Alex Fuhr

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Objective

A part-time research position working on low-level software, electronics, or computer architecture for the 2016-2017 school year.

Experience

Google – Software Engineering Intern (Mountain View, CA) 5/16 to 8/16
Worked on features to improve a machine learning algorithm for deciding whether to reuse data center parts.

OSU ElectroScience Lab – Undergraduate Researcher (Columbus, OH) 1/15 to 5/15, 1/16 to 5/16
Tested and planned an RF tracking system using a Zigbee mesh network.

Raytheon SI – Computer Science Engineering Intern (Indialantic, FL) 8/15 to 12/15
Researched potential exploits in several native and browser-based applications and worked on internal tools for exploit analysis.

Google – Software Engineering Intern (Mountain View, CA) 5/15 to 8/15
Created, debugged, and tested several new features to Google's iOS mobile ads SDK.

BloomReach – Engineering Intern (Mountain View, CA) 5/14 to 8/14
Created a web application using Java, Play Framework, AngularJS, and MySQL to simplify the retrieval and optimization of data extraction.

Education

The Ohio State University Expected Graduation: May 2017

3.97 GPA, B.S. Electrical and Computer Engineering

Projects (more information and source on Github)

• **WiFinder:** A robot that utilized two ESP8266 modules to drive towards the location of the best Wi-Fi dsignal for a given hotspot.
• **FEH Proteus Robot:** Designed, programmed, tested, and documented a fully autonomous robot designed to peform a series of tasks in a fictional candy factory. The robot won in the competition's elimination round.
• **Laser Harp Hero:** A laser harp capable of playing multiple keys and types of scales and includes a Guitar Hero-style game.
• **Meteor Flies Drone:** A web application written in Meteor that allows many users to control a drone using two different control styles. Won Most Entertaining at Meteor hackathon.

Technical Skills

• C#, Java, Python, C, C++, Objective-C, and CLISP syntax, data structures, common libraries, and version control
• Electrical circuit prototyping, schematic and PCB design with EAGLE and KiCAD
• Electronic communication protocols such as UART, I2C, and SPI, and components such as 555 timers and shift registers
• FPGA design using Verilog and VHDL with Quartus II and Xilinx ISE Tools
• Front-end web development with HTML, CSS, Javascript, JQuery, AngularJS, and Polymer
• Server-side web development with Django, Meteor, and Node.js
• Microcontroller-based electronics using AVR and MSP430
• Security concepts such as buffer/heap overflows, fuzzing, and code injection
• x86, MSP430 and ARM assembly languages and architectures, and CPU design using HDL

Honors and Activities

• **Engineering:** Open Source Club (vice president), Collegiate Web Developers Group (vice president), IEEE, Electronics Club (social chair)
• **Music:** OSU Jazz Ensemble, Art Blakey Combo
• **Awards:** First Place Head to Head, OSU Fundamentals of Engineering for Honors robot competition
• **Designations:** OSU Honors Program, AP Scholar with Distinction
• **Scholarships:** Maximus Scholar, Grasser Scholar, Hendrix Scholar, Mu Alpha Theta, Research Scholar Award

Relevant Coursework

• **Current:** Computer Architecture, Computer Networking, Mixed-Signal VLSI, Computing Ethics
• **Past:** Software I/II, Differential Equations, Advanced Digital Design, Signals, Intro to Electronics, Operating Systems, Microcontroller Lab