

# Anthony Camarillo

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## EDUCATION:

### California State University, Long Beach(CSULB)

GPA: 3.5

Masters of Science., Mechanical Engineering, Dynamics and Control

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*

## EXPERIENCE:

### SharkSat, CSULB - Attitude Determination and Control System(ADCS) Team Member

January 2025 - Present

- Creating linear models from system dynamics to perform analysis and design controllers for a CubeSat attitude control system.
- Programming MATLAB scripts to conduct stability analysis and simulate system response for varying reaction wheel inputs.

## RESEARCH EXPERIENCE:

### P.A.C.K. Lab, CSULB - Research Assistant

September 2024 - Present

- Investigating applications of reinforcement learning for control of robotic manipulators and traffic signal control.
- Developing Python scripts to train reinforcement learning agents, process data, and analyze results.
- Composing training documentation on simulation software with detailed explanations and examples for replicability.

## PROJECTS:

### Model Reference Adaptive Controller For Inverted Pendulum

November 2024

- Reviewed academic literature on modern control methods to explore methodologies and identify a study to replicate.
- Reproduced the implementation of a modified Model Reference Adaptive Controller(MRAC) for an inverted pendulum system.
- Benchmarked controller performance against traditional MRAC and PID controllers through simulations in MATLAB/Simulink and presented results.

### Controller Design for Half Quadcopter System

November 2024

- Developed a model for a half quadcopter with MATLAB's System Identification Toolbox based on measurements of the real-world system.
- Designed PID, pole placement, and LQR controllers for controlling the voltage, pitch, and yaw angle of the half quadcopter to stabilize the system output according to design criteria.
- Visualized and reported the performance of the half quadcopter for each controller assessing the system's response to various reference inputs.

## ADDITIONAL EXPERIENCE:

### Robert Half - Emergency Rental Assistance Case Manager

September 2020 - December 2022

- Communicated with applicants of an Emergency Rental Assistance Program to collect necessary documents for processing their application, providing over one million dollars of rent and utility assistance.
- Collaborated with team members to review and verify each application was processed correctly, ensuring quality checks before submission for approval.
- Trained both new and current peers on the application process workflow while staying updated on procedural changes.

## SKILLS:

**Programming:** C++, MATLAB, Python, SQL, Git

**Simulation:** MuJoCo, Simulink

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

**Hardware:** Arduino, ESP32