Wang Yutong

E-mail: yutong_wang@u.nus.edu   Phone: 65-92798794   Personal Webpage: https://wyt2019suzhou.github.io/

Address: 367b, Pasir Panjang Road, Singapore, 117673

PROFESSIONAL SUMMARY

Research interests encompass Multi-Agent Reinforcement Learning (MARL), Multi-Agent Path Finding (MAPF), and communication learning within the MARL framework. Current research is focusing on integrating search-based MAPF algorithms with MARL to address large-scale, complex MAPF problems and their variations. The goal is to devise fundamental algorithms that balance computational efficiency with solution quality, and to deploy them on physical robots. Such problems are commonly encountered in fields such as warehouse logistics, manufacturing, and search-and-rescue operations.   .

EDUCATION

Carnegie Mellon University   Pittsburgh, United States
Visiting Student   January 2024-present

- Department: Robotics Institute   Advisor: Prof. Jiaoyang LI

National University of Singapore   Singapore
Doctor of Philosophy   August 2021-present

- Major: Mechanical Engineering   Advisor: Prof. Guillaume Sartoretti   GPA: 4.0/5.0

National University of Singapore   Singapore
Master of Science   August 2020-July 2021

- Major: Mechanical Engineering   Advisor: Prof. Guillaume Sartoretti   GPA: 4.0/5.0

Shanghai University   Shanghai, China
Bachelor of Science   September 2016-June 2020

- Major: Electrical Engineering and Automation   Advisor: Prof. Peter Chen   GPA: 3.16/4.00

PUBLICATIONS

Chengyang He, Tianze Yang, Tanishq Duhan, **Yutong Wang**, Guillaume Sartoretti; "ALPHA: Attention-based Long-horizon Pathfinding in Highly-structured Areas", accepted by 2024 International Conference on Robotics and Automation (ICRA 2024).

Yutong Wang, Bairan Xiang, Shinan Huang, Guillaume Sartoretti; "SCRIMP: Scalable Communication for Reinforcement- and Imitation-Learning-Based Multi-Agent Pathfinding"; accepted by 2023 International Conference on Autonomous Agents and Multiagent Systems as an extension abstract (AAMAS 2023) and 2023 International Conference on Intelligent Robots and Systems as a full paper (IROS 2023).

Yizhuo Wang, **Yutong Wang**, Yuhong Cao, Guillaume Sartoretti; "Spatio-Temporal Attention Network for Persistent Monitoring of Multiple Mobile Targets"; accepted by 2023 International Conference on Intelligent Robots and Systems (IROS 2023).

Yutong Wang, Yizhuo Wang, Guillaume Sartoretti; "Full Communication Memory Networks for Team-Level Cooperation Learning"; accepted by Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS).

Yutong Wang, Mehul Damani, Pamela Wang, Yuhong Cao, Guillaume Sartoretti; "Distributed Reinforcement Learning for Robot Teams: A Review"; accepted by Current Robotics Reports.

Yutong Wang, Guillaume Sartoretti; "FCMNet: Full Communication Memory Net for Team-Level Cooperation in Multi-Agent

Systems"; accepted by 2022 International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2022).

INTERNSHIP AND WORK EXPERIENCE

National University of Singapore   September 2021- December 2023

Position: Research Engineer

- Research and publish paper in the field of reinforcement learning and multi-agent path finding
- Assist master and undergraduate students with research projects

DENSO Shanghai Technology Center   August 2019-September 2019

Position: Intern Hardware Engineer

- Apply Matlab and Multisim to test hardware equipment
- Complete circuit board welding and design

AWARDS

Toyo-Denso Special Scholarship for Academic Excellent (3/200), Shanghai University   April 2020

REVIEWER

2023 IEEE International Conference on Robotics and Automation (ICRA 2023)

SKILLS

Language: Native in Chinese; Fluent in English

Programming Languages: Python, Matlab, C++

Software & Tools: Linus, ROS2, AutoCAD, Multisim, Git, LATAX, Jupyter, Pycharm, Visual Studio Code, Clion, Tensorflow, Pytorch, Keras, Scikit-Learn, OpenCV