Dapeng Shi

Phone: +86 15317390113 Email: dapengshi@cuhk.edu.hk

Education

Fudan University, Shanghai, China **Sep 2020 - June 2025**
Ph.D. in Statistics, Shanghai Center for Mathematical Sciences *Supervisor: Prof. Zhiliang Ying*

Lanzhou University, Lanzhou, China **Sep 2016 - June 2020**
B.S. in Mathematics, School of Mathematical Sciences and Statistics

Academic Positions

The Chinese University of Hong Kong **2025.7 - Present**
Postdoctoral Fellow, Department of Statistics and Data Science *Mentor: Professor Junhui Wang*

The Chinese University of Hong Kong **2024.9 - 2025.6**
Research Assistant, Department of Statistics and Data Science

Southern University of Science and Technology **2024.6 - 2024.8**
Visiting Scholar, Department of Statistics and Data Science

Research Interests

Network Analysis, Generative Models, Graphical Models, Causal Inference, Statistical Genetics

Publications

1. **Shi, D.**, Wang, Y., Liu, C., Wang, J. Transfer learning for ultra-sparse networks via conditional diffusion models. *Under review at Journal of the American Statistical Association.*

2. **Shi, D.**, Zhang, H., Wang, T., and Wang, J. A multilayer probit network model for community detection with dependent edges and layers. *Journal of the American Statistical Association, minor revision.*

3. Wang, Y., **Shi, D.**, Wang, J. Influence Maximization via Information Cascade Embedding. *IEEE Transactions on Information Theory, revise and resubmitt.*

4. **Shi, D.**, Wang, T., and Ying, Z. Simultaneous identification of sparse structures and communities in heterogeneous graphical models. *Journal of Machine Learning Research 27 (148), 1-63.*

5. Chen, D., Wang, Y., **Shi, D.**, Cao, Y., and Hu, Y. MACFIV: A novel framework for nonlinear causal inference in the body mass index–hypertension relationship with many weak and pleiotropic genetic instruments. *Briefings in Bioinformatics*, 27(1), 2026.

6. Cao, Y., Wang, Y., **Shi, D.**, Chen, D., and Hu, Y. A flexible semiparametric approach for robust causal inference with invalid instruments and unmeasured confounder. *Statistical Methods in Medical Research*, 2026.

7. Wang, Y, **Shi, D**, Scherber, C., Woodcock, B. A., Hu, Y, and Wan, N. Understanding biodiversity effects on trophic interactions with a robust approach to path analysis. *Cell Reports Sustainability*, 2(5), 2025.

8. Chen, D., Wang, Y., **Shi, D.**, Cao, Y., and Hu, Y. Instrumental variable model average with applications in nonlinear causal inference. *Statistics in Medicine*, 43(30):5814–5836, 2024.

9. **Shi, D.**, Wang, Y., Zhang, Z., Cao, Y., and Hu, Y. MR-BOIL: Causal inference in one-sample Mendelian randomization for binary outcome with integrated likelihood method. *Genetic Epidemiology*, 47(4):332–357, 2023.

Research Talks

11/2025, Talk at Shanghai Center for Mathematical Sciences, Fudan University

05/2025, Talk at National University of Singapore, *Frontiers of Statistical Network Analysis: Inference, Tensors and Beyond*

Teaching

Fudan University

- 2020 Fall and 2021 Spring, *Advanced Mathematics*, Teaching Assistant
- 2022 Spring, *Mathematical Statistics*, Teaching Assistant

Skills

Programming Languages and Tools: Python, R, Matlab, C++, LaTeX