Reed Reese-Steiner

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Education

Oregon State University — Corvallis, Oregon
Bachelor of Science: Electrical Engineering
GPA: 3.52 — Expected Graduation: 2021

Work and Volunteer Experience

OSU Robotics Club, Aerial Team — 2017 - present, Corvallis, Oregon

- Lead the Aerial Team: coordinate aircraft design, software development, and electronics assembly through meetings, version control, Slack, lab activity, and flight tests
- Develop aircraft electronics and software, using I^2C, UART, and SPI protocols to connect inertial and atmospheric sensors, GPS units, and magnetometers to STM32 ARM Processors

Eugene Science Center — 2019 - present, Eugene, Oregon

- Implement an audio visualization system on a Raspberry Pi in C using the JACK audio framework to filter microphone signals, visualized with OpenGL
- Remotely support and update the system using git

Teaching Assistant, Electrical Fundamentals II — 2019, Corvallis, Oregon

- Managed laboratory sessions by teaching students to use oscilloscopes and waveform generators, evaluating progress by grading lab reports, and holding office hours

Projects and Coursework

Camera Validation System: Senior project. In a team of 6 engineers, currently developing a real-time validation system for digital camera video signals. Developing a graphical user interface in JavaScript, HTML, and Node.js. Pair programming with team to implement image proessing and validation algorithms in C++/OpenCV. Designing and 3D-printing an enclosure for Raspberry Pis

STM32 Breakout: Designed and built in KiCad a breakout PCB for an STM32F7 ARM CPU, programmable over USB, including power distribution, peripherial devices, and debug LEDs

UART in AVR Assembly: Programmed an Atmega128 CPU in AVR assembly, implementing a bidirectional wireless communcation protocol using UART and and an infrared LED reciever and transmitter

Linux Programming: Designed and wrote a Linux shell (similar to bash) which supports executing programs, I/O redirection, background processes, and tab completion. Implemented a networked encryption system, which encrypts/decrypts ASCII text messages with a one-time pad using TCP sockets as IPC

Audio processing: Implemented a bandpass filtering system for digital audio in C++ using a FIR filter and the discrete Fourier transform

Language learning: Developed a utility to track vocabulary learned in foreign languages in C++, using SQLite to store words, descriptions, and metadata.

Skills

- C, C++, Python, Shell scripting, AVR C and assembly, and Matlab/Octave
- Proficient in French, conversational in Spanish
- Linux, Vim, Git, SQLite
- KiCad, Vegas Pro, LaTeX, GIMP, Inkscape, Blender

Interests

- Digital signal processing
- Foreign languages
- Model aviation
- Photography