Joel Holdsworth

Summary Profile

- Senior Embedded Engineer with M.Eng from Imperial College of Science & Technology, London.
- Key skills include software architecture and implementation, Linux and Open Source systems engineering, embedded development, electronic and mechanical product design, RF communication systems, FPGA development, signal processing, public speaking, customer support and technical sales.
- Over 20 years programming experience in C/C++98/11/14, Python, Linux and cross-platform development (including gcc, clang, gstreamer, Qt, etc.), embedded development (including bare-metal, and Linux systems) and Windows development.
- Strong open source involvement including major code contributions to the Sigrok, Wine, Inkscape and Lumiera projects, and patches to the Linux Kernel, systemd, and others.
- Creator and host of the OpenTechLab YouTube channel focussed on Electronics, Embedded Systems, Open Source Technology, and 3D Printing

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Work Experience

Jul 15 – Current: VCA Inc., Fort Collins, Colorado   *Senior Engineer*
Jul 12 – Jul 15: VCA Technology (UK) Ltd., London

VCA Technology provide best-of-breed computer vision software solutions for the security, retail and transport industries. These solutions are deployed on embedded devices such as IP cameras, embedded appliances and on servers. VCA Technology is a wholly owned subsidiary of Seoul-based UDP Technology.

- Working as a lead embedded software engineer developing and porting cross-platform software solutions portable to a wide variety of platforms including Intel and ARM Embedded Linux, Debian, Arch, Ubuntu, Fedora and working with C, C++11/14, Python and ARM assembly language.
- Lead development of the VCA Bridge embedded Linux operating system platform.
- Leveraging and contributing to Open Source Software projects such as gstreamer, busybox, systemd, waf, Qt, ffmpeg, Qemu, and many others.
- Profiling and hand optimization of video processing algorithms.
- Linux kernel and driver development.
- Assembly of cross-compilation tool-chains.
- Implementing and promoting automated code quality processes including unit testing of algorithms and protocols, static code analysis, fuzz testing, format rules checking.
- Providing developer-level support to US-based customers, training, and technical sales.
- Overseeing and reviewing code contributions, mentoring junior recruits.
- Assisting in recruitment, including resume review and interviewing.
- Administration of the GitLab version control and continuous integration systems.

Feb 12 – Jul 12: BAE Systems Detica, Guildford   *Senior Consultant Engineer*
Jun 09 – Feb 12   *Consultant Engineer*

Detica's Electronic Systems Group (ESG) designs, builds, installs, and supports world-class bespoke hardware and software solutions for the defence and intelligence sector.

- Worked as an embedded software engineer developing low power high performance systems using C and C++.
- Construction of bespoke Linux based operating systems for embedded devices.
- Design, implementation, and testing of RF data communication and software defined radio

systems.
- Design and implementation of DSP, compression and error correction algorithms in assembly language.
- 3D CAD design of custom mechanical housings.

Aug 07 – Jun 09: Cornerstone Church, Kingston, Surrey   *Leadership Apprentice*

Member of a 2 year leader apprenticeship scheme developing the following skills:
- Clear and memorable public speaking and teaching.
- Leadership and Management of teams of church volunteers.
- Project Management of church events.
- Interaction in small groups and teaching one-to-one.

Jun 07 – Aug 07: Harmony Medical (UK) Ltd.   *Embedded Developer*

Harmony Medical is a leading international specialist and distributor of acupuncture and related medical products.
- Designed and implemented the firmware for the IWander electro-therapy system – C firmware for the Jennic JN5121 Wireless Microcontroller featuring a graphical LCD menu interface and wireless control of therapy nodes in a 64kB ROM.
- Took a lead role in designing the base unit's electronics.

Jun 06 – Sep 06: Mode Lighting (UK) Ltd.   *Embedded Developer*

Hertfordshire based Mode Lighting are a leading manufacturer of electronics for architectural lighting. Products include lighting control systems for incandescent, cold cathode and LED lighting systems.
- Designed and implemented the firmware for the DMX ColourStyle 512 Lighting Controller Unit – Bare-metal embedded C++ application for the FreeScale ColdFire featuring an animated iPod- like LCD menu framework, a DMX and analogue lighting sequencer system with sound- to-light support, a file system for flash storage, with Telnet and HTTP interfaces.

Jun 04 – Sep 04, Jun 05 – Sep 05: Control Developments (UK) Ltd.   *Developer*
Aug 02 – Aug 03:   *Year in Industry Intern*

Oxfordshire based Control Developments (now Jetter (UK) Ltd.) develop and manufacture advanced industrial electro-hydraulic control systems.
- Developed the Dorman Long DL-P40 software – an MFC application for controlling, via CAN, a fleet of up to 40 hydraulic jacks used for raising structural loads weighing 20,000T or more. The application was first used to raise the roadway sections of the Sutong Bridge over the Yangtze River, the largest cable stayed bridge in the world.

Education

- 2003-07:   Imperial College Mechanical Engineering (M.Eng) – 2:1 degree
- 2002:   A-Levels – Maths A, Physics A, Chemistry C, Industrial Design C
                  Abingdon School, Abingdon, Oxforshire

Contact & Personal Details

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