

# Anthony Camarillo

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## OBJECTIVE:

Graduate student with a background in mechanical engineering, applied mathematics, and software development. Eager to learn and contribute to innovative engineering solutions in the field of control and robotics.

## SKILLS:

**Programming Languages:** C++, MATLAB, Python, Rust, SQL

**Software:** AutoCAD, Fusion360, ROS, SolidWorks, MS Excel

**Simulation:** MuJoCo, Simulink

**Developer Tools:** Docker, GDB, Git, Nix

**Hardware:** Arduino, ESP32

## EDUCATION:

**California State University, Long Beach**

GPA: 3.5

Masters of Science., Mechanical Engineering, Control and Robotics

Expected Graduation: December 2025

Bachelors of Science., Mechanical Engineering, Minor: Applied Mathematics

December 2019

*Relevant Coursework: Modeling and Analysis of Dynamic Systems, Modern Control of Dynamic Systems, Robot Modeling and Control*

## RESEARCH EXPERIENCE:

**Path Planning of Robotic Manipulators - PACK Lab, CSULB**

September 2024 - Present

Technologies: MuJoCo, Python

- Researching implementations of reinforcement learning to find the optimal path for multiple manipulators in environments with obstacles.
- Developing environments with PettingZoo to test reinforcement learning algorithms and simulating training in MuJoCo.

## PROJECTS:

**Model Reference Adaptive Controller For Inverted Pendulum**

November 2024

Technologies: MATLAB, Simulink

- Implemented a modified Model Reference Adaptive Controller(MRAC) for control of an inverted pendulum system, improving the system's response to input and disturbances.
- Benchmarked implemented controller performance against traditional MRAC and PID controllers through simulations in MATLAB/Simulink and presented results.

**Controller Design for Half Quadcopter System**

November 2024

Technologies: MATLAB, Simulink

- Designed PID, pole placement, and LQR controllers for controlling the pitch angle of a 2 DOF half quadcopter to meet design criteria and stabilize the system.
- Developed the dynamic system model using MATLAB's System Identification Toolbox and Simulink to validate designed controllers against the physical hardware output.

## ADDITIONAL EXPERIENCE:

**Emergency Rental Assistance Case Manager - Robert Half**

September 2020 - December 2022

- Communicated with applicants of an Emergency Rental Assistance Program to ensure they met program requirements, providing over one million dollars of rent and utility assistance.
- Collected and organized sensitive documents from clients to simultaneously process an average of 20 cases per week, guaranteeing a constant flow of applicants receiving assistance.