

Yizhuo Wang

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Ph.D. Student, Multi-Agent Robotic Motion (MARMot) Laboratory, National University of Singapore.
Research interest: robot planning/learning, reinforcement learning, multi-agent systems.

Education

- **Ph.D. (student), Robotics, National University of Singapore** **Singapore**
Advised by Asst. Prof. Guillaume Sartoretti *Fall 2022 – Present*
 - Research topic: Machine learning based methods for scalable, long-term planning in large multi-agent teams.
- **Master in Mechanical Engineering (Control), National University of Singapore** **Singapore**
Advised by Asst. Prof. Guillaume Sartoretti, GPA: 4.5/5.0 *2020 – 2021*
 - Thesis title: Reinforcement Learning for Multi-Agent Search and Rescue.
- **Bachelor in Mechatronics, Harbin Institute of Technology** **Harbin & Sūzhou, China**
Advised by Assoc. Prof. Ong Chong Jin *2016 – 2020*
 - Thesis title: Development of mini-AGV for cooperative control.

Work Experience

- **National University of Singapore** **Singapore**
Research Engineer *2021 – 2022*
 - Investigate advanced multi-agent planning/exploration methods, funded by Temasek Laboratories @ NUS.
- **Meet Hive Intelligence Co., Ltd.** **Xi'an, China**
Mechanical Development Intern *Summer 2020*
 - Design a Garbage Automatic Recycling System for Household (GARSH). Six patents attained.

Publications

Conference / Journal / Workshop

- **Y. Wang**, Y. Cao, J. Chiun, S. Koley, M. Pham, G. Sartoretti. Advancing Multi-Agent Coordination in Visibility-Based Pursuit-Evasion Tasks with Graph Attention Network. Submitted to *Conference on Robot Learning*, Munich, Germany. **CoRL 2024**
- Y. Cao, R. Zhao, **Y. Wang**, B. Xiang, G. Sartoretti. Deep Reinforcement Learning-based Large-scale Robot Exploration. In *IEEE Robotics and Automation Letters* (vol. 9, no. 5, pp. 4631-4638). **RA-L 2024**
- **Y. Wang**, Y. Wang, Y. Cao, G. Sartoretti. Spatio-Temporal Attention Network for Persistent Monitoring of Multiple Mobile Targets. **Presentation** at *IEEE/RSJ International Conference on Intelligent Robots and Systems* (pp. 3903-3910), Detroit, MI, USA. **IROS 2023**
- Y. Wang, **Y. Wang**, G. Sartoretti. Full Communication Memory Networks for Team-Level Cooperation Learning. In Springer's *Autonomous Agents and Multi-Agent Systems*, 37, 33. **J-AAMAS 2023**
- **Y. Wang**, G. Sartoretti. Learning Simultaneous Motion Planning and Active Gaze Control for Persistent Monitoring of Dynamic Targets. In *Workshop on Active Methods in Autonomous Navigation*. **ICRA 2023**
- Y. Cao, T. Hou, **Y. Wang**, X. Yi, and G. Sartoretti. ARiADNE: A Reinforcement learning approach using Attention-based Deep Networks for Exploration. In *IEEE International Conference on Robotics and*

Automation (pp. 10219-10225), London, UK.

ICRA 2023

- Y. Cao, **Y. Wang**, A. Vashisth, H. Fan, and G. Sartoretti. CATNIPP: Context-Aware Attention-based Network for Informative Path Planning. In *Conference on Robot Learning* (pp. 1928-1937), Auckland, New Zealand. PMLR. **CoRL 2022**

Selected Patent.....

- Z. Luo, **Y. Wang**, Y. Fu, J. Lu, and H. Zhang, A Rotating Structure for Garbage Sorting. *Utility Model Patent (Chinese)*, CN213474287U. **2021**
- Z. Luo, **Y. Wang**, Y. Fu, J. Lu, and H. Zhang, A Garbage Pushing and Delivery Structure. *Utility Model Patent (Chinese)*, CN213325514U. **2021**
- **Y. Wang**, Y. Fu, Z. Luo, H. Zhang, and J. Lu. Intelligent Recycling Bin (Dys-1). *Design Patent (Chinese)*, CN306247881S. **2020**

Profession Activities

Teaching.....

- **Teaching Assistant** **Singapore**
- NUS ME3103 Mechanical Systems Design *Spring 2021*

Competition.....

- **Singapore Amazing Flying Machine Competition 2023** **Singapore**
- Judge Commendation Award & Championship Award – 5th place *2023*
- **6th China Intl. College Students ‘Internet+’ Innov. & Entrep. Competition** **Guangzhou, China**
- Gold Prize (Red Tour), Nationwide *2020*

Paper Review.....

- IEEE Robotics and Automation Letters (RA-L) **2023/2024**
- Robotics: Science and Systems (RSS) *2024*
- Association for the Advancement of Artificial Intelligence (AAAI) *2023/2024*
- Conference on Robot Learning (CoRL) *2023*
- European Conference on Artificial Intelligence (ECAI) *2023*
- IEEE Transactions on Automation Science and Engineering (T-ASE) **2023**
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) *2023/2024*
- International Symposium on Experimental Robotics (ISER) *2023*
- International Joint Conference on Artificial Intelligence (IJCAI) *2022/2023*