Ryan Santiago

Ryan Santiago | Aerospace Engineer • St. Louis, MO 63108 • ryansantiago582@gmail.com • (787-601-2226)

Education

Saint Louis University — St. Louis, MO
Aerospace Engineering — May 2026

Experience

Rocket Propulsion Lab — Saint Louis, MO
Avionics/ Embedded Electrical Systems Developer — August 2023 – Present

- Spearheaded the development and integration of a custom rocket avionics system, enabling real-time telemetry transmission from vehicle to ground station; wrote embedded software and designed electrical interfaces for sensors, power, and communication subsystems.
- Adapted quickly to new embedded hardware and electrical systems, demonstrating the ability to work across disciplines combining mechanical, electrical, and software insight to solve high-consequence problems under pressure.
- Designed and developed printed circuit boards (PCBs) for aerospace applications, ensuring seamless integration with avionics systems, which improved system reliability and signal integrity under flight conditions.

Rocket Propulsion Lab — Saint Louis, MO
Chief/ Systems Engineer — August 2024-June 2025

- Directed a 12-person multidisciplinary team in designing, building, and launching a student-research-and-developed (SRAD) rocket, coordinating efforts across avionics, propulsion, and structures
- Implemented systems engineering practices, establishing design reviews, testing protocols, and risk assessments that improved reliability and reduced integration issues.
- Guided the team to achieve 4th place among SRAD teams out of 150 international teams, showcasing technical excellence and leadership in a high-pressure environment.
- Fostered collaboration by mentoring underclassmen and aligning technical milestones with competition deadlines, enhancing team cohesion and project efficiency.

Projects

Thrust Vector Control Rocket

- Designed and built a small-scale experimental rocket 3D printed with a dual-axis thrust vector control gimbal system.
- Integrated servo-actuated nozzle deflection mechanism controlled by onboard flight computer for real-time stabilization.
- Performed static fire testing to validate gimbal response and control authority, demonstrating proof of concept for active guidance in amateur rocketry.

Custom Flight Computer

- Designed and programmed a Teensy-based flight computer to manage sensor fusion (IMU + barometer), real-time telemetry, and thrust vector control algorithms.
- Created custom PCB layouts for compact avionics integration, improving system robustness and reducing noise in high-vibration environments.
- Achieved successful bench and ground tests, verifying reliable telemetry transmission and stabilization control during trials.

Skills & Interests

Technical: Dynamics, Linux, MATLAB, Python, C++, SolidWorks, Onshape, Kicad, 3D Printing & Additive Manufacturing, Data Visualization & Telemetry Systems (Intermediate–Advanced proficiency across tools).
Language: English (Fluent), Spanish (Native)
Laboratory: Wind tunnel testing, vibration analysis, strain gauge instrumentation, soldering & PCB fabrication, propulsion system testing (static fire), materials testing (tensile & thermal).