

Malcolm Richardson

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Software Engineer

Multifaceted technical career with 3-year track record of software and application development

Technically sophisticated software development professional with a solid history of effective integration of new protocols and application development. Broad knowledge and success in providing software solutions in the context of a wide range of software engineering projects. Proficient in identifying and initiating process improvement tools to enhance operations. Skilled in analyzing data, testing software, and fixing bugs.

TECHNICAL PROFICIENCIES

Platforms: Linux, Windows, Tizen

Languages: C, C++, Python

Protocols: LTE MAC, TCP/IP, LWM2M CoAP

Tools: GNU Make, GCC, Read-Elf, WireShark, Tizen-Studio, C-Scope, GIT, Meld, GBS, VIM

Debuggers: GDB, Valgrind

PROFESSIONAL EXPERIENCE

LWM2M/CoAP Protocol Development Project

Senior Software Engineer/Senior Developer (11/2018 – Present)

RFC compliant protocol development of standalone CoAP and LWM2M using C programming language, GDB and Valgrind debuggers on Linux platform. Coordinate programming and development efforts on the server.

- Successfully upgraded LWM2M protocol to the latest standards.
- Implemented security tools (secure socket) for the protocol.

LTE Log Analysis Project

Software Engineer/Log Analysis Specialist (05/2018 – 09/2018)

Analyzed and specified problematic areas; identified root causes of the problems. Worked with Windows OS and used debugger tool based on Binary log (Intel-based).

- Checked for functional issues from LTE PS and LTE-firmware perspective.
- Worked on RACH, SR, Cell Measurement related issues from LTE-Firmware perspective.
- Analyzed DL/UL data stall issues.
- Checked for UE/NW based issues and rejected issues if the functionality was sane.

LTE L2/L3 Stack Development Project for Small Cell Solution

Software Engineer/MAC Scheduler (10/2017 – 4/2018)

Participated in LTE E-UTRAN Framework Development Project at Global Edge, consisting of HeNB Small Cell prototype, NwEPC-based LTE core network, UE Simulator, and Test Controller. Worked with Freescale platform and used C programming language and GNU tool.

- Implemented LTE QOS Scheduler and managed HARQ and Link adaptation.
- Coordinated maintenance of addition/deletion bearers in MAC; fixed bugs in MAC OS environment.
- Performed unit testing on newer builds.

Application Development Project in Tizen

Software Developer (10/2016 – 9/2017)

Assisted with the development and maintenance of core apps for Tizen mobiles. Worked with Linux and Tizen platforms, used C/C++ programming languages, and such tools as Tizen IDE, Tizen Studio, GBS, GDB, Valgrind, Trace, and Code Integrity. Assisted with back-end programming for Tizen applications.

- Owned and managed 2 modules; additionally, partially owned 1 module.
- Contributed to complete ownership, including development, feature enhancement, optimization, and maintenance.
- Tested and fixed bugs in Tizen applications; added new enhanced features for core applications.
- Developed internal security features for Tizen Mobile; developed various POCs for Feature Mobiles.

Binary Logging Project

Software Developer (6/2016 – 9/2016)

Assisted with the development of real-time logging mechanism taking less than 5 microseconds for 500+ logs. Worked with Linux platform, used C programming language, and such tools, as GDB and Valgrind.

- Developed logging mechanism using macro- and bitwise to reduce run time logging time.

Network Stack Project

Software Developer (2/2016 – 5/2016)

Provided assistance with Introducing a new protocol family to provide the platform for the hosts within a network for communication. Sent and received data within the network (for both loop-back and other nodes within the network). Worked with Linux platform, used C programming language and Wireshark packet analyzer.

- Registered new protocol and defined its functionalities; created the socket buffer by attaching required headers.

EDUCATION

Bachelor of Engineering (Electrical and Electronics Engineering)

New York University, NY

TRAINING

6-Month GESL Training Program

(C and Data Structure, Software Engineering, UNIX Programming and Internals, Multi-Threading, Networking, Socket Programming, Unix Commands and System Calls)

LTE Training

(Cellular Wireless Architecture, LTE Network Architecture, LTE Bearer Architecture, LTE Security, LTE Protocol Architecture, Basics of Physical Layer, LTE Message Flows)