**Qiang Zhang**

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**Education**

**M.S. Computer Science, (Exam-exempted), Beijing University of Technology,** **(2012.9 – 2015.6)**

**B.S. Computer Science, Beijing University of Technology,** **(2008.9 – 2012.6)**

**TECHNICAL SKILLS**

* 5 years of C/ C++ experience, proficient in C/C++ and familiar with Python, solid understand of knowledge about compile, link, load, and so on, excellent debugging capability.
* Skilled with developing firmware, embedded software, and device driver.
* Skilled with Linux programming methods, emacs, gdb, cmake, git, and other used tools, understanding inter-process communication, multi-threaded programming knowledge.
* Skilled with SPI, I2C, UART, USB, PCIe protocols, and relative development of software and hardware.
* Proficient in hardware designing, with 2-years low-speed and 1-year high-speed hardware board designing and debugging experience.
* Familiar with X86, ARM and FPGA computer architectures, have bootloader development experience of UEFI and Uboot, familiar with Linux, WinCE and WES embedded operating system, have porting and customizing experience, understand Android system, have developing and debugging whole system experience using FPGA technology.
* Understand overall structure of SSD and relevant knowledge, proficient in cooperation method with logic department, understand NVMe protocol, experience in  developing MLC & TLC NAND Flash driver, XOR engine driver, layer 3 of SSD firmware.
* Have the ability of project management, skilled with git flow, pre-push code review, coding style, unit test, auto test, continuous integration.
* CET-6, have the ability of writing architecture specification and implement specification all in English.

**Work Experience**

**SSD Firmware Engineer at VIA Technologies, July 2015 -** **Present**

**Project Experience**

**Driver and Layer 3 of SSD firmware Development, August 2015 - Present**

**Designed and implemented firmware for the new generation SSD controller chip.**

* Development of NAND flash driver and XOR engine driver.
* Co-designed and completed the new hardware acceleration module XOR engine with logic colleagues, leading the unit and stress testing of XOR engine.
* Redesign Error Handling architecture, added Shift- Read, LDPC Soft-Decode and XOR recover functions, enhanced error correction capability of the previous three times, integration Empty-Page check, CRC errors and other error handling.

**Remote Diagnosis and Maintenance System for POS, December 2013 - February 2015**

**Cooperated with well-known POS manufacturer, combining hardware and software technology, to provide a real-time fault diagnosis, alarm and remote maintenance system for POS machines.**

* Designed PCIe remote diagnosis and maintenance card hardware with Spartan6 FPGA chip.
* Developed firmware and bootloader of PCIe card.
* Developed UEFI and Windows drivers of PCIe cards.
* Developed diagnosis and network communication UEFI application.

**NFC Smart Card Device, May 2013 - October 2013**

**Add NFC function to POS machines and other equipment with RFID reader, to achieve mobile payment.**

* Designed and simulated NFC antenna coil.
* Developed hardware, firmware and PC software of NFC smart card device.

**The Attractions and Monuments Touring System Based On Google Earth, December 2011 - July 2012**

**Capture motion of user through motion capture hardware, and then use it to control the tour in virtual sites of Google Earth.**

* Designed overall and detailed scheme.
* Designed hardware and firmware of six degrees freedom motion capture node by combining the use of accelerometers and gyroscopes.
* Designed hardware and firmware of Zigbee wireless transmission module.
* Organize and coordinate the team members.
* Developed sensor data fusion and filtering software, customized embedded version of Windows.

**Remote Experiment Teaching System Based On PXA270 Platform, September 2011 - November2011**

**Through a browser to remotely view and control the status of each device of PXA270 platform, sharing the limited experimental platform.**

* Designed overall and detailed scheme.
* Organize students of team to collaborative development.
* Porting Uboot to PXA270 platform, porting Linux kernel and complete the Linux kernel boot.
* Developed Linux drivers of serial port, LED matrix, buttons, 7-segment LED.
* Set up embedded Linux Web server BOA.

**Video Conference System, March 2011 - May 2011**

**Develop a real-time video conferencing system use audio and video codec technology combined with network communication technology.**

* Developed two audio codec module based on G729 and MP3.
* Developed voice activity detection module.

**Awards**

* Win the second prize in *2012 Intel Cup Undergraduate Electronic Design Contest - Embedded System Design Invitational Contest*.