

ZHAOJING YANG

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EDUCATION

University of Southern California M.S in Computer Science	Aug 2022 - Present GPA: 4.0/4.0
Shanghai Jiao Tong University B.Eng in Computer Science and Technology	Sep 2018 - June 2022 GPA: 3.73/4.3

RESEARCH INTEREST

My research interest lies at the intersection of **Reinforcement Learning and Robotics**. I'm interested in applying learning method for optimal robot policies in both simulator and real-world. My vision is to enable robots to interpret instructions and learn from feedback to improve human-robot collaboration. In the future, I'm aspiring to explore other learning methods like learning from human demonstration and feedback, combining RL with IL, and utilizing LLM for robot assistance.

EXPERIENCES

Preference-based Reinforcement Learning <i>Research Assistant, LiraLab</i>	Aug 2023 - Now
<ul style="list-style-type: none">Modified reward model of PEBBLE for visual input and adapted the learned reward model to unseen environments.Developed an active learning framework where the agent queries humans for natural language feedback to improve the reward model, enabling more generalized behavior without hand-engineering rewards.	
Multi-drones Obstacles Avoidance with Reinforcement Learning <i>Research Assistant, RESL</i>	Nov 2022 - Jun 2023
<ul style="list-style-type: none">Proposed an end-to-end model that outputs direct thrusts and achieved 97% agent success rate in obstacle and neighbor avoidance in simulation.Added floor interaction and downwash effect in the simulator to get a 4x faster convergence speed.Applied attention mechanism and deploy it on micro quadrotors in the real world.	
Multimodal Model Adapter <i>Course Project</i>	Feb 2023 - May 2023
<ul style="list-style-type: none">Adapted to downstream multimodal tasks via LoRA adapter.Trained with masked modeling for both vision and language to get better unimodal and multimodal representationAchieved comparable performance to full fine-tuning with only 10% trainable parameters.	

PUBLICATIONS

Zhehui Huang*, **Zhaojing Yang***, Rahul Krupani, Baskın Şenbaşlar, Sumeet Batra, and Gaurav S Sukhatme. Collision avoidance and navigation for a quadrotor swarm using end-to-end deep reinforcement learning. *Under Review at ICRA 2024*, 2023 ([pdf](#), [website](#))

Zhehui Huang, Sumeet Batra, Tao Chen, Rahul Krupani, Tushar Kumar, Artem Molchanov, Aleksei Petrenko, James A Preiss, **Zhaojing Yang**, and Gaurav S Sukhatme. Quadswarm: A modular multi-quadrotor simulator for deep reinforcement learning with direct thrust control. *ICRA 2023 Workshp: The Role of Robotics Simulators for Unmanned Aerial Vehicles*, 2023 ([pdf](#), [poster](#))

AWARDS

Undergraduate Academic Excellence Scholarship (Top 15%)	SJTU, 2019
Zhiyuan Honor Program Scholarship (Top 5%)	SJTU, 2018

SKILLS

Programming Language: Python, C++, Shell

Machine Learning Tools: PyTorch