Shuyang Shi
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Education

B.E.
Sep. 2019 - June 2023
Shanghai Jiao Tong University
Mechanical Engineering Overall GPA: 3.8/4.3

M.S.
Sep. 2023 - Aug. 2025 (expected)
Carnegie Mellon University
Robotics

Research Interest

Statement: My research interest lies in the control and planning of robotic systems, especially collaborative multi-robot systems. I hope to build robot teams that can flexibly and safely accomplish human commands and intelligently interact with human beings. I would like to develop methods based on control theory, distributed algorithms, and artificial intelligence, and draw inspiration from any other regions.

Interest: planning, multi-robot coordination, artificial intelligence, control theory

Professional Experience

IEEE RA-L, ICRA 2023 reviewer

Publications

[1] **Shi, Shuyang,** Yuzhu Li, and Wei Dong. "RISE-Based Adaptive Control with Mass-Inertia Parameter Estimation for Aerial Transportation of Multi-Rotor UAVs." *arXiv preprint arXiv:2209.08209* (2022).

[2] Shan, H., Chen, G., **Shi, S.**, Qin, Z. W. M., & Dong, W. (2021, November). Dragon Rider-An Integrated Unmanned Quadruped-Hexarotor System for Flight-Impeded Area Exploration. In *2021 27th International Conference on Mechatronics and Machine Vision in Practice (M2VIP)* (pp. 411-416). IEEE.

Research Experience

Active Vision Scheduling of Multi-UGV Systems | Graduation Dissertation Dec. 2022 - June 2023
Advisor: Wei Dong, Associate Professor of Robotics Institute, SJTU

Schedule active vision tasks of a UGV team to gain better knowledge of the target and the surrounding environment. Control the motion of the UGV team based on model predictive control.

Efficient Large-Scale Collective Behavior Manipulation June 2022 - Jan. 2023
Advisor: Rui Liu, Assistant Professor of College of Aeronautics and Engineering, Kent State University

Control the collective behavior of agents based on a social network-informed election and learning method.

Adaptive Control of UAVs with Parameter Estimation [1] Oct. 2021 - May 2022
Advisor: Wei Dong, Associate Professor of Robotics Institute, SJTU

Proposed an adaptive control method with mass-inertia estimation and disturbance rejection for aerial transportation tasks of multi-rotor UAVs.

Design of an Integrated Unmanned Quadruped-Hexarotor System [2] Mar. 2021 - Sep. 2021
Advisor: Wei Dong, Associate Professor of Robotics Institute, SJTU

Designed a hexarotor UAV capable of grasping and transporting a quadruped robot through an adaptive docking structure.