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
Simulation: MuJoCo, Simulink
Developer Tools: Docker, GDB, Git, Nix
Hardware: Arduino, ESP32

EDUCATION:

California State University, Long Beach
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:

Trajectory Planning of Robotic Manipulators - *PACK Lab, CSULB* — September 2024 - Present
Technologies: MuJoCo, Python

- Designing simulations of robotic manipulators to analyze different control algorithm effects on trajectory generartion.
- Researching implementations of reinforcement learning for trajectory planning to improve adaptability of manipulators in environments with obstacles.

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.

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 measure 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.