Terence V. Williams

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EDUCATION:

University of Colorado, Boulder
Bachelor of Science in Electrical & Computer Engineering **May of 2023**

OBJECTIVE:

Seeking a challenging role in computer engineering where I can utilize my technical skills and gain experience working with the latest technology while advancing my knowledge and career in the field.

WORK EXPERIENCE:

Software Engineer I, *CNH Industrial* **May 2023 - Present**

- Collaborated with colleagues on creating a tractor simulator for virtual software testing, eliminating the need for physical tractors and enhancing efficiency.
- Implemented a new virtual CAN stack, including the network architecture design, ensuring precise simulation of electronic control systems.
- Conducted rigorous validation of the simulator, and documented its architecture

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
-Project Environments: Embedded C, RISC-V Assembly, Python Wrappers (tkinter), MATLAB Simulation, Perforce version control

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 implementing 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 programming in an Arduino environment as well as working on the development of I2C communication between an ATtiny84a and an Arduino Uno

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PROJECTS:

-**Reaction Time Game:** Created a state machine stopwatch which was simulated in Quartus software before being implemented in hardware (DE-10 Lite)

-**Embedded Software Engineering:** Wrote data communication drivers for the following protocols: UART, SPI, & I2C

-**Vigenère Key Decryption:** Python script that can determine the key to an input Vigenère encrypted cipher text (Computer Security)

-**FPGA Soft Core:** Created a "soft core" for the DE-10 Lite which may be used for future Digital Logic classes at CU Boulder

-**ATE to HCI:** Worked on a Hardware Controlled Interface (HCI) for Sametec's current optical bit error rate test station

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TECHNICAL SKILLS:

- Embedded C/C++ & RTOS
- Agile Software Development
- Git Version Control
- Understanding of Computer Architecture (RISC-V, NIOS II, x86 Assembly)
- Data/Network Protocols (CAN, TCP, UDP)
- Frontend Design (Flutter & Avalonia)
- Signal Processing using MATLAB Software

RELEVANT COMPLETED COURSES:

-*Advanced Computer Architecture*

Gained a broad-scope treatment of important concepts in the design and implementation of high-performance computer systems. Discussed important issues in the pipelining of a processor, out-of-order instruction issues and superscalar designs, design of cache memory systems for such systems, and architectural features required for multicore processor designs.

-*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.

ACTIVITIES:

-Started and Maintained Williams Performance LLC **January 2024 - Present**
-Created a Personal Website Portfolio **January 2023**