Ethan Shedd

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KEY SKILLS

- **Robotics/AI**: Imitation Learning, Reinforcement Learning, Computer Vision, ROS2, Isaac, Mujoco, Gazebo
- **Programming**: Python (Pytorch, Pandas, OpenCV, Scikit-Learn, NumPy), C, C++, Java
- **Languages**: English, Mandarin Chinese (proficient), Spanish (limited)

EXPERIENCE

Robot Learning Engineer, Agrobotics Inc. **5/24 – Present**

First engineering hire at an early-stage agricultural robotics startup

- Trained and evaluated **ACT**, **Diffusion Policy**, and **VQ-BeT** with different vision encoders (**ResNet**, **YOLO**, **DINOv2**) for dexterous manipulation of deformable objects in indoor and outdoor settings
- Implemented simulation frameworks (**Gazebo Ignition**, **Mujoco**, **IsaacLab/IsaacSim**) and assessed viability for contact dynamics and **sim2real** gap by controlling custom URDF
- Created **teleoperation** data collection pipeline with **VisionPro** and iterative **IK solving** techniques (J-PARSE, DLS) for smooth control near singularities
- Wrote ROS2 driver for Inspire (因时机器人) Agility Hand and performed feasibility study of **retargeting** a human hand to LEAP, Inspire, and custom robotic **dexterous hands** via teleoperation of real hardware
- Ported codebase from x86 to ARM architecture for edge computing end-to-end policies on **Jetson AGX Orin**
- Designed experiment tracking paradigm for policy rollouts using **Sacred** logging and **Omniboard** dashboard, validated vision encoders with **GradCAM** and **T-SNE**, and built techniques for **out-of-distribution analysis** taken from recent literature—for comprehensive **MLOps** on imitation learning policies
- Led technical interviews (engineering and CTO roles) and drove cross-disciplinary efforts from hardware bring-up to policy architecture design

Computer Vision Research Assistant, Berkeley Artificial Intelligence Research **6/21 – 5/24**

- Trained vision transformers (**ViT**) and **LSTM/GRU** networks in **PyTorch** for visual feature encoding and predicting temporal participant emotion data evoked from videos
- Encoded fMRI data with banded ridge regression for data-driven approach to discover cortical networks
- Built an automatic semantic labeling pipeline with **Grounding DINO** and **SAM** for video datasets
- Applied **GAN** models to determine individuals' cognitive biases in facial recognition and generate hypothesized internal templates of the Fusiform Face Area in the human brain

Computer Vision Engineer Intern, Stout Industrial Technology, Salinas **5/22 – 8/22**

- Diagnosed recurrent failures of **YOLO** object recognition model used in industrial agriculture applications
- Designed modified training regime to reduce majority of error cases
- Implemented image stitching with **SIFT** in OpenCV to supplement IMU data for mobile robot perception stack

EDUCATION

University of California, Berkeley: Bachelor in Computer Science **GPA:** 3.9 | **Graduation**: 5/24

PROJECTS & AWARDS

Voice-Controlled Hand: ASR with LLM to allow for basic speech prompting of a 5-fingered robot hand
Cobot Hidden Target Search: Novel algorithm to estimate volume behind objects in an active vision search
Fashion Recommender: CLIP matches my clothing to user-provided prompts; diffusion model for virtual try-on
Learning Games via RL: Imitation and policy gradient (RL) models compete in learning a custom game
Eagle Scout: Proficiency in leadership, preparedness, communication, and project management