Terence V. Williams

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OBJECTIVE:

Seeking a full-time job where my engineering and computing knowledge can be used to practice and gain experience working as a computer or embedded software engineer. References available upon request.

WORK EXPERIENCE:

Servo Engineering Intern, *Seagate Technology* **January 2022 – August 2022**

-Worked with a team to develop and deploy advanced embedded control system technologies to meet the high-density tracking, performance, and reliability requirements of enterprise hard disk drive systems

Embedded Systems Teaching Assistant, *University of Colorado Boulder* **August 2021 – December 2021**

-Helped students develop and design code at the Embedded C or "Bare-Metal" level. In addition to the implementation of different embedded systems such as reflectance and ultrasonic distance sensors.

Research Intern, *AIMRL University of Colorado Boulder* **May 2021 – August 2021**

-Worked on the software design and implementation of different embedded systems for an Animal Inspired Motion Robotics Lab at CU Boulder

-Gained experience programing in an Arduino environment as well as working on the development of I2C communication between an ATtiny84a and an Arduino Uno

TECHNICAL SKILLS:

- C++ Data Structures & C Programing in Embedded Software
- Python
- RISC-V Assembly
- Data Communication Drivers such as UART, SPI, & I2C
- Experience with FPGA boards & Embedded Systems (DE10-LITE & MSP432)
- Signal Processing using MATLAB Software
- Microsoft Office, including the use of Excel VBA
- Circuit Analysis & Simulation using LTSpice Software
- Oscilloscope and Waveforms Simulation using Waveforms Software and Analog Discovery 2 (AD2)

EDUCATION:

University of Colorado, Boulder

Planned Graduation: Bachelor of Science in Electrical & Computer Engineering **May of 2023**

Relevant Completed Courses:

-*Embedded Software Engineering*

Introduced to both technical and industry requirements to enable proper engineering and architectural decisions as well as implementation. Gained experience creating interrupt driven state machines, interface to sensors via hardware and software, and the ability to extend the functionality of a microcontroller via a Network Co-Processor.

-*Computer Organization*

Studied computer design at the gate level. Discussed instruction set architecture (ISA) design, arithmetic and logic unit design, control logic, memory design and caches, simple pipelining, I/O and peripheral devices. Briefly covered aspects of modern computer architecture, such as multicore processors and cache coherence.

-*Microelectronics*

Analysis and design of circuits with nonlinear elements, including diodes, BJTs and MOSFETs, with an emphasis on design-oriented analysis techniques. Learned the principles of operation for pn junctions, semiconductor diodes, MOSFETs and BJTs, including intuition behind the physical meaning of device model parameters and limitations of models. As well how to analyze and design basic amplifier gain stages and digital logic gates using MOSFETs and BJTs.

-*Linear Systems*

Characterization of linear time-invariant systems in time and frequency domains. Continuous-time systems are analyzed using differential equations and Laplace and Fourier transforms. Discrete-time systems are analyzed using difference equations and discrete-time Fourier transforms. Sampling and reconstruction of signals using the sampling theorem. Applications of linear systems include communications, signal processing, and control systems.

ACTIVITIES:

-Created a Personal Website Portfolio **January 2023**

-Started and Maintained Colorado Boy Clothing LLC **May 2020 – December 2021**

-Society of Professional Hispanic Engineers (SHPE) Member: **September 2019 – Present**

-BOLD Scholarship Member, University of Colorado boulder: **August 2019 – Present**