MENGYUE YANG

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Research statement

I am a doctoral student specializing in artificial intelligence (AI), with a particular emphasis on causal inference and decision-making in the theory and applications of AI. I recently presented the tutorial "Causality for Decision Making" to help researchers and postgraduate students understand causal learning and its practical use in decision-making.

Education

University College London ***Sep 2020 – Sep 2024(expect)***
Ph.D. student
Major: Computer Science
Supervisor: Prof. Jun Wang
Research Interests: Causal Inference, Reinforcement Learning, Fairness

University of Chinese Academy of Sciences (UCAS) ***Sep 2017 – Jul 2020***
M.Sc. in Computer Application Technology
Supervisor: Dr. Hongbo He
Research Interests: Causal Inference, Reinforcement Learning

Beijing Jiaotong University ***Sep 2012 – Jul 2016***
B.Sc. in Software Engineering

Internships

MBZUAI *Abu Dhabi, United Arab Emirates*
Visiting student. *expect Mar 2024 – Jul 2024*
Supervised by Professor Kun Zhang
Causal representation learning.

TikTok *London, United Kingdom*
Research Intern in ByteDance Research *Feb 2022– Jul 2022*
Supervised by Dr. Hang Li and Dr. Jean-Francois Ton
Causality for fairness machine learning.

Microsoft *Beijing, China*
Software Engineer Summer Intern of STCA, Ads Data & AI Platform Team *Jul 2019 – Oct 2019*
Machine learning in the integrated environment on large scale cloud compute system (Azure ML).

Didi *Beijing, China*
Research Intern in AI Labs, Reinforcement Learning team. *Sep 2018 – Jul 2019*
Supervised by Dr. Zhiwei Qin and Dr. Qingyang Li
Online learning: Multi-armed bandit.

Representative Publications

1. **Mengyue Yang**, Zhen Fang, Yonggang Zhang, and Yali Du, Furui Liu, Jean-Francois Ton, Jianhong Wang, Jun Wang. Invariant Learning via Probability of Sufficient and Necessary Causes. NeurIPS 2023 (**Spotlight**!)

2. **Mengyue Yang***, Quanyu Dai*, Zhenhua Dong, Xu Chen, Xiuqiang He, Jun Wang Top-N Recommendation with Counterfactual User Preference Simulation. CIKM 2021 *(full paper/oral)*

3. **Mengyue Yang**, Furui Liu, Zhitang Chen, Jianye Hao, Jun Wang. CausalVAE: disentangled representation learning via neural structural causal models CVPR 2021

Other Publications

4. **Mengyue Yang**, Xinyu Cai, Furui Liu, Xu Chen, Zhitang Chen, Jianye Hao, Jun Wang. Specify Robust Causal Representation from Mixed Observations. SIGKDD 2023 *(full paper/oral)*

5. **Mengyue Yang**, Jun Wang, Jean-Francois Ton. Rectifying Unfairness in Recommendation Feedback Loops. SIGIR 2023 *(full paper/oral)*

6. **Mengyue Yang**, Guohao Cai, Furui Liu, Zhenhua Dong, Xiuqiang He, Jianye Hao, Jun Wang, Xu Chen. Debiased Recommendation with User Feature Balancing. ACM TOIS

7. **Mengyue Yang**, Qingyang Li, Zhiwei Qin, Jieping Ye. Hierarchical Adaptive Contextual Bandits for Resource Constraint based Recommendation. WWW 2020 *(full paper/oral)*

8. Weiyang Qu, Yang Yu, Qingyang Li, Zhiwei Qin, **Mengyue Yang**, Yiping Meng, Jieping Ye. Offline Reinforcement Learning via Trajectory Synthesis. NeurIPS2019 workshop on deep reinforcement learning

9. Junruo Gao, **Mengyue Yang**, Yuyang Liu, Jun Li. Deconfounding Representation Learning Based on User Interactions in Recommendation Systems PAKDD 2021

10. Jiarui Jin, Xianyu Chen, Weinan Zhang, **Mengyue Yang**, Yang Wang, Yali Du, Yong Yu, Jun Wang. Replace Scoring with Arrangement: A Contextual Set-to-Arrangement Framework for Learning-to-Rank. CIKM 2023 *(full paper)*

11. Xidong Feng, Yicheng Luo, Ziyan Wang, Hongrui Tang, **Mengyue Yang**, Kun Shao, David Mguni, Yali Du, Jun Wang. ChessGPT: Bridging Policy Learning and Language Modeling. NeurIPS 2023 (Dataset & Benchmark track)

12. Jiarui Jin, Xianyu Chen, Fanghua Ye, **Mengyue Yang**, Yue Feng, Weinan Zhang, Yong Yu, Jun Wang. Lending Interaction Wings to Recommender Systems with Plug-and-Play Conversational Agents. NeurIPS 2023

Preprint

1. Minne Li*, **Mengyue Yang***, Furui Liu, Xu Chen, Zhitang Chen, Jun Wang. Causal World Models by Unsupervised Deconfounding of Physical Dynamics.

2. Jiarui Jin, Zexue He, **Mengyue Yang**, Weinan Zhang, Yong Yu, Jun Wang, Julian McAuley. InfoRank: Unbiased Learning-to-Rank via Conditional Mutual Information Minimization.

3. Jiarui Jin*, Yuwei Wu*, **Mengyue Yang***, Xiaoting He, Weinan Zhang, Yiming Yang, Yong Yu, Jun Wang. Manage Your Plug-in Data for Language Models: A Data-Centric Approach.

Service

Reviewer/Program Chair of TNNLS, KDD, NeurIPS, ICML, ICLR, SDM.
Co-organizer of NeurIPS 2023 Competition Causal Structure Learning from Event Sequences and Prior Knowledge.
Teaching assistant at UCL (2021/2022, 2022/2023, 2023/2024): COMP0124 Multi-agent Artificial Intelligence.

Competition

Third Prize of National University Students Computer Design Competition.
First Prize of the 2014 Youth Science Popularization Innovation Competition.
Second Prize of Chinese Physics Olympiad (2011) provincial level.