Liangzong, Ma

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EDUCATION

Peking University, School of Economics *Beijing, China*
Major in Finance, Double Major in Applied Mathematics, GPA: 3.78 / 4.0 (Ranking: Top 10) *09 / 2018 – 07 / 2022*

- **Relevant Courses**: Econometrics **(98)**, Mathematical Economics **(100)**, Microeconomics **(97)**, Advanced Mathematics **(96)**, Linear Algebra **(96)**, Probability and Statistics **(92)**, Data Structure and Algorithm **(96)**, Computer Science **(94)**, International Finance **(100)**
- **Awards and Honors**: Third-class scholarship of Peking University (Top: 10%); First Prize (Province) in CPHO (Ranking: 7)

PROFESSIONAL EXPERIENCE

Shenzhouchiji Fund Management Co., Ltd *Beijing, China*
Quant Intern, Strategic Investment Research Division *07 / 2020 – 09 / 2020*

- Used Python to construct packages contained frequently-used time-series, cross-section and element-wise functions and explanation docs; used Python packages like *bottleneck* and improved algorithms to promote the efficiency greatly
- Developed the back-test system in Python supporting the assessment of a strategy through graded annualized abnormal return and IC histograms, cumulative multiple / empty / portfolio and graded net worth curves and factor turnover
- Constructed hedging strategies system supporting automatically creating hedging strategies through matching the stock value and short position value of CSI300 or CSI500 stock index futures when a trading list is passed in; utilized operations like locking positions to highly reduce down the trading costs

HuaTai Securities *Beijing, China*
Quant Intern, Financial Engineering Group *04 / 2020 – 06 / 2020*

- Participated in the research about *Industry Configuration landing: Index Enhancement* and wrote the related report; explored the types of industry rotation model applicable to index enhancement through Monte Carlo simulations
- Used Python and MATLAB to create 0-1matrix based on Monte Carlo simulations and binomial distribution to predict the tendency of industries; used linear and quadratic programming to solve the maximum returns based on multi-factor Alpha models and prediction
- Drew the conclusion that CSI 300 is the most suitable security for industry rotation strategy by running strategies on CSI 300, CSI 500, CSI 1000 and verified the conclusion according to the existing CSI 300 fund in the market

Beijing TaiChuang Investment and Management Co., Ltd *Beijing, China*
Quant Intern, Investment Research Division *01 / 2020 – 04 / 2020*

- Realized pattern recognition in A-share market by detecting whether the tendency of several indexes such as mutual information, NDCG and IR have appeared similarly in the past; built up strategies based on the result of pattern recognition with Sharpe Ratio over 2
- Used machine learning models like XGBOOST, Random Forest, LASSO, Regression/Decision Tree and time-series data to construct return ratio prediction model
- Used Python and MATLAB to realize the functions abstracted from the logic of factors mentioned in research reports and papers and constructed a function database; independently created Genetic Programming model based on the function database to explore quantities of new factors

RESEARCH EXPERIENCE

Research on CSI 300 Stock Index Futures Pricing Based on Stochastic Analysis *Peking University*
Core Member, Advisor: Professor Yiming Wang (Dean of Finance Department), School of Economics *06 / 2020 – 12 / 2021*

- Tried to explore the pricing model of CSI 300 stock index futures by consulting BS formula and other existing theoretical pricing models of commodity futures based on stochastic analysis
- Studied the fitness and possible improvement of several models like ECM_GARCH and Geometric Brownian motion process by realizing the model based on CSI 300 market and analyzing the result

Research on Structural Change of Middle Class in Rural China *Peking University*
Core Member, Advisor: Professor Li-an Zhou (Associate Dean of GSM), GSM. *05 / 2020 –*

- Used Python to filter the rural mid-income group and divide their assets and income; carried out the macro portrait of such group by analyzing the mean and variance of each asset and income part; used matplotlib to visualize the result
- Traced assets and income of several special samples and discussed the possible explanation

Research on Inequality Carried by Entry of Big Companies *Stanford University*
Remote Research Assistant, Advisor: Franklin Qian (PHD) *04 / 2019 – 06 / 2019*

- Searched the information of companies such as the time and place of establishment, jobs providing, salary and whether still in operation, to verify the accuracy of the database; checked whether the enterprise has policy and welfare support and other information for future use

EXTRACURRICULAR ACTIVITIES & SKILLS

- Assistant teacher of microeconomics, School of Economics, Peking University *09 / 2020 – 01 / 2021*
- Programming & Languages: Python, C++, C, MATLAB, Stata, R, Web Making, Office; Chinese (native), English (fluent; CET4: 638/710)
- Interests: Swimming, Piano, Chess