Beining Jin

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EDUCATION

| Expected 12/2025 | **University of Michigan** | Ann Arbor, MI |

M.S. in Quantitatoive Finance and Risk Management

- **Mathmatics and Statistics:** Financial Mathematics, Machine Learning in Finance, Deep Learning, Statistic

| 09/2019-06/2024 | **Fudan University** | Shanghai, China |

B.S. in Finance in the School of Economics (with Outstanding Student Award:2019-2020, 2021-2022)

- **Mathmatics and Statistics**: Stochastic Analysis, Econometrics, High-dimensional Calculus, Linear Algebra

INTERNSHIP EXPERIENCE

| 11/2023-06/2024 | **SINOLINK SECURITIES** | Shanghai, China |

Quantitative Research Intern(Python)

- **Project:** Designed a downward-sloping curve model, based on **Stochastic and Yield Curve Modeling** to simulate and predict performance volatilities of pension target FOF portfolios across various maturities (2030-2060). Integrated the model outputs into the firm's risk assessment framework, enabling dynamic adjustments to portfolio allocations based on real-time volatility forecasts.
- Automated the data pipeline using Python, significantly reducing the time required for data cleaning, preprocessing, and model execution.
- Used Python to build algorithms, developed multi-factor models to project portfolio volatilities, and performed backtesting, achieving 3% annual return rate and 0.12 Sharpe ratio in increase through optimization of trading signals and parameters.

PROJECT

07/2024-08/2024 — **Stock prices and market index prediction based on Deep Learning (LSTM)**

- Used Python to preprocess data (data cleaning, volatility analysis, normalization) and build deep learning model (LSTM) to predict stock prices and S&P 500 index on TensorFlow.
- Tuned LSTM model hyperparameters (activation: ReLU/Tanh, regularization: L2) by TensorFlow on GPU for real-time predictions of the variation of S&P 500 index (Error 3.17%).

07/2024-08/2024 — **Banking (Industrial and Commercial Bank of China) Customer Churn Prediction**

- Developed algorithms to predict bank customer churn probability based on labeled data via Python programming and Apache Spark, preprocessed data (data cleaning, categorical feature transformation, standardization) and get training data via 5-fold cross-validation.
- Trained supervised machine learning models (Logistic Regression, Random Forest, K-Nearest Neighbors) and applied regularization with optimal parameters (F1 score: 0.735, 0.891, 0.822).

03/2024-04/2024 — **Kaggle - LLM Prompt Recovery Competition (Silver Medal, Python, PyTorch)**

- Input the text data into Google's open source LLM model (gemma-7b-it) to generate new text data to generate tons of training data.
- Developed an efficient ensemble prediction algorithm by generating and processing large-scale text data, building a retrieval database, and performing online inference.Utilized models for feature extraction(Seq2Seq) and enhance prediction accuracy(Phi2 fine-tuning, Zero-shot LLM models) .

07/2023-08/2023 — **Quantitative Analysis and Valuation Research based on Derivatives Investment**

Research Supervisor: Prof. David Shimko, Professor at NYU, Tandon School of Engineering

- Used Python to analyze price transmission between China-US spot futures prices and adjust trend and seasonality, implemented Granger causality test to validate a significant mutual transmission relationship, US being stronger.
- Accomplished the corresponding research paper, utilizing VAR, ARIMA and ARMA-GARCH model to study the price and volatility transmission, validating that both countries' futures markets perform better in volatility transmissions, while US market is more significant.

05/2021-06/2021 — **Simulated Portfolio Construction-Based on Multifactor Stock Selection and Mean-Variance Modeling**

- Used Python to rank and identify five types of indicators—profitability, valuation, operation capacity, solvency and macroeconomic indicators, established the regression model to screen out stocks and build the portfolio.
- Based on the mean-variance modeling and efficient frontier, determined individual weight in the portfolio via Python, achieving portfolio expected weekly return 1.35% and standard deviation 3.65%; then use Python to evaluate systematic financial risk and calculated key indicators.

COMPUTATIONAL SKILLS / OTHER

- *Programming languages:* Python (pandas, numpy, scipy, scikit-learn), C, R, Matlab, MySQL
- *Machine Learning:* Random Forest, Decision Tree, K Nearest Neighbors, Regularization, PCA, Model Evaluation
- *Languages:* English (fluent), Mandarin (native)