JUSTIN CHANG

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EDUCATION

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Objective: Looking for Summer 2019 opportunity (research or internship).

B.S., Computer Engineering Major (Firmware Engineering) **Expected Graduation: June 2020**

- **Cumulative GPA:** 3.78
- **Honors:** Dean's Honor List, Upsilon Pi Epsilon, Tau Beta Pi, and Eta Kappa Nu honor societies member.

WORK EXPERIENCE

RESEARCH Intern **6/2018 to Present**

Electrical and BeagleBone Intern at UCLA IGPP

- Worked on Debian/Ubuntu interface for Beaglebone and wrote bash scripts to improve functionalities
- Helped with PCB schematic routing (Altium) and Assembly Instruction Data Sheet for designs such as SILMAG, Brassboard, Psyche, as well as parts management for PCBs such as ICEMAG, etc.
- Read analog and digital oscilloscope current vs frequency waves for different valued RLC circuits to better match FPGA clock frequencies on several boards.

Engineering 96C Mentor **4/2018 to Present**

- SensorTile (embedded programming) mentor for Computer Engineering course
- Worked on improving tutorials and writing programs to interact with the sensors on the SensorTile.

RELEVANT COMPUTER/PROJECTS/SKILLS

Relevant Course List: (CS, Math, EE)

C++, Data structures, Algorithms and Complexity Analysis, Machine Learning, Probability Theory, Circuit Theory, Signals and Systems, Internet of Things, Operating Systems, Telecommunications, Feedback Control

Morse Code Decoder, Neural Network (Digital Design)

- From scratch, created a neural network to decode an input of "short", "long", and letter gaps to a letter.
- Used Verilog, FPGA to synthesize on basys3 hardware, and created modules from simple logic gates.
- Structured a control FSM Datapath controller that calculates weighted likelihood values to select code.

Physical Therapy Motion Tracker

- Team project, we created a system that tracks how well a bicep curl, shoulder press, is done.
- I used the Intel Edison, 9DoF Sensors, FANN (Fast artificial Neural Network) ML library to implement.
- I looked at gyroscopes, accelerometer, and projected values to obtain better data to train a neural net, and wrote some C code that parsed data into CSV notation.

Skills (coding)

- C++,Java, C, Matlab, Javascript, Python, HTML, Verilog, Swift, C#

IEEE Micromouse/OPS (Maze Traversing, Designed and Programmed Robot)

- Micromouse maze traversing robot, implemented with PID using gyroscope, on axis encoders, IR sensors in feedback loop, Arduino Nano/STM32 MCU, H Bridge, building the system from picked/created parts for routing PCB (Eagle).
- Experience with soldering, Arduino/MBed IDE, Motors, DMM, Oscilloscopes

LEADERSHIP/VOLUNTEERING ACTIVITIES

UCLA HKN (Eta Kappa Nu Workshop Officer) **12/2017 to Present**

- UCLA HKN Workshop Officer, held intro and advanced workshops on Matlab, Verilog, (Numpy) Python.
- Workshops covered concepts such as Machine Learning (supervised with seed and gradient descent approach/unsupervised using k means clustering), image processing (using 2D convolutions for filter)