

Kevin N. Haw

<http://www.KevinHaw.com>

Objectives and Interests

To obtain challenging employment as a software engineer, preferably programming embedded systems. Willing to perform in a technical leadership position.

Synopsis of Experience

Creative problem solver and team player with extensive real-time embedded systems software development experience. C, C++, Python, Perl, Javascript, and assembly for various processors. Familiar with ARM, MIPS, x86, Power PC, 8051 and other processors. Developed device driver, kernel, and application software for Linux, Solaris UNIX, and other real time operating systems. Experience with low level interfaces to hardware devices: DMA hardware, embedded microcontrollers, FPGAs, UARTs, serial flash devices, etc. Experience with code development and management tools: Eclipse, gcc, make (UNIX and Windows), shell scripts, Perforce, CVS, Subversion. Wrote applications and tools for Windows and UNIX platforms. Taught undergraduate and extension courses in UNIX for California State University, Fullerton. Well versed in software requirements specification, design, code, test, and formal qualification. Experienced in UML software design tools and techniques. Numerous awards for process improvement initiatives. Two Master of Science Degrees: one in Software Engineering and one in Computer Science. A good mix of programming experience, leadership roles, and instructional knowledge gives me unique a perspective on software development, letting me see it from both the developer driven, low level and customer driven, "big picture" viewpoints.

Professional Experience

***Staff Software Engineer, Broadcom Corporation. Irvine, California.
March 2011 to Present.***

- Software engineer for Broadband Communication group, supporting embedded Linux multiple processor core "platform on a chip" Digital Subscriber Line (DSL) and Ethernet Passive Optical Network (EPON) modems and routers for domestic and international markets.
 - Worked on bonded DSL line drivers for Asynchronous Transfer Mode (ATM) and Packet Transfer Mode (PTM) DSL traffic, allowing doubling of end user bandwidth over existing copper infrastructure. Redesigned interrupt handling of driver for MIPS and ARM platforms to use dedicated thread for receiving packets to offload processing from interrupt context.
 - Redesigned ATM bonding autosense function, replacing legacy design in favor of optimized state machine. Implemented portions of Broadcom's proprietary ATM Nitro™ mode.
 - Fielded customer support requests from throughout the world for customized patches, aid in customizing Broadcom reference software, and capture of feature requests. Enhanced debug utility capabilities to allow for better diagnosis of problems from customer developers. Corrected bugs in debug "port mirroring" feature.
 - Ported entire existing Linux source code baseline (kernel, driver, and userspace code) for new line of EPON chips. Tested using proprietary gate level simulator and then worked on "bring up" team with original delivered silicon. Developed guides and checklists to document process for subsequent product line efforts.
 - Added extended network traffic statistics to Linux kernel: multicast packet and byte counts, unicast and broadcast packet counts. Modified drivers for Ethernet, network bridge, ppp,

vlan, ATM/PTM, and proprietary packet accelerator and integrated with **ifconfig** utility and web statistics reporting mechanism.

- Wrote Linux driver for MIPS core to load dedicated EPON MAC and manage DMA communications between both cores.
- Implemented field download for new and legacy EPON MAC products.
- Ported, enhanced, and maintained embedded EPON MAC 8051 source tree for internal build process and source control.
- Integrated JFFS2 flash memory file system for use on embedded Linux platform.

***Senior Software Engineer, Boeing Company. Anaheim, California.
December 2003 to March 2011.***

- Software engineer for Fedora Redhat Linux and Solaris UNIX platforms for real time acoustic processing on P-8A Multimission aircraft, aircraft trainer, and foreign sales follow on products.
 - Implemented (design/code/test) acoustic data transfer manager to process 64 channels of mission critical acoustic data over gigabit Ethernet LAN in real time. Modular design, object oriented methodologies, and C++ allowed for later expansion of product to other platforms and vendors.
 - Rewrote NATO specification for static acoustic data storage as streaming TCP/IP protocol, which served as a primary driver for \$6 million worth of subcontracts.
 - Implemented software application to control, manage, and diagnose two different vendor units, a 64 channel RF receiver and a high capacity data recorder.
 - Created a Python maintenance utility to control an acoustic data recorder over TCP/IP.
 - Used rapid development techniques with HTML/CSS and Javascript to quickly prototype and test operator interface changes.
 - Coordinated interface development with acoustic data receiver and recorder subcontractors.
 - Used Python testing framework to test hardware simulator for aircraft system trainer.
- Developed technical proposal for expendable acoustic sensor for littoral surveillance.

Formal Education

***Master of Science Degree in Software Engineering, California State University, Fullerton.
Fullerton, California.***

- Capstone project "Protecting Sensitive Data While Outsourcing Software Development Projects" and my white paper "Comparison of Version Control Systems for Software Maintenance" are available at my personal website, KevinHaw.com.
- Member of Upsilon Pi Epsilon honor society.

***Master of Science Degree in Computer Science, California State University, Fullerton.
Fullerton, California.***

- Emphasis in hardware interface topics and object oriented design.

Bachelor of Science Degree in Computer Science, minor in Mathematics, California State University, Fullerton. Fullerton, California.

Side Projects

- As "Northcott Consulting," wrote recreational Android applications ("AD&D Stats Quiz", "ShareTimer") available at Google Play online store.
- Numerous other web based and hardware projects at personal website, KevinHaw.com.