Andy Goetz

Portland, OR

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OBJECTIVE

Obtain an entry level position as an embedded systems software and hardware engineer.

B.S. Computer Engineering Magna Cum Laude, graduated Spring 2013, **GPA 3.85**
Portland State University

WORK EXPERIENCE

Embedded Systems Intern June 2013–Present
Daimler Trucks North America
- Developing smart battery charging system for next generation semi-trucks.
- Using Altium to develop schematic designs for prototypes
- Developed RTOS for use in battery monitor on bare metal platform

Research Assistant Winter 2013–June 2013
Portland State University
- Obtained grant to study performance of heterogeneous 3d network-on-chip.
- Using ParadisEO framework to study on-chip network architectures constructed out of heterogeneous link types.

Computer Engineering Intern Spring 2012–Summer 2012
Electro-Scientific Industries, Portland, OR
- Developed control software for high speed ceramic capacitor test equipment.
- Used Computational Intelligence techniques to monitor air pressure in high-speed transport system.

Software Intern Summer 2010–Spring 2012
Intel Corporation, Hillsboro, OR
- Developed software in C#/C++ to automate chipset validation.

Software Developer Winter 2010–Spring 2010
Business Solutions Group, Corvallis, OR
- Used C# and ASP.net to develop dynamic web applications.

LEADERSHIP EXPERIENCE

Secretary of the Oregon Beta Chapter of the Tau Beta Pi Honor Society.
Project leader for 4-person Engineering Practicum.
Project leader for 3-person Engineering Capstone.

SKILLS

Schematic and PCB design for embedded systems
Experience designing with SPI, I2C, UART, and LIN busses
Experience with Windows and Linux environments
Programming in C/C++, Java/C#, ARM/z80/MIPS Assembly, Perl, Verilog

HONORS AND AWARDS

Honorable mention for the *T-16 Audio Synthesizer* in Practicum Competition.
"Spur the Competition Award" for predictor design in Computer Architecture class.
"ECE Outstanding Undergraduate Student" at Portland State University.
Member of HKN Honor Society *Limited to top 25% of Department*
Member of TBΠ Honor Society *Limited to top 12.5% of College*
Member of ΦΚΦ Honor Society *Limited to top 7.5% of University*

Project Descriptions Continue on Next Page

MAJOR PROJECTS

Explored Heterogenous 3d On-Chip Network Design ***(C++, Perl)***
I used evolutionary-programming techniques to evaluate alternative interconnect topologies for on-chip bus designs. This involved heavy use of symmetric multiprocessing to harness the full power of our simulation servers.

Developed a Branch Target Predictor Simulator ***(C++, Perl)***
For the final project of a Computer Architecture class, I worked with a classmate to develop a branch predictor simulator. This project explored several different predictor designs. At its peak, the parallel simulation kept PSU's engineering computer labs pegged at 100% usage. The project won several awards as a part of an in class contest, including the 'Spur the Competition Award', and 'Most Conspicuous Consumption of Computing Cycles'.
github.com/apgoetz/CBTB

Designed and implemented an ARM-based synthesizer ***(C, PCB Design)***
For my Industry Design Processes class at PSU, I worked with a team of 3 other students to design and build a microcontroller-based project. We developed a microcontroller based-audio synthesizer capable of generating up to 6 frequencies simultaneously. Gathered requirements, prototyped solutions, designed a PCB, and implemented all of the firmware in a single, 10-week semester.
github.com/killerfriend/womprats

Developed Linux kernel driver for data acquisition board ***(C, Linux)***
As part of my Linux Device Drivers course at PSU, I developed a Linux kernel module for a USB data aquisition board. This driver was capable of supporting multiple data aquisition boards connected simultaneously.
github.com/apgoetz/linux_labjack

Control System for Servo-Hydraulic Load Frame ***(C, PCB Design)***
For my senior capstone project at Portland State University, I worked with two other students to resurrect a load frame for use by the Civil Engineering department. This load frame consisted of a ten ton press, and required extensive reverse engineering to get under control. I acted as project leader, gathering requirements and developing specifications for the project.
andygoetz.org/loadframe

Developed firmware for pneumatics control board ***(C, C#)***
While working at ESI, I developed firmware features for a pneumatics control board that used computational intelligence techniques to automatically determine if the board was functioning correctly.

References, Code and Writing Samples available upon request