

# HAOZHE MA

Ph.D. student, National University of Singapore

☎ (+65) 8485 8137

✉ [haozhe.ma@u.nus.edu](mailto:haozhe.ma@u.nus.edu)

🌐 [github.com/mahaozhe](https://github.com/mahaozhe)

## 🎓 EDUCATION

<b>National University of Singapore</b>		<b>01/2022 - Now</b>
Ph.D. student in School of Computing		Advised by Prof. Tze-Yun Leong
<b>National University of Singapore</b>		<b>08/2020 - 12/2021</b>
Master of computing	<b>GPA: 4.83/5.0</b>	Advised by Prof. Tze-Yun Leong
<b>Xi'an Jiaotong University</b>		<b>08/2016 - 06/2020</b>
Bachelor of computer science (Qian Xuesen Top Class)	<b>GPA: 3.75/4.3</b>	<b>Ranking: 10/156 (top 6%)</b>

## 🔍 RESEARCH INTERESTS

Reinforcement Learning, Robotics, Sequential Decision Making, Uncertainty Modeling, Large Models and Multimodality, Human-AI Interaction and Collaboration

## 📖 PUBLICATIONS

- [1] **Haozhe Ma**, Kuankuan Sima, Thanh Vinh Vo, Di Fu, Tze-Yun Leong. 2024. Reward Shaping for Reinforcement Learning with An Assistant Reward Agent. In International conference on machine learning, PMLR. [\[Paper\]](#)[\[PDF\]](#)[\[Codes\]](#)
- [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. (Under review of NeurIPS 2024).
- [6] Zhengding Luo\*, **Haozhe Ma**\*, Dongyuan Shi, Woon-Seng Gan. GFANC-RL: Reinforcement Learning-based Generative Fixed-filter Active Noise Control. (Under review of Neural Networks Journal). [\[Paper\]](#)  
\*Equal contribution.
- [7] Di Fu, Thanh Vinh Vo, **Haozhe Ma**, Tze-Yun Leong. 2024. Decoupled Prompt-Adapter Tuning for Continual Activity Recognition. In Conference on Lifelong Learning Agents, PMLR. (accepted and in proceedings).

## 📖 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.

## 🏆 AWARDS

- International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2024) Scholarship 2024
- Xi'an Jiaotong University Outstanding Student Scholarship 2018 - 2019
- H Prize in the American Mathematical Modeling Competition 2019
- Xi'an Jiaotong University SiYuan Student Scholarship 2016 - 2017

## OPEN-SOURCE PROJECTS

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- [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 StarCraft 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 [\[GitHub Link\]](#)

## DUTIES AT SCHOOL

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- Member of the Artificial Intelligence Lab. Seminar at the National University of Singapore. 12/2023 – 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*. 01/2022 – 12/2022
- Minister of *E-Eyes*, the largest internet technology club at Xi'an Jiaotong University. 09/2017 – 07/2019

## VISITING AND INTERNSHIP

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- 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

## SOCIAL PRACTICE

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- Volunteering in Singapore society. 06/2023 – Now
- Volunteered at the AAMAS 2024 conference. 05/2024
- Volunteered at the 'Yingzai Love Club' at Xi'an Jiaotong University. 01/2017 – 06/2020