

Mechanical Engineering, Robotics and Controls · UC Irvine, from Fall 2026

I build robots for real-time control and autonomy: pressure hulls, gear reductions, mechanisms, and the control loops that drive them. My degree is mechanical engineering. I also build the electronics and write the firmware, so I can carry a machine from CAD through board assembly to a working control loop. Each memorandum below records what was built, what was measured, and what was not.

EDUCATION

from Fall 2026	University of California, Irvine B.S. Mechanical Engineering
May 2026	Clovis Community College A.S. Mechanical Engineering, A.S. Civil Engineering, A.S. Electrical Engineering

PROJECTS

TM-01	Crush Depth ROV · underwater remotely operated vehicle Eight T200 thrusters, four cameras, 48 V tether. MATE ROV World Championship 2025 and 2026; Engineering Presentation MVP, 2026. Co-CEO / CTO; electrical and software domains, internal mounts and service stand. PDF
TM-02	PERRY · vertical profiling float O-ring sealed, vapor-smoothed ABS hull; marine grease failed in the field, silicone grease fixed it. PID depth control on Bar02 depth, gains set by hand. Profiled to 4 m in open water and transmitted logged data over LoRa. Programming, electronics, buoyancy. PDF
TM-03	CLARK · four-link robotic arm with 20:1 printed cycloidal gearboxes Designed, printed, soldered, assembled, and debugged in five days; four degrees of freedom, about 0.9 m reach. Club-rush demonstration piece, about 50 sign-ups. Driver board assembly, firmware, gearbox design contribution. PDF

LEADERSHIP

Crush Depth	Co-CEO / CTO Co-manages the MATE ROV team with Luke Salazar: Gantt scheduling, BOM management, outreach, final say in design alongside his counterpart. Leads the electrical and software domains and backfills any lead's workload to hold deadlines.
Crush Depth	Float Team Technical Lead (prior role) Led the float subteam through LoRa communications, ESP32 development, stepper motors and drivers, and board assembly.
Engineering Renaissance Club	Electrical Officer Designed and ran two structured onboarding projects with the design officer, each with a scope-approval gate, a justified BOM, system integration diagrams, and scheduled check-ins, ending in presentations to the club.

OTHER

2024	NASA L'SPACE Mission Concept Academy: lunar far-side rover concept, 250-page mission concept document.
2024, 2025	PODER peer mentor, summers.
Spring 2024 – Spring 2026	Clovis Community College tutor, about 19 hours per week. FIRST Robotics Competition alum. Beautify Fresno volunteer, through Engineering Renaissance.