

# Haoyu (Peter) Lei

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## EDUCATION

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### THE UNIVERSITY OF CHICAGO

#### Master of Science in Financial Mathematics

Chicago, IL

Expected December 2021

- Current Courses: Portfolio Theory & Risk Management, Python, Option Pricing

### THE UNIVERSITY OF HONG KONG

#### Bachelor of Engineering in Computer Science

Hong Kong SAR

July 2020

- Courses: Data Structures and Algorithms, Probability and Statistics, Differential Equations, Numerical Analysis, Econometrics, Empirical Asset Pricing, Mathematical Finance, Fixed Income Securities, Derivatives

### THE UNIVERSITY OF CALIFORNIA, IRVINE

#### Visiting Student, Major in Computer Science

Irvine, CA

January 2018 – June 2018

- Courses: Design and Analysis of Algorithms, Machine Learning and Data Mining, Parallel and Distributed Computing, Multivariable Calculus, Linear Algebra

## SKILLS

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**Computing:** Python, R, SAS, SQL, C++, Jupyter, Java, Unix/Linux, L<sup>A</sup>T<sub>E</sub>X, MS Office

**Database:** Bloomberg, CRSP, Compustat, Datastream, I/B/E/S

**Knowledge:** Machine Learning, Regression Analysis, Software Development, CFA Level 2 Candidate

## EXPERIENCE

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### KUBID RESEARCH

#### Summer Quantitative Researcher

Hong Kong SAR

June 2019 – August 2019

- Collected data from Bloomberg and SEC EDGAR for over 70 US equities using Python, and built SQL database;
- Back-tested and refined market-neutral, statistical arbitrage strategies in R with collected data;
- Documented data collection and back-testing processes to facilitate future intern onboarding.

### JPMORGAN CHASE BANK, N.A., HONG KONG BRANCH

#### Summer Technology Analyst, Equity Derivatives Group

Hong Kong SAR

June 2018 – August 2018

- Designed logging message patterns, and implemented logging message aggregation in Spring Boot microservices;
- Researched, presented to teammates, and documented the use of Splunk to search for logging messages;
- Processed over 10,000 request-for-quote emails using VBA.

## RESEARCH

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### THE UNIVERSITY OF HONG KONG

#### Research Assistant, Faculty of Business and Economics

Hong Kong SAR

September 2019 – Present

- Portfolio Optimization: Improve parametric portfolio policies with variable selection methods (in-progress);
- Asset Pricing Anomalies: Replicated 7 momentum factor-mimicking portfolio returns in SAS with portfolio sorts and Fama-MacBeth regressions. Examples of factor are standardized unexpected earnings, cumulative abnormal returns around earnings announcements, and revisions in analysts' earnings forecasts.

### A REVIEW OF MEAN-VARIANCE OPTIMIZATION METHODS ([Paper link](#))

February 2020 – May 2020

- Reviewed and back-tested 6 portfolio mean-variance optimization methods across groups of datasets consisting of Fama-French portfolios and individual stocks. The methods include sample covariance matrix, graphical lasso, non-negativity constraint, shrinkage covariance matrix, and industry factor model;
- Evaluated portfolio out-of-sample performance with 5 metrics: standard deviation, Sharpe ratio, Herfindahl index, portfolio turnover, and transaction-cost adjusted certainty equivalent returns;
- Concluded that graphical lasso delivers the most superior performance.

## ADDITIONAL INFORMATION

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**Languages:** English (fluent), Mandarin (native), Cantonese (native), French (elementary)

**Interests:** Volunteer work (worked as volunteer teaching project leader for 1 year), jogging, swimming, reading, singing