

Lancelot Juarez

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SUMMARY

Mechanical Engineering student with hands-on experience in mechanical design, prototyping, testing, embedded systems, PCB design, and control systems. Skilled in CAD, programming, and hardware development, with experience supporting multidisciplinary engineering projects from concept to validation.

EXPERIENCE

SEDS@UCSD | *Avionics & Controls Lead, VESPER Rocket* June 2025 – Present

- Designed a custom 8 channel DAQ PCB for rocket instrumentation.
- Developed hardware and implemented PI controls for throttling a 650 lbf LOX/LCH4 film-cooled rocket engine.
- Troubleshoot hardware and integration issues during subsystem testing.
- Prepared and presented 5+ technical Preliminary Design Reviews (PDRs) with cross-functional project teams.
- Developed and Validated a REDS (Rapid Emergency Depressurization System).

RPL@UCSD | *Daedalus Lead Avionics & Analysis Engineer* Sep 2024 – June 2025

- Evaluated G-class rocket stability, structural design, and predicted flight performance using SolidWorks and OpenRocket.
- Designed and used a custom avionics PCB for onboard data acquisition.
- Performed post launch analysis achieving an apogee of around 4000ft.

PROJECTS

Autonomous UAV Wildfire Detection System Aug 2024 – June 2025

- Built a fully 3D-printed fixed-wing UAV platform.
- Integrated embedded hardware for onboard wildfire detection including telemetry, GPS, and cameras.
- Trained and implemented a YOLO-based vision model for real-time AI fire detection.
- Programmed autonomous flight paths using Raspberry Pi and MAVLink.
- Troubleshoot hardware, software, and communication system issues.

EDUCATION

University of California, San Diego 2024 – Expected 2027

Bachelor of Science in Mechanical Engineering
Specialization in Controls and Robotics

SKILLS

- **Technical Skills:** SolidWorks, Onshape, Git, MATLAB, OpenRocket, PCB Design, Simulink, Embedded Systems, RTOS
- **Interpersonal Skills:** Prototyping, Testing, Validation, Leadership in team based Environments
- **Programming:** Python, C++, Arduino, Java, HTML, Shell Scripting