

## Matthew Romero

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### Education

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California State Polytechnic University, Pomona – B.S. Computer Engineering

May 2025

*Relevant Coursework:* Robotics, Advanced Control Systems, VLSI Design, Microcontrollers, Embedded Systems

### Leadership & Technical Projects

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#### Student Unmanned Aerial Systems International Competition

*Project Lead & Chief Engineer*

Aug 2024 – June 2025

- Led 30+ member team to #4 U.S. ranking and 13<sup>th</sup> place globally out of 81 teams in an international autonomous UAV competition.
- Directed integration of flight hardware systems, including power distribution and custom cable harnesses, into UAV platform.
- Integrated AI-based object detection (YOLOv8) on Jetson Orin Nano for autonomous payload deployment.
- Selected as one of the top U.S. representatives based on technical design, flight performance, and autonomous capabilities.
- Received Hands-On Leadership Award for UAV integration and live mission execution.

*Chief Engineer & Autonomous Navigation Lead*

Aug 2023 – June 2024

- Built custom ROS-MAVROS interface for real-time GPS waypoint insertion from onboard Jetson Orin to Pixhawk Cube, enabling dynamic object-based flight paths.
- Authored schematics, integration diagrams, and system wiring documentation for testing and manufacturing.
- Designed and validated custom 2-layer PCBs using KiCad for payload deployment and servo control.
- Tested and debugged circuits using multimeters, oscilloscopes, and logic analyzers during integration phase.

### Professional Experiences

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#### Univue Inc.

Corona, CA

*Electrical Engineer Intern*

Aug 2021 – Present

- Sole electrical engineer responsible for full industrial control panel schematics using AutoCAD Electrical.
- Integrated 24VDC sensors, actuators, safety relay, and power components into custom industrial control systems.
- Collaborated with controls engineer to align electrical hardware design with PLC logic and machine behavior.
- Built and validated prototypes from schematics through wiring and troubleshooting.
- Interfaced with vendors to verify electrical specifications, part compatibility, and system compliance with industrial standards.

#### ICSN Engineering Inc.

Corona, CA

*Electrical Engineer Intern*

May 2023 – Dec 2024

- Designed and assembled low-voltage control panels integrating sensors, relays, and lighting.
- Performed high-precision soldering on PCBs, terminal blocks, and wiring harnesses.
- Conducted and verified circuit behavior using multimeters and oscilloscopes.

### Additional Skills | Courses Taken

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*Eligible for U.S. DoD Secret Clearance; experienced working on sensitive technical projects.*

*Programming:* Python, C++, C#, MATLAB/Simulink,

*Hardware/Embedded:* ESP32, Pixhawk, Jetson Orin Nano, Arduino, STM32, GPIO, I2C, SPI, UART

*Tools & Software:* Robot Operating System (ROS), TensorFlow, AutoCAD Electrical, LTspice, KiCad, Altium, Linux

*Test & Debug:* Multimeters, oscilloscopes, logic analyzers, spectrum analyzer

*Communication Protocols:* MQTT, RESTful API, MAVLink, CAN Bus