

# Alan Austin

**BA (Hons) Oxon**

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## **Career**

December 2018 –present **Heber Ltd, Stroud**

***Heber Ltd** is a design consultancy, now specializing in developing embedded products for the environmental monitoring and domestic appliance market.*

### **CONTRACT FIRMWARE ENGINEER**

1 Developed firmware (sole responsibility) for remote temperature/RH/light monitoring device communicating via LoRa long range wireless transceiver modules with a base station.

The design uses the ARM STM32 processor, with firmware written in C using the STM32 Cube libraries and the IAR development environment.

2 Developed firmware (lead) for a portable device capable of detecting “taggants” in paint. Taggants are micro spherule “markers” added to fire retardant or biologically resistant paint. STM32 based system.

July 2018- December 2018 **Osler Diagnostics Ltd, Oxford**

***Osler Diagnostics** is a Startup medical devices company developing an innovative range of portable blood analysis systems, capable of diagnosing a wide range of medical conditions*

### **CONTRACT FIRMWARE ENGINEER**

Part of a multidisciplinary team (research scientists, engineers) developing a prototype portable Blood Analysis System. One of a team of two firmware engineers responsible for developing the Application Firmware for the Raspberry Pi based prototype.

The Application code was written in Python, using the Kivy Gui framework for the screen based user interface.

The prototype system was developed to an extremely tight development schedule, and successfully demonstrated in December 2018.

Oct 2017 – July 2018 **Rufilla Ltd, Culham**

***Rufilla Ltd** is an embedded software consultancy, specializing in implementing Yocto Linux based systems for client companies.*

### **SENIOR FIRMWARE ENGINEER**

1 Developed embedded platform/application software for a prototype 3D body position tracking and analysis system. The software was written in C, using dBus for message passing between modules, using BLE (Bluetooth low-energy) for communication with a mobile app.

2 Implemented modifications and enhancements for a number of client companies Yocto Linux based embedded products.

Feb 2012 –Oct 2017 **Naim Audio Ltd, Salisbury**

***Naim Audio** is a British manufacturer of high fidelity audio products for domestic use, based in Salisbury, Wiltshire, United Kingdom. Founded in 1973, it is a highly successful and well-established high-end European audio brand.*

**SENIOR SOFTWARE ENGINEER**

Worked on development of server/streaming audio products.

- 1 Platform based around Xilinx Zynq (dual core ARM9 + FPGA) Work involved: board bringup, Linux device drivers, FPGA design and integration of sub-contracted FPGA IP blocks, low level firmware, Linux framebuffer work, C++ application work, python test work, Jenkins based build server work.
- 2 Freescale iMX6Q SOM based platform. Yocto Linux implementation and device driver development.
- 3 ARM Atmel SAM4E platform – porting of existing proprietary OS and Application software to this platform.

July 2011 –Feb 2012 **DisplayLink (UK) Ltd, Cambridge**

*DisplayLink is a semiconductor and software company based in Cambridge. DisplayLink USB graphics technology is designed to connect computers and displays using USB and Wireless USB,*

*allowing multiple displays to be connected to a single PC.  
DisplayLink's primary customers are tier-1 LCD monitor  
manufacturers, notebook OEMs and Thin Client OEMs.*

#### **CONTRACT FIRMWARE ENGINEER**

Returned to DisplayLink in July 2011 to join Firmware Team. Worked on same project as in 2009-2010 - device now successfully implemented as an ASIC and at early adoption stage. Various firmware development tasks: testing, firmware enhancements and bug fixes. Firmware in C++ (ThreadX) plus extensive coding in python for Jenkins based test infrastructure.  
(2 month contract extended to 7 months)

May 2011–June 2011 **Ozmo Devices Ltd**

*Ozmo Devices developed Wi-Fi compatible communication technologies supporting wireless personal area network (WPAN) connectivity for battery-operated devices.*

#### **CONTRACT FIRMWARE ENGINEER**

Porting work of existing firmware suite to a new platform variant. WPAN device is low-cost ASIC with 8051 based control processor. Firmware written in C with proprietary real-time OS.

Oct 2010 –April 2011 **Dialog Semiconductors Ltd**

*Dialog Semiconductor creates energy-efficient, highly integrated mixed-signal ICs that are optimised for personal portable, short-range wireless, lighting, display and automotive applications.*

#### **APPLICATIONS ENGINEER**

Wrote Linux Audio Device Driver for new design of DSP based low-power CODEC. This device was adopted by a leading manufacturer for new designs of ARM based Android smartphones. The work involved extended periods of integration and testing work at the client design centre in South Korea.

Oct 2009 -Oct 2010 **DisplayLink (UK) Ltd**

*DisplayLink is a semiconductor and software company based in Cambridge. DisplayLink USB graphics technology is designed to connect computers and displays using USB and Wireless USB, allowing multiple displays to be connected to a single PC.  
DisplayLink's primary customers are tier-1 LCD monitor manufacturers, notebook OEMs and Thin Client OEMs.*

#### **CONTRACT FIRMWARE ENGINEER**

Member of the ASIC team developing the company's next generation ASIC product. Product ASIC with multi-processor cores (ARC processor based), prototyped on Xilinx FPGA based system.

