Alvin Ma

(510) 856-8689 ♦ alvinma111@gmail.com

OBJECTIVE

To obtain an internship or co-op position to further improve my skills and pursue a full time career at the industry level.

EDUCATION

San Jose State University San Jose, CA
Bachelor of Science, Electrical Engineering *Expected Dec 2017*
Bachelor of Science, Computer Science

RELEVANT PROJECTS

Space Invaders 8 Bit Game Using FPGA and PicoBlaze *Fall 2016*

- Worked in a team of two in the development of the classic game, Space Invaders, using FPGA and PicoBlaze.
- Programed a Digilent Basys3 board using Xilinx Vivado IDE, Verilog, and Assembly Language.
- Conducted optimization to obtain a functioning game within an 8 MB size limit.
- Implemented button press and switches for user inputs throughout the process of the game.

PID Motor Control with Embedded Systems *Fall 2016*

- Used Embedded C and Assembly Language to program a PID motor controller.
- Utilized Atmel Studio IDE to program an ARM Cortex-M0+ SAM D20 Microcontroller.
- Used keypad to control speed and position of the motor based on the user input.
- Used multiple interrupts to read tick segments, calculate the speed, and display values on the 7-segment display.
- Used PWM to measure the RPM of the motor and applied PID to control the motor accurately.

Scientific Calculator Design with Embedded Systems *Fall 2016*

- Used Embedded C and Assembly Language to program a scientific calculator.
- Utilized Atmel Studio IDE to program an ARM Cortex-M0+ SAM D20 Microcontroller.
- Configured keypad with a voltage matrix using transistors and voltage inputs to create specific button functionality.
- Created De-Bouncing feature to avoid multiple, rapid, or accidental button presses and keep stable displays.

Restaurant Reservation Application *Fall 2015*

- Used Java Programming Language to program a restaurant reservation application.
- Application schedules and reserves specified tables in a pre-set room configuration according to trends of time spent eating.
- Created application's reservation system based on a round robin algorithm.
- Implemented a GUI for customer's selection and simulated the program using random eating times for a typical customer.

Path Following Hovercraft *Fall 2015*

- Worked in a team of two to design and implement a hovercraft using C programming and an Arduino microcontroller.
- Created multiple state machines in order to keep sensors and fan rotations in sync with the given path.
- Implemented hit detection avoidance application to the hovercraft during free drift mode.

Java-Based Maze Game *Fall 2014*

- Led a team of five in creating a computer application game using Java programming language.
- Designed and implemented a Rogue-like Maze game with implementation of different Object-Oriented strategies.
- Conducted objects creation and the decisions made by enemies to prevent the user from successfully completing the game.
- Constructed room size, fog over undiscovered areas, and ensuring path connections between rooms.

Remote Control Airplane *Fall 2013*

- Worked in a group of five and took the role of circuit design and system controls.
- Designed and implemented a circuit board that controls the flaps of the airplane wings, propeller, and motors for the wheels.
- Implemented communication between Controller and RC plane.
- Resulted with the plane to take flight and maintain levitation.

RELEVENT COURSEWORK

Computer Science: Data Structures and Algorithms, Network Security, Network Communications, Object-Oriented Programming, Operating Systems
Electrical Engineer: Circuit Design, Digital Logic Circuit Design, Embedded Systems, Fundamentals of Internetworking, Microprocessor Based System Design

SKILLS

Android Development, AutoCAD, Cryptology, Embedded Systems, FPGA, Information Security, Networking, Machine Learning, PCB Design and Fabrication, Linux/ Unix, MATLAB, Programming Languages (Assembly, C, C++, C#, Embedded C, Python, Java), Verilog, Web Development (HTML, CSS, JavaScript)