**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**

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| --- | --- |
| **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)