**Reza Auleear**

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British

# Profile

# Experienced Software Engineer (18+ years) with a demonstrated history of working in the information technology and services industry. Skilled in Embedded Software, C/C++, Linux, Qt Creator, Visual Studio, and Scrum. Strong engineering professional with a BSC (Hons) focused in Computer Software Engineering from University of Westminster.

# Key Technical Skills

* Experience in development of embedded C/C++ functions for Real Time Operating Systems.
* Development of Software using Object Oriented Design
* Development of Software using Test Driven Development (TDD) approach
* Development of Software by unit testing
* Designing Software using Unified Modelling Language (UML)
* Ability to use Software Development tools including Simulators/Emulators, e.g. SuperTAP Emulator for debugging the 186 processor
* Developing/Designing in house device Emulators/Simulators to help during the development process and afterwards.
* Extensive use of Rational ClearCase, Visual Source Safe and GIT for Software Configuration Management (SCM).
* Familiarity with RT Devices & logging tools for debugging and diagnosing crash problems.
* Test Driven Development, Software Design using Structured Analysis System Design methods with Google Test (GTest).
* Working ARM7 ARM9 Processors using WindRiver and Eurotech Toolchains
* Operating Systems ThreadX Multi thread, Unix, Linux Ubuntu,
* Tools Microsoft Windows 7 and 10 and 2010 MS Office and MS Visual C++/C# and MS VB
* Utilise Agile /Jira Methods, Certified Scrum master. Use of Jenkins for automated builds

# Career Profile

**Software Development InTest (SDET)**

**OCT 2019 – present**

Software Development in Test at Connected Devices

* Working remotely from home
* Writing GTest and GMock test for medical devices using C++ on Linux platform
* C++ 11/14
* CMake/QTCreator IDE
* QT APIs

# Cubic Transportation Systems Surrey Sept 2000 – July 2019

**Career Breakdown whilst working at Cubic**

**Senior Software Engineer Jan 15 – present**

* Developed and enhanced the Fixed Location Readers (FLRs) found in Sydney for the Light Railway project. This was done using C++ on Linux Platform with WindRiver tool chain.
* Enhanced the Remote Ticketing Device (RTD) Host Emulator using C++ on Windows Platform as part of the Sydney Light Railway project.
* Development and enhanced of Cubic’s Reader (remote ticketing device) that reads contactless Oyster Cards and bank cards. Involved in the implementations of the Weekly Capping feature.
* Building on Linux Customised Platform as supplied for by WindRiver and previously Eurotech
* Code Refactoring
* Adding functionality & resolving software bugs using modern tools like Jenkins Agile.
* Harness Development, G-Test, and Test-Driven Development for various Ticketing devices.
* Application Dev in C++ using ARM7, ThreadX RTOS on Multi Green Hills Systems.
* Dev of Real Time Payment System (Oyster) and integration of Flash File System.
* Remote Debugging of Real Time Devices using Eclipse and QT Creator (GDB server) on Linux Platform
* Remote Debugging of Devices using Microsoft Visual Studio,
* Updated, modified the RID (Revenue Inspection Device) as used by the ticket inspector on the train and the tube,
* Updated the and modified the MOVie - another type of Revenue Inspection Device. This device is a C++ based application built using the Kiel Compiler
* Updated, enhanced tool using C# for a Widows based application
* Updated and enhanced the Bulk Encoder device (that initialises and enables Oyster Cards that get issued to the public). It is written in C++ on windows platform, that loads DLLs, uses serial comms link to the Readers, printers and Ethernet Link to the Station Computers. It has a Graphical User Interface with several worker threads that are controlled by a state machine.
* Enhanced and maintained ITSO Certification test tool using C++ for windows platform. This tool is shipped to the ITSO headquarters which is used to certify ITSO cards that are using within the Cubic Ticketing Systems

