Dichen Li

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Education

University of California, San Diego   **09/2024-**
- Master's Program in ECE department: Major in EC80 intelligent system & robotics | GPA: 4.0/4.0
- Relevant Curriculum: *Machine Learning for Robotics; Sensing & Estimation Robotics; Random Processes.*

University of California, Berkeley   **09/2023-06/2024**
- Exchange Program: Studying in EECS department
- Relevant Curriculum: *Designing, Visualizing and Understanding Deep Neural Networks; Introduction to Artificial Intelligence.*

Xi'An Jiaotong University   **09/2020-06/2024**
- Bachelor of Engineering: Major in Automation (Academic Elite Program) | GPA: 3.92/4.30 rank: 19/220
- Relevant Curriculum: *Principles of Automatic Control; Mobile Robotics; Intelligent Control; Data Structure and Algorithms; Computer Architecture and Embedded System Design; Computer Network Theory & Its Applications.*

Research Experiences

Embodiment Adaptation
Graduate Research Intern | UC San Diego   **04/2025-Present**
- Trained the locomotion controller online to learn diverse gaits across a continuous range of robot embodiments with varying robot parameters.
- Designed and trained a transformer-based adaptation module to infer unknown robot parameters from historical trajectories, enabling robustness to motor failures, payload variations and other uncertainties, improving generalization across diverse embodiments.

Discover Large-scale Embodiments Scaling Law   **10/2024-05/2025**
Graduate Research Intern | UC San Diego
- Conducted reinforcement learning of locomotion policies on 1,000 distinct robots (hexapod, humanoid and quadruped; with different topology, geometry and kinematic features) using Isaac Lab.
- Conducted large-scale supervised teacher-student policy distillation, and achieved real-world deployment for both teacher and student policies on Unitree Go2 and H1 robot.
- Discovered that training on accumulated embodiment improves performance, and that embodiment scaling outperforms data scaling.
- **Paper accepted to CoRL 2025 as the co-author.** The corresponding author is Professor Hao Su.
- **Paper title: Towards Embodiment Scaling Laws in Robot Locomotion.**

Hexopod Robot Manipulation with Reinforcement Learning   **09/2023-05/2024**
Undergraduate Research Intern| UC Berkeley
- Designed reward and trained reinforcement learning policies in complex environments for a hexapod robot with depth-sensing cameras to accomplish tasks of obstacle avoidance, stair climbing, and narrow passage traversal.
- Conducted policy distillation with the only viable observations, and deployed on real hexapod robots, achieving stair climbing, cave-like passages traversal (height reduction from 22cm to 10cm), and obstacle avoidance (maneuvering around 40x40x40cm blocks).
- **Paper accepted to IROS 2024 as the second author**. The corresponding author is Professor Avideh Zakhor.
- **Paper title: Versatile Locomotion Skills for Hexapod Robots.**

Four-Wing UAV Control and Navigation   **04/2022-08/2023**
Undergraduate Research Assistant | Xi'an Jiaotong University
- Developed real-time flight control firmware in C/Keil (TM4C) with multi-level PID and mission logic.
- Adapted ROS system files for sensor data management and utilized hector_mapping for UAV indoor localization. Developed a real-time object detection system using Python, PyTorch, and OpenCV using the YOLOv5 model.

Publications
- CoRL 2025 (co-author): Towards Embodiment Scaling Laws in Robot Locomotion.
- IROS 2024 (second author): Versatile Locomotion Skills for Hexapod Robots.

Awards
- 1st Prize of Shanxi Province, China in the 2022 National College Student Mathematical Modeling Competition
- 2nd Prize of Shanxi Province, China in the 2022 National College Student Electronic Design Competition (TI Cup)

Skills
- Reinforcement learning for robotic locomotion.
- Neural network design and training.
- Deployment of control policies on physical robots with embedded systems, sensors and actuators.