

JESSICA ANZ

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EDUCATION

University of California Los Angeles

M.S. in Mechanical Engineering – GPA: 3.87 / 4.0

Class of 2025

Los Angeles, CA

Duke University

B.S.E. in Mechanical Engineering – GPA: 3.73 / 4.0

Class of 2024

Durham, NC

EXPERIENCE

Graduate Student Researcher

December 2024 – Present

UCLA Robotics & Mechanisms Lab

Los Angeles, CA

- Modeled a physics-accurate humanoid in Isaac Sim with ROS2 enabling pose validation and collision risk detection
- Analyzed Adversarial Motion Prior (AMP) trained motion policies for a custom humanoid with a top-heavy mass distribution and constrained kinematics; Used AMP guided RL to achieve stable standing and walking behaviors
- Co-authored a paper on natural motion generation for entertainment robots using AMP based RL (IEEE Humanoids 2025)

Robotics Engineering Intern

June 2023 – December 2023

Machina Labs

Los Angeles, CA

- Built a ROS2-based simulation pipeline to replicate robotic sheet metal forming processes and verify toolpath feasibility
- Modeled KUKA and Fanuc robot cells in RViz using URDFs; validated configurations through DH parameter checks
- Developed C++ ROS2 packages for collision detection and joint constraint checking, improving motion safety
- Improved process reliability through simulation-driven debugging and iterative testing, increasing output quality

Introduction to Robotics Teaching Assistant

August 2023 – December 2023

Mechanical Engineering Department at Duke University

Durham, NC

- Supported 50+ graduate/undergraduate students in robotics basics including robot kinematics, dynamics, and control
- Led weekly sessions focused on debugging, simulation support, and project development in robotics software
- Taught Git workflow, ROS fundamentals, and documentation best practices to promote clean code development

Undergraduate Research Assistant

August 2022 – April 2023

Duke Ni Lab Group

Durham, NC

- Collaborated on the development of a programmable soft-robotic surface for use in haptic feedback applications
- Designed a high-load bearing enclosure in SolidWorks to protect the soft-robotic surface from exterior magnetic forces
- Fabricated a functional prototype using PDMS microfluidic chips and liquid metal; enabled controlled surface deformation through voltage input based electromagnetic actuation

PROJECTS

Candle Lighting Robot System | Python, Solidworks, Computer Vision, 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 - The 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, URDF/Xacro, Isaac Sim, Gazebo, MuJoCo, RViz, MoveIt, Reinforcement Learning, Gymnasium

Programming: Python, C++, MATLAB, Git, Linux, Bash, Docker, OpenCV, NumPy/SciPy, Conda/venv, CMake, HTML

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