KEVIN HE

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EDUCATION

The University of Chicago **Chicago, IL**
Master of Science in Financial Mathematics ***(GPA:*** *3.9/4.0)* *Expected December 2024*
- **Honors:** Maroon Scholarship

The University of Michigan **Ann Arbor, MI**
Bachelor of Science in Mathematical Science ***(GPA:*** *3.95/4.0)* *August 2020 – May 2023*
- **Honors:** James B. Angell Scholar

RELEVANT COURSEWORK

- **Math:** Linear Algebra, Multivariate Calculus, Differential Equation, Stochastic Calculus, Statistics, Probability Theory
- **Programming:** Algorithms and Data Structure, Machine Learning, Numerical Methods
- **Finance:** Options Pricing Theory, Portfolio Management, Fixed Income, FX Market, Macro Finance

SKILLS & INTERESTS

Computing: Python, MS Office
Languages: Bilingual in English and Mandarin
Interests: ex-professional swimmer, Michigan Parkour Club, StarCraft II

PROFESSIONAL EXPERIENCE

Invesco Great Wall Fund Management **Shanghai, China**
Quantitative Research Intern *June 2024 – August 2024*
- Implemented **random forest** to predict the relative performance of sectors based on macro and price indicators; optimized the weights for index strategies using the **Black-Litterman model** to incorporate model predictions into portfolios
- Constructed higher frequency factors using alternative data to complement seasonal earning data; wrote programs to efficiently update and synthesize historical factor values for the portfolio manager
- Carried out **time-series analysis** on macro data to quantify the relative position of the current market within the broader economic cycle

Morgan Stanley **Houston, TX**
Fixed Income Summer Analyst *June 2023 – August 2023*
- Used **dimension reduction techniques** to decompose the risk factors of the portfolio; engineered new risk factors to interpret the P&L change and predicted the influence of price shocks on the portfolio using Python; the new factors accounted for up to 95% of the variance in daily P&L change
- Conducted **time-series analysis** on the price of natural gas futures contract to evaluate its locational and seasonal trend; analyzed data on the fundamentals of natural gas; generated weekly reports using Python to provide updates on the demand and supply for the desk
- Shadowed traders and originators on a daily basis; recommended locational spread trading for natural gas based on regional market events; the trade pitch was highly praised within the team

China Merchant Securities **Shenzhen, China**
Quantitative Research Part-time Assistant *July 2022 – August 2022*
- Used Python to create and formulize the **inversion-momentum strategy** based on China's stock market trend
- Optimized the company valuation model using a **new time-series model**, increased the Sharpe ratio by 0.7, and reduced the largest drawback by 10%

PROJECTS

Prime Trading – University of Chicago Project Lab, *Quantitative Researcher* *March 2024 – May 2024*
- Exploited and modeled statistical arbitrage opportunities between London and US cocoa traded on International Exchange; experimented on **OLS regression models** to process signals from high-frequency trading data; constructed trading strategies that achieved a Sharpe ratio of 7.3 using **Kalman filter**

Discrete-Time Dynamic Portfolio Optimization, *Quantitative Researcher* *May 2022 – August 2022*
- Carried out research regarding optimizing portfolios consisting of equity and bonds under discrete time steps to maximize expected utility; utilized **regression**, **Monte Carlo simulation**, and **dynamic programming** to deduce the optimal weights at each time step