HAOZHE MA

Singapore (+65) 8485 8137 haozhe.ma@u.nus.edu
homepage Google Scholar github.com/mahaozhe

EDUCATION

National University of Singapore **01/2022 - Now**
Ph.D. student major in **Computer Science** Advised by Prof. Tze-Yun Leong

National University of Singapore **08/2020 - 12/2021**
Master of **Computing** **GPA**: 4.83/5.0 Advised by Prof. Tze-Yun Leong

Xi'an Jiaotong University **08/2016 - 06/2020**
Bachelor of **Computer Science** (Qian Xuesen Top Class) **GPA**: 3.8/4.3 **Ranking**: top 6%

RESEARCH INTERESTS

Reinforcement Learning, Robotics, Sequential Decision Making, Uncertainty Modeling, Human-AI Collaboration

PUBLICATIONS

[1] **Haozhe Ma**, Kuankuan Sima, Thanh Vinh Vo, Di Fu, and Tze-Yun Leong. 2024. Reward Shaping for Reinforcement Learning with An Assistant Reward Agent. *In Proceedings of the 41st International Conference on Machine Learning*, PMLR, 33925–33939. [Paper][PDF][Poster][Codes][Presentation]

[2] **Haozhe Ma**, Thanh Vinh Vo, and Tze-Yun Leong. 2024. Mixed-Initiative Bayesian Sub-Goal Optimization in Hierarchical Reinforcement Learning. *In Proceedings of the 23rd International Conference on Autonomous Agents and Multiagent Systems*, 1328–1336. [Paper][PDF][Poster][Slides]

[3] **Haozhe Ma**, Thanh Vinh Vo, and Tze-Yun Leong. 2023. Hierarchical Reinforcement Learning with Human-AI Collaborative Sub-Goals Optimization. *In Proceedings of the 22nd International Conference on Autonomous Agents and Multiagent Systems*, 2310–2312. [Paper][PDF][Poster]

[4] **Haozhe Ma**, Thanh Vinh Vo, and Tze-Yun Leong. 2023. Human-AI Collaborative Sub-Goal Optimization in Hierarchical Reinforcement Learning. *In Proceedings of the AAAI Symposium Series*, 86–89. [Paper][PDF][Slides]

[5] **Haozhe Ma**, Zhengding Luo, Thanh Vinh Vo, Kuankuan Sima, Tze-Yun Leong. Highly Efficient Self-Adaptive Reward Shaping for Reinforcement Learning. (preprint and under review). [Paper][PDF][Codes]

[6] **Haozhe Ma**, Zhengding Luo, Kuankuan Sima, Thanh Vinh Vo, Tze-Yun Leong. Knowledge Sharing and Transfer via Centralized Reward Agent for Multi-Task Reinforcement Learning. (preprint and under review). [Paper][PDF][Codes]

[7] Zhengding Luo*, **Haozhe Ma***, Dongyuan Shi, Woon-Seng Gan. 2024. GFANC-RL: Reinforcement Learning-based Generative Fixed-filter Active Noise Control. Neural Networks (2024). (IF=6.0) [Paper][Codes]

[8] Di Fu, Thanh Vinh Vo, **Haozhe Ma**, Tze-Yun Leong. 2024. Decoupled Prompt-Adapter Tuning for Continual Activity Recognition. *In Proceedings of the Conference on Lifelong Learning Agents*, PMLR. [Paper][PDF]

ACADEMIC PROJECTS

- **Project Participant** of Academic Research Grant from the Ministry of Education in Singapore, No. MOE-T2EP20121-0015. *MixREADY: A unifying framework for Mixed-initiative, REsponsible, DynAmic Decision making under uncertainty*.
- **Project Participant** of National Research Foundation Singapore and DSO National Laboratories under the AI Singapore Programme No. AISG2-RP-2020-016. *The "Other Me": Human-Centered AI Assistance In Situ.*

Awards

- PhD Research Achievement Award of National University of Singapore (AY2023-2024)
- Research Scholarship from the Ministry of Education in Singapore
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2024) Scholarship
- Xi'an Jiaotong University Outstanding Student Scholarship
- Xi'an Jiaotong University SiYuan Student Scholarship

Teaching Experience

- Teaching Assistant for the graduate course *AI Planning and Decision Making*. 8/2024 – Now
- Teaching Assistant of the undergraduate course *Foundations of Artificial Intelligence*. 01/2023 – 05/2024
- Teaching Assistant for the graduate course *AI Planning and Decision Making*. 08/2021 – 12/2022

Open-Source Projects

- [ICML 2024] Reward Shaping for Reinforcement Learning with an Assistant Reward Agent [GitHub Link]
- Efficient Reinforcement Learning Algorithms and Environments by PyTorch [GitHub Link]
- Flat Reinforcement Learning Algorithms on StartCraft II Mini-Games [GitHub Link]
- Tutorial and Document: How to Use StarCraft II as Learning Environment [GitHub Link]
- Auto Text Recognition and Translation by Pasting Screenshots [GitHub Link]

Thesis

- Hierarchical Reinforcement Learning in StarCraft II with Human Expertise Integration 12/2021
  Master's thesis, advised by Prof. Tze-Yun Leong from the National University of Singapore.
- A Dynamic Decision Language for Adaptive Cognitive Robot Development 06/2020
  Undergraduate thesis, jointly advised by Prof. Tze-Yun Leong from the National University of Singapore and Prof. Jun Liu from Xi'an Jiaotong University.

Visiting and Internship

- Interned in a research project on causal inference as an intern at Roche Singapore. 01/2023 – 07/2023
- National University of Singapore NGNE project visiting exchange. 12/2019 – 06/2020
- National University of Singapore School of Computing summer workshop. 06/2019 – 08/2019
- Hong Kong Polytechnic University summer visiting exchange. 06/2018 – 08/2028
- Interned in Xi'an TangHua Environment Co., Ltd. 06/2017 – 09/2017

Recommenders

- **Leong Tze-Yun**
  Professor of Computer Science at the School of Computing, National University of Singapore, Director of NUS AI Laboratory. She is elected Fellow of the American College of Medical Informatics (ACMI) and a founding Fellow of the International Academy of Health Sciences Informatics (IAHSI). [homepage]
- **Liu Jun**
  Professor, Doctoral Supervisor of Xi'an Jiaotong University, Director of the Key Laboratory of Space and Earth Network Technology in Shaanxi Province, Selected by the Ministry of Education of the People's Republic of China under the "New Century Outstanding Talents Support Program". [homepage]
- **Shi Dongyuan**
  Research Assistant Professor of School of Electrical and Electronic Engineering at Nanyang Technological University. Professor of Northwestern Polytechnical University [homepage]
- **VO Thanh Vinh**
  Research Fellow at the School of Computing, National University of Singapore. [homepage]