

Yang Li 李阳

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RESEARCH STATEMENT

I am a doctoral student specializing in artificial intelligence, with a particular emphasis on multi-agent learning and applications of AI. My recent research focuses on multi-agent learning in open-ended worlds, aiming to improve the adaptability of multi-agent systems to varying tasks, emergent on-the-fly co-players, and other evolving environments. The ultimate aim of my research is to advance multi-agent interaction in real-world applications where unpredictability is the norm.

EDUCATION

University of Manchester

PhD student in Computer Science

UK

Supervised by Wei Pan; Sep 2022 –

University of Chinese Academy of Sciences

M.Sc. in Information and Communication Engineering

China

Supervised by Jun Wang, Yang Yang; Sep 2019 – Jun 2022

Dalian University of Technology

B.Sc. in Digital Media Technology

China

Sep 2015 – Jun 2019

INTERNSHIP & TA

Teach Assistant

- COMP61011 Foundations of Machine Learning 2023/2024
- COMP26120 Algorithms and Data Structures 2022-23 Full Year
- COMP24112 Machine Learning 2022-23 2nd Semester

Shanghai Institute of Digital Brain

Algorithm Intern

Shanghai, China

Oct 2021 – May 2022

Huawei

Algorithm Intern

Hangzhou, China

Apr 2021 – Oct 2021

AWARDS

China Scholarship Council (CSC) scholarships

China National Scholarship for Graduate Students 2021

Merit Student of the University of Chinese Academy of Sciences 2022

Student Grant of ICC 2021 by COMSOC

PUBLICATIONS

Research Paper

- **Yang Li**, Wenhao Zhang, Jianhong Wang, Shao Zhang, Yali Du, Ying Wen, and Wei Pan. "Aligning Individual and Collective Objectives in Multi-Agent Cooperation." arXiv preprint arXiv:2402.12416 (2024). *paper link* [<https://arxiv.org/abs/2402.12416>].
- Jianhong Wang, **Yang Li**, Yuan Zhang, Wei Pan, and Samuel Kaski. "Open Ad Hoc Teamwork with Cooperative Game Theory." arXiv preprint arXiv:2402.15259 (2024). *paper link* [<https://arxiv.org/abs/2402.15259>].
- **Yang Li**, Shao Zhang, Jichen Sun, Wenhao Zhang, Yali Du, Ying Wen, Xinbing Wang, and Wei Pan. "Tackling cooperative incompatibility for zero-shot human-ai coordination." arXiv preprint arXiv:2306.03034 (2023). Under Review of Journal of Artificial Intelligence Research (JAIR). *paper link* [<https://arxiv.org/abs/2306.03034>].
- **Yang Li**, Kun Xiong, Yingping Zhang, Jiangcheng Zhu, Stephen Marcus McAleer, Wei Pan, Jun Wang, Zonghong Dai, Yaodong Yang (2023). JiangJun: Mastering Xiangqi by Tackling Non-Transitivity in Two-Player Zero-Sum Games. Transactions on Machine Learning Research. *paper link* [<https://openreview.net/forum?id=MMsyqXIJuk>].
- **Yang Li**, Fanglei Sun, Jingchen Hu, Chang Liu, Fan Wu, Kai Li, Ying Wen et al. "Self-Supervised MAFENN for Classifying Low-labeled Distorted Images over Mobile Fading Channels." IEEE Transactions on Mobile Computing (2023). *paper link* [<https://ieeexplore.ieee.org/abstract/document/10365701>].

