Yifan Su

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Education

Carnegie Mellon University 2021.09 – 2025.05
B.S Computer Science

Experience

ARCS Lab (CMU Robotics Institute) 2023.05 - now
Research Assistant

- Work with Prof. Jiaoyang Li to research and develop strategies to enhance the efficiency of multi-robot systems by minimizing execution time without the need for replanning in the event of delays, through the implementation of bidirectional temporal planning graphs.
- The algorithm is implemented in **C++** and simulated in **Python**, and the paper has been accepted by **AAAI 2024**.

The Air Lab (CMU Robotics Institute) 2022.06 - 2023.05
Research Assistant (multi-drone system)

- Development of the GPS backpack carried by the ground experimenters using **Raspberry Pi** and **ROS**
- Responsible for developing the health monitor using **Python** and **C++** for the whole system to monitor the working status of the system in real time
- Independent study on multi-drone coverage, submodular maximization problem

Projects

Robot Planning with Dynamics 2023.03 – 2023.05
A simulator that considers the dynamic limits of four-wheeled vehicles.

- Implemented a path planning algorithm (GUST) using **C++**

The Cube 2022.11 - 2023.01
An on-campus social networking app that allows students to chat anonymously in real time in the classroom. Also, provides a platform to vent their emotions anonymously.

- Project idea lead proponent, front-end development using **React, JavaScript,** and API design.

Mobile Robot System Project 2022.09 - 2022.12

- Developed autonomous mobile forklift using **Matlab** to automatically find targets to lift and transport to specific locations

HackCMU 2021 (Hackathon - the third place)
MAGC Map： A new mind map which breaks the previous mind map where you had to take notes through linear thinking.

- Front-end development using **HTML and JavaScript**

Publications

Bidirectional Temporal Plan Graph: Enabling Switchable Passing Orders for More Efficient Multi-Agent Path Finding Plan Execution
Yifan Su, Rishi Veerapaneni, Jiaoyang Li AAAI - 2024

Skills

C/C++, Python, Swift, JavaScript, React, SML, Matlab