

Ziyi Xu

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EDUCATION

- Zhejiang University** Hangzhou, China
• *Bachelor of Engineering - Robotics Engineering; GPA: 3.99/4.0 (91.8/100)* Sept 2021 - June 2025
Courses: RoboticsI(Manipulation), RoboticsII(Navigation), Automatic Control, Optimization and Optimal Control, Machine Vision

PROJECT EXPERIENCE

- CMU SafeAI Lab - Advisor: Ding Zhao** Pittsburgh, USA
• *Research Intern* Jul 2024 - Oct 2024
 - Query-centric Diffusion Policy for Generalizable Robotic Assembly**
Developed a two-stage hierarchical framework with a query-centric diffusion policy for zero-shot execution of long-horizon assembly tasks in robot manipulation, using task-relevant queries to guide the policy.
Preparing submission for RA-L.
- FAST-LAB FAR - Advisor: Fei Gao** Huzhou, China
• *Research Intern* Jun 2023 - May 2024
 - Bearing-based Localization & Mutual Observation in UAV Swarms**
Trained and deployed a drone detection&tracking module in visual-based UAV-swarm systems jointly solving active mutual observation and anonymous initialization. Two co-authored papers accepted by IROS 2024 and RA-L.
 - RoboMaster University AI Challenge(Classic) - National Champion**
Teamed up and won an autonomous drone racing challenge with our self-built drone. Almost twice as fast as the runner-up. Contributed to robust goal detection and high level finite-state-machine design.
 - Reinforcement Learning for UAV Trajectory Tracking**
Course Project for *Innovation and Practice in Robotics*. Generated a high-quality trajectory library, trained trajectory tracking, and deployed in real-world.
- National Student Research Training Program - Advisor: Yu Zhang** Hangzhou, China
• *Project Leader* Mar 2023 - Mar 2024
 - Real-time 3D Point Cloud Object Detection Model Based on Auto-wheeled Robot Platform**
Self-designed and built an autonomous car, compared SoTA point-cloud-based 3D object detection algorithms on board.
- Robot Transportation & Confrontation Contest** Hangzhou, China
• *Project Leader* Dec 2021 - Jun 2022
 - Zhejiang University Robotics Competition(Runner-up) & Robot Competition in Zhejiang Province**

PUBLICATIONS

- Query as You Need: Query-centric Diffusion Policy for Generalizable Robotic Assembly**
*Ziyi Xu**, Haohong Lin*, Shiqi Liu*, Mengdi Xu, and Ding Zhao
Under Revision
- Preserving Relative Localization of FoV-Limited Drone Swarm via Active Mutual Observation**
*Lianjie Guo**, Zaitian Gongye*, *Ziyi Xu*, Yingjian Wang, Xin Zhou, Jinni Zhou, and Fei Gao
2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- FACT: Fast and Active Coordinate Initialization for Vision-based Drone Swarms**
*Yuan Li**, Anke Zhao*, Yingjian Wang*, *Ziyi Xu*, Xin Zhou, Jinni Zhou, Chao Xu, and Fei Gao
IEEE Robotics and Automation Letters (RA-L)

HONORS AND AWARDS

- DJI RoboMaster University AI Challenge(Classic) - National Champion March, 2024
- Huawei Elite Scholarship in College of Control Science and Engineering 2023
- Zhejiang University Scholarship - First Prize (Top 3%) 2022
- Government Scholarship of Zhejiang Province 2022
- Zhejiang University Robotics Competition - First Prize 2022

SKILLS AND INTERESTS

- Skills**
Languages: C/C++, Python, MATLAB, Lua
Tools of Production: ChatGPT, Pytorch, OpenCV, Pybullet, Isaac-Gym, ROS, SolidWorks, STM32(CubeMX, HAL, FreeRTOS), SIMULINK, Arduino
- Research Interests**
Motion Planning, Optimal Control, Real-world Robotics
- Hobbies**
Jigsaw, Reading, Piano, Traveling and Cooking

SOCIAL ACTIVITIES

- Zhejiang University Student Robot Association - President of Association** Hangzhou, China
• *Led an association of over 200 students passionate about robotics.*
Awarded the Zhejiang University Top 10 Students' Association Award (2022-2023). Oct 2021 - Jun 2023
- Zhejiang University Chu Kochen(CKC) Alumni Secretariat** Hangzhou, China
• *Organized college alumni events and managed alumni communications and publicity.* Sept 2021 - Jun 2022