

ERHAO ZHAO

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EDUCATION

Princeton University

Master in Finance

Princeton, NJ

05/2023 (expected)

- **Anticipated Coursework:** Asset Pricing, Statistical Analysis of Financial Data, Financial Econometrics, Computational Finance in C++, Financial Risk and Wealth Management, Statistical Theory and Methods

Cornell University

Master of Engineering in Computer Science

Bachelor of Arts in Computer Science and Economics (with Distinction)

Ithaca, NY

05/2021

05/2020

- **GPA:** 4.04/4.3 (3.93/4.0), Dean's List (all semesters)
- **Relevant Coursework:** OOP and Data Structures, Computer Architectures, Algorithms, Operating Systems, Systems Programming, Mathematical Analysis, Linear Algebra, Probability, Statistics, ODE, Stochastic Processes, Statistical Data Mining, Machine Learning for Intelligent Systems (TA), Large-Scale Machine Learning Systems (TA), Big Data Technologies, Computer Vision, NLP

WORK EXPERIENCE

Vanguard

Quantitative Research Intern, Quantitative Equity Group (Equity Alpha Strategies)

Malvern, PA

06/2020 – 08/2020

- Conducted a research project on seeking alpha strategies using machine learning techniques with PyTorch and Scikit-Learn and statistical techniques such as ad-hoc signal regularization and industry contextualization and neutralization for signal noise reduction and financial forecasting with nonparametric panel dataset
- Explored and built unstructured and non-linear multi-factor equity forecasting frameworks to identify potential complements to traditional linear-structured models commonly used in quantitative equity investment space
- Experimented with various signal filtering and processing techniques and performed neural network architecture design, hyperparameter optimizations, fixed-window and extending-window rolling training, software optimizations, out-of-sample and in-sample backtesting on long/short portfolios constructed by models which outperformed the linear benchmark model

CICC

Investment Banking Intern, Energy Group, Investment Banking Division

Beijing, China

06/2019 – 08/2019

- Material Asset Restructuring M&A (600131.SH): Joined an on-site project team and worked closely with an A-share listed energy company on its restructuring, fundraising and acquisition of four energy-related technology companies
- Potential NYSE Spin-off IPO: Conducted research and provided advisory on Spin-off IPO for an NYSE listed TMT company, performed financial statement analysis, built valuation models and prepared presentation materials and pitchbook

CITIC Securities

Fixed Income Research Intern, Research Group

Beijing, China

06/2018 – 08/2018

- Conducted quantitative and fundamental fixed income research and modeling with a focus on rate securities for internal and external distribution
- Research Topics:
 - Statistical modeling such as degree of deviation of DR007 for macroeconomic forecasting
 - Divergence of high liquidity injection and low public credit level based on Chinese AFRE and M2 data
 - Depressed infrastructure and fixed-asset investment of 1HY of China with a focus on the electricity power industry

PROJECTS AND RESEARCH

Extending Diebold-Li Model to Yield Curve Forecasting Models using Machine Learning

Research Project, Advised by Professor David Ruppert, Cornell University

Ithaca, NY

09/2020 – 12/2020

- Conducted research on building dynamic forecasting models for parameters in the Diebold-Li model using various machine learning techniques including feedforward neural network and LSTM

Neural Question Answering Systems

NLP Project, Cornell University

Ithaca, NY

10/2020 – 12/2020

- Designed two Question Answering NLP systems for the SQuAD 2.0 dataset with deep learning and DistilBERT fine-tuning for extracting answers for questions given relevant context texts

Mixed Frequency Time Series Forecasting using LSTM-CNN Architecture

Research Assistant, Beijing Institute of Big Data Research, Peking University

Beijing, China

12/2019 – 01/2020

- Built Mixed Frequency Time Series Forecasting models using LSTM-CNN architecture with PyTorch for macroeconomic and financial index forecasting with mixed-frequency dataset

Equity Forecasting Based on Twitter Sentiment Analysis with Deep Learning

Artificial Intelligence Practicum Project, Cornell University

Ithaca, NY

09/2019 – 12/2019

- Built an NLP model with deep neural network to perform real-time sentiment analysis on Twitter tweets for day trading decision making on large-cap stocks

SKILLS AND INTERESTS

Computer Skills: Python, C/C++, Java, SQL, R, OCaml, MATLAB, Stata, Latex, Excel, Word, PowerPoint, Wind, Bloomberg
Languages: Mandarin (Native)

Interests: Soccer (President of Cornell CDSC Soccer Club, Bronze Medal in 2018 Ivy Cup Soccer Tournament), Basketball, Tennis, Football, Poker, Fishing, Skiing