Josh Li

+1-773-219-9887 | li999josh@gmail.com | linkedin.com/in/joshli999

Core Competencies

Programming: Python, C++, SQL, VBA, R
Developer Tools: Jupyter Notebook, VS Code, Visual Studio, Git, TensorFlow, PyTorch
Statistics and Data Analysis: Probability Theory, Time Series, Machine Learning, Data Structures and Algorithms
Quantitative Finance: Stochastic Processes, Derivative Pricing, Quantitative Portfolio Management, Fixed Income, Value at Risk, Numerical Methods, Financial Econometrics, High Performance Computing in C++

Education

The University of Chicago — Chicago, IL
Master of Science in Financial Mathematics — *Expected Dec. 2025*
Bachelor of Science in Data Science & Bachelor of Arts in Economics — *Sep. 2020 – Jun. 2024*

- Undergraduate GPA: 3.62/4.0, Graduate GPA: 3.72/4.0
- Honors: Dean's List, B.S. with Honors, First-Gen Phoenix Scholar

Professional Experiences

CIBC — Chicago, IL
Model Risk Intern — *Jun. 2025 – Aug. 2025*

- Validated interest rate derivatives pricing models; performed stress testing guided by Federal Reserve SR 11-7, assessed model risks, and prescribed mitigants.
- Conducted SOFR swap curve construction and discount factor replication testing to validate pricing models for vanilla interest rate swaps across multiple tenors.
- Replicated tenor risk profiles and sensitivity analyses for vanilla interest rate swaps under varying market scenarios to challenge and validate front-office model outputs.
- Built Retrieval-Augmented Generation (RAG) agents using LangChain to automate risk statement generation across business lines, improving monitoring, auditing, and reporting efficiency for high-risk models.

University of Chicago Booth School of Business — Chicago, IL
Economics Research Assistant — *Jun. 2023 – Aug. 2023*

- Engineered estimation/event windows for monetary surprise analysis; cleaned and merged U.S. and European ETF datasets; incorporated Fama–French factors and latent variables in regressions.
- Simulated multi-asset portfolio returns with ETFs as proxies; analyzed macro factor correlations; collaborated with ECB economists on U.S./EU ETF performance during monetary shocks.

Projects

Exponential Techonology & Hull Tactical – Quantitative Research | *Python* — *Mar. 2024 – Jun. 2025*

- Developed a multi-asset trading strategy exploiting rounding errors between reported and actual monthly CPI values; evaluated performance with Kelly criterion, Sortino ratio, volatility regimes, and stress events.
- Designed and backtested a short ATM straddle strategy around 19,000+ earnings announcements using OptionMetrics data; identified implied vs. realized volatility patterns and systematic mispricings.
- Built signals, backtest logic, tear sheets, and interactive dashboards with Zipline and Plotly for client delivery; enhanced strategy performance through cross-sectional signals and model-driven thresholds.

Prudential Financial (PGIM) – Event-Based Strategies with NLP | *Python* — *Mar. 2024 – Jun. 2024*

- Applied NLP techniques (tokenization, stemming, sentiment analysis) to corporate earnings call transcripts and fundamentals to extract predictive signals and build equity portfolios.
- Leveraged cross-sectional regression analysis and deep learning models deployed on AWS to identify transcript sections with the richest firm performance signals across sectors.

Fermi National Accelerator Laboratory – Simulation Acceleration | *Python* — *Dec. 2023 – Mar. 2024*

- Deployed ML models to reduce computational costs of particle collision simulations; fine-tuned latent diffusion models to generate samples in lower dimensions with empirical consistency.
- Refactored large-scale legacy codebase; built Python scripts that improved sample generation time by 30% using high-performance remote clusters.

Interests

Photography, Film Projection, Reading, Philosophy, Soccer, Guitar, Esports, Poker