**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, excellent debugging capability, experienced with design pattern.
* Experienced with memory and performance optimization using profiling tools (e.g. gperftools, valgrind).
* Proficient in Machine Learning and Neural Network, familiar with CNN, IMU fusion and Visual-SLAM.
* Experienced with large-scale simulation software and embedded software development.
* Understanding inter-process communication, multi-threaded programming knowledge, skilled with Linux programming tools (e.g. emacs, gdb, cmake, git…).
* Proficient in hardware designing, with 2-years low-speed and 1-year high-speed hardware board designing and debugging experience.
* Familiar with FPGA computer architectures, have developing and debugging whole system experience using FPGA technology.
* Have the ability of project management, familiar with git flow, pre-push code review, coding style, unit test, regression test, continuous integration.
* CET-6, good English technical document writing ability and effective English communication skills.

**Certification**

**Neural Networks and Deep Learning by deeplearning.ai Andrew Ng on Coursera. Certificate earned as grade 97.9 on September 5, 2017**

**Machine Learning by Stanford University Andrew Ng on Coursera. Certificate earned as grade 98.4 on June 16, 2017**

**Work Experience**

**SSD Firmware Engineer at VIA Technologies, July 2015 –** **November 2016**

**Software Engineer at Cadence Design Systems,** **Nov. 2016 -** **Present**

**Project Experience**

**Measurement Dynamic Language Development,** **Apr. 2017 - Present**

**Designed and implemented MDL Monte Carlo result statistics and the new MDL flow.**

* Collect results of each MDL Monte Carlo iteration and process them to get statistics information e.g. variance, standard deviation, skewness.
* Using Event-Driven methods to redesign the MDL flow, in order to complete measure calculation during integrated circuit simulation.

**IC Simulation Front End** **Development, Nov. 2016 - Apr. 2017**

**Maintain and development new feature of SFE who plays a compiler role to IC simulator.**

* Extend WildCardService module to support the net in netlist.
* Implement Lex and Yacc parts of new simulation language grammar feature dotSubckt.
* Design and implement several inner efficiency work tools using Python, e.g. a auto regression test tool which is similar with web crawler.

**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*.