# 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 prevent me from indulging in other topics such as Quantum Mechanics, Power Electronics and IT.

## Education

**B.S.E in Electrical Engineering** — **Junior – GPA: 3.71**
**Arizona State University** — **Graduating May 2023**
**Focus**: Embedded Systems & RF Design — **Tempe, AZ**

## Technical Skills

**Programming:** C/C++ (Proficient), Python (Proficient), Java (Proficient), Git (Proficient), Bash (Proficient), MATLAB (Proficient), Verilog (Proficient), VHDL (Intermediate), Assembly (Intermediate)
**Lab Equipment Experience:** Oscilloscope (Proficient), Logic Analyzer (Proficient), Multimeters (Proficient), Software Defined Radios (Intermediate), Spectrum Analyzer (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:** Filament Printing (Proficient), Laser Sintering (Intermediate), Fusion 360 (Intermediate)
**Certificates:** ARRL Amateur Radio License (KJ7TZG)

## Professional Experience

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

- Developed software for the LightCube and DORA Satellites.
- Designed PCBs 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) Testbed 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 data migration.
- Developed various scripts and Docker images to accelerate the migration process.

**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**

- Contributed to the UHF radio section.

## Side Projects

**RISC-V Experimentation:**

- Explored the new ISA and published documentation on my website for beginners.
- Experimented with GPIO, PWM and I2C using Assembly.

**FPGA Development:**

- Bit-banged various communication protocols (Ethernet-IEE802.3, 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 which allows graphics cards to fit in more restrictive environments and published documentation.

**Custom Electric Bike**

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

## Activities

**Sun Devil Satellite Laboratory** — **2020-2021**

- Team Member then Team Lead for Hyperspectral Cubesat Project.