Ben Smith

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Work Experience

Jun 2013 – Aug 2013

Engineering Intern at Miranda Technologies

Verilog Firmware Development

Debuged control firmware in System Verilog for Altera FPGA. System was experiencing unknown issue causing a failure with a particular controller module. Xilinx and Altera debugging tools were extensively used to isolate the bug in a chip control bus' arbitration system. Wrote fix for Veilog HDL that was integrated into code depository distributed to customers.

Mechanic, sales at Bicycle Emporium — Mar 2009 – Current
Boutique bicycle retail

Manager at River Rat Raft Rental — Jun 2008 – Mar 2008
Daily operations and payroll

Mechanic at River Rat Mountain Bike — Jun 2004 – Mar 2008
Bicycle retail

Sound Technician Underground Cafe — Jun 2005 – Jun 2009
Live sound and stage management

Projects

June 2013

Self balancing FPGA robot

PID control system based on Accelerometer

A FPGA based robot balanced itself on a single axis. PID control was very similar to inverted pendulum problem. The system received its feedback via I2C accelerometer.

June 2013

LED brake light design for Hornet Racing

PCB design and validation

Unstable voltage conditions necessitated the design of a constant current source to supply the brake LEDs with reliable power. The Altium EDA suite was used to design a PCB board with surface mount N-FETs and BJTs.

July 2013

Cereal Hack 3

Rapid prototyping competition

48 hour rapid development "hackathon" where sensor interface for Accelerometer, Gyroscope, and rotary encoder were developed. The filtered data was communicated though bluetooth to a host PC and used to create an on screen representation of the users movement. The project took second place when judged by a panel of local industry experts.

Engineering Skills

Programmable Logic	**Altera:** Signaltap, Quartus, Cyclone IV and V SoC, Stratix V NIOS II **Xilinx:** Chipscope, Spartan 6, ISE,
Microcontrollers	**Microchip:** PIC, MPASM, C MPLAB 8 and X **Atmel:** AVR
Laboratory Equipment	**Oscilloscope:** High speed serial integrity testing, Eye diagrams,
Circuit design	**EDA tools:** Altium, DX Designer serial integrity testing, Eye diagrams,

Education

2012 – Present — **Computer Engineering**
Undergraduate
California State University, Sacramento
GPA: 3.5

Coursework — **Electronics:** Network Analysis, Electronics I, Microcontrollers
Software Engineering: Algorithms I, Advanced Object Oriented Programming,

Awards

2013 — **Second place at Cereal Hack 3**
The Hackerlab

2013 — **Deans List**
California State University, Sacramento