Samuel Witte

sam@samwitte.com Portfolio: samwitte.com linkedin.com/in/samwitte

Education

University of Iowa — BSE in Electrical Engineering with Minor in Mathematics Dec 2024

Experience

Avionics Intern, ispace Technologies, US — Denver, CO Jun 2024 — Aug 2024
- Utilizing Altium Designer, designed ground support hardware for Apex 1.0 lander and M3 (and onward) basing design decisions on existing flight hardware constraints
- Completed PCB layout work on 10-layer network interface circuit card assembly containing over 400 components and including technologies such as PCIe and M.2 for test circuit card assemblies
- Created block diagrams, wrote comprehensive tests and documentation, and submitted purchase requests for components and PCBs

Undergraduate Computer Engineer, University of Iowa — Iowa City, IA Feb 2023 — May 2024
- Collaborated with NASA and University research groups on projects such as MAGIC and TRACERS
- Utilized MATLAB and Raspberry Pi to display ADC outputs sent via SPI
- Designed a ground support computer utilizing the CCSDS protocol and LVDS for data downlink from sounding rockets and connected data collection systems
- Prototyped deployable portable magnetic field alert system intended to test instruments prior to entering sensitive labs and work environments

Electrical Design Intern, SSC Engineering, Inc. — Chesterfield, MO Dec 2021 — Aug 2022
- Saved 40+ hours monthly by building internally used automation scripts written in Python and PS
- 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

High-Powered Rocketry Flight Computer samwitte.com/projects/flightcomputer.html
- Recorded barometric pressure, temperature, acceleration, and angular velocity data in-flight for analysis post-flight using an RP2040 micro-controller
- Developed electrical schematic, completed PCB board layout, handled bill of materials, and hand soldered and assembled custom flight computer circuit boards
- Assisted and guided club members to develop a new revision including live data transmission and receipt via 900 MHz radio modules and a ground support dashboard for real-time telemetry

ESP32 Powered IoT Thermometer samwitte.com/projects/esp32.html
- Developed an innovative temperature-sensing IoT solution using the ESP32 microcontroller, integrating Wi-Fi and Bluetooth for seamless wireless connectivity
- Programmed robust, real-time firmware with the ESP-IDF framework, enabling efficient sensor data acquisition, system control, and idle-state power management for maximum battery life
- Designed, simulated, and iteratively manufactured module case using FEA and FDM 3D printing

Skills

Languages: Python, C++, C, AVR Assembly, Java, Verilog, Powershell, TypeScript, JS, HTML
Tools and Technologies: Altium, KiCAD, Thonny, Fusion 360, Git, VCS, TensorFlow, MS Office, Jira, Confluence, Revit, AutoCAD, Soldering, I2C, SPI, FPGA, UART, MQTT, Generative AI (local and cloud)