Michael W. Stumpf

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EDUCATION:

Penn State School of Engineering Computer Engineering - Bachelors of Science
Penn State Behrend Honors Program
GPA: 3.42, Major GPA: 3.37

SKILLS:

Computer languages
Python, Java, C++, C, VHDL, HTML, CSS, JavaScript, Linux

Computer Programs
Xilinx, MPlab X, Pspice, GIT Android Studio, Visual Studio

ACADEMIC EXPERIENCE:

Embedded Systems Design

- Surface Mount Soldered PIC 18F26k22 development boards
- Programed the PIC in both PIC assembly and C
- Integrated Raspberry PI, EEPROM, and other circuitry using the I2C protocol

Very Large Scale Integration Design

- Learned the basics of digital circuit design using CMOS transistors
- Developed a four-bit adder for the final project using the Magic VLSI layout tool

Introduction to Computer Architecture:

- Extensively studied MIPS RISC processors
- Gained knowledge of pipelining, along with performance issues of different hardware designs

Advanced Digital Design

- Developed Digital Circuits using standard logic blocks using VHDL with a FPGA

Microprocessors

- Introduced to MIPS Assembly, created multiple programs using assembly language only
- Made a Pokémon battle simulator for the final project

Data Structures and Algorithms

- Studied the most efficient ways of handling data such as hash tables
- Used standard algorithms to make programs time efficient

RECENT PROJECTS:

PIC18/ Raspberry Pi controlled Hexapod

- Used NGINX to implement a webserver on a Raspberry Pi to send commands via I2C to the PIC18
- Programmed the PIC18 to interpret the commands and control the 12 servo motors that controlled the Hexapod

ESP8266 Controlled Water Pump

- Connected an ESP8266 to a relay to control a water pump
- The ESP8266 was configured as an access point that enabled any device on the network to control the logic level of the GPIO pins

FPGA Hexapod

- Used a FPGA to create a Hexapod robot controller that used PWM technology to control 12 servo motors
- This design implemented data path and control to enable the robot to have a full range of movement.

Rasp Droid

- Created a Java server to talk to a Python client that communicates using the Bluetooth protocol.
- Enabled a robot powered by a Raspberry Pi to be controlled by an Android app that was custom made for the robot

WORK EXPERIENCE:

Penn State Behrend IT Consultant
August 2015 – Current

- Troubleshoot many types of PC issues students are facing
- Provided IT support to customers face to face and over the phone

ERIE Insurance Future Focus Internship
May 2016 – August 2016

- Assumed the role of project manager/ Developer
- Designed a web application using Servlets to create a tool that monitors web services

ORGANIZATIONS:

National Slovak Society Ambassador

- Contributed blog post to the organization
- Traveled around Pennsylvania to volunteer for different organizations affiliated with the national Slovak Society.

Association of Computing Machinery

- Held the position of secretary in the Fall 2015 to the spring of 2016
- Organized technology workshops to teach students skills they otherwise would not learn in class, such as Python, Bootstrap, and Cyber Security
- Worked with other group leaders to host Behrend's first hackathon