ETHAN SORENSEN → (310) 343-9301 ← ethansorensen01@gmail.com in ethan-na-sorensen

Education

Brigham Young University, Provo UT

BS in electrical engineering

Recent Coursework: Embedded Systems, Circuit Design, Signal Processing, IoT Systems

Technical Skills

${\bf Languages:} \ {\bf C}, \ {\bf Python}, \ {\bf Matlab}$

Software & Tools: Linux/Windows systems, LTSpice, Kicad, Altium Design, PADS Designer & Library Tools, Microsoft Office

Experience

Research Assistant in BYU's NETLab

 $Undergraduate \ Research$

- Currently developing a system whereby a device can communicate over an unauthenticated network by inducing latency into the packet stream of a known receiver in the network.
- The real time receiver is being developed in Python, along with a transmitter in C, using closely measured network statistics and various distributions to determine if latency is random or intentional.

TA for ECEn 224 Intro to Computer Systems

Teaching Assistant

- Currently instructing students on intro-level Computer Systems class for the fourth semester in a row, including once as the instructor of the lab.
- Assisting students in understanding several areas such as fundamental C programming skills including compiler and program structure, working in Linux environments, and reading and writing code in x86 assembly.

The Aerospace Corporation

DCID Technical Intern

- Created a method of detecting individual Starlink satellites from collected data using RANSAC regression as a part of the development of a non-cooperative PNT solution.
- Created a pipeline for GPS-SBF receivers that allows for certain messages and observations to be filtered and repacked into modules, assisting in the construction of a resilient PNT solution alternative to GPS.

The Aerospace Corporation

xLab Technical Intern

- Worked with engineers to redesign and improve the xLab PADS library database; managed and created workflows for the import and creation of PADS Designer parts, as well as performing critical library repairs to enhance project development across xLab.
- Assisted in the schematic development and VHDL implementation of standardized GSE equipment to be used in future projects.
- Worked with engineers to repair, inspect, and assemble various engineering boards as a solder technician.

Projects & Accolades

Str8Key Keyboard Design | Personal Project - see Github

- Designed and built an ortholinear split keyboard using ATmega32 micro controllers. Features include 56 keys, RGB lighting, and serial communication between halves.
- Used Ergogen YAML to design the key layout, KiCad to design the board, and soldered the board manually. ATmega32 micro controllers were programmed in C.

Raspberry Pi 'Ring' Doorbell | Computer Systems Project

- Created a product similar to Amazon's 'Ring' doorbell, capable of taking pictures when triggered and sending them to a storage server.
- Implemented using C code on a Raspberry Pi Zero in a custom 3D printed casing.

Prototype 1U CubeSat | Aerospace's Robert H Herndon Science Comp.

- Team won 1st place in competition for our design of a prototype 1U CubeSat bus with telemetry, power, attitude control, and payload hosting.
- Designed and implemented from scratch using Arduinos and C++ code, custom PCBs, and hand crafted aluminum framing.

September 2023 – Present

May 2023 – August 2023

Provo, UT

Provo. UT

May 2022 – May 2023

El Segundo, CA

El Segundo, CA

July - August 2023 de 56 keys, RGB

January - April 2023

May 2018 - May 2019

May 2024 – Present

Position and Navigation Using Starlink | *Publication link*• E. Grayver, R. Nelson, E. McDonald, E. Sorensen, S. Romano. *IEEE Aerospace Conference 2024*Certifications

IPC JSTD-001: Soldering and Inspection, received July 2022 **IPC 620D**: Wires and Harnessing, received July 2023