Steven Rodriguez

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EDUCATION

Florida International University (FIU) | Miami, FL **Expected:** December 2024
Mechanical Engineering / Mechatronics Track
- GPA: 3.11/4.00

SKILLS

Programming: C/C++, Python, Rust, Typescript, HTML
Frameworks / Libraries : Streamlit, Node.js, Vite
Development Tools: VS Code , VIM, Nano, SSH
Collaboration: Git, Github, Gitlab, SCRUM
Communication Protocols: TCP/ IP, I2C, UART, SPI

WORK EXPERIENCE

Mechanical / Software Engineering Intern | ***Blue Origin*** | Kent, WA **May 2024- Aug 2024**
- Utilized CI/CD tools to implement a tool feature in Python that enhanced verification of software release components and flight controller telemetry.
- Verified tool functionality using Pytest, crafting test cases to assess edge cases, validate performance under varying conditions, and ensure robust error handling.
- Developed a basic command line interface in Rust to establish a framework for transitioning a Python tool to Rust and facilitating future integration with mainframe systems.
- Designed test fixtures using Creo for ATP & QTP testing to collect attenuation performance data on two different isolators enhancing visualization of performance under realistic engine conditions.

Aerospace Engineering Intern| ***Sabrewing Aircraft*** | Hayward, CA **June 2023- Aug 2023**
- Enhanced the aerodynamic performance of a UAV nacelle with Fusion 360 to refine its inner and outer contour balancing optimal shape design and preservation of critical design features resulting in 8.50% improvement in peak velocity.
- Developed a flexible system of adjustable parameters that empowered effortless customization of nacelle features allowing adaptation to evolving dimension requirements in future manufacturing process and aircraft integration.

PROJECTS

6502 Computer from Scratch | Personal | Github **Aug 2024- Present**
- Developed and executed a custom 6502 microprocessor system, implementing core functionalities including instruction handling, subroutine calls, and stack management, to enable effective program execution.
- Optimized system performance through iterative testing and debugging, enhancing the handling of return addresses and memory operations, while effectively utilizing the processor's architecture for efficient instruction execution.

SmartChoices | ShellHacks FIU | Github **Sep 2024 - Sep 2024**
- Leveraged object-oriented programming principles to create a structured system for managing player attributes, financial transactions, and tax calculations to enhance code maintainability and readability.
- Developed a front-end UI using Streamlit, integrating with a Python backend to deliver a dynamic, data-driven application showcasing versatility in both UI design and backend logic.

Obstacle Avoidance Robot | EML 4806 | Github **Jan 2024 - May 2024**
- Developed an autonomous robot utilizing a state machine architecture, enabling real-time obstacle avoidance with integrated ultrasonic and orientation sensors for seamless navigation.
- Implemented modular code for motor control and sensor integration, optimization performance and responsiveness to enhance adaptability in dynamic environments.

LEADERSHIP

Telemetry Lead | SEDS FIU | Github **Aug 2024- Present**
- Conducted workshops and meetings for the avionics team, providing training on version control tools like Git, introducing essential serial communication protocols (I2C, UART, SPI), and reviewing industry standards for safety critical systems including DO-178C.
- Leveraged the RocketPy python package to simulate the previous years flight trajectory, organizing data into adjustable parameters to streamline future flight simulation adjustments.

FIU Navigation Map | Capstone Project | Github **Jan 2024- Present**
- Led a team of three to design a solution using Mappedin's SDK using Typescript and HTML improving navigation for FIU engineering center students and faculty by 70%.
- Engineered a C++ barcode scanner repository with detailed documentation to facilitate future contributions and enhancement of secure kiosk access to only FIU students, faculty, and staff.

Software Lead | SEDS FIU **|** Github **March 2023- June 2023**
- Employed Git for collaborative development, troubleshooting, and rigorous testing of C/C++ and Python code for embedded systems overseeing various electronic hardware and mechanical components.
- Created modular code and prototype circuit board for efficient data collection using I2C and UART, contributing to a fully functional rover that helped secure 26th place out of over 100 teams at Spaceport America Cup 2023.