Zane McMorris

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EDUCATION

University of Colorado Boulder || College of Engineering and Applied Science

- Master of Science in Electrical Computer Engineering (GPA: 3.72/4.0) 08/2024 – 05/2026
- Bachelor of Science in Electrical Computer Engineering 08/2020 – 05/2024
  - *CEAS Graduation Awards*: **Academic Engagement Award**

TECHNICAL SKILLS

- Programming in C/C++, Python, MATLAB, Arduino, Verilog/System Verilog, Concurrent Programming, FreeRTOS, Git, Linux (WSL & Ubuntu), ESP32, STM32, ARM, RISCV, NIOS-II, UART, I2C, SPI
- Altium, EAGLE, Onshape, Oscilloscopes, Logic Analyzers, PCB through-hole & SMT soldering, Hardware debugging
- Embedded Systems, Robotics, IOT, Data analysis and representation, PC assembly and troubleshooting

PROFESSIONAL EXPERIENCE

Micron Technology Longmont, CO
Firmware Engineering Intern – C, Python, Linux, Embedded Systems 05/2025 – 08/2025

- Collaborated with back-end firmware developers on tool improvements in Python and C for write amplification characterization and read error handling stats, using logs from the DUT
- Created testing methodology and performed power experiments on the latest enterprise SSD product seeking to maximize power to performance, using a benchtop oscilloscope to measure a sense resistor on the DUT
- Assisted with dynamic memory removal and conversion in firmware initialization routine, increasing debuggability and streamlining further development

Western Digital Corporation Longmont, CO
Firmware Engineering Intern – C++ & Python *08/2024 – 12/2024*

- Assisted Runtime team in feature development and bug removal in homebrew RTOS for multi-core SOC
- Created Python script to characterize high-resolution power data for detecting reads and writes on enterprise HDD systems
- Wrote unit tests and implemented algorithms in fundamental hard drive subsystems using C++

Seagate Technology Longmont, CO
Servo Engineering Intern – C, Python, RISCV *(Summers) 05/2023 – 08/2024*

- Led RISCV processor bring-up on IP SOC for Servo Tools usage using SOC specs and RISCV documentation
- Implemented low-level processor features to be accessible by Python and Matlab layers (start, read/write, etc.)
- Ported software tool for tracing program variables on other HARTs in real-time to this auxiliary processor
- Developed UI features on internal analysis tools for HDD systems using C and Python libraries (Dash, MongoDB, Tkinter)

University of Colorado Boulder Boulder, CO
Senior Design Project Team Leader – Leadership, C, ESP32, IOT, Product Design *08/2023 – 05/2024*

- Led the design and implementation of an open-source air quality measurement product for SparkFun Electronics, consisting of a 3D printed enclosure, PCB, mobile app, and ESP32-S3 firmware
- Created firmware based on ESP32-S3 microcontroller, using FreeRTOS for task management, Wi-Fi and BLE for wireless communication, over-the-air-updates, I2C and analog reading for sensor data, and SPI for E-paper screen
- Received departmental award for '**Best Overall Design**' at capstone expo among 14 other strong projects

University of Colorado Boulder Boulder, CO
Teaching Assistant – Real Time Operating Systems, Embedded Software Engineering, Senior Capstone *08/2022 – 05/2026*

- Supported ~70 students by hosting office hours, grading, and providing feedback on algorithms, code structure, and accuracy.
- Taught Embedded Software Engineering and Real-Time Operating Systems labs on STM32F4 devkits
- Mentoring three senior design groups, leading them through phases of design and implementation of electrical and computer engineering projects for a year-long capstone course focusing on system-level design with PDR, CDR, and more