Jiarui Li

Tel: (+86) 19801162393 | Email: lijiarui@pku.edu.cn | Website: https://jrli.org/

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, Embedded System (Arduino, STM32)
- Robotics: ROS, Gazebo, PyBullet, Moveit!, OpenCV, mmdetection, 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

- **Intern Outstanding Contribution Award** from Beijing Institute for General Artificial Intelligence 2023
- **University Merit Student** from Peking University 2022
- **Schneider Scholarship** from College of Engineering 2022

RESEARCH EXPERIENCE

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

- Designed and built a fully-actuated UAV platform; Implemented an optimal controller to avoid the downwash disturbance during flipping motion; Further designed a lightweight manipulator, integrated it into the UAV platform, implemented the planning and control algorithms to install a spare part on the ceiling.
- 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.

Collective Intelligence (Evolutionary Game Theory, Complex Network) Beijing, China
Peking University, Supervisor: Prof. Aming Li, Dr. Lecheng Ruan, Prof. Long Wang *Sep 2022 – present*

- Used Monte Carlo Simulation to explore game strategy's evolution on complex networks, including Scale-Free network and Erdős-Rényi network, aimed to explain the emergence of cooperation in the sizeable structured group. Compared the effects of different parameters and try to explain this phenomenon clearly.

SELECTIVE PROJECTS

Computer Vision: Image processing, Deep-learning based classification and object detection *Peking University*

Machine Learning: Image and Video Classification, RL for manipulator's motion planning *Peking University*

MATLAB based Modeling and Analysis of a Wire-Driven Flexible Robotic Arm *Peking University*