**Software Engineer/Senior Software Engineer Oct 07 – Dec 14**

* Maintained and fixed legacy bugs on all the different types of gates (currently found at the LUL stations). C language was used.
* Used the SuperTap that emulates the 186 process to debug the legacy 186 based systems
* Heavily involved in the development of replacing the legacy 186 based gates to Linux based platforms, which involve the following:
* Implementation of Graphical User Interface Application on Linux Platforms using QT Creator to test the peripherals of the application boards and digital IO.
* Implementation of Client/Server architecture (TCP/IP, UDP protocols)
* Implementation of Serial Communications Links over RS232/RS422 and USB ports
* Extensive use of the Standard Template Libraries (STL)
* Extensive use of the Boost Libraries
* Implementation using XML, Rapid JSON and CURL Libraries
* Enhancing PIC application, building and downloading using MathLab
* Bash shell scripting
* Makefiles
* Remote debugging using QT creator
* Interfacing with the FTDI chip
* Implement Simple Network Management Protocol (SNMP) on the Gates that send customised gate status message to the Remote Monitoring Systems (RMS).
* Created shell scripts to generate a full software release (tar) package that are currently used for upgrading the various gate types.
* Developed and implemented software using C++ for the Raspberry PI on Raspbian platform that interfaces with the Barcode Scanner as found on the London Underground with cross Rail platform.
* Enhanced and maintained inhouse tool for testing PEARL device using C++ prior to releasing to customers. The PEARL device is basically a reader that reads and write to Oyster Cards which can be found at independent shops.

**Software Engineer Mar 04 – September 07**

* Maintaining the Station Computer using C/C++ on windows NT platform that consisted of several Windows NT Services and DLLs.
* Ported legacy code written in PLM to C/C++ using RAD Studio tool. Written test harnesses to test the individual subsystems. Written design document for the newly ported code (class diagrams, API details)
* Written a windows device driver for the Automatic Fare Machine (AFM) when migrating from NT to XP platform. The driver was written in C/C++
* Involved on the development of the Chip and Pin introduction to the Ticketing Machines, using C/C++ and XML formatted message to the Bank Card server.
* Added new feature for the Drive Control Unit (DCU) that is currently used on the buses in Skane. This development was on Windows CE platform using C++.
* Updated some code written in pascal for the Skane project
* Maintaining and bug fixing for a few legacy devices
* Written a new story board and design document for the enhancement of the Station Computer Unit (SCU) to enable to user to control Wide Aisle Gates WAG) and also switch them into a first come first served mode as requested by Transport for London (TfL)
* Updated the Station Computer Unit to introduce new functionalities. This involved adding new controls to the main screen so that the user can control the Wide Aisle Gate (WAG, the large gate found at the underground station). This was done using C++ on windows platform.

**Software Engineer Sept 02 – February 04**

* Designed and developed a new Ethernet based interface that was plugged in the Station Computer Units. It was written in C++ using Visual Studio 6 (windows sockets and windows threading models). The software is released and currently being used most underground station
* Update existing software tool that was used to commission the above device. This was carried out using Visual Basic.
* Designed and developed a System Information Management (SIM) simulator. This is a Graphical User Interface application with button controls and Edit controls written in C++ for window NT/XP platforms.
* The tool is widely used by testers and also at a few London Underground stations as part of their device monitoring.
* Maintaining and updating documents
* Maintaining and fixing of legacy bugs
* Updating and enhancing various in-house tools using C/C++ and visual basic.

**Junior Software Engineer Sept 00 – August 02**

* Designed a storyboard document for hand-held device based on user requirements. The tool used was a combination of Microsoft Word and Rational Rose. The document story board was reviewed, updated and finally released.
* Developed a windows registry tool application using C++ on WindowsCE platform.
* Ported legacy C code written in Borland 6 to C/C++ using Visual studio 6. The applications were subsequently use a wide part of build process to split a large binary data file into chunks that would fit 4 EPROMS.
* Enhanced the diagnostics feature of Multifare Ticketing Machine (MFM, the ticketing machine found at most of the London Underground stations that, dispenses magnetic tickets), Developed and implemented a new diagnostic feature to test hardware and software of remote ticketing device attached to the MFM over a serial linked. This would help the testers and particularly engineers on the field to easily diagnose any issues with the remote ticketing device.

# Education

**University of Westminster, London**

BSC(Hons) Software Engineering (2:2)

# Training Courses

* Agile Scrum Master Certified
* Clean Code by R Martin (commonly known as uncle BOB)

# Interests

* Travelling
* Sports (swimming and jogging)