

# Luofeng Zhou

Sex: Male

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Cooperative and active in academic environment, good at communication skills, open-minded

## Education

**Wuhan University, Economic and Management School**

*Sept. 2015 – Jul. 2019 (expected)*

*majoring in Mathematical Finance and minoring in Computer Science,*

*Expecting B.A. in Economics, B.S. in Mathematics, B.Eng. in Computer Science.*

➤ **3.84/4.00 Overall GPA.**

## Academic Projects

**Innovative Entrepreneurship Program, Wuhan University**

*Apr. 2016 - Jul. 2018*

*Participated in a 2-year project focusing on the design of an APP aimed at tourism market and quantitative analysis.*

- We found the potential trend of the “private tour” and favorable policies related to this emerging area, so we were trying to design a platform for matches between private tours and tourists in need.
- By using market’s and users’ data, we tried to apply AI methods such as machine learning models and NLP approaches to carry out customer analysis and develop a recommendation system to speed up the matching process. For machine learning models, they act as a predictor to summarize the characteristics which potential tourists may bear. NLP models try to attract pivot information in online remarks to identify which group of people may feel content about a tour to where and with whom.
- Contribution: Leader of the market and accounting sector; analyzed potential competitors and help form the NLP model for remarks on interest of places and travel agencies.

**Interdisciplinary Research, Wuhan University**

*Sep. 2017 - Dec. 2017*

*Participated in an interdisciplinary research focusing on big data indicators for financial fraud*

- We tried to use big data method to detect fraudulent financial statement of listed companies in US and China separately.
- We specified that sentimental elements gained by text mining instruments such as basic discrete bags of words model, modern Word2Vec model and Latent Dirichlet Allocation (LDA) model in annual reports (10-Ks in US) have significant indicator effect of fraudulent financial statements in the same year clustered by the same accounting firm. Plus, traditional machine learning models like SVM also perform a good predicative power.
- We also found that before and after the accounting criteria changed, the effect of fraudulent financial statements on stock prices differs drastically both in scope and in scheme.
- Contribution: Leader of financial part; applied the output which text mining or machine learning models with financial intuitions and previous researches, combined the newly formed variables with pure financial ones to conduct regressions in financial markets and compare the effects before and after these variables are added.

**Financial Market Research, Wuhan University**

*Dec. 2017 – Jun. 2018*

*Led a half-year research focusing on short sellers’ possible information sources around trading halts*

**“Are Short Sellers Informed? Evidence from the Short-selling Activities before Stock Trading Halts”**

- Informed trading appears before private information. Short-selling indicates confidence of investors stronger than normal selling actions. Abnormal short-selling then shows trades with private information, which might contribute to the market disorder and inefficiency.
- We found that the private information around trading halts explained much of the short-selling in Chinese listed company by comparing the abnormal short-selling with normal short-selling, in which information-abundant and moderate duration shows more insider trading and vice versa.
- Different from the phenomenon PEAD whose drifting time is short and relatively stable, the drifts after trading halts varied from different amount of information it contained and the duration of the halt. A longer halting period and more information let the drift longer and vice versa.
- Contribution: Second author; collected previous research to attest the contribution of the idea, did all the empirical experiments, wrote the draft paper.

**Interdisciplinary Research, Wuhan University**

*Jun. 2018 - Sep. 2018*

*Participated in an interdisciplinary research focusing on a novel model in macroeconomic causal inference*

**“Compression and Causal Relations Around Macroeconomics: an Improved CUTE Model”**

- Traditional Granger causality test preserves many demerits, so it is not always used in recent years. There are two ways to detect causality in time series data: use an appropriate instrument variable and structure equations; develop another model in detecting causality. In this project we use a newly developed model, CUTE, to do causal inference in Canadian macro-economy.
- The original CUTE model is applied to binary time series while economic variables are multivalued. We perform a multi-value expansion to let the original one fit the macro-economy. Theoretical and robustness tests are done to show the benefits of improved CUTE model with respect to traditional Granger causality test.
- From empirical data, improved CUTE shows a somewhat different results, which may provide advises on macroeconomic policies from a different perspective.

