisation, numerical methods and programming, differential equations, real and complex analysis, multivariable calculus, linear algebra, mathematical finance (options theory)

09/19 - 06/21 **HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY** Wuhan, China
B.S. in Finance

- ***Coursework:*** econometrics, microeconomics, macroeconomics, accounting, money and banking, public finance, game theory
- ***Award:*** Freshman Award scholarship (50% tuition)

EXPERIENCE

06/24 - 09/24 **EASTMONEY SECURITIES CO., LTD** Shanghai, China
Quantitative Researcher Intern (Asset Management)

- Conducted research project on crowded trading risks, analyzed crowded trends to understand market mechanics, performed portfolio optimization under different rebalancing frequencies
- Developed multiple crowded risk features based on mid-frequency trading data, generated high risk-adjusted return exit signals with strong statistical significance
- Delivered an automated multi-signals risk monitoring model to alert for crowded trading risks

08/22 - 09/22 **CHINA SECURITIES CO., LTD** Shanghai, China
Data Analyst Intern (Python)

- Mocked market-making automation mechanics, revisited delta-neutral, beta hedging, grid trading and arbitrage trading algorithms; implemented dynamic hedging algorithms for OTC derivatives
- Backtested structured derivatives (auto-callables) historical win rates under various P/B ratios
- Adjusted institutional clients' portfolios based on Sharpe models; attained significant Sharpe ratio increases (25%+ average)

PROJECTS

09/24 - Now **BANK OF AMERICA MERRILL LYNCH** New York, NY
Capstone Project

- Explore high-frequency intraday correlations among return volatility, trade volumes and intensity
- Build a stochastic multiplicative error model(SMEM) to capture a latent common factor which accounts for the positive simultaneity between volatility and trade volume substantially
- Extend the SMEM framework to improve forecasting accuracy on volumes to a systematic portfolio level which is fundamental for alpha generation

01/24 - 05/24 **NYU CENTER FOR DATA SCIENCE** New York, NY
Deep Learning (Pytorch)

- Developed and trained energy-based deep neural networks within the Graph Transformer Network(GTN) framework, achieved high performance on text transcription from images
- Developed and trained Vision Transformer(ViT) on image classification tasks, demonstrated high accuracy on open-source large datasets (cats and dogs)
- Developed and trained a Mixture of Experts(MoE) on large-scale nonlinear classification tasks

COMPUTATIONAL SKILLS / OTHER

Programming Languages & Software: Python, R, MATLAB, SQL, LaTex, Excel

Interests/Certification: Sports games betting prediction; Texas hold'em(SIG Poker Tournament NY final); Certificates of Completion for Akuna Capital Options 101 & 201 Courses