Ziyu Wang

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Skills

- **Programming Language:** Python, Java, C/C++, JavaScript, SQL, HTML, CSS, R, MATLAB, VBA
- **Tools:** MySQL, MongoDB, ExpressJS, React, Spark, Flask, Sklearn, Pytorch
- **Coursework:** Programming for Web; Big Data Analytics; Computer Programming

Education

University of Pennsylvania Philadelphia, PA
MSE in Data Science Sept. 2022 – May 2024 (Expected)

ShanghaiTech University Shanghai, SH
Bachelor of Physics, Minor in Finance (Core GPA: 3.8/4.0) Sept. 2017 – June 2021

Honors

- 1st place in the 2019 Citi Cup FinTech Development Competition organized by Citibank #1 out of 79

Projects

Instagram-like Video and Photograph Sharing Web APP Aug. 2022 – Present
(Full-stack, Javascript/React/Express.js/Node.js/MongoDB/Cypress/Jest/Herok)

- Followed the Agile software development procedure, implemented frontend layout, REST API design, and backend development.
- Used React for frontend, Express for backend, MongoDB for database, Cypress, and Jest for testing.

Fluid Dynamics Simulation of Needle-like Particles in Solution Oct. 2020 – May 2021
(Fluid dynamics simulation program, Python/Multiprocessing)

- Constructed equations of motion for self-driven needle-like particles with initial velocities.
- Coded a simulation program based on event-driven algorithms to simulate the trajectories of particles.
- Solved the collision prediction equations by modified interval Newton method. Then reduced computing time by eight times by parallel computing.
- Obtained the asymptotic form of the diffusion coefficient from theoretical and experimental aspects, proved the "effective tube theory" and got the Outstanding Thesis Award.

Multi-factor Video Channel Digital Marketing and Investment Platform July 2019 – Nov. 2019
(Full-stack, Python/Urllib/React/Flask/Sklearn)

- Developed a Web with the function of video channel data visualization, investment recommendations, valuations, comments sentiment analysis, and development forecasts based on machine learning.
- Used Urllib for data crawling, Pandas for data cleaning and integration, React for frontend, Flask for backend, Sklearn for forecast function, and Selenium for Automated testing.
- Chose isotonic regression for development forecasts due to the small sample size. All ten channels recommended by the platform doubled their fan volume after three months.
- Won first place in Citi Cup FinTech Development Competition, was highly praised by Mr. Pan, CIO of Citibank, and received a $13,000 bonus and a management trainee offer from Citibank.

Multi-Factor Stock Selection Program June 2019 – Aug. 2019
(Quantitative Investment Model Implementation, Python/JoinQuant)

- Implemented a multi-factor stock selection program for quantitative investments. Taking CSI-300 stock as research objects, constructed more than 50 factors neutralized by market value and industry.
- Conducted stepwise regression to reduce Multicollinearity, which gradually added factors to the model and used F-test and T-test to remove factors with high correlation.
- The strategy's out-of-sample returns > 10% and Sharpe ratio > 2.0 during the 2018-2019 backtest period.

Professional Experiences

Yibei Investment | *Quantitative Researcher (Full-time)* Aug. 2021 – June 2022

- Mined new Alpha factors based on 1-minute data, submitted more than 300 indicators and more than 30 effective Alpha factors (Out-of-sample Sharp ratio >2.5, IC >1.5%). A quarter of the factors were used in the actual investment.
- Cleaned the minute ticker market data and the pending order data to generate "Yesterday PM and Today AM" (PAM) series indicators which generated Alpha with an average correlation below 0.2.
- Developed stratified backtest function and Alpha factor correction function on the backtest platform. The latter improved the IC of 20 alpha factors by 30% via adjusting Alpha factor values of specific layers according to the results of the stratification backtest IC.