Lixin Xu

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RESEARCH INTERESTS

I am deeply committed to advancing the field of robotics with a focus on the integration of cognitive and athletic intelligence to create robotics foundation models that could revolutionize our modern industry and society.

EDUCATION

The Hong Kong University of Science and Technology *Guangzhou, China*

Ph.D Student in Robotics. Supervisor: Renjing Xu

Georgia Institute of Technology *Atlanta, United States | Shenzhen, China* Dec 2024

M.Sc. in Electrical and Computer Engineering GPA: 4.0/4.0

- Coursework: ECE 6258 Digital Image Processing(A), ECE 6122 Adv Prog Techniques(A), ECE 6550 Linear Sys and Control(A), CS 7641 Machine Learning(A), CS 7643 Deep Learning(A), CS 7638 AI for Robotics(A), etc.

Qingdao University *Qingdao, China* June 2021

B.Sc. in Mechanical Engineering GPA: 90.96 / 100 (Top 1%)

- National Scholarship, Ministry of Education of China

INTERNSHIP

Tsinghua University Jan 2025 - May 2025

Research Intern at Institute for AI Industry Research (AIR), Supervisor: Yilun Chen and Wenchao Ding

National University of Singapore June 2024 - Dec 2024

Research Intern at School of Computing, Supervisor: Prof. Lin Shao

PUBLICATION

DexSinGrasp: Learning a Unified Policy for Dexterous Object Singulation and Grasping in Densely Cluttered Environments | *R-AL Submission*

- **Lixin Xu**, Zixuan Liu, Zhewei Gui, Jingxiang Guo, Zeyu Jiang, Tongzhou Zhang, Zhixuan Xu, Chongkai Gao, Lin Shao.
- Website: https://dexsingrasp.github.io/dexsingrasp-web/

Taming VR Teleoperation and Learning from Demonstration for Multi-Task Bimanual Table Service Manipulation | *ICRA 2025 WBCD Challenge*

- Weize Li, Zhengxiao Han, **Lixin Xu**, Xiangyu Chen, Harrison Bounds, Chenrui Zhang, Yifan Xu.

RESEARCH & PROJECT EXPERIENCE

ICRA WBCD Challenge | *Atlanta, United States* Jan. 2025 - May 2025

- Champion. Refer to technical report https://arxiv.org/abs/2508.14542

Monocular Depth Estimation - FADE Ain't Depth Estimation | *CS 7643* Feb 2022 - May 2022

- Involved deep learning experience on large-scale networks focusing on depth estimation.
- Exploration and evaluation of current boosting methods with MiDaS and LeRes.

An Attention-Based Video Inpainting Technique for Wire-Removal Scenarios | *ECE 6258* Sep 2021 - Dec 2021

- Proposed an autoencoder-based video inpainting model for wire-removal in movie scenes.

C++ Simulation, Games and Visualization | *ECE 6122* Oct 2021 - Dec 2021

- GaTech Buzzy Bowl, a multi-threaded OpenGL 3D simulation; Buzzy's Revenge, a multimedia game based on SFML
- CUDA-based thermal conduction simulation

An ORB-based Stereo Vision Odometry | *Undergrad thesis* Jan 2021 - Jun 2021

- Designed PyVO (Python Visual Odometer), an ORB-based visual stereo odometer.

The 6th National Engineering Training Competition - Material Handling Robot | *Special Prize* Dec 2018 - Jun 2019

- Built a STM32-based Mecanum Wheel robot with OpenMV for object recognition.

SKILLSET

Programming and tools Python/PyTorch, C/C++, Isaac Gym, MATLAB/Simulink, ROS, Cmake, LaTeX, Solidworks

ML & Decision Making Imitation Learning, Reinforcement Learning, LLM/VLM

Control & Actuation Nonlinear control, disturbance rejection control, dynamics modeling

Languages Mandarin(native), English(IELTS 7.5, GRE 322, CET6 614), Cantonese (colloquial), German(A2), Japnese(N4)