

Christopher McCormick

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Summary

A Junior Electrical Engineering Student with a background in embedded system and RF development. Although, that does not stop me from indulging in other topics such as Quantum Mechanics, Power Electronics and IT.

Education

B.S.E in Electrical Engineering

Arizona State University

Focus: Embedded Systems & RF Design

Junior – GPA: 3.71

Graduating May 2023

Tempe, AZ

Technical Skills

Programming: C/C++ (Proficient), Python (Proficient), Java (Proficient), Assembly (Intermediate), Bash (Proficient), Matlab (Proficient), Verilog (Proficient), VHDL (Intermediate), Git (Proficient)

Lab Equipment Experience: Spectrum Analyzer (Intermediate), Oscilloscope (Proficient), Logic Analyzer (Proficient), Multimeters (Proficient), Software Defined Radios (Intermediate)

Operating System Experience: Linux (Expert), Windows (Proficient), Mac OS (Proficient)

PCB Design: KiCad (Proficient), LTSpice (Proficient), Soldering (Proficient), SMD Rework (Proficient).

3D Modeling & Printing: Fusion 360 (Intermediate), Filament Printing (FDM), Laser Sintering (SLA)

Certificates: ARRL Amateur Radio License (KJ7TZG)

Professional Experience

ASU Interplanetary Initiative Lab: Research and Project Intern (20 – 30 hr./week) 09/2021 – Current

- Software Development for the LightCube and DORA Satellites.
- PCB Design for rapidly developed NASA funded project - Exocam
- Lead Technician for RF Equipment and Vibration Testing System.
- Contributed to Open Source Radio Development - Planet OpenLST Radio
- Team Lead for Attitude Determination and Control System (ADCS) Test bed Development.
- Assist Students with Embedded Systems Development with Protocol Demonstrations.

Pulselink IT Summer Intern (40 hr./week) 05/2020 – 08/2020

- Assisted with Local Server to Cloud based Data Migration.
- Developed various scripts and Docker images to accelerate the process as necessary.

ASU Inventory Clerk (15-20 hr./week) 08/2019 – 09/2020

- Developed Various Excel and python scripts to accelerate the inventorying process.

Papers

2021 Small Satellite Conference - Deployable Optical Receiver Array Cubesat

- Contributor for the UHF Radio Section

Side Projects

RISC-V Experimentation:

- Explored the new ISA and published documentation for beginners.
- Experimented with GPIO, PWM, I2C using assembly.

FPGA Development:

- Bit-banged various communication protocols (Ethernet-IEEE802.3, HDMI, VGA, SPI, I2C).
- Worked with both Altera and Xilinx FPGAs and familiarized myself with their respective IDEs.
- Developed Simple Pong Game for VGA testing.

Motherboard Repair:

- Debugged and repaired older server motherboards with known Clock failures and published documentation.

Custom Graphics Card Adapter

- Designed an adapter PCB that routes existing DVI ports to HDMI connectors to allow graphics cards to fit in more restrictive environments. Published documentation on my website.

Custom Electric Bike

- Converted existing Cargo Bike Frame to function with an electric motor. Performed various controller modifications and published documentation on said bike.

Activities

Sun Devil Satellite Laboratory

2020-2021

- Team Member then Team Lead for Hyperspectral Cubesat Project