Keigo Hayashi

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EDUCATION

The University of Chicago — **Expected: December 2025**
Master of Science in Financial Mathematics — *Chicago, U.S.*

- Maroon Merit Scholarship Recipient

Georgia Institute of Technology — **May 2024**
Bachelor of Science in Computer Science — *Atlanta, U.S.*

- GPA: 3.97
- Selected Coursework (CS): Graduate Level Machine Learning, Deep Learning, AI, Computer Simulation, Systems, Networks, Computer Organization, Robotics
- Selected Coursework (Math): Statistics, Probability, Linear Algebra, Multivariable Calculus, Differential Equations, Combinatorics, Game Theory

EXPERIENCE

Goldman Sachs — **June 2024 - August 2024**
Quant Research Intern | Asset Management QIS Equity Alpha Team — *New York City, U.S.*

- Alpha signal research and portfolio management
- Researched, back-tested, and implemented an alpha strategy utilizing credit card data through time-series forecasting, employing both traditional statistical models and time-series transformers.

Georgia Tech Finance Research Lab — **September 2023 - May 2024**
Research Assistant (Prof Xindi He) | Empirical Asset Pricing & Behavioral Finance — *Atlanta, U.S.*

- Revised Volatility: Revising traditional risk measures using behavioral experiments and return prediction regressions with higher moments
- Carbon Premium: Investigated carbon premia by analyzing factor portfolios and correlation between major climate events and investor sentiment shifts
- Belief Formation: Explored belief discretization through analyzing dimensions such as information complexity, risk level, and emotional state to decipher behavioral patterns

Georgia Tech Automated Algorithm Design Lab — **January 2023 - May 2024**
Research Assistant — *Atlanta, U.S.*

- Investigated high-frequency limit order book forecasting in the NASDAQ Nordic market by employing AutoML Evolutionary Multi-objective Algorithm Design Engine (EMADE)
- Developed a comprehensive set of factors, including order flow imbalance, higher moments, and momentum as primitives

Instinet Incorporated — **June 2023 - August 2023**
Quant Research Intern | Quantitative Trading Strategy Team — *New York City, U.S.*

- Developed intraday 5-min volatility probabilistic forecasting model leveraging machine learning and dynamic regressor selection; demonstrated 5x increase in accuracy relative to Instinet's prior model
- Integrated volatility model into real-time inference engine used for dark pool price protection, dynamic participation strategies, and Volatility Laddering for maximum spread capture during VWAP child orders

Nomura — **December 2022 - December 2022**
Quant Developer Intern | Global Markets Digital Strategy Algorithmic Trading Team — *Tokyo, Japan*

- Developed real-time log-book signal extraction system and portfolio/order analysis tool with NoSQL Elasticsearch, Logstash data processing pipeline, and Kibana visualization
- Designed and implemented a dynamic interface to present real-time portfolio and order metrics for the Delta One Prop Trading Desk, streamlining data visualization and empowering traders with rapid access to critical information

Point 72 — **May 2022 - August 2022**
Analyst Intern — *New York City, U.S. & Tokyo, Japan*

- Formulated fundamentally-driven investment strategies tailored to post-COVID Japanese inbound tourism market, incorporating a blend of macroeconomic and style factors
- Developed suite of both quantitative and fundamental models offering a robust framework for scenario-based decision-making

Citadel Securities — **April 2022 - April 2022**
Discover Citadel — *New York City, U.S.*

- Attended exclusive invite-only event to discuss predictive models to execute trades at scale

SKILLS

Programming Languages: Python, Java, C++, C, MatLab, SQL
Technologies: Linux, SLURM, Pandas, Scikit-learn, PyTorch, DEAP, Elasticsearch, Dash