MAURICIO VINAGRE HERNANDEZ
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OBJECTIVE

Senior Electrical Engineering student with a concentration in Embedded Systems, looking for a paid/unpaid (volunteer) full-time job or internship in Software Engineering or Electrical Engineering.

SKILLS AND QUALIFICATIONS

- Ability to use lab equipment: Oscilloscope, function generator and multimeter.
- Experienced in different programming languages: Java, C, MATLAB and Verilog recently, Python, Visual Basic and C++ in the past.
- Embedded Systems experience with Arduino
- FPGA and Modelsim experience.
- Ability to teach technical topics such as Data Structures and Algorithms
- Experience with Dynamic Programming
- Proficiency in Linux and Shell scripting
- Experience with SQL/SQLite

EDUCATION

University of Washington, Seattle, WA
B.S. Electrical Engineering with a concentration in Embedded Systems
Expected Graduation Date: Summer (August) 2017

RELATED EXPERIENCE

Teaching Assistant, Paul G. Allen School of Computer Science and Engineering, University of Washington, Seattle, WA. January 2015 – March 2016.

- Class: CSE 373 Data Structures and Algorithms. Java.
- Taught quiz sections, graded assignments, held office hours, meet with instructor to plan course.

RELEVANT PROJECTS

Electrocardiogram machine (ECG) / Heart Rate Monitor, Introduction to Embedded Systems final project. February 2017

- ECG displayed the heart signal of the user, as well as the heart rate.
- Detected heart problems such as bradycardia and tachycardia based on heart rate.
- Used Teensy 3.1 processor board, LCD screen for display, and a Bluetooth module
- Software used: Arduino

Cycle Detection in a Directed, Disconnected Graph. February 2017

- Used Java to detect cycles in a graph using the depth-first search algorithm (linear time)

Pipeline ARM processor, December 2016

- Used Verilog and Modelsim to simulate a pipeline ARM processor. It included forwarding logic.

T-9 predictive text(like in the old cellphones). February 2016

- Implemented in C. Used the trie data structure and pointers.

Sound Blaster. September 2015

- This java program reverses a sound file that is passed as argument.
- I implemented a Stack in two ways: a resizable array and a linked list.

Word Frequency Analysis Program. July 2015

- Implemented hash tables using two different techniques: Quadratic Probing and separate chaining.
- This java program is given a text file, and keeps track of the frequency of each word.

Shortest Paths. July 2015

- Implemented Dijkstra's algorithm in Java
- This program takes a graph as an argument, as well as two vertices, and outputs the shortest path between those two vertices, as well as the cost.

Elevator. June 2015

- I simulated an elevator using Verilog, Modelsim and a Field Programmable Gate Array (FPGA).