

# MENGYUE YANG

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## Research statement

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I am a doctoral student specializing in artificial intelligence (AI), with a particular emphasis on causality and decision-making from the theory to applications in AI. I recently presented the tutorial "[Causality for Decision Making](#)" and talk "[Causal Agent & Foundation Models](#)" to help researchers and postgraduate students understand causal learning and its practical use in decision-making.

## Education

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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: Hongbo He

Research Interests: Causal Inference, Reinforcement Learning

Beijing Jiaotong University

Sep 2012 – Jul 2016

B.Sc. in Software Engineering

## Representative Publications

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

## Other Publications

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4. Anjie Liu, Jianhong Wang, Haoxuan Li, Xu Chen, Jun Wang, Samuel Kaski, **Mengyue Yang**. Attaining Humans Desirable Outcomes in Human-AI Interaction via Structural Causal Games. ICML 2024 Humans-Algs-Society workshop.
5. **Mengyue Yang**, Xinyu Cai, Furui Liu, Xu Chen, Zhitang Chen, Jianye Hao, Jun Wang. Specify Robust Causal Representation from Mixed Observations. SIGKDD 2023.
6. **Mengyue Yang**, Jun Wang, Jean-Francois Ton. Rectifying Unfairness in Recommendation Feedback Loops. SIGIR 2023.
7. **Mengyue Yang**, Guohao Cai, Furui Liu, Zhenhua Dong, Xiuqiang He, Jianye Hao, Jun Wang, Xu Chen. Debiased Recommendation with User Feature Balancing. ACM TOIS.

8. **Mengyue Yang**, Qingyang Li, Zhiwei Qin, Jieping Ye. Hierarchical Adaptive Contextual Bandits for Resource Constraint based Recommendation. WWW 2020.
9. Weiyang Qu, Yang Yu, Qingyang Li, Zhiwei Qin, **Mengyue Yang**, Yiping Meng, Jieping Ye. Offline Reinforcement Learning via Trajectory Synthesis. NeurIPS2019 Deep Reinforcement Learning workshop.
10. Junruo Gao, **Mengyue Yang**, Yuyang Liu, Jun Li. Deconfounding Representation Learning Based on User Interactions in Recommendation Systems PAKDD 2021.
11. 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.
12. Xidong Feng, Yicheng Luo, Ziyang 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.
13. 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.
14. Jiarui Jin, Zexue He, **Mengyue Yang**, Weinan Zhang, Yong Yu, Jun Wang, Julian McAuley. InfoRank: Unbiased Learning-to-Rank via Conditional Mutual Information Minimization. WWW 2024.

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## 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\*, 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.

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## Internships

### MBZUAI

*Visiting Student*

Supervised by Prof. Kun Zhang

Causal Representation Learning.

*Abu Dhabi, United Arab Emirates*

*Mar 2024– Jul 2024*

### TikTok

*Research Intern in ByteDance Research*

Supervised by Dr. Hang Li and Dr. Jean-Francois Ton

Causality for fairness machine learning.

*London, United Kingdom*

*Feb 2022– Jul 2022*

### Microsoft

*Software Engineer Summer Intern of STCA, Ads Data & AI Platform Team*

Machine learning in the integrated environment on large scale cloud compute system (Azure ML).

*Beijing, China*

*Jul 2019 – Oct 2019*

### Didi

*Research Intern in AI Labs, Reinforcement Learning team.*

Supervised by Dr. Zhiwei Qin and Dr. Qingyang Li

Online learning and reinforcement learning.

*Beijing, China*

*Sep 2018 – Jul 2019*

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## Services

Co-organizer of ICDM 2024 Workshop: Causality Representation Learning.

Co-organizer of NeurIPS 2024 Workshop: Causality and Large Model.

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.  
Reviewers: TNNLS, KDD, NeurIPS, ICML, ICLR, SDM.

## Talks and Tutorial

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Tutorial: Causality for Decision Making. [Slides](#)  
RL China 2023.

Talk: Causal Agent & Foundation Models. [Slides](#)  
Jizhi Causality Reading Party 5<sup>th</sup> season.

Talk: Essential Causal Representation Learning via Probability of Sufficient and Necessary Causes. [Slides](#)  
University of Manchester,  
University of Bristol,  
Imperial College London,  
University College London,  
AI Time,  
DataFun Summit.

Talk: Causal Representation Learning.  
Microsoft Research (New York),  
Institute of Automation, Chinese Academy of Sciences,  
University of Bristol,  
Shanghai Jiaotong University,  
Hong Kong University of Science and Technology (Guangzhou).

Talk: Causal Disentanglement representation and models.  
Paper Weekly,  
University College London,  
Beijing Institute of Technology,  
Jizhi Causality Reading Party,  
Northeastern University.

## Honors

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Rising Star in AI 2024 by KAUST.  
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.