Miguel Tirado

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Qualification Summary

- BS Computer Engineering –*December 2020*
- Strong team, communication and organization skills developed through work experience, technical projects, and professional activities
- ***Programming Languages:*** Java, C, Verilog, Python, VHDL, Assembly (x86 and MIPS)
- ***Hardware:*** FPGA, Raspberry Pi, Arduino, Parallax Propeller Board, Analog Discovery, Oscilloscopes, Sensors
- ***Software:*** PSpice, Multisim, Arduino IDE, MS-DOS, Simple IDE, Unix/Linux, Putty, VM Ware, Quartus Altera II, Xilinx ISE Design Suite, MS Office, MS Visio, GNU Debugger

Education

BS, Computer Engineering • CSU, Sacramento • Overall GPA 3.72 | Major GPA: 3.74 • *December 2020*

Related Coursework:

Introduction to Systems Programming in UNIX	Programming Concepts and Methodology I & II	Computer Hardware Design
Discrete Structures	Data Structures and Algorithm Analysis	Adv Computer Organization
Operating System Principles	Advanced Logic Design	Signals and Systems
Network Analysis	Computer Interfacing	CMOS and VLSI Design
Electronics	Computer Networks	Senior Design I & II

Projects

Senior Project Design – Pedestrian Safety Device *Spring 2020*

Member of a 4-person team that is developing devices that will assist in the safety of low-speed personal vehicles such as bicycles and scooters. The devices will communicate with each other as a mesh network and pass crucial data to the collision detection system. The collision detection system uses coordinates and the velocity of the vehicles to calculate the time to collision and notify the user if there in danger. Personally, responsible for leading the team for one quarter as well as developing the communication aspect by using ESP 32's to communicate with each other and developed a 150-line C communication program.

CMOS and VLSI Chip Layout Design *Spring 2020*

Designed 0.18um chips (NAND, Inverter, and Ring Oscillator) that use CMOS and VLSI concepts, methodologies, and techniques. The project had requirements such as midpoint voltage values, rise, and fall time values while following the design rules of the CMOS process. The chips were tested and validated by going through and DRC and LVS chip layout verification.

16-bit MIPS Processor, Verilog *Fall 2019*

Led a two-person team through the design, development, and implementation phases of 16-bit microprocessor components. The processor specifications were based on the professor's criteria but followed MIPS format as a reference. Behavioral and combinational modeling in Verilog was used in the design of the processor's components.

Java & C Projects *Fall 2017*

- Developed a word count program with over 900 lines of code as a class final project with a team of 2. The user can obtain the number of words inside a txt file by frequency or by unique words and can choose the type of algorithm to perform the task. Responsible for developing AVL trees and binary search trees onto the program. *Java Program*
- Designed a kernel module with 135 lines of code that would store a person's birthday inside a linked list and then sort the list by oldest to youngest. The module would also allocate and deallocate memory to save space. *C Program*

Experience

Embedded Systems Intern ***Network Sound, Sacramento*** *12/2019 – 3/2020*

Helped the company transition from FPGA use towards microcontrollers by developing C and Python scripts that would allow wireless capabilities and control towards new audio products. Developed programs that would allow UDP communication with the audio product and the user.

Director of Academics ***Society of Hispanic Professional Engineers*** *08/2019 – 05/2020*

Responsible for helping 40+ members achieve higher grades by promoting support services, conducting workshops, study sessions, and providing tutoring. Worked alongside a team of 12 student officers to improve and empower engineering students on campus

Mentor ***MESA Professional Mentor Program*** *09/2018 – 05/2019*

Helped a student towards their first year in college by being a mentor and leader. Lead the student to pursue higher grades and extracurricular activities. Provided tutoring, guidance, and support through difficult courses.

Professional Activities & Accomplishments

Member: Tau Beta Pi Honor Society, SHPE (Officer 1 year), IEEE, MESA Engineering Program

Awards: HITEC Foundation Scholarship, Cien Amigo IME scholarship, CSUS ASI Scholarship, Deans Honor roll (4 years)