

# 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 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

#### 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.

## Research 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 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

## 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)