Dafu Zhu

Chicago, IL | (872) 201-7540 | dafuzhu@uchicago.edu | linkedin.com/in/dafu-zhu | github.com/dafu-zhu

EDUCATION

The University of Chicago — Chicago, IL
Master of Science in Financial Mathematics (GPA: 3.7/4.0) — *Expected December 2026*
Courses: Options Pricing, Statistical Inference, Stochastic Calculus, Computing for Finance in C++

Xiamen University — Xiamen, China
Bachelor of Economics (GPA: 3.63/4.0) — *June 2025*
Courses: Mathematical Statistics, Time Series Analysis, Numerical Analysis, Stochastic Processes, Machine Learning

SKILLS

Programming Languages: Python, Java, SQL, R, MATLAB
Libraries & Infrastructure: NumPy, Polars, scikit-learn, PyTorch, PostgreSQL, MongoDB, Linux, Docker, AWS, Git

EXPERIENCE

7 Chord Inc. — Chicago, IL
Quantitative Developer – University of Chicago Project Lab — *October 2025 - Present*
- Develop Java shared library for FIX 4.4 bond feed ingestion processing 11,500 messages/sec, publishing to RabbitMQ with automated alerting and PostgreSQL logging
- Building full-depth order book pipeline in Docker extracting top-of-book quotes and spread analytics; streaming enriched data to PostgreSQL and downstream ML systems via RabbitMQ

DolphinDB Inc. — Hangzhou, China
Quantitative Developer Intern — *August 2024 - November 2024*
- Developed Barra-CNE6 risk model with 33 factors covering 4,800+ equities using Newey-West HAC estimator and eigenvalue decomposition, achieving 37% R^2 and 0.996 bias statistic
- Designed portfolio optimizer in DolphinDB supporting 8 objectives and 10+ constraints, improving annualized return by 1.13% and reducing max drawdown by 2.45% versus baseline

Infinity Capital Management Co., Ltd. — Shenzhen, China
Quantitative Researcher Intern — *March 2024 - July 2024*
- Devised multi-factor equity model with dynamic factor weighting and momentum signals, achieving 0.087 IC with 0.589 ICIR; applied as index enhancement strategy generating 6.5–8.3% annual excess return across CSI benchmarks
- Constructed risk parity strategy with Ledoit-Wolf covariance shrinkage and drift-threshold rebalancing, achieving 1.34 Sharpe ratio and -7.68% max drawdown over 6-year backtest (2018–2024)

China Industrial Securities Co., Ltd. — Shanghai, China
Quantitative Analyst Intern — *September 2023 - February 2024*
- Validated jump-intensity anomaly on CSI300 using Lee-Mykland detection and SDF framework with tick data; added bear market regime filter improving Sharpe by 3.5x
- Implemented 3-state Hidden Markov Model for macro regime classification, generating 2.15x cumulative return versus 1.10x benchmark across 11 rolling windows

PROJECTS

University of Chicago — Chicago, IL
End-to-end Trading System with Backtesting — *October 2025 - December 2025*
- Designed modular Python trading system with market data gateway, alpha generation, risk-based position sizing, and order routing via Alpaca API; built custom event-driven backtesting engine with look-ahead bias prevention
- Built asynchronous pipeline with WebSocket streams enabling sub-100ms order execution across 20+ symbols; SQLite cache reduced data latency 10x with volume-based slippage modeling

Alpha Research Platform — *November 2025 - Present*
- Built market data infrastructure for 8,000+ US equities (2017–2025) with survivorship-bias-free SecurityMaster tracking symbol changes, mergers, and delistings; integrated SEC EDGAR XBRL fundamentals and Alpaca daily ticks
- Architected alpha research API with 60+ vectorized operators, expression parser, and feature pipeline for systematic factor discovery and backtesting classification

Xiamen University — Xiamen, China
Genetic Programming Factor Mining System — *December 2024 - Present*
- Automated alpha mining using DEAP Genetic Programming with correlation penalty and regularization, where 13.9% of mined factors achieved 5%+ IC out-of-sample across 3,000+ A-share equities
- Extended GP pipeline with Maskable PPO agent optimizing factor synergy, achieving 8–11% IC and 1.0–1.4 ICIR out-of-sample across CSI300/500/1000, outperforming handcrafted and GP baselines