Luis Alberto Quiroz Diaz

Personal Website

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EDUCATION & INVOLVEMENT

(eligible to obtain clearance)

University of Southern California **May 2026 & Dec 2026 Graduation**

4th Year M.S & B.S. Astronautical Engineering Student *Los Angeles, CA*

- Boeing, TELACU College Success Program, & Latino Alumni Association Scholar **3.7 GPA**
- Previous Involvements: USC Rocket Propulsion Laboratory Avionics Engineer, Google AI Community Intern

WORK EXPERIENCE

NASA Jet Propulsion Laboratory (JPL) **May 2025 – Sep 2025**

Systems Engineering Modeling Intern, Earth Science & Technology Directorate *Pasadena, CA*

- Built spacecraft cost modeling dashboard and spreadsheet analysis tool for Earth observing architectures investigating VSWIR and altimetry missions that match flagship-level science return.
- Conducted trade studies between large flagship observatories and SmallSat constellation profiles that incorporate system-level cost, performance, and parametric trades including development & commercial factors.
- Shadowed Mars 2020 Uplink/Downlink/Campaign Implementation Operations as well as ATLO team.

USC Liquid Propulsion Laboratory (LPL) **Jan 2025 – Present**

GNC Hardware & Software Engineer, Throttling & Thrust Vector Control *Los Angeles, CA*

- Designing & implementing control systems for kerosene-LOX cryogenic feed system toward CDR maturity.
- Developing Python GUI and C++ frameworks for real-time valve/sensor integration.
- HW Testing semesterly hot-fire campaigns (Dev-2 throttling & thrust-vectoring) optimizing stability/repeat.
- HW/SWE collaboration to advance future hopper vehicle for dynamic testing beyond static fires.
- Agile cycling + exposure to cryogenics, actuation hardware, & embedded controls in bipropellant feed systems.

USC Spacecraft Systems Engineering **August 2024 – Present**

Teaching Assistant |Human Mission Team Lead *Los Angeles, CA*

- Leading design, V&V, and Mission Concept Review for S/C models including a custom lunar human lander with a team of 6 subsystem CogE's. Coordinated meetings and outreach for feedback and project development.
- Mentoring 21 students in spacecraft subsystem design: Propulsion, GN&C, C&DH, Telecom, Power, Thermal, Structures, & Payload. Promoting collaboration and critical thinking across office hours and grading.
- Developing subsystem-level spreadsheets analyzing heritage performance against custom mission design profile.
- Programming ACS simulation with PID controllers for ISS and an Orbital decay due to atmospheric density.
- Authoring V&V procedures for Avionics in F´ hardware GDS interaction, class training for software usage.

USC Technology and Computing **April 2024 – Present**

Teaching Assistant | Grader *Los Angeles, CA*

- Deliver technical feedback for weekly deliverables assignments on electronic hardware and firmware in C++ including analog/digital components, developed API dashboards & remote interaction via Bluetooth and WiFi.
- Administer office hours available to 60 students each week to lead Particle Photon 2 microcontroller mastery.

SKILLS, CERTIFICATIONS, & INTERESTS

- **Engineering:** Spacecraft Systems Engineering | Human Spaceflight & Life Support| Cost Modeling | Microcontrollers | Structural Mechanics | Embedded Firmware | CNC Milling | Liquid Propulsion Cryogenic Feed Systems | Engine Development | 3D Printing | Computational Modeling, Simulation, & Trade Analysis
- **Software:** C++ | Python | MATLAB/Simulink| Unix | ArcGIS Pro | NX/Nastran | Thermal Desktop | Jira
- **Technical:** Electronics Hardware Test & Integration | Control Dynamics | Mission Design | Human Factors
- **Certifications:** Open Science 101| Machine Shop (Band Saw/Drill Press/Sander) | CPR/AED | NARCAN
- **Interests**: Flying Airplanes | Cats |Human Spaceflight | Electric Vehicles | Pickleball | Hiking | Motorcycles