

Shiying Xiao

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Education

M.Sc. in Statistics

University of Connecticut
Advisor: [Prof. Jun Yan](#)

August 2023 – May 2026
Storrs, CT

M.Econ. in Statistics

Shanxi University of Finance and Economics
Advisor: [Prof. Tao Wang](#)

September 2019 – July 2022
Taiyuan, China

B.Econ. in Insurance

Shanxi University of Finance and Economics

September 2015 – July 2019
Taiyuan, China

Experience

Statistical Consultant

Statistical Consulting Services, University of Connecticut

August 2023 – May 2026
Storrs, CT

- Provided statistical consultation, study design recommendations, descriptive and inferential statistical analyses, data management, and reproducible programming support to investigators across biomedical, clinical, and scientific disciplines.
- Developed `msDiaLogue`, an open-source R package providing reproducible analytical workflows, statistical analyses, and publication-quality visualizations for mass spectrometry-based proteomics data.
- Organized, cleaned, validated, and analyzed high-dimensional proteomics and metabolomics datasets while collaborating with interdisciplinary research teams on biomedical research projects.
- Collaborated with interdisciplinary research teams to interpret analytical results, communicate findings, and contribute to peer-reviewed publications and scientific reports.

Research Assistant

Department of Statistics, University of Connecticut

August 2023 – May 2026
Storrs, CT

- Analyzed high-dimensional neuroimaging data to investigate brain functional connectivity associated with Alzheimer's disease.
- Conducted reproducible statistical analyses and benchmarking studies to evaluate analytical methods for biomedical research.
- Developed reproducible analytical software packages in R to support statistical analysis and visualization of biomedical datasets.
- Prepared publication-quality figures, analytical summaries, and scientific reports for collaborative manuscripts and conference presentations.

Assistant Professor of Teaching

Fuzhou University of International Studies and Trade

August 2022 – July 2023
Fuzhou, China

- Designed and delivered undergraduate courses in Data Visualization Design and Business Data Mining & Analytics.
- Taught statistical concepts, data visualization, and analytical techniques to students from diverse academic backgrounds.
- Supervised student projects involving statistical analysis, data visualization, interpretation of results, and data-driven decision making.

Research Assistant

Shanxi University of Finance and Economics

June 2019 – July 2022
Taiyuan, China

- Collaborated on multiple government-funded research projects involving economic statistics, network analysis, and policy evaluation.
- Collected, harmonized, cleaned, managed, and analyzed large-scale datasets using statistical methods and reproducible programming.
- Developed quantitative indicators, data visualizations, and technical reports to support research, policy evaluation, and strategic planning.
- Collaborated with interdisciplinary research teams to communicate analytical findings to government agencies and research collaborators.

Software

1. **Xiao, S.**, Yan, J. and Zhang, P. (2026). **grasps**: Groupwise Regularized Adaptive Sparse Precision Solution. R package version 0.1.1, <https://CRAN.R-project.org/package=grasps>.
2. **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>.
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.** (2025). **pecan**: Portfolio for Economic Complexity Analysis and Navigation. R package version 0.1.0, <https://CRAN.R-project.org/package=pecan>.
5. **Xiao, S.**, Yan, J. and Zhang, P. (2026). **spice**: Sparse Precision (Inverse Covariance) Estimation. R package version 0.1.0, <https://shiyang-xiao.com/spice>.

Publications (* refers to the corresponding author)

1. 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. *Metabolomics*, 22(4): 123. [DOI](#)
2. 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](#)
3. 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)
4. **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](#)
5. 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](#)

Manuscripts

1. Aladelokun, O., Benitez, K., Shen, X., Jain, A., Berardi, D., Lu, L., Gardner, E., Yang, J., Alkawazini, M., Rattray, N. J. W., Butensky, S., **Xiao, S.**, Siddique, S., Berner, A. M., Aalizadeh, R., Vasiliou, V., Paty, P. B., Garcia-Milian, R., Khan, S. A. and Johnson, C. H.* (2026+). Sex-specific metabolic phenotypes in early onset colorectal cancer. Under review.
2. **Xiao, S.***, Yan, J. and Zhang, P. (2026+). Groupwise regularized adaptive sparse precision solution.
3. **Xiao, S.**, Liddle, J., Balsbaugh, J., Watt, C. and Moore, T.* (2026+). msDiaLogue: Analyzing and visualizing DIA proteomics data in R.
4. Zhang, P.*, **Xiao, S.**, Robb, W. H., Liu, D., Jefferson, A. L. and Yan, J. (2026+). Gaussian graphical models for functional connectivity analysis: A statistical review with applications to Alzheimer's disease. [arXiv](#). Under review.

Presentations and Posters

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.

Reviewer Service

- Journal of Open Source Software
- Physica A: Statistical Mechanics and its Applications

Technical Skills

- **Programming:** R, Python, C++
- **Computing:** Linux, Bash, High-Performance Computing (HPC)
- **Tools:** Git, $\text{\LaTeX}$, Markdown, Quarto