

Mingzhou Liu

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Research Interests

- Causal inference: time-series causal discovery, causal discovery for dynamic systems
- Causal machine learning: causality for alignment, causal transfer learning
- Applications: AI, neuroscience, healthcare (Alzheimer's disease)

Education

Peking University

Sept. 2020 – Now

Ph.D. in Computer Science

Advisor: Prof. Yizhou Wang, Co-advisor: Prof. Xinwei Sun

Shanghai Jiao Tong University (SJTU)

Sept. 2016 – June 2020

B.Eng. with Honor in Electronic Engineering (Top 5%)

Publications & Preprints

- **M. Liu**, X. Sun, Y. Wang. Conditional Local Independence Testing for Itô processes with Applications to Dynamic Causal Discovery. arXiv preprint, 2025. [pdf]
- **M. Liu**, C. Lee, X. Sun, Y. Qiao, Y. Wang. Learning Causal Alignment for Reliable Disease Diagnosis. International Conference on Learning Representations (ICLR), 2025. [pdf]
- Y. Wang, **M. Liu**, X. Sun, W. Wang, Y. Wang. Bayesian Active Learning for Bivariate Causal Discovery. International Conference on Machine Learning (ICML), 2025. [pdf]
- **M. Liu**, X. Sun, Y. Qiao, Y. Wang. Causal Discovery via Conditional Independence Testing with Proxy Variables. *International Conference on Machine Learning (ICML)*, 2024. [pdf]
- **M. Liu**, X. Sun, L. Hu, Y. Wang. Causal Discovery from Subsampled Time Series with Proxy Variables. *Conference on Neural Information Processing Systems (NeurIPS)*, 2023. [pdf]
- **M. Liu**, X. Zheng, X. Sun, F. Fang, Y. Wang. Which Invariance Should We Transfer? A Causal Minimax Learning Approach. *International Conference on Machine Learning (ICML)*, 2023. [pdf]
- **M. Liu**, F. Zhang, X. Sun, Y. Yu, Y. Wang. Leveraging Contextual Features for Lung Cancer Prediction. *Image Computing and Computer Assisted Intervention (MICCAI)*, 2021. [pdf]

Skills

Mathematics: probability, time-series analysis (vector-autoregression models, stochastic calculus)

Machine Learning: statistical learning, deep vision neural networks, transformers

Programming: Python (PyTorch), R, Matlab

Selected Awards

Huawei Scholarship, Honor Scholarship, Academic Innovation Award, Outstanding Student, Peking University

Academic Services & Teaching

Reviewer for NeurIPS, ICML, ICLR, AISTATS, UAI

Teaching Assistant, Computer vision theory and methods (Fall 2021)