Ziliang Shen

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Personal Statement

Skilled in theory and programming, I excel in project management and team leadership, consistently delivering complex projects. With a calm demeanor and a passion for tech innovation, I thrive on learning and applying new insights in my work.

EDUCATION

Shanghai University of Finance and Economics 2021.09 - Now

- *PhD*, Mathematical Statistics, School of Statistics and Management

Nanchang University 2015.09 - 2019.06

- *Undergraduate*, Mathematics and Applied Mathematics (Financial Mathematics), School of Science

Work Experience

Fibonacci Capital Link, Data Analysis 2024.04-2024.05

- During my internship at Fibonacci Capital, the company required in-depth data analysis of specific industries to support investment decisions. I collected data, built statistical models, and conducted net asset value investigations and quantitative analysis.

  1. **Data Visualization**: Utilized Python and its related libraries (such as matplotlib) for data visualization.
  2. **Statistical Learning Models**: Built basic statistical models, decision trees, and random forest models, applying statistical knowledge for quantitative analysis to identify patterns and trends within data.
  3. **Financial Analysis**: Analyzed financial statements and short data, conducted net asset value investigations, and provided detailed industry analysis reports.

Shanghai Electric Solar Cell Target Detection Project 2024.05-2024.06

Project Background: This project is a collaboration between Shanghai University of Finance and Economics and Shanghai Hongpu Information Technology Co., Ltd., aimed at achieving solar cell target detection to improve detection accuracy and avoid missed and false detections of electromagnetic cells.

- **Role and Responsibilities**: As the project leader on the university side, I led a team of graduate and undergraduate students, working closely with the on-site department to ensure workflow integration and the smooth completion of project interfacing.
- **Technical Implementation**: I led the team to complete data annotation and iteratively optimized the target detection model based on the Faster R-CNN network architecture to improve detection accuracy and efficiency.
- **Cross-Department Collaboration**: Communicated and collaborated effectively with the on-site department, integrating workflows to ensure seamless alignment between project requirements and technical implementation.

The project successfully completed on-site interfacing and delivery, meeting the established standards and effectively enhancing the quality and efficiency of solar cell detection.

Shanghai GDP Nowcasting Project 2024.06-2024.09

This project is a collaboration between Shanghai University of Finance and Economics and the Shanghai Municipal Bureau of Statistics, aimed at using various Nowcasting models with machine learning methods to achieve real-time forecasting of Shanghai's GDP growth rate.

- As the project leader, I participated in the entire process from model design to implementation.

  1. **Technical Implementation**: Developed various Nowcasting models, including dynamic factor models, machine learning models (Lasso, Elastic Net, SVM, etc.), mixed-frequency Bayesian additive vector autoregressive tree (MF-BAVART) models, and Weekly Economic Index (WEI) models. Conducted in-depth parameter tuning of these models to ensure the accuracy and reliability of the forecast results.

Research Results

Caixing Wang, **Ziliang Shen**(2024). Distributed High-Dimensional Quantile Regression: Estimation Efficiency and Support Recovery.

- International Conference on Machine Learning (ICML) 2024, **Spotlight(accept rate 3.6%)**. [Paper] [Code]

This study addresses the problem of efficient communication and computation in distributed robust regression. It is my first published paper and marks the beginning of my research on distributed algorithms. I contributed to the entire algorithm design and the implementation of comparison codes for various methods in this paper.

Talks and tutorials

Distributed High-Dimensional Quantile Regression: Estimation Efficiency and Support Recovery. 2024.07

Invited Presentation at the 17th China R Conference 2024 X Intelligence Conference 2024 International Forum on Data Science Joint Conference - New Statistical Methods I (RUC). Link

Software

- Proficient in R and Python.
- Experienced with MATLAB, SAS, Stata, and C.

Honor

First-class Undergraduate Scholarship, Nanchang University.

Second-class Graduate Scholarship, Shanghai University of Finance and Economics.

Excellent Student Award and Excellent member of the Communist Youth League, Shanghai University of Finance and Economics.