Fangyuan Li

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EDUCATION

Zhejiang University **Zhejiang, China**
B.S. in Statistics, Data Science Track Expected July 2023

- GPA: 3.86 / 4.0 (Third Year GPA: 3.91 / 4.0)
- Honors: Provincial Government Scholarships (10 out of 260); Zhejiang University 2nd Prize Scholarship (Top 10%)
- Core Courses: Statistical Learning, Data Modeling and Analysis, Advanced Algebra, Regression Analysis, Computer Simulation, Stochastic Processes, Software Design and Development Using C

WORK EXPERIENCE

DolphinDB, Inc. **Zhejiang, China**
Data Science Intern, awarded as excellent intern July 2022 – December 2022

- Optimized the computing efficiency by over 200 times by replacing the naïve iterative computing method for Net Asset Value Index with parallel matrix computation through internal C++ libraries
- Realized the panel calculation and the streaming calculation and Newton's Method for Guotai Alpha 191 factors using DolphinDB (Python + SQL), which was published as a new module in DophinDB and attracted 1100+ customers to watch the live feature launch
- Researched the applications of pivot table in several industry scenarios, conducted data analysis, and benchmarked the pivoting performance of DolphinDB against Python; Published the research deliverable in the product manual
- Built XGBoost, MLP (Multi-layer Perceptron), and RNN (Recurrent Neural Network) to perform real-time demand forecasting for the bike-sharing system; Achieved 0.0534 RMLSE through RNN

xQuant Technology Co.,Ltd **Zhejiang, China**
Quantitative Analyst Intern April 2022 – June 2022

- Optimized the investment portfolios for clients by implementing eigenvalue adjustment to the factor risk matrices in the Barra model, ran 3,000 Monte Carlo simulations in Python, and reduced the bias by 20%
- Derived the formula of ARC (Active Risk Contribution) using multivariate statistical analysis, helping the team better understand the statistical principles of the multi-factor model

RESEARCH EXPERIENCE

Analysis of the Volatility of China Financial Markets Based on the View of Hurst Statistics Apr 2022 – Jun 2022
National Statistical Modeling Competition for College Students in China

- Conducted literature review and used the filter method and the pre-averaging approach to mitigate microstructure noise in high-frequency financial data when estimating Hurst Exponent of the integrated volatility
- Implemented the algorithm to calculate Hurst Parameter using MATLAB, examined the estimation using simulated financial data by implementing cross-validation, random seeds, and method of weighted mean to select parameters
- Incorporated the realized volatility of the China stock market into this aforementioned algorithm to estimate the Hurst Exponent and conducted a statistical hypothesis test to ensure the reliability of the results
- Submitted a paper *Estimation of Hurst Parameter of China Financial Market* and won the provincial first prize

Solar Panel Energy Prediction Study Using Machine Learning Jan 2022 – Fab 2022
GEARS program of North Carolina universities

- Leveraged Time Series Analysis to predict the energy consumption of solar panels, built and refined MLR, SVR, and NN models to predict heat load; Achieved the lowest RMSE of 1.047 with SVR
- Implemented K-means to cluster weather-influenced energy consumption in the U.S. and used ggplot2 to visualize the clustering result, which helped the process of decision-making of whether to install the solar panel
- Summarized the research in a poster, delivered the presentation, and won the Honorable Mention

'Webwork' Online Homework System Log Analysis Apr 2021 – May 2022

- Cleaned the log data collected from the online system, conducted correlation analysis on students' scores and their homework behaviors, and detected/removed outliers through Q-Q plot
- Implemented a Genetic Algorithm in MATLAB using relevant features of the questions as the fitness factors, designed and built an Automatic Test Paper Generation System which generated problem sets based on teachers' needs
- Improved the functionality of the system, which had been adopted by math teachers throughout Zhejiang University

SKILLS AND LEADERSHIP

- **Programming Skills**: R, Python, C, MATLAB, SQL, Linux, DolphinDB, LaTeX, SPSS, HTML
- **Machine Learning**: Supervised (XGBoost, Neural Net, SVM, etc), Unsupervised (K-means, PCA, RBM, etc)
- **Visualization**: Python (Matplotlib, Seaborn), R(ggplot2), Excel, PowerPoint
- **Leadership Experience:** President of the Student Union of the School of Mathematical Sciences
- **Volunteer Experience:** Four-star volunteer in ZJU with cumulative volunteer hours of over 200 hours