- Contribution: Leader of the economic part; testified the contribution of the idea in macroeconomic scale, selected variables before tests are done according to previous research, did experimental and empirical Granger test, formed the robust test, wrote the draft paper.

#### **Unsupervised Economics Research, Wuhan University**

*Ongoing*

*Participating in a research focusing on modeling the behavior of a principal-agent problem when a third party exists*

##### **“Information Disclosure and Competitive Equilibrium in Capital Market”**

- Traditional principal-agent problem does not assume the existence of a third part or simply their utility to be the same with one of the two sides. However, lots of cases tell that the third part such as sales manager play a quite important part in principal-agent problem with a unique utility function. Their most important power is to determine the degree of information asymmetric. The agent's choice has been researched under this circumstance, but the principal's best response has not been formed and so equilibrium is not been specified.
- In this paper, we tried to form theoretical explanation of the mechanism where a third party with unique utility function is involved and then characterize the behavior boundaries through Monte Carlo simulation and numerical specification for the final equilibrium.
- Contribution: Second author; derived part of the theoretical proof and did all the empirical tests, drafted the paper.

#### **Interdisciplinary Research, Wuhan University**

*Ongoing*

*Leading an interdisciplinary research focusing on high frequency causality in foreign exchange markets*

##### **“Free Temporal Causality from Market Microstructure Noise in Foreign Exchange Markets”**

- Granger causality test in vector auto-regression model performs poor when using high frequency data because of the existence of market micro-structure noise. Previous theoretical studies tried to model the micro-structure noise through stochastic analysis. It works in estimating the realized volatility but hard to be used in empirical works. Empirical scholars always use sub-sampled or aggregated data to dissolve the micro-structure noise, but high frequency causality is masked by this process. We are trying to use EM algorithm to form an implicit projection from low frequency data to high frequency data generating process and distributions of noise.
- Original EM algorithm does not consider the GARCH effect and we modify the code to allow a multivariate GARCH effect in VAR model to estimate more accurately. However, the convergent speed is relatively slow. Now we are researching on how to speed up this maximization process.
- Simulated data show a small MSE for the coefficient matrix and variance matrix of noises. Empirical data show the expected output (i.e. a smaller MSE of variance matrix in low frequency data and smaller variance in high frequency data) when lag operators are set 1. We are still working on the higher order cases.
- Contribution: Leader of the whole research group; formed the idea and testified the contribution, modified the traditional EM algorithm for bearing GARCH effect, collected previous related research, constructed variables, wrote the proposal.

## **Internship Experience**

### **Changjiang Securities, Wuhan, China**

*Jul. 2016 - Aug. 2016*

#### **Quant Intern, Department of Asset Management**

- Researched on the traditional multi-factored model in security selection and its performance especially in Chinese pharmaceuticals industry during the past few years.
- Researched on three biggest listed companies in pharmaceuticals industry.
- Assessed the whole pharmaceuticals industry by analyzing information from sentiments of media and investor.
- Armed traditional multifactor model with sentimental factors obtained by big data method to adapt more to the Chinese market.

### **China Universal Asset Management Co., Ltd, Shanghai, China**

*Jul. 2017 - Aug. 2017*

#### **Customer Analysis Intern, Department of Wealth Management**

- Wrote a report about what high net worth clients (HNW clients) concern during the past decade, the development of private banking service in Chinese market and the planning scheme to establish private banking group.
- Formed a modified multi-factored model by including special characteristics of HNW clients' concern and their changes to provide more favorable portfolios.

### **Panda Capital, Beijing, China**

*Jul. 2018 - Aug. 2018*

#### **Investing Intern, Department of Investment**

- Investigated a series of entrepreneurship programs around AI and medical care.
- Parsed sales and remark data from e-commercial platforms in objective fields.
- Summarized founders' past experience of successful and unsuccessful venture capital program to help decision making for a new program.

## **Miscellaneous**

- **Language:** Mandarin (native), English (proficient), TOEFL: 106/120.
- **Programming skills:** proficient in MATLAB, R, STATA, JAVA, PYTHON, SQL.
- **Hobbies:** Table tennis and singing.