

JUAN CARLOS JIMENEZ

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SUMMARY

Senior Electrical Engineering student (B.S., Sonoma State University May 2026) with hands-on experience in embedded systems, robotics, power electronics, RF circuits, and hardware system integration. Experienced in FPGA, microcontrollers, digital logic, PCB Design and ADS, and multidisciplinary engineering projects, including NASA Lunabotics 2024-2025.

EDUCATION

Sonoma State University – Rohnert Park, CA

Bachelor of Science in Electrical Engineering | Expected May 2026

Bachelor of Science in Math | Expected May 2026

Koret Research Scholarship Recipient 2024-2025

RELEVANT COURSEWORK:

Calculus 1, Differential and Integral Calculus 2, Introduction to Electronics, Linear Algebra and Differential Equations, Multivariable Calculus, Control Systems, Engineering Probability Theory and Stats, Mathematical and Statistical Modeling, Linear Systems Theory, Advance Digital Logic Design, Electromagnetic Theory, Networking, Internet of Things

PROJECTS

R. E. A. C. H. (LTE, Database, Power Design, Hardware implementation) – Senior Design (Capstone) | August 2025 – May 2026 | https://juanjimenez.io/Senior%20Design/reach_seniordesign.html

- Designed a multidisciplinary system integrating solar energy harvesting, power management, LTE communication, and backend data storage.
- Implemented SQL-based databasing for sensor and system telemetry.
- Integrated embedded hardware with wireless communication and backend infrastructure.
- Designed and developed final PCB architecture

FM Transmitter Design | April 2025 | Course: Electromagnetic Theory

- Designed and built functional FM transmitters using discrete analog and RF components.
- Applied transmission line theory, tuning, and testing to achieve stable frequency operation.

NASA – LUNABOTICS | Aug 2024 – May 2025 | Mechanical Systems & Hardware Lead, Lunabotics Team

- Led hardware fabrication and assembly of a competitive autonomous excavation robot for NASA Lunabotics.
- Evaluated and optimized structural stress points at robot joints to improve durability and performance.
- Managed and coordinated a build team responsible for mechanical assembly and integration.
- Collaborated with electrical, software, and controls subteams on system-level design decisions.

Manual Transmission PID Controller | April 2025 | Course: Control Systems

- Designed a physical system with 3 different gearing ratios.
- Used and familiar with Ziegler Nichols procedure to develop gearing ratios and accurate measurements for testing.

TECHNICAL SKILLS

- Hardware & Embedded Systems: ESP32/ESP8266, Arduino, PIC18F47K42, STM32, Raspberry Pi, FPGA
- Digital & Electrical: Digital logic, TTL, analog circuits, RF circuits, transmission lines, power electronics
- Robotics & Vision: Robotics systems, ROS2, computer vision fundamentals
- Design & Tools: KiCad (PCB design), LTspice, Advance Design System (ADS), hardware debugging, lab instrumentation
- Software & Data: C/C++, Python, HTML, PHP, SQL, embedded firmware development
- Manufacturing & Devices: Semiconductor fundamentals, physical electronics, etching processes

WORK EXPERIENCE

North Cal Restoration and Construction – Point Reyes Station, CA

Administrative Assistant | Jun 2021 – Jan 2026

- Operated power tools and heavy equipment while adhering to OSHA safety standards.
- Performed framing, carpentry, plumbing, landscaping, and physically demanding construction tasks.
- Demonstrated reliability, teamwork, and attention to safety in dynamic job sites.
- Proficiency in Quickbooks, demonstrating understanding and attention to detail.

Right at Home – Santa Rosa, CA

Caregiver | February 2026 – Current

- Provided non-medical care and companionship to those in need.
- Developed personal connections and provided a dependable support system.
- Helped with day-to-day activities that may deem difficult for the elderly