Quang Phan
Senior Principal Software Engineer - Broadcom Corp

Irvine, CA 92620
qphanhuy8_ivj@indeedemail.com - (949) 241-5841

Seeking position in software/firmware development or related areas that requires extensive experiences and knowledge in various software/firmware technologies. Flexible in area of assigned work. Most interested in working with a team or leading a team to define, develop, and deploy products/solutions to meet company business goals.

WORK EXPERIENCE

Sr. Principal Engineer
Western Digital   -   Irvine, CA   -   2014 - 2016

Develop embedded Channel firmware for disk drives

Senior Principal Software Engineer
Broadcom Corp   -   Irvine, CA   -   2005 - 2014

1. Software/firmware developer lead for an embedded power management controller based on ARM processor. The deliverables include ROM and software components. Main function of the product is to manage all the power management aspects of a complex SoC for the mobile
platforms. Led the project which includes the following responsibilities:
• Work with the other architecture leads to define the requirements and external interfaces
• Work with the team to define the internal architecture and design
• Design, code and functional test several core components
• Interface with other teams to coordinate the deployment and testing efforts
• Project planning and schedule. Coordinate the releases and bug/defects fixes

2. Developed boot ROM for several complex GPS SoC devices based on ARM processor.
Testing of the boot ROM have been done thoroughly in both FPGA and simulation
environment. The boot ROM supports:
• Boot from SD devices, NOR Flash, and UART.
• Secure boot based on crypto algorithms DSA/RSA using hardware blocks or software- only implementation.
• Fully support system power management suspend/resume features.

3. Ported Linux BSD to several GPS SoC reference boards
• Developed secure second stage boot loader and Linux loader u-boot.
• Worked with the hardware team to bring up the systems
• Developed power management features which include:
- Linux Power Management Framework to support system suspend/resume.
- Ported DVFS (Dynamic Voltage and Frequency Scaling) drivers.
• Ported security drivers into Linux OCF (OpenBSD Cryptographic Framework).
• Port Linux drivers for the system Real Time Clock (RTC) and utilities used for implementing secure boot features such as mkImage (make and sign Image) and
programming OTP (One Time Program) memory used for storing security keys.

4. Developed DVT programs to test several IP blocks in both pre- (FPGA) and post-silicon. The

areas of experience includes:
• Security blocks: Crypto engines, Secure Boot ROM, OTP memory, patchable ROM
• Power Management: System Suspend/Resume, dynamic clock switching, PMU and
Power Management Logic.
• Debug & trace, profiling, IPC, DMA, SD devices

5. Ported RTOS to an ARM Cortex-based SoC for a hard disk controller SoC

6. Worked with vendors to support the internal development team on tools. Established code
build environment and source code management structure for team use. Integration all
firmware components for final firmware checkout on hardware platforms.

7. Worked with customers to support product porting, bringing up hardware, and customization.

Staff Engineer
SimpleTech, Inc   -   Santa Ana, CA - 2002 - 2005

Developer and team leader for development projects such as: Internet/network SCSI storage
(iSCSI), Network Attached Storage (NAS), and video streaming/VOD over IP using MPEG2-TS
format. Responsible for developing embedded firmware and software applications. Worked with partners and
vendors to develop, port, integrate, and test firmware/software for the products.

Engineering Director
Princeton Graphic Systems   -   Santa Ana, CA - 2000 - 2001

Worked with management team to define and launch a new Internet /Entertainment
Convergence division. Worked with partners and vendors to develop, port, integrate, and test
firmware/software for the product.

Engineering Manager/Technologist
Phoenix Technologies Ltd   -   Irvine, CA - 1996 - 2000

Managed the Internet Enabling Group. Projects include: Web-enabled remote management, web
servers and browser for embedded appliance, security.
Lead architect for the Strategic Development Group. Contributed to define Windows NT
strategies for the company. Led a major effort in developing NT application Suites for mobile.

Senior Software Engineer
AST Research, Inc   -   Irvine, CA - 1987 - 1995

Principal software architect/lead for a multi-processor development project. Ported Windows NT to the
AST Multiprocessor systems. Worked with vendors porting the O/S's, drivers, and establishing technical
relationships. Developed and managed core BIOS technologies.

EDUCATION

Certificate in Management Practice for Engineering and Technical Professionals
University of California   -   Irvine, CA
1984-06

BSEE in Computer and Electrical Engineering
University of California   -   Santa Barbara, CA
1979-12

LINKS

https://www.linkedin.com/pub/quang-phan/7/78/461

PATENTS

Method and apparatus for secure processing of cryptographic keys (#Patent #6,557,104)
http://www.google.com/patents/US6557104

System and Method for Securely Utilizing BIOS Services (#US Patent #6,148,387)
http://www.google.com/patents/US6148387