

Dean Camera

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SUMMARY

Electronics engineer with a strong focus and love for resource constrained embedded software development, seeking new opportunities.

SKILLS

- C Programming, for both multi-core POSIX and bare-metal embedded environments
- Good knowledge of Atmel AVR and ARM Cortex-M series architectures
- Specialist in USB firmware development
- Git, Subversion SCM tools
- RTOS and RTOS-less application design
- GNU Make, GCC and IAR toolchains
- Basic C#, Java, Python and .NET framework development skills
- Customer support, both on-site and remote

EDUCATION

Bachelor of Computer Science/Bachelor of Electronics Engineering
La Trobe University, Bundoora, Victoria, Australia

Victorian Certificate of Education
St Helena Secondary College, St Helena, Victoria, Australia

EXPERIENCE

LIFX / LIFI Labs Inc. 2014-Present
Embedded systems firmware engineer at LIFX, part of a small four person firmware team developing next-generation WiFi and 802.11-based mesh radio IoT consumer products from the ground up, using a variety of ARM based technologies and toolchains. This position has a high emphasis on self-directed problem solving and a strong focus on meeting deliverable dates.

As part of this role, I helped my team develop, test and ship several 1.x point releases as well as the major 2.x firmware re-write for the LIFX Original bulb and new LIFX Color 650. In addition, I assisted our team to develop and deploy the firmware for the new LIFX LCM platform, as used in the newly shipping LIFX White 800 product.

Duties include:

- Development of high level feature modules for preemptive RTOS, cooperative RTOS and bare metal environments for several ARM Cortex-M3/Cortex-M4 based systems
- Design, development, unit testing and integration of hardware abstracted product cores into multiple physical and emulated platforms
- Development of multiple cross-platform, highly multi-threaded (Linux/BSD/MacOS) product emulators and various product utilities in C
- Development and integration of low level drivers for both bare-metal and embedded operating systems
- Minor Android/Java development (UI front-end and SDK backends)
- Release testing and QA of firmware binaries before distribution to end customers

Atmel Norway AS 2012-2013
Applications engineer at Atmel Norway, developing demonstration firmware, low level peripheral drivers, and assisting customers with their commercial designs. Duties included:

- Maintenance and feature development for a very large (3.5M/LOC) in-house framework covering multiple microcontroller architectures
- New Product Introduction (NPI) specification and firmware development
- Customer support, both on-site and remote (telephone and email) for small and large customers
- Stack integration and porting between multiple microcontroller architectures

- Customer application development and support
- Training of customers at Atmel “Tech on Tour” seminar events
- XML stylesheet transformations between Doxygen and Docbook technologies for automated documentation generation in multiple output formats

Atmel Norway AS 2011
 Three month paid internship working with the Atmel AVR Applications group, developing embedded systems software. Duties performed included:

- Collaborated in a software engineering team to develop and test a commercial embedded microcontroller framework
- Designed and implemented a USB gateway firmware for use in a line of prototype and demonstration boards manufactured by Atmel
- Developed a C# host application for use with the USB gateway firmware, for dynamic device configuration
- Wrote end-user technical documentation to supplement the USB gateway firmware and host application
- Assisted in the scripting and production of training videos for a new version of the Atmel AVRStudio IDE development software
- Performed ESD analysis on a prototype development board to diagnose the source of an ESD failure

La Trobe University 2010, 2011
 Lab demonstrator for a set of general and embedded C programming classes, assisting Masters level students with a set of pre-written laboratory tasks. Required the use of public speaking, training and time management skills, in addition to a good knowledge of the languages and environments being demonstrated.

AWARDS

Soanar Plus Prize for Best Use of Embedded Microcontroller 2011
 Awarded in my final University year for my Bluetooth ExplorerBot Bachelor Thesis project, in which I designed and implemented a low resource usage Bluetooth 2.0 communications stack into a small prototype robot capable of remote movement and sensor acquisition.

PROJECTS

LUFA - The Lightweight USB Framework for AVRs 2008-Present
 USB 2.0 compatible communications stack, designed for the Atmel AVR 8-bit microcontrollers (with experimental ports to other AVR architecture variants). Contains support for multiple USB classes (HID, CDC, Mass Storage, Printers, etc.) in both On-The-Go reduced host mode and in device mode.

Open source under an MIT license, with an optional commercial licensing available. Popular with its own support community and integrated into the Atmel Studio 6 IDE as a native extension it has been used by thousands of people and built into dozens of commercial products.

For more information see <http://www.lufa-lib.org>.

ExplorerBot Embedded Bluetooth Stack 2011
 Embedded Bluetooth 2.0 compatible communications stack, written in C, and designed to be suitable for extremely resource constrained environments. Test implementation is a small two wheeled robot with multiple sensors, which can support simultaneous connections to a PC (for sensor logging) and a Mobile Phone, Wiimote or PS3 controller for remote control.

For more information see <http://www.fourwalledcubicle.com>.

REFERENCES

Available upon request.