

Education

SJTU (Shanghai Jiao Tong University)

Shanghai, China

B.E. IN COMPUTER SCIENCE AND TECHNOLOGY

Sep. 2022 - Present

- IEEE Honors Class
- GPA: 90.6/100 (3.93/4.3)
- Relevant Coursework: Mathematics Analysis (90/100) · Linear Algebra (94/100) · Probability and Statistics (94/100) · Linear and Convex Optimization (96/100) · Information Theory (93/100) · Discrete Mathematics (91/100) · Robotics (96/100) · Operation System (95/100)

Publications

Bridging the Sim-to-Real Gap from the Information Bottleneck Perspective

HAORAN HE, PEILIN WU, CHENJIA BAI, HANG LAI, LINGXIAO WANG, LING PAN, XIAOLIN HU, WEINAN ZHANG

Apr. - Jun. 2024

CoRL (Oral), 2024

- Provided a theoretical analysis to model the sim-to-real gap concerning privileged information and historical trajectories.
- Proposed an efficient and effective sim-to-real transfer method inspired by information bottleneck, outperforming existing baselines (DreamWaQ, RMA, etc.) for about 10% in simulated RL tasks and real-world quadruped locomotion.

LoopSR: Looping Sim-and-Real for Lifelong Policy Adaptation of Legged Robots

PEILIN WU, WEIJI XIE, JIAHANG CAO, HANG LAI, WEINAN ZHANG

Jun. - Sep. 2024

Preprint

- Modeled the lifelong learning problem and proposed methods accordingly to get a simulated reconstruction of the real world.
- Designed a lifelong policy adaptation framework that enhanced the performance by at least 30% in the most difficult cases compared with sim-to-real transfer baselines and successfully handled problems like catastrophic forgetting.

Research Experience

Shanghai AI Lab

Shanghai, China

RESEARCH ASSISTANT AT EMBODIED AI CENTER, ADVISED BY DR. JINGBO WANG

Mar. 2025 - Present

Research Topic: Robotics, Reinforcement Learning, Motion Generation

Shanghai Jiao Tong University

Shanghai, China

RESEARCH ASSISTANT AT APEX LAB, ADVISED BY PROF. WEINAN ZHANG

Sep. 2023 - Present

Research Topic: Robotics, Reinforcement Learning

Shanghai Jiao Tong University

Shanghai, China

RESEARCH ASSISTANT AT MAGIC LAB, ADVISED BY PROF. SIHENG CHEN

Jul. 2023 - Mar. 2024

Research Topic: Drone System, Collaborative Communication

Highlighted Projects

Bridging the Gap between Human Motion Generation and Humanoid Control

Shanghai, China

RESEARCH ASSISTANT AT EMBODIED AI CENTER, ADVISED BY DR. JINGBO WANG

Mar. 2025 - Present

- Established a thorough pipeline from text/goal-conditioned motion generation to low-level locomotion of humanoid robots (Unitree G1).
- Implementing RL-based fine-tuning techniques to get a robust system which can continuously improve.

Drone System Construct and Communication for UAV swarm

Shanghai, China

RESEARCH ASSISTANT AT MAGIC LAB, ADVISED BY PROF. SIHENG CHEN

Aug. 2023 - Mar. 2024

- Constructed a drone system based on ROS, carrying a GPS sensor and USB camera, used to collect data for autonomous driving datasets.
- Implemented the communication for UAV swarm based on TCP/UDP, preparing for future research on collaborative communication.

Course Projects

EcoCat: Universal Search Engine for Financial News

Shanghai, China

COURSE PROJECT LEADER FOR ICE2602 INTRODUCTION TO ENGINEERING FOR ELECTRONIC INFORMATION

Nov. - Jan. 2023

- Developed a universal search engine for financial news based on crawler technology, information retrieval and front-end technology.

Vision System for 6-DoF Robot Arm

Shenzhen, China

TEAM MEMBER AT SJTU ROBO MASTER TEAM IN ROBO MASTER COMPETITION 2023

Feb. - Aug. 2023

- Designed the algorithm to identify the camera pose and desired end effector pose from RGB image.
- Constructed a thorough pipeline to connect the sensor, PC, and lower computer based on ROS and serial communication.

Honors & Awards

2023 **1st Prize**, China University Robot Competition RoboMaster
2022-2024 **Zhiyuan Honorary Scholarship**, top 5 % students in SJTU
2023, 2024 **University Scholarship**, top 5 % students in SJTU

Skills

Programming Python, C/C++, \LaTeX , MATLAB, HTML, CSS, JavaScript
Frameworks PyTorch, Tensorflow, NumPy, OpenCV, ROS, Flask
Language Chinese, English (TOEFL 112, GRE 328+3.0)