Shutong Ding

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EDUCATION

The University of Chicago **Chicago, IL**
Master of Science in Financial Mathematics **Expected December 2024**

- Courses: Machine Learning in Finance, Portfolio Theory & Risk Management, Option Pricing, Stochastic Calculus, Credit Markets, Big Data, Financial Statistics: Time Series, Forecasting, and High Frequency Data

Colgate University **Hamilton, NY**
Bachelor of Arts in Computer Science, Bachelor of Arts in Applied Mathematics **May 2023**

- Courses: Probability Theory, Statistics, Data Structures and Algorithms, Partial Differential Equations, Linear Optimization, Multivariable Calculus, Natural Language Processing, Machine Learning, Statistical Modeling
- Awards: Honors in Computer Science; Meritorious Award at SCUDEM modeling challenge

SKILLS

Computing: Python, C++, Java, R, MATLAB, HTML, LaTeX, Unix/Linux, MS Office
Knowledge: Financial Markets, Machine Learning, Statistical Modeling, Data Analytics, Econometrics, NLP

EXPERIENCE

Zephyr Capital **Chicago, IL**
Quantitative Researcher Intern **June 2024 – August 2024**

- Developed 18 low-correlation tick-level factors based on market microstructure, including liquidity and order book imbalance, achieving a marginal improvement in backtesting performance of 14.2%
- Implemented SOTA deep learning models (PatchTST, UniTST, TSMixer, and ODENet) using PyTorch for multivariate time series forecasting; tested these models on tick-level and minute-level data for futures and stocks
- Conducted ablation studies through various experiments to explore the capabilities of models' expressivity

Spline Data **Chicago, IL**
Quantitative Researcher – University of Chicago Project Lab **March 2024 – May 2024**

- Developed a predictive model to evaluate the liquidity profile of municipal bonds
- Utilized Polars for extensive dataset management; conducted comprehensive EDA and feature engineering on 246 features, creating pivotal new features that significantly boosted models' performance
- Designed and implemented an ensemble method that aggregates outputs from SVM, Random Forest, XGBoost, and ARIMA models, achieving a 38.7% improvement in prediction accuracy

Sixie Capital **Shanghai, China**
Quantitative Analyst Intern **June 2023 – August 2023**

- Collaborated in constructing a micro-cap fund, conducting in-depth strategy analysis of a referenced high-performing fund's holdings, industry allocation, and rebalancing techniques; enhanced fund performance by identifying key differentiators in stock selection through rigorous backtesting
- Analyzed the performance of various factors on PnL, evaluating their effectiveness before and after earnings announcement dates, segmented by market capitalization and different earnings seasons

Zheshang Securities **Shanghai, China**
Asset Management Intern **June 2022 – August 2022**

- Constructed a model to evaluate the rebalancing power of portfolio managers; employed WLS regression and Lasso regression to simulate daily stock holdings based on quarterly data
- Integrated the rebalancing model into a comprehensive factor model and conducted backtesting on a dataset of 1,443 funds, contributing to the development of a Fund of Funds (FOF) that achieved a 22.19% annualized return

PROJECTS

Financial Sentiment-Confidence Analysis, *Colgate University* **January 2023 – May 2023**

- Proposed a dual approach integrating traditional sentiment analysis with a confidence measure
- Fine-tuned the pre-trained FinancialBert model on the Financial PhraseBank dataset after pre-processing, achieving a 40% increase in accuracy; formulated evaluation metrics to balance the trade-offs between precision and recall

Harbor Seal Face Recognition, *Colgate University* **January 2023 – May 2023**

- Built a Vision Transformer (ViT) based deep learning model using PyTorch for facial recognition of harbor seals
- Trained on 1,176 pre-processed images; yielded 90.7% Rank-1 accuracy, outperforming the existing SealNet model