Fangting Zhou

Postdoctoral Associate, Department of Biostatistics, Yale University

Website: fangting-zhou.github.io Email: fangting.zhou@yale.edu Phone: 979-985-7435

Research Interests

Methods: Graphical models, causal discovery, causal inference, Bayesian statistics

Applications: Genomics, single-cell genomics, neuroscience, precision medicine

Employment

2022 – Now Postdoctoral Associate, Biostatistics, Yale University. Supervisor: Hongyu Zhao

Education

2017 – 2022 Ph.D. in Statistics, Texas A&M University. Advisor: Yang Ni

2013 – 2017 B.S. in Mathematics and Statistics, Wuhan University.

Publications and Revisions

1. **Fangting Zhou**, Kejun He, and Yang Ni. Tree-based additive noise directed acyclic graphical models for nonlinear causal discovery with interactions. *Revision at Biometrics.*
2. Zhuofan Wang, **Fangting Zhou**, Kejun He, Jessica Galloway-Peña, Bani Mallick, and Yang Ni. Modeling microbial community coalescence via compositional directed acyclic graphical models. *Revision at Journal of the American Statistical Association.*
3. Zhuofan Wang, **Fangting Zhou**, Kejun He, and Yang Ni. Multi-way overlapping clustering by Bayesian tensor decomposition. *Statistics and Its Interface, 2024.*
4. **Fangting Zhou**, Kejun He, James J Cai, Laurie A Davidson, Robert S Chapkin, and Yang Ni. A unified Bayesian framework for biclustering multi-omic data via sparse matrix factorization. *Statistics in Biosciences, 2023.*
5. **Fangting Zhou**, Kejun He, and Yang Ni. Individualized causal discovery with latent trajectory embedded Bayesian networks. *Biometrics, 2023.*
6. **Fangting Zhou**, Kejun He, Kunbo Wang, Yanxun Xu, and Yang Ni. Functional Bayesian networks for discovering causality from multivariate functional data. *Biometrics, 2023.*
7. **Fangting Zhou**, Kejun He, Qiwei Li, Robert S Chapkin, and Yang Ni. Bayesian biclustering for microbial metagenomic sequencing data via multinomial matrix factorization. *Biostatistics, 2022.*
8. **Fangting Zhou**, Kejun He, and Yang Ni. Causal discovery with heterogeneous observational data. *Uncertainty in Artificial Intelligence, 2022.*

Manuscripts and Work in Progress

1. **Fangting Zhou**, Kejun He, and Yang Ni. Nonparametric score-based causal discovery through Bayesian density estimation. Submitted.
2. **Fangting Zhou**, Kejun He, and Yang Ni. Graph-based nonparametric multivariate density estimation. Submitted.
3. **Fangting Zhou** and Hongyu Zhao. Causal discovery from count-based interventional data.
4. Joint work with Yang Ni. Multivariate probit models for causal discovery of binary data with unobserved confounders.
5. Joint work with Yang Ni. Discrete causal structure learning with latent confounders.
6. Joint work with Xinzhi Zhang and Hongyu Zhao. Bayesian instrumental variable-assisted joint causal discovery, with insights into brain function and psychological disorders.
7. Joint work with Matthew Girgenti, Hongyu Li, Yiming Shi, John Lee Soto-Vargas, Jiawei Wang, Yuhan Xie, Xiaotong Xu, Xinzhi Zhang, and Hongyu Zhao. Genetic regulation of methylation, expression, and splicing across brain regions and their roles in post-traumatic stress disorder.

Awards

2020 SBSS Student Paper Award. The Section on Bayesian Statistical Science of the American Statistical Association.

Presentations

2022 Conference on Uncertainty in Artificial Intelligence.

2022 International Conference on Econometrics and Statistics.

2020 Joint Statistical Meetings.

Academic Service

Journal Referee: BMC Bioinformatics, Statistical Analysis and Data Mining, Human Genomics, Frontiers in Neurology.

Conference Referee: UAI 2023, 2024, AISTATS 2023, 2024.

Teaching Experience

Teaching Assistant, Department of Statistics, Texas A&M University.

STAT 604 Topics in Statistical Computations, Fall 2021, Summer 2022.

STAT 608 Regression Analysis, Summer 2021.

STAT 639 Data Mining and Analysis, Spring 2022.

Academic Mentorship

Intern Mentor, Zhao Lab, Department of Biostatistics, Yale University.

Xinzhi Zhang and Xiaotong Xu. Master students at Yale University and collaboration with Girgenti Lab at the Department of Psychiatry. Fall 2023 – Now.

Yiqing Sun. Undergraduate student at Fudan University. Summer 2023.

Programming Skills

R, Python, Matlab, C++

References

Yang Ni, Ph.D. Associate Professor, Department of Statistics, Texas A&M University.
Email: yni@stat.tamu.edu Phone: 979-845-3141

Hongyu Zhao, Ph.D. Ira V. Hiscock Professor, Department of Biostatistics, Yale University.
Email: hongyu.zhao@yale.edu Phone: 203-785-3613

Kejun He, Ph.D. Associate Professor, Institute of Statistics and Big Data, Renmin University of China.
Email: kejunhe@ruc.edu.cn Phone: 010-62510977