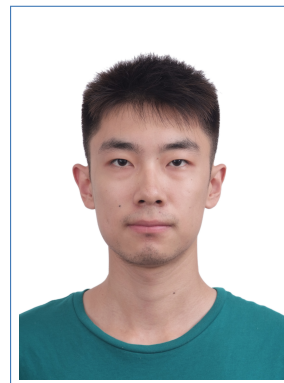


Yang Liu

Curriculum Vitae

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Profile

I am currently a Postdoctoral Researcher at Hong Kong Baptist University, where I focus on spatial multi-omics data integration, an emerging and highly interdisciplinary field. I hold a PhD degree in Bayesian Network structure learning from Queen Mary University of London, where I developed expertise in probabilistic modeling and machine learning. My research has been published in top-tier conferences such as ICLR and leading journals including the Journal of Machine Learning Research (JMLR) and Machine Learning Journal (MLJ). At HKBU, my work centers on developing decomposable representation learning algorithms to enhance the visualization and annotation of spatial multi-omics data, contributing to advancements in this rapidly growing area of research.

Employment experience

2024 **Postdoc in spatial multi-omics data integration**
Hong Kong Baptist University, China

Educational Background

2019 **PhD in Bayesian network structure learning**
2023
Queen Mary, University of London, UK

2017 **MSc in Artificial Intelligence**
2018
University of Edinburgh, UK
Thesis: Posterior predictive check on Gaussian process

2013 **BSc in Optoelectronic Information Engineering**
2017
Beihang University, China

Publications

- 2025 Zirui Wang, Ke Xu Xu, **Yang Liu**, Yu Xu, and Lu Zhang. Mitigate multi-scale bias in cell-type deconvolution for spatial transcriptomics by harmodecon. *Accepted by Bioinformatics*, 2025.
- Yang Liu** and Lu Zhang. Interpretable spatial multi-omics data integration and visualization. *In progress*, 2025.
- 2023 **Yang Liu** and Anthony Constantinou. Improving the imputation of missing data with markov blanket discovery. In *International Conference on Learning Representations*, 2023.

Neville Kenneth Kitson, Anthony C Constantinou, Zhigao Guo, **Yang Liu**, and Kiattikun Chobtham. A survey of bayesian network structure learning. *Artificial Intelligence Review*, pages 1–94. Springer, 2023.

Anthony Constantinou, Neville K Kitson, **Yang Liu**, Kiattikun Chobtham, Ar-ian Hashemzadeh Amirkhizi, Prahars A Nanavati, Rendani Mbuva, and Bruno Petrungaro. Open problems in causal structure learning: A case study of covid-19 in the uk. *Expert Systems with Applications*, page 121069. Elsevier, 2023.

- 2022 **Yang Liu**, Anthony C Constantinou, and Zhigao Guo. Improving bayesian network structure learning in the presence of measurement error. *Journal of Machine Learning Research*, volume 23, pages 1–28, 2022.

Yang Liu and Anthony C Constantinou. Greedy structure learning from data that contain systematic missing values. *Machine Learning*, volume 111, pages 3867–3896. Springer US, 2022.

Aiqi Jiang, Xiaohan Yang, **Yang Liu**, and Arkaitz Zubiaga. Swsr: A chinese dataset and lexicon for online sexism detection. *Online Social Networks and Media*, volume 27, page 100182. Elsevier, 2022.

Anthony C Constantinou, **Yang Liu**, Neville K Kitson, Kiattikun Chobtham, and Zhigao Guo. Effective and efficient structure learning with pruning and model averaging strategies. *International Journal of Approximate Reasoning*, volume 151, pages 292–321. Elsevier, 2022.

- 2021 Anthony C Constantinou, **Yang Liu**, Kiattikun Chobtham, Zhigao Guo, and Neville K Kitson. Large-scale empirical validation of bayesian network structure learning algorithms with noisy data. *International Journal of Approximate Reasoning*, volume 131, pages 151–188. Elsevier, 2021.

- 2020 Anthony C Constantinou, **Yang Liu**, Kiattikun Chobtham, Zhigao Guo, and Neville K Kitson. The bayesys data and bayesian network repository. *Queen Mary University of London: London, UK*, 2020.

Teaching experience

- Demonstrator**
- Bayesian Decision and Risk Analysis, 2020 - 2023
 - Data Analytics, 2022 - 2023

Skills

- R/Matlab/Python
- Pytorch programming experience