

JIMMY GUO

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EDUCATION

Columbia University New York, NY
M.S. in Financial Engineering (GPA: 4.08/4.00, Top 5%) Dec 2025

- Award: Benjamin Miller Memorial Fellowship (top 5%)
- Courses: Optimization, Stochastic Models, Asset Pricing, Machine Learning, Monte Carlo Simulation, Generative AI

University of Liverpool Liverpool, UK
B.S. in Mathematics (GPA: 93/100, Ranked 1/325) Jul 2024

- Awards: Brownlow Hill Prize (top 1%), Sampford Memorial Prize (Best Final Year Student), Exchange Program Excellence Scholarship (top 1%), University Academic Excellence Award (top 5%)
- Courses: Financial Mathematics, Data Science, Stochastic Process, Differential Equations, Time Series, Bayesian Statistics

WORK EXPERIENCE

Goldman Sachs New York, NY
Quantitative Strategist Intern (Controllers Revenue) Jun 2025 - Aug 2025

- Engineered an end-to-end balance sheet and PnL generation pipeline in Slang; designed a new OTF (On-The-Fly) valuation module that precomputed stable trade valuations into a Lakehouse cache, serving as a reusable and consistent data source for downstream processes
- Achieved significant improvements in journal generation speed and data consistency by introducing daily-updated deterministic valuation layers, reducing dependency on real-time recalculation under unstable market conditions

WonderWiz Investment Shanghai, CN
Quantitative Research Intern Jun 2023 - Sep 2023

- Restructured a Deep Momentum Network deploying PyTorch to generate trading signals and to predict stock market movements
- Constructed Gaussian Process (GP) Regression to capture volatile stock price movements during Covid-19, lifting sharpe ratio by 8%
- Led a group of 6 to modify the LOT-Mixed estimator for Bid-Ask spread, applying ridge regression techniques via Python sklearn package, succeeding a 30% increase in accuracy and a 35% reduction in standard error

Orient Securities Suzhou, CN
Quantitative Research Intern Jun 2022 - Aug 2022

- Enhanced the Fama-French Five-Factor Model by integrating ESG factors to identify alphas, leading to a 15% improvement in Sharpe Ratio for Chinese stock market portfolios; performed Stress Testing using Monte Carlo simulations to estimate portfolio VaR
- Constructed a data pipeline processing daily high-frequency financial data from JointQuant, constructed several factors using Python

PROJECTS AND RESEARCH

Columbia University (Supervised by Prof. Wenpin Tang) New York, NY
Fast Inference Diffusion Model with Compressed Sensing Jan 2025 - Jul 2025

- Proposed a novel framework integrating compressed sensing and diffusion models to reduce generative complexity, enabling fast sampling and high-fidelity recovery of sparse high-dimensional signals
- Achieved state-of-the-art acceleration in generative modeling across medical imaging (OCTMNIST), climate reanalysis (ERA5), and synthetic financial stress testing, demonstrating up to 60% reduction in generation time

Columbia University (Supervised by Prof. Ali Hirsra) New York, NY
Adaptive Order Slicing via Volatility-Volume Regime Modeling Jan 2025 - May 2025

- Developed a regime-aware order execution strategy that dynamically slices limit orders based on real-time volatility, volume, and microstructure momentum, using exponentially-weighted statistics and empirical distribution modeling
- Estimated state-conditional fill probabilities via Bayesian inference and MCMC methods, enabling precise control of order aggressiveness
- Backtested across futures markets (e.g., E-mini S&P 500, Crude Oil, Bund), demonstrating up to 30% fill rate improvement and 40% slippage reduction in high-volatility, high-volume environments

University of Liverpool (Supervised by Dr. Youness Boutaib) Liverpool, UK
Final Year Thesis - Deep Learning Jan 2024 - Jun 2024

- Designed and evaluated RNN, LSTM, and Echo State Network (ESN) architectures for S&P 500 index prediction using PyTorch; improved model accuracy by 30% through custom feature engineering from Yahoo Finance and FRED data
- Derived a 7-page paper on the Backpropagation Through Time (BPTT) algorithm in RNN and LSTM models, including advanced mathematical proofs involving matrix operations and multi-variable calculus

SKILLS & CERTIFICATIONS

Programming Languages: Python, C++, R, Java, Maple, Matlab, SQL, LaTeX, SLang

Certifications: FRM Level I (Distinction, Aug 2022), C++ Programming for Financial Engineering (QuantNet, Oct 2023)