

# WANG JIKAI

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## RESEARCH INTERESTS

◇ Complex Networks ◇ Statistical Learning ◇ Causal Inference ◇ Topology Data Analysis

## EDUCATION

**Southwest Jiaotong University(SWJTU), Chengdu, China** *Sept 2019- June 2023 (expected)*

B.S. in Statistics, School of Mathematics

**GPA: 85.98/100**

**Main Courses:** Mathematical Modeling ( $A^+$ ), Time Series Analysis ( $A^+$ ), Multivariate Statistics ( $A^+$ ),  
Market Research and Analysis( $A^+$ ), Engineering Statistical Practice( $A^+$ ), ...

## RESEARCH PROJECTS

**A mixed-frequency extreme asymmetric Granger causality study of USGDP and EPU**

*Team Leader*

*May 2022- present*

- Extended Granger causality test for mixed-frequency data USGDP and EPU to examine associations
- Conducted extreme and asymmetric Granger causality test in mixed frequency data USGDP and EPU
- Proposed tests allow a more detailed look at causality than traditional tests

**A Hybrid Deep Learning Model for Bitcoin Prediction**

*Team Leader*

*Jan 2022- present*

- Collected technical and financial determinants, especially clean energy and green bonds for the prediction model to improve accuracy.
- The proposed model outperforms ARIMA, SVR, LSTM and GRU in predicting bitcoin price accuracy
- Trading strategies based on the proposed model increased returns by 187.58% compared to buy-and-hold

**An empirical study of Air Quality Index and stock price volatility based on GARCH-MIDAS**

*Core Member*

*Nov 2021 –May 2022*

Individual research:

- Utilized Granger causality tests to examine the relationship between AQI and stock prices.
- Deployed DM test and MCS test to inspect Model robustness
- Proposed suggestions based on the results

Team collaboration:

- Used a composite indicator(AQI) to measure air quality
- Found an asymmetric effect of AQI on the stock market
- For out-of-sample prediction and resilience, GARCH-MIDAS and AQI-GARCH-MIDAS outperform.

**Analysis of data on physical health using zero-inflated generalized linear models**

*Core Member*

*May 2021 –Nov 2021*

Individual research:

- Developed the zero-inflated Poisson distribution generalised linear model to analyse the data.
- Designed the sample frame and wrote the report

Team collaboration:

- Visualisation of high-dimensional physical health data
- Developed 2 zero-inflated negative binomial distribution generalised linear models to analyse the data
- Found school-level and district-level aggregations for pull-up score

## PUBLICATIONS

- **Wang, Jikai**; Feng, Kai; Qiao, Gaoxiu. A Hybrid Deep Learning Model for Bitcoin Price Prediction: Data Decomposition and Feature Selection. *North American Journal of Economics and Finance*, 2022. (Under Review)
- Hu, Yang; Hong, Yanran; Feng, Kai; **Wang, Jikai**. Evaluating the importance of monetary policy uncertainty: the long and short-term effects and responses. *Evaluation Review*, 2022. (Published)

## SELECTED HONORS & AWARDS

- **First Prize (Top3%)** National Data Statistics and Analysis Competition for College Students 2021
- **First Prize (Top5%)** May Day Mathematical Contest in Modeling 2021
- **"Emei 89 Carrying Forward China" Scholarship** 2022
- **Puxin Education Cadre Scholarship** 2021
- **Outstanding Student Leader Award** 2020, 2021, 2022

## SERVICES

- **Class study commissar** *Sept 2019 –present*  
Organized Q&A sessions of the course and academic exchange activities  
Shared study materials and provided information for students to further their career
- **Mentor for freshman** *Jun 2021 –Oct 2021*  
Helped freshmen to better adapt to college life  
Provided information and advice to freshmen on choosing a sub-discipline

## SKILLS

**Programming** R(Tidyverse, mlr3verse, keras...), Python, Eviews, MATLAB  
**Languages** English (IELTS: 6.5), Mandarin (Native)