Jiarui Li

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EDUCATION

Peking University (PKU) Beijing, China
***B.E. in Robotics Engineering* (Rank 2 in class, GPA 3.7/4.0)** *Sep 2020 – Jul 2024 (expected)*

- **Relevant Curriculum:** Introduction to Machine Learning (94), Set Theory and Graph Theory (91), Practice of Programming in C and C++ (93), Robotics Experiments (I) (91), Introduction to Computation (A) (91), Theoretical Mechanics (91), Electromagnetism (96), Social Statistics (91)

- **Technical Skills:**
- Programming Skills: Python, C/C++, MATLAB (Simulink), Arduino
- Robotics: ROS, Gazebo, Moveit!, OpenCV, PyTorch
- CAD: SolidWorks

PUBLICATIONS

(*indicates joint first authors)

[C2] Yao Su*, **Jiarui Li***, Ziyuan Jiao, Meng Wang, Chi Chu, Song-Chun Zhu, Yixin Zhu, Hangxin Liu, "Planning Sequential Aerial Manipulation for Over-actuated UAMs", in *International Conference on Robotics and Automation (ICRA), 2023. (submitted)*

[C1] Yao Su*, Chi Chu*, Meng Wang, **Jiarui Li**, Yang Liu, Yixin Zhu, Hangxin Liu, "Downwash-aware Control Allocation for Over-actuated UAV Platforms", in *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022.*

HONORS & AWARDS

- University Merit Student from Peking University 2022
- Schneider Scholarship from College of Engineering 2022

RESEARCH EXPERIENCE

Aerial Robotics (UAV & UAM's Control and Planning) Beijing, China
Beijing Institute for General Artificial Intelligence (BIGAI), Supervisor: Prof. Song-Chun Zhu *Jan 2022 – present*

- I designed and built a fully-actuated UAV platform and implemented an optimal controller to avoid the downwash disturbance during flipping motion. I further designed a lightweight manipulator, integrated it into the UAV platform, and implemented the planning and control algorithms to install a spare part on the ceiling.
- In this work, I accumulated experiences in mechatronic design and the implementation of control and planning algorithms. These hardware-related experiences can help me deal with problems like algorithm implementation efficiently.
- The results of these works have been concluded in a few papers, including one in IROS 2022 and one submitted to ICRA 2023, as listed in the "publications" section.

SELECTIVE PROJECTS

Machine Learning: Image and Video Classification, RL for manipulator's motion planning Beijing, China
Introduction to Machine Learning, Peking University *Apr 2022 – Jul 2022*

- Used PyTorch-based neural network to complete image and video classification tasks, and build an TD3 Reinforcement Learning algorithm to enable the manipular to conduct motion planning.

MATLAB based Modeling and Analysis of a Wire-Driven Flexible Robotic Arm Beijing, China
Introduction to Robotics, Peking University *Apr 2021 – Jul 2021*

The theoretical mechanics-based modeling of the transmission line ice-covering problem Beijing, China
Theoretical Mechanics, Peking University *Oct 2020 – Dec 2020*