# JIKAI WANG

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## RESEARCH INTERESTS

◇ Complex Economic 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**
*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

## PUBILICATIONS

- **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. (Accepted)

## 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*
- **PUXIN Special Scholarship** *2021*
- **Third-class Comprehensive Scholarship** *2020*
- **Outstanding Student Officer Award** *2020 , 2021*

## 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)