**Murtaza Hussaini**

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**OBJECTIVE**Results-oriented Computer Engineering graduate and current Master's student in Software Engineering with 3+ years of experience in C/C++, real-time operating systems like VxWorks and Embedded Linux, and debugging low-level hardware-software interactions. Eager to join Ciena to help build and improve real-time systems, from hardware drivers to high-level platform applications. Fully available for full-time work.

**HIGHLIGHTS OF SKILLS & QUALIFICATIONS**

* **Programming**: Solid background in C (POSIX, VxWorks RTOS), C++ (STL, Boost), Python (scripting, PyTest), Bash, Perl.
* **Embedded Systems**: Experience with RTOS, Linux kernel modules, device drivers, and memory-mapped I/O.
* **Hardware Integration**: Comfortable reading datasheets, timing diagrams, and working with ASICs, FPGAs, SPI/I2C interfaces.
* **Networking & Telecom**: Familiar with OSI Model, TCP/IP, DWDM, SONET/SDH, OTN, Ethernet, MPLS.
* **Tools & Debugging**: Used GDB, logic analyzers, JTAG for troubleshooting; Git, Bitbucket, Jira for development.
* **Testing**: Unit testing with Google Test, PyTest; continuous integration pipelines.
* **Development Approach**: Experienced working in Agile Scrum teams, contributing to sprint goals and documentation.

**EDUCATION**

* **ONTARIO TECH UNIVERSITY** – Oshawa, ON  
  Master of Engineering (MEng), Software Engineering - Fully available for full-time work.
* **YORK UNIVERSITY** – Toronto, ON  
  Bachelor of Engineering (BEng), Computer Engineering - Graduated June 2024
  + **Relevant Courses**: Real-Time Operating Systems, Embedded Systems, Computer Architecture, Digital Logic Design, Software Design Patterns, Data Structures & Algorithms
  + GPA: 3.8 / 4.0

**WORK EXPERIENCE**

**Software Developer Intern** Toronto, ON

**Redline Communications** Sept 2022 – Apr 2023

* Developed and maintained embedded C firmware on Linux-based wireless networking hardware, ensuring low-latency communication with FPGAs and proprietary ASICs
* Built and debugged device drivers using VxWorks RTOS for power management, temperature sensors, and FPGA registers (SPI/I2C interface)
* Integrated system-level diagnostics and fault detection logic to support predictive maintenance and alarm management systems
* Collaborated with hardware engineers to implement UART-based communication protocol for radio diagnostics, reducing field debugging time by 25%
* Used GDB and logic analyzers to troubleshoot race conditions and interrupt handling issues in multi-threaded kernel modules
* Worked within Agile Scrum environment, contributed to bi-weekly sprints using Jira and Confluence for task tracking and documentation.

**Key Accomplishment:**  
Reduced firmware boot time by 18% by optimizing initialization sequences and memory access routines.

**Junior Application Support Developer** Toronto, ON

**RBC Bank** Jan 2021 – Aug 2022

* Developed internal automation tools in **Python (with Flask)** and **Java (Spring Boot)** to streamline testing of financial data pipelines.
* Built CI/CD scripts using Jenkins and Bitbucket Pipelines to auto-deploy nightly test builds on staging environments.
* Implemented RESTful APIs for performance monitoring dashboards to help back-office teams track SLA violations.
* Conducted unit testing using PyTest and integration testing across systems with various upstream services.

**Key Accomplishment:**  
Improved test automation coverage by 40%, reducing manual QA hours by over 10 hours/week

**PROJECTS**

**AVID: Smart Vacuum Robot -** [**GitHub ↗**](https://github.com/murtazahussainii/AVID) | [**Demo↗**](https://youtu.be/iHhO0eXAKVE?si=WyXZjk0c5TSzPdTJ)   
C, Bluetooth, Arduino, Jetpack Compose, GDB, MPU9250, Android Studio

* Programmed C-based real-time obstacle avoidance system with sub-50ms sensor response time.
* Used GDB to debug navigation logic on Embedded Linux, reducing field crashes by 75%.
* Implemented UART-based Bluetooth communication and non-blocking state machine control.

**SphereMovies Platform -** [**GitHub ↗**](https://github.com/murtazahussainii/SphereMovies) **|** [**Demo ↗**](https://www.youtube.com/watch?v=MWdJC19PmD0&t=2s&ab_channel=MurtazaHussaini)  
React, Java Spring Boot, MySQL, Docker

* Built secure full-stack app for browsing trailers using Spring Boot REST API and React UI.
* Enabled JWT-based login with lazy-loaded components; load time improved by 31%.

**VOLUNTEER EXPERIENCEVolunteer Instructor – Refugee Learning Nest**  
Toronto, ON | Jan 2015 – 2017

* Taught basic computing and typing to newcomer refugee students (ages 10–17) using Scratch and Code.org

### ****Certifications & Awards****

* **Embedded Systems Specialization** – Coursera (University of Colorado Boulder)
* **Linux Kernel Development Micro-Certification** – edX
* **Dean’s Honour Roll** – York University (2023, 2024)

**REFERENCES**: Available upon request.