Dafu Zhu

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EDUCATION

Xiamen University — Xiamen, Fujian
Major: Finance — Dec 2021 - Jun 2025
- GPA: 3.70/4.0
- Courses: Mathematical Analysis, Statistics, Machine Learning, Numerical Analysis, Time Series Analysis, Financial Engineering, Python Data Analysis and Mining, Financial Mathematics, Fixed Income Securities

University of California, Berkeley — Berkeley, CA
Summer Session — Jul 2023 - Aug 2023
- Courses: Financial Derivatives (A), Behavioral Finance

INTERNSHIP EXPERIENCE

DolphinDB, Inc. — Hangzhou, Zhejiang
Data Analysis Intern — Aug 2024 - Oct 2024
- Designed a Barra optimizer framework and API, calculate data based on the existing Barra model, achieving eight target functions, including MinVariance, MaxSharpeRatio, and MaxIndicator
- Integrated eight constraint functions including industry and style factor neutralization and tracking error limits while enabling soft constraints to adapt to stock selection and risk management scenarios
- Analyzed back-testing results of 96 portfolios, where the optimizer improved the average annualized return by 1.13% and reduced the Maximum Drawdown by 2.45%

Infinity Capital Management Co., Ltd. — Shenzhen, Guangdong
Quant Research Intern — Mar 2024 - Jul 2024
- Leveraged Python and JoinQuant APIs to automate and streamline the entire data extraction and transformation pipeline, enabling efficient retrieval of historical market data
- Reproduced the Dynamic Contextual Alpha Model (DCAM) by using style factors to stratify the sample space, capturing differences in alpha factors across layers and dynamically adjusting the alpha factor weights
- Improved the DCAM model by employing Support Vector Machines (SVM) to cluster contextual factors, resulting in a 19% increase in the long-short portfolio's annualized return and achieving a Sharpe ratio reaching 1.86
- Implemented a stock index daily-frequency timing strategy based on Deep Q-Network (DQN); trained the DQN agent through temporal difference algorithm, incorporating feature engineering and hyperparameter tuning

China Industrial Securities Co., Ltd. — Shanghai
Quant Analyst Intern (Remote) — Sep 2023 - Feb 2024
- Conducted IC tests and quantile portfolio tests on various factors for analyst research reports; constructed composite factor using ICIR weighted method
- Implemented K-means algorithm to cluster daily return data of 28 industry indices, reducing dimensions to five indices; analyzed data spanning 2010 to 2024 across four stages and authored a comprehensive report

RESEARCH AND PROJECTS

Quantitative Investment and Algorithmic Trading
Research Assistant | Advisor: Haiqiang Chen, Professor — Jul 2024 - Sep 2024
- Conducted research on high-frequency trading strategies, strategy evaluation and attribution analysis, and the construction of a factor research framework
- Developed a tutorial for the graduate course on Quantitative Investment and Algorithmic Trading, implementing order-splitting strategy, cross-market arbitrage, pairs trading, and the Brinson model

Kaggle - LLM Science Exam
Award: Bronze — Sep 2023 - Oct 2023
- Built and fine-tuned DeBERTa and LLAMA2 models with advanced preprocessing (truncation, padding, tokenization) and custom feature engineering to enhance prediction accuracy
- Achieved MAP@3 score improvement (0.895 to 0.905) through model ensembling and integration of external datasets for improved contextual understanding

Mathematical Contest in Modeling (MCM)
Honorable Mention — Apr 2023
- Developed a multi-dimensional evaluation model to assess the impact of hosting the Olympic Games, integrating metrics such as economic benefits, land use, human satisfaction, and future opportunities
- Applied TOPSIS, entropy weight method, and Principal Component Analysis (PCA) to rank potential Olympic host cities, delivering strategic, data-driven recommendations

SKILLS

Computer: Python (NumPy, Pandas, SciPy, PyTorch), C, R
Language: Mandarin Chinese (Native), English (Professional)