Ang Li

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Education

Stanford University
M.S. Computer Science — *Sep 2023 - Present*

University of California, San Diego
B.S. Computer Science, GPA: 3.97 / 4.0 — *Aug 2019 – Dec 2022*

Publication

1. Xiaoshuai Zhang, Rui Chen, **Ang Li**, Fanbo Xiang, Yuzhe Qin, Jiayuan Gu, Zhan Ling, Minghua Liu, Peiyu Zeng, Songfang Han, Zhiao Huang, Tongzhou Mu, Jing Xu, Hao Su. *Close the Optical Sensing Domain Gap by Physics-Grounded Active Stereo Sensor Simulation.* Accepted to IEEE Transactions on Robotics (T-RO). [arXiv]

Research Experience

Key Frame Editing for Robot Manipulation — *UC San Diego (Remote)*
Advisor: Prof. Hao Su — *April 2023 – Present*

- Designed a reward-based key frame editing framework for robot manipulation tasks.
- Built an ImGui-based UI for the system upon SAPIEN.

Active Stereo Vision Depth Sensor Simulation — *UC San Diego*
Advisor: Prof. Hao Su — *July 2022 – Nov 2022*

- Developed a CUDA library to simulate the stereo matching module of real-world depth sensors. The library is integrated into SAPIEN.
- Our proposed depth sensor simulation pipeline built on SAPIEN outperformed other state-of-the-art sim-to-real methods in both runtime performance and transfer performance. [Project Page]

Closed-Loop Control for Mechanical Ventilation — *UC San Diego*
Advisor: Prof. Ryan Kastner — *Nov 2020 – June 2021*

- Led the development of the closed-loop control circuit for a low-cost mechanical ventilator prototype.
- Designed and developed a PID controller implementing Pressure Control Ventilation on Arduino chips.

Selected Projects

SAPIEN | [GitHub]

- SAPIEN is a realistic and physics-rich simulated environment. I developed SAPIEN Realistic Depth, scene serialization and key frame editor for SAPIEN.

SimSense | [GitHub]

- Developed a Real-Time Depth Sensor Simulator with GPU Acceleration. The code can achieve 250+ FPS, which is 300x faster than off-the-shelf CPU implementations.

Neural Radiance Fields (NeRF) | [GitHub]

- Reimplemented NeRF in a concise manner using PyTorch.

Multi-view Stereo (MVS) | [GitHub]

- Developed a MVS reconstruction pipeline using OpenCV and Open3D.

Teaching

CSE 152A: Introduction to Computer Vision — *UC San Diego*
Instructional Assistant — *Sep 2022 – Dec 2022*

- The course covered image formation, reconstruction, classification, recognition, deep learning.

Volunteering

Mentor for UC San Diego Regents Scholar Research Initiatives *UC San Diego*
Mentorship *Oct 2022 – June 2023*

- Support two prospective students interested in CV/RL research through biweekly meetings.

Technical Skills

Languages: Python, C/C++, Java, CUDA, MATLAB, SQL
Developer Tools: Git, Docker, Kubernetes, CMake
Libraries: PyTorch, OpenCV, Open3D, pybind11, ImGui