Zi Tao Dylan Li

Fremont, CA | +1 (808) 551-8720 | dylanlzt2003@gmail.com | linkedin.com/in/zitaodylanli | github.com/ztialo

EXPERIENCE

Undergraduate Researcher | UCSC Tactile Manipulation Lab, Santa Cruz, CA   Nov 2025 - Present
- Designed a 6-axis force/torque sensor model in Isaac Lab to replicate CoinFT sensor characteristics.
- Evaluate and refine synthetic tactile data for closer alignment with real CoinFT sensor outputs.
- Build a synthetic tactile data-collection pipeline for diverse robotic manipulation tasks.
- Integrate tactile feedback into VLA models to improve manipulation accuracy and robustness.

Robotics Operator & Research Assistant | World Engine AI, Santa Clara, CA   March 2025 - Present
- Designed a CAD replica of the robotic arm workstation to support digital simulation and data collection.
- Developed a pipeline in NVIDIA Isaac Lab using inverse kinematics for vision-based arm manipulation.
- Integrated Pyroki motion planner to generate collision-free trajectories for synthetic data generation.
- Building a data collection pipeline using a VLM-based tool to understand affordance for manipulation tasks.
- Teleoperating a 6-DOF robotic arm to collect real-world manipulation data for a vision-language model.

Undergraduate Researcher | UCSC Human Aware Robotics Exploration Lab, Santa Cruz, CA   April 2025 - Present
- Designed a PPO training pipeline for quadruped locomotion across multiple gait styles and terrain variations.
- Developed ROS control with Unitree UDP protocol for low-level commands on the physical quadruped robot.
- Integrating an MPM solver to improve robustness in locomotion learning on deformable terrains.
- Deploying and tuning control gains on learned locomotion policies onto the physical quadruped.

RELEVANT PROJECTS

Machine Learning | Fine-tuning Language Model   Sept 2025 - Dec 2025
- Customized a RAG pipeline for retrieving top-relevant context and reducing hallucinations in model responses.
- Fine-tuned a baseline small language model, improving response accuracy by 64%.
- Designed an SFT pipeline enabling a 1B-parameter model to replicate the style and quality of a 7B model.
- Developed evaluation scripts to measure relevance and consistency across RAG-enabled and baseline models.

Embedded System | Human-Computer Interaction Robotics Arm   Jan 2025 - March 2025
- Calibrated IMU sensor with closed-loop PID control in MATLAB and converted it to C language.
- Designed and developed a robot arm that mimics the movement of a human arm and fingers.
- Implemented the I2C library to have multiple sensors to communicate with the microcontroller in real-time.
- Combined sensor fusion and feedback control system to increase the motor output precision by 93%.

EDUCATION

University of California, Santa Cruz, CA   Expected Graduation: Spring 2026
Bachelor of Science in Robotics Engineering

Relevant Coursework: Introduction to Robot Learning, Robot Automation for Feedback Control, Robotics Manipulation, Hybrid Control System, Signals and Systems, Sensing and Sensor Technologies, Introduction to Mechatronics

SKILLS

Languages:	Python, C/C++, Verilog
Framework:	PyTorch, TensorFlow, OpenCV
Hardware:	Raspberry Pi, STM32, PIC32, Microcontrollers, ARM, Xilinx,
Applications:	Isaac Sim, ROS, OpenCV, PyBullet, MPLAB, MATLAB, Simulink, Fusion 360, Onshape