Micah Weston

(702) 816-6833 | weston.m@northeastern.edu | Boston, MA 02115
github.com/red1bluelost | micahsweston.com | linkedin.com/in/micah-s-weston

Education

Northeastern University   Boston, MA | Aug 2023
Candidate for Bachelor of Computer Engineering and Computer Science   GPA: 4.00

Honors:	University Honors Program, Dean's List (all semesters)
Activities:	NU Baja SAE, NU Sound, NUCAR Labs Computer Research
Courses:	Object-Oriented Design, Computer Systems, Fund. of Digital Design and Computer Organization, Embedded Design, Fund. of Networks, Fund. of CS 2, Discrete Structures, GPU Programming Basics with CUDA

Professional Experience

Freelance | *Embedded Software Engineer*   Las Vegas, NV | Apr – Aug 2020 & Dec – Jan 2021
- Generated C++ software for a digital color organ running from an ESP32 NodeMCU microcontroller
- Designed and implemented an automatic calibration system that balanced light amplitudes based on audio input
- Optimized software for memory efficiency, implemented improved algorithms for LED color assignment, and removed unnecessary branching in the hot path
- Refactored legacy code with object-oriented principles to increase maintainability
- Migrated build process to PlatformIO while keeping backwards compatibility with Arduino IDE
- Generated dynamic color patterns from audio input processed by an FFT library to display through an LED display
- Implemented HTTP API accessible over WIFI that controlled settings and configurations on the color organ
- Instituted a soft Access Point to dynamically configure WIFI connection for the embedded device

Advanced Monitoring Systems | *Embedded Systems Engineer*   Las Vegas, NV | July – Aug 2020
- Improved organization of legacy code base through version control systems and secure online storage
- Validated hardware function and performance for embedded processors that controlled multiple sensors
- Created documentation for hardware/software interfacing and the upload process for embedded software
- Troubleshooted the wire connections for software upload from Atmel ICE programmer

Skills

Programming: C++, Go, C, CUDA, Java, Bash, Verilog, Python
Applications: Git, Bash Shell, Vim, GitHub, GitLab, Bitbucket, JetBrains IDEs, VS Code
Technical: Linux, I2C, Arduino, PlatformIO, Soldering

Project Experience

NU Computer Architecture Research Lab | *Research Assistant*   Boston, MA | Oct 2019 – Present
- Research Translation Lookaside Buffer (TLB) design to increase hit rate through memory address coalescing
- Develop code for a multi-GPU simulator built with the Go programming language
- Implemented the page migration process as an interface supported with unit tests
- Wrote Bash scripts to automate building, executing, and collecting data for hardware simulations

NU Motorsports Baja SAE | *Team Member and Social Media Manager*   Boston, MA | Oct 2019 - Present
- Organize communication and activities for general team recruitment
- Gather feedback from incoming members to improve club interactions
- Manage team social medias, maintain official website, and optimize website performance
- Designed, assembled, and soldered battery-powered light up pit sign for race events
- Set up online GitHub organization to help coalesce team software for DAQ system and other devices
- Machined parts on manual lathes and mills for off-road vehicle
- Assembled, dismantled, cleaned, and maintained student built off-road vehicle

GPU Programming Basics with CUDA | *Final Project Competition, NUCAR Lab*   Boston, MA | Oct – Nov 2020
- Developed CUDA code for a Histogram Equalization image processing program ran with a Nvidia Kepler GPU
- Increased kernel execution speed by over 10% through use of Hillis-Steele Scan, shared memory, and few concurrent memory accesses
- Improved program speed by 25% through reducing the memory footprint and coalescing the remaining allocations
- Placed second as the only undergrad student in the class competition judged for program accuracy and speed