**Tariq Mahmood**

**Senior Embedded Software Engineer BEng (Hons), MSc**

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**Personal Summary**

My love and passion for programming began long before I knew it would be my career. As a constant source of interest, and even after so many years, I invest a lot of my free time in developing embedded software to improve my flow of work.

As a highly dedicated and adept embedded software engineer with a wealth of experience of 21 years, in all aspects of the development cycle, I am able to work under pressure to tight deadlines. Taking a methodical approach to situations means I am a good analytic problem solver and planner.

As a determined and enthusiastic individual, I am looking to take on a new challenge where I can share all my knowledge that I have built up over the years.

**Technical proficiencies**

**Operating systems:** Ubuntu Desktop, Windows OS

**Languages and libraries**- Assembly, Bash, batch programming, C/C++, Python, Shell scripting

**Cross Compiler** ARM

**Tools** Bitbucket, Buildroot, CAN USB, CMake, cppcheck, Docker, Eclipse, GCC, GDB, Gerrit, git, github, gitlab, gpg, grep, GTK, IAR, Jenkins, JTAG, Makefiles, Mantis, Monkey, MPLAB IDE, Orcad, PC Lint, Slack, SSH, SVN, Virtualbox, Visual Studio 2005/08, VMWare Workstation, Windows CE 7.0 Platform builder

**Employment**

**Touchstar Technologies Ltd (formerly Belgravium plc)**   **Bradford**

**Senior Embedded Software Engineer December 2000 – July 2019**

* Expert in software development of mobile computing solutions for custom hardware
* Full product life cycle management from specification to production
* Bring up and maintain BSPs targeting ARM used internationally in many different environments including trucks, trains, airplanes and explosive atmospheres
  + 15 years in depth experience with Windows Compact edition (WinCE) 2.0, 3.0, 4.2,5.0 and 7 BSPs development for StrongARM PXA 255, PXA270 and OMAP3
  + Android 5,6,8 (Lollipop, Marshmallow, Oreo) development for OMAP3 and i.MX6 with kernel version 2.6, 3.10 and 4.1
* Windows CE Driver development and debugging of GPIO expanders, I2C, SPI, Bluetooth, WiFi, Ethernet, GPRS/3G, SDIO, SDHC, UARTs, USB, touch screens, battery gas gauges, CPLDs, accelerometers, graphics and micro controllers
* Porting of android file system from Marshmallow to Oreo on custom hardware
* Setup of development environment using various versions of OS ubuntu from 10.04 to 18.04 LTS
* Porting from scratch, u-boot and Linux Kernels 2.6.x to 4.1 to custom hardware
* Porting and implementation of various Linux Kernel drivers such as SPI, I2C, UART, capacitive and resistive touchscreens, physical keyboard, Audio, IO Expanders, USB, OTGUSB, OTG, USB HUB’s, QUAD UARTS, GPS, GSM
* Building and debugging of Linux Kernel, X-loader, u-boot and Android file systems using ADB debug techniques for custom hardware
* Embedded C. shells (sh/bash), Eclipse, Visual Studio
* Version control tools Microsoft Visual SourceSafe, SCM, GIT
* Code review and fault management tools such as Mantis Bug Tracker, Gerrit, GitLab
* Helping other engineers in finding and fixing faults in android and Windows CE issues
* Improve quality through designing and implementing code review, continuous integration and semi-automated testing

O**gden Safety Systems Doncaster/Tadcaster**

**Embedded Software Engineer July 1997 – December 2000**

* Ogden multi beam radar designed for anti-collision applications using the FMCW principle to create precise detection zones using beams
* Designed, developed and maintained hardware using Easy-PC and software in C and assembly
* Used the H8 16-bit microcontroller, Microchip PIC 8 bit microcontroller, IAR system development tools and MPLAB IDE

**EMIS Health Horsforth**

**System Software Analyst April 1997- July 1997**

* Enhanced and adapted existing systems and integrated new features all with the aim of improving business efficiency and productivity
* Implemented, configured and tested feasible solutions

**VFX Systems Limited Batley**

**Embedded Software Engineer June 1996 – December 1996**

* Contributing in designing and developing software and hardware for the film industry including monitors, video-links, digital levels and power converters

**Education and qualifications**

**1994-1996** Bradford University MSc with Distinction in Real time operating systems

**1990-1994** The University of Huddersfield BEng (Hons. 2:1), Electrical and Electronic Engineering

**1987 – 1990**- BTEC National Diploma in Electrical and Electronic engineering

**1982-1987**- 8 O level’s

Other courses attended include

* **Windows CE driver Course** 2000- QA training. This was a 5-day intensive hands- on course intended to short circuit the steep learning curve involved in building a CE image and modifying/ providing a hardware driver
* **Windows CE 4.2 porting and refresher course**- 5 days October 2003. This was an attempt to shortcut the change to CE 4.2 from CE 3.0 development. The nature of CE development forces the developers to ‘sweep under the carpet’ if time to market is to be contained.
* **Android Porting training course-** 5 days from 30th November to 4th December 2015- how to create a custom Android platform from scratch, based on code from the Android Open Source Project (AOSP). Build up a functional embedded Android system, using a BeagleBone Black development board and how to adapt the Android hardware abstraction layer to work with your target platform
* **ISO27001 security training-** June 2019- Awareness that information security is everybody’s responsibility and that there are simple things everyone should do to improve the cyber security posture of the company.

**Additional Skills, activities and interests**

I strive to keep fit and go on a run every morning. I enjoy going on walks in the countryside and have completed the Yorkshire 3 peaks and Mount Snowdon. The rest of my time is spent with my wife and 4 children and staying up to date with the latest processes and technologies.

**Driving license-** I have a full UK Driving License

**References**

Available on request