Peiwen Hu
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EDUCATION

COLLEGE OF ENGINEERING, BOSTON UNIVERSITY, MA. [Sept., 2012-May, 2013(Expected)]
- **Degree:** Master in Engineering (Major: Computer Engineering) [GPA:3.7 up to date]

Hochschule für Telekommunikation Leipzig, Germany [Mar., 2012-June, 2012]
- **Degree:** Exchange student/ Bachelor project&dissertation (Major: Informatics) [2/5 point scale(1 best)]

Beijing University of Post and Telecommunications, China [Sep., 2008-July, 2012]
- **Degree:** Bachelor of Engineering(Major: Electronic information Science and Technology) [81/100]

EXPERIENCE

3D PROJECTION MAPPING (October 2011- Mar 2012)
Intern at Beijing Dream Lighting City Culture Development Co., Ltd, China
- Assisted project documentation, inter-team communication.

PROJECTS

C program simulating a simple CPU with self-designed 8-bit Instruction Set (Ongoing)
- Developing a simulator CPU (C++ program) that can read fixed-format instruction file and process.
- Designing instruction set architecture and optimizing the encoding.

Simple motion detection by background subtraction (Nov 2012-Dec 2012)
- Designed a motion detection system based on Xilinx Spartan 3 FPGA, fed directly from a specific camera.
- Implemented camera control using I^2C protocol.
- Optimized the originally floating point algorithm by substituting it with integer computation to fit the constraints of FPGA and avoid precision loose at the same time.
- Implemented VGA display control.

Rock-crawler with Java SunSPOT device and sensors (Sep 2012-Dec 2012)
- Developed localization of the model car by reading radio signal strength from 3 other SunSPOTs with known coordinations, interpreting it to distance values, transmitting to PC base station where it is computed and visualized by Matlab. (Subproject)
- Developed a small wireless swarm network using 5 SunSPOTs each communicating with its master and follower. (Subproject)
- Developed the control of the car between PC and SunSPOT wirelessly, and between SunSPOT and servo.
- Implemented IR sensor, Ultrasonic sensor, light sensor and a wi-fi based webcam on the car.

Digital data transmitter based by Xilinx RocketIO transceiver with Virtex 5 FPGA (Mar 2012-May 2012)
(Idea courtesy Prof. Thomas, Schneider, Lab of high frequency, HfTL, Germany)
- Designed a high speed data transmitter/signal synthesizer, which is able to switch function between pre-configured data and pseudorandom signals generated by linear feedback shift register.
- Implemented the transmitter through RocketIO 3.75GHz level high speed transceiver, to generate test signal for an ultra-high resolution oscillator under development in the lab.

Embedded system coursework project(Sep 2011)
- Implemented basic driver modules on an embedded learning kit based on ARM, communicating with PC through Ethernet.

SKILLS SET

Programming Languages and tools:
- Experienced in C/C++, Java, Matlab, Labview
- Fluent in Verilog and FPGA Designing (Xilinx ISE)
- Knowledge of MIPS assembly language and instruction set architecture
- Git version control

Operating Systems: Mac OS X, Arch linux, Windows
Theory: Computer architecture, Algorithms and data structure, internet&TCP/IP, Information theory, Telecommunication, Wireless communication, Digital logic, DSP, Hardware design workflow, Unix, Embedded systems
Language Skills: English, Mandarin

COURSES

Currently pursuing: Advanced data structure,Enterprise Client-Server Software Systems Design,High Performance Programming with Multicore and GPUs, Introduction to Embedded Systems.

Completed(completed during Master Degree): Computer architecture, advanced digital design with Verilog and FPGA, networking the physical world.

Completed(during Undergraduate Degree): Algorithms and data structure, Embedded system, Computer Operating system, Computer organization & I/O, Digital logic, Digital signal processing, Computer network.