YANFEI CUI

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EDUCATION

Tsinghua University, Department of Physics, Physics, *Bachelor*   2017.09 - 2021.07

- **GPA**：3.49/4.0

- **Major courses**：

    - **Math courses**：Discrete Mathematics, Calculus, Linear Algebra, Mathematical Methods for Probability and Statistics, Statistical Inference, Complex Variables, Mathematical Equations

    - **CS courses**：C++ based on Linux, Data Structures, Pattern Recognition and Machine Learning, Introduction to Deep Learning, Computer Organization and System Architecture

Tsinghua University, Department of Automation, *Master*   2021.09 - 2024.07

- **Research field**: Bioinformatics, medical mage processing

- **Major courses**: Machine learning, probabilistic graphical models, convex optimization, advanced statistical computing

INTERNSHIP EXPERIENCE

WorldQuant, Quantative researcher summer intern   2023.07 - 2023.09

- **Daily alpha research**: I construct delay-1 alpha in the US stock market from various aspects such as price-volume, fundamentals, and analysts. From multiple perspectives including volume-price divergence, asset turnover, and market opinion divergence, a total of 10+ new factors have been submitted. The single-alpha Sharpe ratio is consistently above 1.5 with stable out-of-sample performance exceeding 50% of the in-sample performance.

- **Intraday alpha research**: I conduct intraday 5-minute frequency alpha mining and research in the US stock market. I perform alpha mining from multiple perspectives such as volume-price divergence, order book microstructure, etc. A total of 6 alphas have been submitted, with the highest single-factor Sharpe ratio reaching 14.

Century Frontier Asset Management, Quantative researcher intern   2023.10 - Present

- **Price-volume alpha research**: I use Chinese A-share price and volume data for alpha research. I have constructed more than 30 alphas from various perspectives such as momentum, beta, autocorrelation, positive volatility, K-line denoising, etc. The maximum correlation with the company's existing alpha library is around 0.3. The annualized returns are all above 10%, and the Sharpe ratios are all greater than 2. 80% of the alphas show no weakening in out-of-sample performance. Three of these alphas have been validated to provide gains to the company's existing models.

- **Fundamental alpha research**: In order to identify momentum signals in A-shares and increase the long position returns of alphas, I adopt a method that combines fundamental analysis with price-volume information. From multiple perspectives such as cluster comovement, opening momentum, low volatility momentum, timing momentum, insider trading, etc., I have constructed multiple momentum alphas. The long position returns are consistently outperforming the CSI 500 Index.

RESEARCH & COMPETITIONS

Industrial and Commercial Bank of China Fintech Data Mining Competition, top 5%   2023.05

- **Customer purchase intention prediction**：Facing encrypted data, I extract features and use machine learning models such as xgboost to predict customers' willingness to purchase financial derivatives.

- **reduce overfitting**：In order to address the issue of inconsistent distribution between samples, I performed sparse sampling on the training set to adjust the sample distribution.

OTHER ACTIVITIES

Education Industry Entrepreneurship, Online Education for Enhancing Learning Abilities   2022.01 - 2023.08

- **Self-media entrepreneurship**: I provide solutions for parental education services to families in third-tier and lower cities in China. I have created a self-media account called "清华小崔老师" with over 3 million followers on the internet.

SKILLS & INTERESTS

- **Technical skills**：Machine Learning, Deep Learning, Python, C/C++