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](#) | [Demo](#)
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](#) | [Demo](#)
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 EXPERIENCE

Volunteer 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.