

Shi Shuyang

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EDUCATION

School of Mechanical Engineering, Shanghai Jiao Tong University

Sep 2019 - Jun 2023 (Expected)

- Bachelor of Mechanical Engineering. **Overall GPA: 89.8/100, Ranking: 7/163**
- Research Interests: UAV, Planning, Control Theory, Multi-Agent Systems
- Standard Tests: TOEFL (Total 111), GRE (V 157, Q 169, AW 3.5)

PUBLICATION

[1] Shan, H., Chen, G., **Shi, S.**, Qin, Z. W. M., & Dong, W. (2021, November). Dragon Rider-An Integrated Unmanned Quadrupe-d-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

Adaptive Control of UAVs with Parameter Estimation | Research Assistant/Project Leader

Oct 2021 - Present

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.
- Evaluated the proposed method numerically in MATLAB and conducted a simulation in ROS gazebo.
- Conducted experiments on a quadrotor to verify the effectiveness of the proposed method in practical applications

Design of an Integrated Unmanned Quadrupe-d-Hexarotor System [1] | SJTU

Mar 2021 - Sep 2021

Advisor: Wei Dong, Associate Professor of Robotics Institute, SJTU

- Designed a hexarotor UAV capable of grasp and transport a quadrupe-d robot via an adaptive docking structure.
- Developed a vision-based approach for the quadrupe-d robot to detect and localize the hexarotor with yolo-v3 and QR-Code.
- Realized computing resource sharing between the hexarotor and the quadrupe-d during flight via the serial communication function of the docking structure.

A Wave Energy Capture Robot Based on Foldable Wings | SJTU

Oct 2020 - Oct 2021

Advisor: WeiXing Chen, Assistant Professor of School of Mechanical Engineering, SJTU

- Designed an autonomous underwater vehicle with wave energy capture ability based on foldable wings.
- Established the body dynamics model to analyze the energy capture efficiency and conducted simulation in MATLAB Simulink.

SELECTED PROJECT

Path Planning for Mobile Robots | Project Leader

Feb 2021 - May 2021

- Implemented the A* algorithm in ROS C++/Python, and smoothed the path based on the Floyd algorithm.
- Developed an interactive interface and set a room model in Rviz to compare the effectiveness of the implementation between C++ and Python.

AWARDS

- Shanghai General Motors Wuling Scholarship (**Top 20%**) 2021
- Meritorious Winner of 2021 Mathematical Contest in Modeling (**Top 7%**) 2021

SKILLS

- **Programming Languages:** Proficient in C/C++, MATLAB, Python
- **Software:** Solidworks, ROS