Preston Percival

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EDUCATION

Texas A&M University, College Station, Texas

Bachelor of Science in Computer Engineering (Electrical Engineering Track) with Mathematics Minor - May 2018.

Related Coursework: Engineering Calculus 1-3, Linear Algebra, Discrete Mathematics for Computing, Differential Equations, Linear Algebra of Differential Equations, Mathematical Cryptography, Mechanical and Electrical Physics, Engineering Basics 1 and 2, Programming Design Concepts in C++, Digital System Design, Data Structures and Algorithms, Signals and Systems, Operating Systems and Design, Electronics, Microprocessor Systems Design, Digital Integrated Circuits, Chemistry for Engineers

JOBS

Software Developer - Tenaska Power Services Co., Arlington, Tx

June 2018 - Present

- Full stack developer
    - .NET stack using C# for backend
    - Vue.js stack for frontend
- Responsible for maintaining customer portal website and services to integrate data from power markets across the US

SKILLS

- Extensive experience and application, implementation of algorithms within many different high-level programming languages including:
    - C#
    - C++
    - Java
    - Python
    - Haskell
- Evaluation of algorithm performance in high level languages.
- Experience with web design languages and frameworks including:
    - HTML
    - Javascript
    - PHP
    - CSS
    - AngularJs
    - Vue.js
- Experience with machine learning and pattern recognition.
- Experience with modern cryptography including
    - Modular Arithmetic
    - Public Key Cryptograph and RSA
    - Factoring
    - El Gamal
    - Rabin-Miller
    - Solovay-Strassen
    - Generators
    - Pohlig-Hellman
- Extensive experience in developing countless programs using Visual Studio and many other IDEs.
- Development experience using Xilinx tools.
    - Wrote programs using VHDL in the Xilinx environment including:
        - Registers
        - Adders

        - Arithmetic Logic Units
        - Single Cycle Processors
    - Debugging hardware representation programs and analyzing the waveform patterns of their logic.
    - Created a Linux Kernel and device drivers for an IR remote
    - Running and testing hardware representations FPGA with verification of logic. Debugging hardware representation programs and analyzing the waveform patterns of their logic.
    - Building computer architecture from the gate level up
- Knowledge and experience building circuits from electrical components such as Operational Amplifiers, Bipolar Junction Transistors, diodes, and CMOS
    - Ran simulations in for many different circuits with SPICE software (Multisim and LTSPICE)
- Experience with software and firmware development cycles, as well as team based development methods such as agile development.
    - Used tools such as burn down rates to estimate development completion and organize teams.
    - Worked with many developer teams of sizes varying from 2 to 6 or more and dealing with the conflicts and intricacies that come with such team sizes and developing on deadline.
- Experience with VSLI Design and Cadence Software Suit
    - Building processor components such as adders, flip flops, logic gates, and registers at the nanometer, transistor level
    - Optimizing transistor sizing and determining logical effort

PROJECTS

- Created and maintained a Raspberry Pi webserver to keep track of all of the utility usage in a household through a sensor network
    - Installed Apache2 webserver software along with PHP module
    - Created MariaDB (fork of MySQL) database and created tables to store data
    - Created HTML website hosted on Raspberry Pi connected to database via PHP with CSS formatting to display all of the data collected
    - Created a JavaFX GUI to display all of the utility data locally
- Created a multi-stage power amplifier for an 8 Ohm, 5-Watt speaker conforming to low distortion and high gain specifications
- Project to use machine learning and artificial intelligence to distinguish English letters
    - Built a neural network that was designed to be trained to recognize patterns in our alphabet.
    - Neural network was trained using machine learning. At the end of the project, was able to distinguish alphabetical characters.
    - Created JavaFX GUI to provide easy to use interface
- Implemented RSA encryption in python
- Compiled Linux Kernel and ran user created kernel modules to take TV remote input from an infrared detection circuit that I built by demodulating the signal via pulse width modulation via a Verilog program on a FPGA