Preston Caldwell

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Education

Rensselaer Polytechnic Institute, Troy, NY — May 2023
Bachelor of Science in Electrical Engineering, Computer & Systems Engineering — **GPA: 3.82/4.00**
Focus in Robotics and Automation
Honors: Magna Cum Laude

Shaker High School, Latham, NY — June 2019
Advanced Regents Diploma, Honor Graduate, Seal of Biliteracy in Spanish

Relevant Coursework

Robotics I, II — Fall 2022, Spring 2023

- Theoretical and practical applications of Forward and Inverse Kinematics, Path Planning, PID Systems, and Object Manipulation. Programming in MATLAB and Python with YAHBOOM robots in a laboratory setting.
- Use of ROS in an Ubuntu environment with interfaces to various sensors for control algorithms.
- Leveraged ROS OpenCV packages to create an autonomous convoy of robots speaking through light signals.

Mechatronics — Spring 2023

- Modeling and simulation of Dynamic Electro-Mechanical systems using MATLAB and Simulink.
- Created a self-balancing segway using State Feedback Control.

Fields & Waves — Fall 2022

- Deepened understanding of Maxwell's equations in the design and analysis of electromagnetic systems.
- Use of Smith Charts and mathematical analysis to solve Transmission Line and Wave problems.

Experience

Lockheed Martin, Orlando, FL — Summer 2021, Summer 2022, May 2023 - Present
Software Engineer

- Worked upgrading simulator network infrastructure, touching on several subsystems across Windows and Linux development environments.
- Acted as Lead Software Engineer for a team working on updates to an F-35 simulator maintenance device.
- Wrote C++ scripts to automate tests for a network translator subsystem in the F-35 simulator.
- Developed and tested features for the communications system in C++ on the F-35 MMRT simulator.
- Experience with basic computer networking, flight simulator software and hardware, and Unreal Engine 4.
- Gained exposure to the “Engineering V” development cycle, and AGILE mindset.

Projects

Home Server — November 2021 - Present

- Created a Debian-based home server using Docker Compose for personal cloud storage, gaming and streaming services. Used reverse proxy to direct traffic between different containers.

Skills

Engineering: PID Control, State Feedback Control Systems, Circuit Building, Simulation & Analysis, FPGA Programming
Software: Linux, Docker, Siemens NX, LTSpice, UE4, JupyterLab, Git**,** Java, Python, C++, C, MATLAB, Simulink

Clearances/Certifications

Secret Level U.S. Department of Defense Clearance — July 2021 – Present

Clubs & Organizations

RPI Club Rugby — October 2019 – May 2022