ZHAOJING YANG

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EDUCATION

University of Southern California Aug 2022 - May 2024
M.S in Computer Science

Shanghai Jiao Tong University Sep 2018 - June 2022
B.Eng in Computer Science

RESEARCH INTERESTS

My research interests lie in **Robot Learning**, especially in developing generalizable policies for real-world tasks. I am interested in applying learning methods to obtain general robot policies that can be deployed in the real world. My vision is to enable robots to perform complex tasks in the real world and interpret human instructions for better human-robot collaboration.

RESEARCH EXPERIENCES

Preference-based Learning with Human Language Feedback Aug 2023 - Jun 2024
Research Assistant, USC *Advisor: Erdem Bıyık*

- Proposed a learning-based framework to learn a latent space that aligns human preferences through comparative language feedback with robot trajectories, which can then be used to learn human reward functions or improve robot trajectories.
- Conducted user studies on real robot, which demonstrate that our approach achieves a 23.9% higher subjective score on average and is 11.3% more time-efficient compared to the baseline

Multi-drones Collision Avoidance with Reinforcement Learning Nov 2022 - Jun 2023
Research Assistant, USC *Advisor: Gaurav Sukhatme*

- Proposed an end-to-end model that outputs direct thrusts to control quadrotors and achieved 97% agent success rate in obstacle and neighbor avoidance in simulation.
- Applied attention module in the model and deployed the model on micro quadrotors (Crazyflies) in the real world.

PUBLICATIONS

[1] **Active Reward Learning and Iterative Trajectory Improvement from Comparative Language Feedback**
Eisuke Hirota*, **Zhaojing Yang***, Ayano Hiranaka, Miru Jun, Jeremy Tien, Stuart J. Russell, Anca Dragan, Erdem Bıyık
IJRR [website, code]

[2] **NaVILA: Legged Robot Vision-Language-Action Model for Navigation**
An-Chieh Cheng*, Yandong Ji*, **Zhaojing Yang***, Zaitian Gongye, Xueyan Zou, Jan Kautz, Erdem Bıyık, Hongxu Yin†, Sifei Liu†, Xiaolong Wang†
RSS 2025 [website, paper, code, benchmark]

[3] **Trajectory Improvement and Reward Learning from Comparative Language Feedback**
Zhaojing Yang, Miru Jun, Jeremy Tien, Stuart J. Russell, Anca Dragan, Erdem Bıyık
CoRL 2024 [website, paper, code]
HRI 2024 Human-Interactive Robot Learning Workshop

[4] **Collision Avoidance and Navigation for a Quadrotor Swarm Using End-to-end Deep Reinforcement Learning**
Zhehui Huang*, **Zhaojing Yang***, Rahul Krupani, Baskın Şenbaşlar, Sumeet Batra, Gaurav S. Sukhatme
ICRA 2024 [website, paper, code]

[5] **QuadSwarm: A Modular Multi-Quadrotor Simulator for Deep Reinforcement Learning with Direct Thrust Control**
Zhehui Huang, Sumeet Batra, Tao Chen, Rahul Krupani, Tushar Kumar, Artem Molchanov, Aleksei Petrenko, James A. Preiss, **Zhaojing Yang**, Gaurav S. Sukhatme
ICRA 2023 The Role of Robotics Simulators for Unmanned Aerial Vehicles Workshop [paper, code]

AWARDS

Zhiyuan Honor Scholarship (Top 5%) SJTU, 2021
Undergraduate Academic Excellence Scholarship (Top 10%) SJTU, 2019

SKILLS

Programming Language: Python, C++, Shell

Robotics: ROS, IsaacLab, IsaacGym