(3 month contract extended to 12 months)

### ***Responsibilities***

- Firmware verification on prototype Xilinx FPGA system.
- Writing testcases: C/C++/Assembler on Target, Python scripts on host.
- Developing C and assembler firmware running in ASIC based multiple processor cores.

Aug 2008 to  
July 2009

### **QUADRICS LTD**

*Quadrics was a leading supplier and developer of HPC (high performance computing) networking products. Quadrics produced hardware and software for clustering commodity computer systems into massively parallel systems. Quadrics ceased trading at the end of June 2009.*

### **SENIOR SOFTWARE ENGINEER**

Part of the team developing the the *QSNET III* system. This is a 10 GBit ethernet compatible HPC interconnect system based around in-house developed ASICs.

Member of Switch Software team developing embedded **Linux Driver Software** for the *QSNetIII Control Card* and *Line Cards* (Power-PC boards with flash-based firmware running embedded **Linux**).

### ***Responsibilities***

- Completing and testing the I2C driver subsystem.
- Developing TCP/IP/UDP messaging layer applications.
- Implementing system wide time synchronisation (NTP based).

May 1988 to  
Aug 2008

### **HEBER LTD**

*Heber Ltd is an electronics design and manufacturing Company based near Stroud. The company was originally engaged in the product development of electronic products for a large range of clients in a variety of industries. Over the period 1988 to 2008 the company the emphasis and proportion of turnover shifted from consultancy and external contracts to the development and manufacture of the company's own successful and innovative range of embedded 16/32 bit processor based electronic controllers and graphics systems for the Amusement Machine industry.*

*Employed at Heber Ltd for twenty years, in a variety of Software Design, Hardware Design and Project Management roles. The company grew from 10 employees to 55 employees, and turnover increased from £250k to £10m over this period.*

*Heber Ltd was awarded the Queens Award for outstanding achievement in International Trade in 2005*

### **SENIOR SOFTWARE ENGINEER/ SENIOR PROJECT MANAGER**

### ***Responsibilities***

- Leading role involved in developing the software platform for the company's advanced range of embedded controller and graphics systems.
- Developing **embedded software** using **Linux** and other OS's.
- Electronic Design and Project Management. This experience was initially for external clients for commercial contracts.
- Initial meeting and discussion with clients
- Preparation of Proposals and negotiation of contracts
- Project planning
- Software design and development
- Electronic design and development
- **Supervising and mentoring of junior engineers**
- Supervision of sub-contracted resources: PCB layout
- Prototype manufacture and testing
- Preparation for volume manufacture including preparation of ATE systems

### ***Achievements***

- designed graphics hardware for very successful Calypso Graphics system (sales > 100K systems)
- wrote graphics driver for above
- wrote dual video driver version of above
- wrote touch screen device driver
- wrote FAT32 Filesystem driver for Compact Flash storage
- wrote audio driver (u-law compression)
- wrote security driver using triple-DES Encryption
- wrote SmartCard Interface driver
- Linux device driver for FPGA based serial interface
- Linux device driver for SmartCard interface
- Driver for security authentication system using FPGA based triple-DES encryption.

## Continuous Professional Development

2012,2015	<b>Yocto Linux</b>	Doulos Training
2005	<b>Developing Linux Device Drivers</b>	Feabhas Associates
2004	<b>Developing for Embedded Linux</b>	Feabhas Associates
pre- 2003	<b>Mathematics and Computing</b>	The Open University

### *Technical skills*

- Embedded Software Design: C, Python and Assembler embedded software: Embedded Linux and bare metal ARM and derivatives, Power PC, Freescale Coldfire, Motorola CPU32 processors.
- Yocto Linux Distribution Development
- Linux Device Driver Development.
- Scripting languages: Python, Unix shell script.
- Python Test Frameworks, Jenkins Automation Servers
- UBoot Embedded Boot-loader
- GNU Tool Chains, GDB, Cross development
- Version control systems: Git, Subversion, RCS, CVS, Mercurial
- Development Environments: Visual Studio, Eclipse
- Hardware design of microcontroller based systems.
- FPGA design using Xilinx toolchains and **VHDL** design methodology
- TCP/IP socket based programming.

*Early career*

1984 to 1988

**RENISHAW RESEARCH LTD**

*Industrial metrology systems.*

**SENIOR DEVELOPMENT ENGINEER**

Electronic Design and Development (Microprocessor and graphics systems)

1982 to 1984

**PHILIPS TMC LTD**

*Telecommunications systems.*

**DEVELOPMENT ENGINEER**

Electronic Design and Development

1980 to 1982

**MARCONI AVIONICS LTD**

*Defence and Subsea electronic systems.*

**PROJECT ENGINEER**

Electronic Design and Development

1978 to 1980

**EMI ELECTRONICS LTD**

*Defence electronic systems.*

**PROJECT ENGINEER**

Electronic Design and Development.

## Qualifications

1978	<b>BA (Hons)</b>	Engineering Science	<b>University of Oxford</b>
1974	<b>A levels</b>	Mathematics, Physics, Chemistry	Bradford Grammar School.

## Outside non-technical interests

Heavily involved with local Arts Centre co-ordinating concerts and gigs.

Music: guitar player.

Sports: Running (5K, 10K) and badminton

Family history (14 generations traced)