

James North

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As an accomplished Embedded Systems Engineer with a successful track record of 15+ years in the industry, I have extensive experience in delivering innovative solutions for various projects such as LED lighting for racing cars, firmware development for SMETS2 smart meters, and HVAC systems. Possessing excellent communication skills, I excel in collaborating effectively with cross-functional teams and working independently. My approachable and amiable personality makes me a go-to person for my colleagues when they require assistance or seek advice. Driven by my lifelong passion for science and technology, I am constantly seeking opportunities to enhance my knowledge and expertise, and eager to expand my skill set to tackle new challenges.

Experience

Cybersecurity Consultant (Embedded Systems Engineer) | BT plc

September 2016 – Present

Cyber security consultant working in supply chain security.

- Built internal tools such as web applications and source code analysis tools.
- Security code reviews and penetration testing of products.
- Software escrow validation.
- Managing security compliance working groups for suppliers to BT.
- Created numerous scripts and tooling using Python and Bash.
- Designed custom PCBs for interfacing with a Lauterbach JTAG debugger.
- Helped design a custom PCB for testing hardware attacks against a device.

Embedded Software Engineer | Itron Metering Solutions

July 2015 – Aug 2016

Firmware engineer working on smart electricity meters for the SMETS 2 programme.

- Working with third party vendor to certify a cryptography library against FIPS 140-2. This involved working on a Python script to automate our own tests of the library.
- Worked on developing a C library for decoding DER encoded X509 certificates.
- Designed a circuit for enabling automated testing of analogue inputs of the system, then worked with hardware team to get it built.
- C++ code base running on a dual-core ARM Cortex-M4 (SAM4CM) with Keil RTX RTOS.
- Responsible for maintaining a Jenkins CI server and helped develop a Python based system test framework for automated tests.
- Developed Python script for automating calibration process.
- Produce detailed design documents using UML diagrams created with Enterprise Architect.
- Coded to MISRA C and C++ standards.
- Assisted with designing the bootloader and firmware upgrade process.

Embedded Software Engineer | Melectronics Systems Ltd

2006 – July 2015

Duties includes the development and maintenance of embedded firmware and hardware. During the development of new designs, I am often responsible for getting the new boards to power up, diagnosing and repairing any faults in the circuit. I also aid in the manufacture of a variety of products from industrial control systems to LED lighting for racing cars.

- Written a bootloader for ARM7TDMI, dsPIC33F and PIC32MX devices.
- Developed an interface program for Windows using Visual C++ and MFC.
- Worked on the firmware for AC power sources used for electricity meter testing.
- Prototyped an electricity meter test device that used an ADE7878 meter chip.
- Developed firmware for a device that detected TDC on a running car engine.
- Ported existing firmware that ran on an 8051 to dsPIC33F, also adding new functionality.
- Maintained legacy MSDOS software that ran car engine test equipment – also maintained the hardware which comprised of a 486DX SBC and a custom ISA card with FPGAs.
- Used Pov-ray to run a simulation of a lens that was to be used in LED lighting.
- Created a prototype using an Analog Devices Blackfin DSP running embedded Linux. Wrote kernel modules to support the hardware being developed.
- Developed and maintained the business website.

Education

NVQ Electrical and Electronic Engineering

Suffolk College

- Electronic Principles
- Further Electronic Principles
- PLC programming
- Three Phase Power
- Transformers

After the course finished, I returned to do extra modules for Digital Electronics and Microcontrollers.

Certifications/Training

ISTQB Certified Tester, Foundation Level

Feabhas – Advanced C++ for Real Time Embedded Systems

Wray Castle – Cloud and Virtualisation Training Conference

Wray Castle – 2G to 5G Mobile Networks and Security

QA – Secure Coding

ART C1 Rework of Surface Mount BGAs

References

Available upon requests