# XIAOYE ZUO

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Website ⋄ LinkedIn ⋄ Github

## EDUCATION

**University of Pennsylvania**, School of Engineering and Applied Science — May 2024, Philadelphia
*Master of Science in Engineering in Robotics* — GPA: 3.88/4.0

**University of California, San Diego**, Jacobs School of Engineering — June 2022, San Diego
*Bachelor of Science, Major in Computer Engineering, Minor in Business* — GPA: 3.82/4.0
*Honors: cum laude, IDEA Scholar, Henry G. Booker Award Recipient*

## SKILLS

**Programming Languages**: Python, C++
**Software** : PyTorch, OpenCV, ROS, AWS, CUDA, Docker, Slurm
**Specialization**: Computer Vision, Multimodal Learning, F1Tenth Autonomous Racing, Entrepreneurship

## WORK EXPERIENCE

**Computer Vision Engineer (part-time) — Daxo Industries Inc.** — Mar. 2023 - Oct. 2023
- Developed a vision-based fruit detection pipeline with 95% accuracy using ROS and PyTorch with a ZED stereo camera
- Implemented streaming RGBD data storage pipeline for learning system improvement using AWS S3, ROS, and OpenCV
- Designed Dockerized vision pipeline that reduced deployment setup on an NVIDIA Jetson Orin Nano

**Research Intern — Advanced Robotics and Controls Lab** — Jan. 2021 - Apr. 2022
- Built a blower-based ventilator using PID controller and pressure sensors to simulate respiratory motion on a lung phantom
- Implemented real-time lung motion tracking with a Kinect Azure RGBD camera and ArUco markers using ROS and OpenCV
- Designed a compact PCB using Altium to improve circuit reliability and protect microcontrollers from overvoltage

## TECHNICAL EXPERIENCE

**Contrastive Language-Image-Path Pretraining** — Mar. 2024 - May. 2024
- Trained a multimodal model to predict the most relevant trajectory given an image sequenec and a text instruction
- Achieved more than 35% increase in accuracy for vision-language navigation through finetuning on the RXR dataset

**Facial Landmark Tracking** — Oct. 2023 - Dec. 2023
- Implemented a 2-stage facial landmark tracking pipeline for long videos using TAPIR to capture temporal consistency
- Lowered tracking error by 30% using SOTA facial landmark detectors including ADNet and PIPNet

**Principle member - TritonAI** — Oct. 2020 - Jan. 2021
- Built and trained an autonomous RC car to race on outdoot tracks using NVIDIA's Jetson Nano and Jetracer AI framework
- Designed support structures using SolidWorks and 3D-printed detachable magnetic camera mount for collision protection
- Implemented perspective transform on RGB images to generate birds-eye views that improved lane detection efficiency

## LEADERSHIP EXPERIENCE

**Tutor — UCSD ECE Department** — Mar. 2020 - Mar. 2022
- Facilitated discussions of digital signal processing using MATLAB for a 150-person class during weekly office hours
- Helped design class components to transition from in-person to remote teaching in response to COVID-19

**Vice Chair External — IEEE at UCSD** — June 2020 - May 2021
- Designed sponsorship plans and successfully obtained fundings from companies including Qualcomm and BrainCorp
- Coordinated workshops that invited industry leaders to discuss advanced topics such as quantum computing

**Global Seminar Participant — Ireland's Silicon Valley Program** — Aug. 2019 - Sep. 2019
- Discussed organizational leadership and workplace diversity at Trinity College Dublin and University Collage London
- Gained practical insights on corporate cultures and implications of Brexit through visits to FactSet and KPMG