Samuel Witte

sam@samwitte.com samwitte.com github.com/samcwitte

Education

University of Iowa – Bachelor of Science in Electrical Engineering Expected Dec 2024

Experience

Undergraduate Teaching Assistant, University of Iowa – Iowa City, IA August 2023 – Present
- Held weekly lab and discussion sections for Introduction to Digital Design & Linear Systems I
- Assisted in grading assignments and exams for professors

Undergraduate Computer Engineer, University of Iowa – Iowa City, IA Feb 2023 – Present
- Collaborate with NASA and University research groups on numerous projects
- Utilized MATLAB and Raspberry Pi to display ADC outputs sent via SPI
- Created a ground support computer that uses the CCSDS protocol and LVDS (Low Voltage Differential Signal) for data downlink from sounding rockets and related data collection systems
- Prototyped deployable portable magnetic field alert system intended to be used around sensitive equipment and to test instruments before entering sensitive work areas
- Wrote basic Verilog modules and testbenches for various projects

President, Electronics Lead, Rocketry Club – Iowa City, IA May 2022 – Present
- Organize, coordinate, and prepare material for weekly meetings, events, and competitions
- Write grant proposals and ongoing design reports to receive grant funding

Electrical Design Intern, SSC Engineering, Inc. – Chesterfield, MO Dec 2021 – Aug 2022
- Built internally used automation scripts written in Python and PowerShell to save 40+ hours monthly
- Deployed scripts across systems company-wide using external script deployment software
- Designed electrical layouts for commercial and healthcare facilities using Revit and AutoCAD to satisfy constantly changing client specifications and requirements

Projects

Lab Equipment GUI
- Developed a UI that interfaces with lab equipment such as power supplies and function generators to control and test flight hardware using SCPI and PyVISA
- Completed tasks and features based on NASA project requirements and colleagues' input

High-Powered Rocketry Flight Computer
- Recorded sensor data in-flight for analysis post-flight using an RP2040 micro-controller
- Designed, developed, and assembled custom PCBs using Altium Designer
- Programmed using CircuitPython to be more user-friendly and accessible for new club members

HACKUIOWA AI Drawing Program github.com/max-proj17/Dubious-Studio
- Placed 3rd out of 77 teams in a 24 hour hackathon
- Created an art application using TensorFlow and the ClipDrop API that includes a comprehensive set of art tools and generative AI tools to accelerate and enhance artists' workflows

Skills

Languages: Python, AVR Assembly, C, C++, Java, Verilog, Powershell
Design Tools: Altium, KiCAD, Thonny, Fusion 360, Git, VCS, TensorFlow, Revit, AutoCAD, Soldering
Technologies: I2C, SPI, FPGA, UART, MQTT