Antonio Anzora Jr

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Education

California State University, Northridge *Northridge, CA*

B.S. in Computer Engineering *Aug 2021 – Dec 2025*

M.S. in Computer Engineering *Jan 2026 – Expected May 2028*

Professional Experience

Research Assistant — SFS^2 Program
California State University, Northridge *June 2025 - Sep 2025*

- **Simple Digital Communication System using Software-Defined Radio (USRP N210)**
  - Built and validated an end-to-end digital communication system using USRP N210 SDR and GNU Radio, implementing modulation, filtering, and synchronization blocks.
  - Diagnosed signal distortion using time and frequency-domain analysis, improving demodulation reliability and overall link stability.
- **Electrical Resistivity Tomography (ERT) System**
  - Designed and routed a custom multi-channel PCB in KiCad using 16×1 multiplexers to automate electrode switching, eliminating manual reconfiguration during resistivity measurements.
  - Built and validated experimental sensing setups, collecting resistivity data and correlating measurements to subsurface material properties and void detection.

Projects

- **LOG — Wireless-Controlled Mobile Robotics Platform (LOG)**
  - Developed Wi-Fi controlled embedded system using ESP32, enabling real-time remote operation.
  - Designed motor driver and power regulation circuits to maintain stable performance under dynamic load conditions.
  - Iteratively prototyped drivetrain and chassis, redesigning components in Fusion 360 to improve manufacturability and structural stability.
- **Inter-Satellite Optical Communication (ISOC) System** *(Capstone / Team Project)*
  - Designed and routed portions of a 5-board modular PCB stack in KiCad built around an Arduino GIGA R1 WiFi, separating sensor, intermediary, and control boards to improve scalability and debugging.
  - Designed and routed a custom multi-channel PCB in KiCad using multiplexers for automated electrode switching, eliminating manual reconfiguration.
  - Performed DRC checks and validated PCB manufacturability, coordinating fabrication to ensure successful board production.
  - Built and tested sensing hardware, collecting resistivity data and correlating measurements to subsurface material properties.

Technical Skills

- **RF / Signal Tools:** GNU Radio, USRP SDR platforms, PSpice
- **PCB and CAD:** KiCad, Fusion 360
- **Hardware Lab Equipment:** Oscilloscope, Function Generator, Digital Multimeter
- **Embedded Systems:** ESP32, TM4C123, microcontroller debugging
- **Programming:** C, C++, MATLAB, VHDL
- **Version Control:** Git/GitHub