Peilin **Wu**

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Education

SJTU (Shanghai Jiao Tong University)   *Shanghai, China*

B.E. IN COMPUTER SCIENCE AND TECHNOLOGY   *Sep. 2022 - Present*

- IEEE Honors Class
- GPA: 90.4/100 (3.92/4.3)
- 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)

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 sim2real 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*

Submitted to *ICRA***, 2025**

- 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.

Reasearch Experience

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

Other Projects

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.

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 ROBOMASTER TEAM IN ROBOMASTER 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

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)