- **Yang Li**, Shao Zhang, Jichen Sun, Yali Du, Ying Wen, Xinbing Wang, and Wei Pan. "Cooperative open-ended learning framework for zero-shot coordination." In International Conference on Machine Learning, pp. 20470-20484. PMLR, 2023. *paper link* [<https://proceedings.mlr.press/v202/li23au.html>].
- Zhang, Bin, Hangyu Mao, Jingqing Ruan, Ying Wen, **Yang Li**, Shao Zhang, Zhiwei Xu et al. "Controlling large language model-based agents for large-scale decision-making: An actor-critic approach." arXiv preprint arXiv:2311.13884 (2023). *paper link* [<https://arxiv.org/abs/2311.13884>].
- David Henry Mguni, Taher Jafferjee, Jianhong Wang, Nicolas Perez-Nieves, Oliver Slumbers, Feifei Tong, **Yang Li**, Jiangcheng Zhu, Yaodong Yang, and Jun Wang. "LIGS: Learnable Intrinsic-Reward Generation Selection for Multi-Agent Learning." In International Conference on Learning Representations (ICLR). 2021. *paper link* [<https://openreview.net/forum?id=CpTuR2ECuW>].
- **Yang Li**, Cheng Yu, Guangzhi Sun, Hua Jiang, Fanglei Sun, Weiqin Zu, Ying Wen, Yang Yang, and Jun Wang. "Cross-Utterance Conditioned VAE for Non-Autoregressive Text-to-Speech." In Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers), pp. 391-400. 2022. *paper link* [<https://aclanthology.org/2022.acl-long.30.pdf>].
- Cheng Yu, **Yang Li**, Weiqin Zu, Fanglei Sun, Zheng Tian, and Jun Wang. "Cross-utterance Conditioned Coherent Speech Editing." In Proceedings of the Annual Conference of the International Speech Communication Association, INTERSPEECH, vol. 2023, pp. 2108-2112. ISCA, 2023. *paper link* [https://discovery.ucl.ac.uk/id/eprint/10178175/7/Wang_yu23d_interspeech.pdf].
- Fanglei Sun, **Yang Li**, Ying Wen, Jingchen Hu, Jun Wang, Yang Yang, and Kai Li. "Multi-Agent Feedback Enabled Neural Networks for Intelligent Communications." IEEE Transactions on Wireless Communications 21, no. 8 (2022): 6167-6179. *paper link* [<https://ieeexplore.ieee.org/abstract/document/9705656/>].
- **Yang Li**, Fanglei Sun, Wenbin Song, Ying Wen, Kai Li, Jun Wang and Yang Yang. "Retrospective Thinking based Multi-Agent System for Wireless Video Transmissions." ICC 2021 - IEEE International Conference on Communications (2021): 1-6. *paper link* [<https://ieeexplore.ieee.org/abstract/document/9500274>].
- **Yang Li**, Fanglei Sun, Weiqin Zu, Wenbin Song, Ying Wen, Jun Wang, Yang Yang, Kai Li and Liantao Wu. "MAFENN: Multi-Agent Feedback Enabled Neural Network for Wireless Channel Equalization." 2021 IEEE Global Communications Conference (GLOBECOM) (2021): 1-6. *paper link* [<https://ieeexplore.ieee.org/abstract/document/9685522/>].
- Xiangyue Duan, Xinchun Ye, **Yang Li** and Haojie Li. "High Quality Depth Estimation from Monocular Images Based on Depth Prediction and Enhancement Sub-Networks." 2018 IEEE International Conference on Multimedia and Expo (ICME) (2018): 1-6. *paper link* [<https://ieeexplore.ieee.org/abstract/document/8486539>].

Patent

- Yu, C., **Li, Y.**, Zu, W., Sun, F., Tian, Z., Wang, J. Cross-sentence conditionally coherent voice editing method, system, and device. (CN Patent Pending, No. CN116189653A)
- **Li, Y.**, Yu, C., Sun, F., Tian, Z., Wang, J., Zhang, C., Sun, X., Jiang, H. Cross-sentence speech synthesis method, system, and device based on variational autoencoder. (CN Patent Pending, No. CN114566141A)
- **Li, Y.**, Sun, F., Yang, C., Wang, J., Wen, Y. Multi-Agent Feedback Network Model, Device, and Storage Medium based on Retrospective Thinking. (CN Patent Pending, No. CN113011582A)
- X. Ye, H. Li, **Y. Li**, X. Duan, a high-quality depth estimation method based on depth prediction and enhanced sub-network. (CN Patent Granted, No. CN108510535B)

SERVICE

Reviewer for ICML2024, AAMAS 2023, DAI 2023, Journal of AI Research, IEEE INTERNET OF THINGS JOURNAL, IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS, e.t.c.

Served as a volunteer for the ICML conference in Hawaii, July 23-29, 2023.