

# Shiying Xiao

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## Education

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- **M.Sc. in Statistics** August 2023 – Present  
University of Connecticut  
Advisor: [Prof. Jun Yan](#) Storrs, CT
- **M.Econ. in Statistics** September 2019 – July 2022  
Shanxi University of Finance and Economics  
Advisor: [Prof. Tao Wang](#) Taiyuan, China
- **B.Econ. in Insurance** September 2015 – July 2019  
Shanxi University of Finance and Economics  
Taiyuan, China

## Research Interests

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Applied Econometrics, Biostatistics, High-Dimensional Data, Input-Output Analysis, National Economic Accounting, Network Analytics, Public Health Applications, Statistical Computing

## Publications (\* refers to the corresponding author)

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1. Seyednejad, A., Sacko, T. J., Babigian, C. J., Moore, T. E., **Xiao, S.**, Liddle, J. C. and Sartor, G. C.\* (2026). Cocaine-induced changes in the BRD4 interactome identifies casein kinase 1 epsilon as a therapeutic target. *Journal of Neurochemistry*, 170(1): e70336. [DOI](#)
2. Wang, T.\* and **Xiao, S.** (2022). A comparative study of domestic industrial circulation between China and the United States from the perspective of input-output network. *Statistical Research*, 39(11): 32-43. [URL](#) (in Chinese with English abstract)
3. **Xiao, S.\***, Yan, J. and Zhang, P. (2022). Incorporating auxiliary information in betweenness measure for input-output networks. *Physica A: Statistical Mechanics and its Applications*, 607: 128200. [DOI](#)
4. Wang, T., **Xiao, S.**, Yan, J. and Zhang, P.\* (2021). Regional and sectoral structures of the Chinese economy: A network perspective from multi-regional input-output tables. *Physica A: Statistical Mechanics and its Applications*, 581: 126196. [DOI](#)

## Preprint and Manuscript

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1. **Xiao, S.\***, Yan, J. and Zhang, P. (2026+). Gaussian graphical models for functional connectivity analysis: A statistical review with applications to Alzheimer's Disease.
2. **Xiao, S.\***, Yan, J. and Zhang, P. (2026+). Groupwise Regularized Adaptive Sparse Precision Solution.
3. Thornton, S., Szymanski, M. R., Brewer, G. J., Casa, D. J., Moore, T. E., **Xiao, S.**, Green, A. A., Pardee, K. and Lee, E. C.\* (2026+). Sample processing methods affect salivary metabolomics in human exercise-stress studies.
4. Chen, C.\*, **Xiao, S.** and Salike, N. (2026+). China's export supply chain resilience measures and improvement strategy: The application of product space theory. (in Chinese with English abstract)
5. Wang, T., **Xiao, S.\*** and Yan, J. (2026+). Comparison of sectoral structures between China and Japan: A network perspective. [arXiv](#)

# **Presentations and Posters**

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1. Functional Connectivity Estimation Based on Gaussian Graphical Models: A Statistical Review and Applications to Alzheimer's Disease Data. Datablitz speaker. The 27th Annual Neuroscience at Storrs Symposium. University of Connecticut, Storrs, CT, 10/22/2024.
2. Gaussian Graphical Models for Functional Connectivity Analysis: A Statistical Review and Applications to Alzheimer's Disease Data. Poster presenter. [The 33rd Annual Applied Statistics Symposium for the International Chinese Statistical Association \(ICSA 2024\)](#). Nashville, TN, 06/17/2024.
3. Functional Connectivity Analysis in Brain Networks: A Statistical Review and Application to Alzheimer's Disease Data. Invited speaker. [The 37th New England Statistics Symposium \(NESS 2024\)](#). University of Connecticut, Storrs, CT, 05/23/2024.
4. Introduction to Data Analysis in R for DIA-based Proteomics Using msDiaLogue. Assistant instructor. [The 4th Annual Introduction to Mass Spectrometry-Based Proteomics Workshop](#). University of Connecticut, Storrs, CT, 03/15/2024.

# **Software**

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1. **Xiao, S.** (2025). `grasps`: Groupwise Regularized Adaptive Sparse Precision Solution. R package version 0.1.0, <https://CRAN.R-project.org/package=grasps>.
2. **Xiao, S.** (2025). `pecan`: Portfolio for Economic Complexity Analysis and Navigation. R package version 0.1.0, <https://CRAN.R-project.org/package=pecan>.
3. **Xiao, S.**, Moore, T. and Watt, C. (2025). `msDiaLogue`: Analysis and Visuals for Data-Independent Acquisition Mass Spectrometry Data. R package version 0.0.7, <https://uconn-scs.github.io/msDiaLogue>.
4. **Xiao, S.**, Yan, J. and Zhang, P. (2025). `fcstat`: Statistical Methods for Estimating Functional Connectivity in fMRI Data. R package version 0.1.0, <https://shiyeng-xiao.com/fcstat>.
5. **Xiao, S.**, Yan, J. and Zhang, P. (2024). `ionet`: Network Analysis for Input-Output Tables. R package version 0.2.2, <https://CRAN.R-project.org/package=ionet>.

# **Experience**

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## **Statistical Consultant**

August 2023 – Present

UConn Statistical Consulting Services

Storrs, CT

- Developed the R package `msDiaLogue` for the analysis and visualization of untargeted mass spectrometry-based proteomic datasets.
- Delivered statistical consulting and analytical support to researchers across diverse academic fields.

## **Research Assistant**

June 2019 – July 2022

Shanxi University of Finance and Economics

Taiyuan, China

- Projects in the area of network analysis and complex systems: development of methodology, management activities to maintain research data, implementation of the computer code, and data presentation.
  1. The National Social Science Fund of China, 21BTJ013, Research on the Compilation and Application of the International Flow of Funds Table. PI: Tao Wang.
  2. National Bureau of Statistics of China, 2018LZ33, Research on the Compilation and Model Application of Inter-Provincial Input-Output Tables in China. PI: Tao Wang.
- Projects in the area of evaluation index system: ideas, data collection and cleaning, application of statistical to analyze data, and visualization.
  1. Shanxi Provincial Federation of Social Sciences, SSKLZDKT20211075, Study on the Index System of High-Quality Tourism Development in Shanxi Province.
  2. Shanxi Academy of Social Sciences, 2020YY119, Study on the Index System of High-Quality Development in Shanxi.
  3. Shanxi Provincial Bureau of Statistics, KY[2020]046, Study on the Scale Benefit of High-Tech Industry in Shanxi.
  4. Shanxi Provincial Bureau of Statistics, KY[2019]151, Study on the Evaluation Index System of Industrial Competitiveness in Shanxi Province.

5. Shanxi Academy of Social Sciences, 2019B100, Study on the Monitoring and Evaluation Index System of Rural Social Undertakings in Shanxi Province.

**Assistant Professor of Teaching**

Fuzhou University of International Studies and Trade

August 2022 – July 2023

Fuzhou, China

- Selected Teaching Activities

1. Data Visualization Design (C010405620): 2 credit undergraduate level; Spring 2023.
2. Business Data Mining & Analytics (C010402930): 2 credit undergraduate level; Spring 2023.

- Research Program

The National Social Science Fund of China, 23CGJ018, Research on the Reconstruction of China-ASEAN Foreign Trade Industry Value Chain and Resilience Enhancement Strategies. PI: Chen Chen.

## Reviewer Service

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- Physica A: Statistical Mechanics and its Applications

## Technical Skills

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- **Programming:** R, Python, C++

- **Tools:** Git, L<sup>A</sup>T<sub>E</sub>X, Markdown, Quarto