

# Anthony Camarillo

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## OBJECTIVE:

Graduate robotics 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

<https://github.com/a-camarillo/MuJoCo-UR5>

Technologies: MuJoCo, Python

- Designing simulations of robotic manipulators to analyze different control algorithm effects on trajectory generation.
- 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.

### Control Of Robotic Manipulator

June 2024 - August 2024

<https://github.com/a-camarillo/HiWonder-Max-Arm>

Technologies: ESP32, C++

- Leveraged a commercial 4-DOF robotic manipulator to study physical applications of inverse kinematics, increasing knowledge in control algorithms for robotics.
- Developed algorithms in C++ to enable both manual and autonomous control of the manipulator, integrating various sensors, allowing the manipulator to perform pick and place tasks.

## 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.