Jiayang Nie

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EDUCATION

University of California, Berkeley Dec 2022
Master in Statistics; GPA 4.00; Linear Modelling, Statistical Inference, Advanced Probability, Experimental Design

University of California, Berkeley May 2021
Bachelor in Statistics; Minor in Mathematics; GPA 3.97; Graduated with the Highest Distinction
Courses: Stochastic Process, Game Theory, Bayesian Inference, Data Structure, Time Series, Real Analysis, Linear Algebra

WORK EXPERIENCE

Guotai Junan Securities May 2021 – Jul 2021; Dec 2019 – Sep 2020
Research Intern, Machine Learning Remote & Shanghai, China

- Applied Machine Learning models on stock dataset to extract signals and designed algorithms to profit by trading on signals.
- Cleaned raw csv data, designed features, and coded a program to obtain signals from raw data that tends to achieve the maximum correlation with stock price change, such correlation coefficient reached around 50% with XGBoost model.
- Designed algorithms that focused on beating the market by high frequency trading and back test shows a steady 5% return on a scale of 60 million fund from period 2021-02-01 to 2021-04-01.
- Improved the speed for searching optimal parameters by over 50% through rewriting algorithms in Numba package.

Tencent Jun 2019 – Sep 2019
Computer Vision Research Intern, Face Recognition Shanghai, China

- Researched on the architecture of Neural Network and applied to detect facial log-in attacks like using a picture to log in.
- Improved the original classification framework by reapplying ResNet through pyTorch and trained on GPU through Cuda.

Ant Group, Alibaba Jul 2018 – Oct 2018
Data Analyst Intern, Default Detection and Credit Rank Shanghai, China

- Improved a GBDT model precision rate by 50% with a fixed 80% recall rate for predicting bond-default possibility with a creative filtering method for the training set data; team named this filtering method after my name.
- Customized a data pipeline to add an important feature into a GBDT model through Alibaba's cloud computing platform, accuracy for the output reached more than 97 percent.

PUBLICATION

Jiayang Nie, Xiao Qiao, Sibo Yan (2020). *COVID-19 Effects on Intraday Stock Market Behavior.* In Sabri Boubaker, Duc Nguyen (Eds.). Financial Transformations beyond the Covid-19 Health Crisis. World Scientific Publishing. (In the process of printing)

PROJECTS

Experimentation Under Social Network Interference Jan 2022 – May 2022

- Researched on the solutions for measuring average treatment effects for experiments under social network spillover effect.
- Filled a minor gap for the result of Aronow and Samii (2017) under misspecification cases with simulation study.
- Showed that biased WLS/OLS estimator outperforms unbiased Horvitz-Thompson estimator for complex social networks.
- Connected a special case of Aronow and Samii's framework with 2 by 2 factorial experiment and linear regression.

Airbnb Demand Forecasting Jan 2022 – May 2022

- Led a team at UC Berkeley to analyze Airbnb listings' demand and revenue in Los Angeles areas through machine learning.
- Discovered the real-estates and geographic factors that impact the potential return-on-investment and demand by SHAP.
- Trained a price model through XGBoost to set an optimal price for Airbnb hosts to maximize their return-on-investment.

Analysis of Covid-19's Impact on Intraday Stock Market Jan 2019 – Oct 2020
Supervisor: Dr. Sibo Yan, University of California, Los Angeles

- Measured the speed of change of stock market volatility through applying a model hypothesized in a top-edge research paper in R by Generalized Method of Moments.
- Improved the model-fit converge rate from 50% to 70% by smoothing and pooling the time-series data.
- Confirmed and solidified with evidence of a correlation between stock price change in the 1st and the 13th half-hour in a trading day, crucial findings for both research purpose and business use.

SKILLS

- **Programming Tools**: Python(excellent), R(excellent), SQL(proficient), Java(proficient), Pandas, Pytorch, sk-learn, seaborn
- **Analysis Skills**: Linear Models, Experimental Design, Ensemble, Bayes Hieratical Models, Neural Networks, Causal Inference