

JESSICA ANZ

(818)-581-6806 | jessicaanz118@gmail.com | Portfolio | LinkedIn

EDUCATION

University of California Los Angeles

M.S. in Mechanical and Aerospace Engineering - GPA: 3.87

Class of 2025

Los Angeles, CA

Duke University

B.S. in Mechanical Engineering - GPA: 3.73

Class of 2024

Durham, NC

EXPERIENCE

Graduate Student Researcher

December 2024 – Present

UCLA Robotics & Mechanisms Lab

Los Angeles, CA

- Built a physics-accurate humanoid simulation in Isaac Sim with ROS2 for pose validation and collision risk detection
- Analyzed AMP-trained motion policies for a custom humanoid with a top-heavy mass distribution and constrained kinematics, improving safety and balance
- Co-authored a paper on natural motion generation for entertainment robots using RL (IEEE Humanoids 2025)

Robotics Engineering Intern

June 2023 – December 2023

Machina Labs

Los Angeles, CA

- Led the development of a simulation pipeline to replicate Machina's sheet metal forming process; Modeled KUKA and Fanuc robot cells using URDFs and validated configurations via DH parameter checks
- Built ROS2 C++ packages and RViz interfaces for visualization, enabling early detection of collisions and joint constraint violations
- Improved process reliability through simulation-based debugging and iterative test cycles, preventing common robot path errors

Introduction to Robotics Teaching Assistant

August 2023 – December 2023

Mechanical Engineering Department at Duke University

Durham, NC

- Supported instruction for 50+ undergraduate & graduate students by hosting weekly office hours, troubleshooting ROS-based projects, and grading assignments
- Facilitated student engagement and success through online forum support, personalized feedback, and technical guidance

Undergraduate Research Assistant

August 2022 – April 2023

Duke Ni Lab Group

Durham, NC

- Engineered a soft-robotic actuator system using PDMS and liquid metal microfluidics to achieve programmable deformation
- Designed and 3D printed a custom enclosure in SolidWorks capable of withstanding 400 lbf magnetic separation
- Demonstrated feasibility of responsive soft actuation, enabling interactive demos and follow-up research in haptic feedback systems

PROJECTS

Candle Lighting Robot System | Python, Solidworks, OpenCV, Docker

March 2025 - June 2025

- Designed a 4-DOF manipulator using PD control with gravity compensation, ran trajectories reducing error to $< 1^\circ$
- Prototyped a computer vision pipeline using OpenCV to localize candle wicks in 3D space for dynamic visual servoing

Quadruped Robot "Meow Machine" | Python, Linux, Raspberry Pi, Solidworks

January 2024 - May 2024

- Engineered a 4-legged robotic cat with 3D-printed linkages and servo actuation; optimized design across 3+ iterations
- Programmed locomotion in Python and wirelessly controlled via Raspberry Pi, achieving stable quadrupedal walking

Modular Assembling Robot System | Arduino, Solidworks

August 2023 - May 2024

- Fabricated modular robotic units capable of autonomous assembly/disassembly, movement, and reconfiguration
- Utilized AprilTags for localization, magnets for alignment and Arduino micro-controllers with WiFi for wireless control

Color Sorting Robot Simulation | ROS, Python, Computer Vision

October 2022 - December 2022

- Developed a dynamic color sorting simulation of the Panda robot using Gazebo, MoveIt, and OpenCV
- Achieved $> 95\%$ accuracy in categorizing 5 randomized colored blocks and moving them to their respective bins

SKILLS

Robotics: ROS/ROS2, URDFs, Simulation (Isaac Sim, Gazebo, Mujoco, RViz, MoveIt), OpenAI Gym

Software: Python, C++, MATLAB, Linux, Git/GitHub, Docker, Conda/Venvs

Mechanical / Hardware: SolidWorks/CAD Modeling, Arduino, Raspberry Pi, Machining, 3D Printing, Circuit Design