**William Chong**

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**EDUCATION**

**University of California, Los Angeles Expected Graduation Jun. 2022**

B.S., Computer Science, 3.5 GPA

* **Relevant Coursework:** Algorithms and Complexity; Operating Systems; Neural Networks and DL; Neural Signal Processing;Systems and Signals; Bioinformatics; Computer Architecture; Digital Systems Logic; Engineering Design

**TECHNICAL SKILLS**

**Software:** C, C++, Python, R, Bash, Linux/Unix environments, Git, PyTorch, Keras, TensorFlow,

MIPS and x86 Assembly, G-Code, Flask, JavaScript, TCP/TLS, Embedded Systems, Agile development.

**Hardware:** Circuit/PCB Design, Verilog, CAD, Soldering, Microcontrollers, 3D Printing.

**WORK EXPERIENCE**

**NextFlex – Software Engineering Intern Jun. 2020 – Present**

*Flexible Hybrid Electronics Manufacturing Institute*

* Demonstrated and implemented Machine Learning models on flexible, Edge devices. Worked with Zephyr RTOS, ML experiment tracking tools, and data capture over Bluetooth.
* Improved circuit inspection process throughput by 10 times by developing an in-house automated inspection system
  + Automated the previously manual inspection process with a PyTorch image classification model running on a microcontroller system, which identifies defects and tags them with an appropriate label.
* Wrote Camera and Motion System control interfaces with Python and G-Code; prototyped a user GUI with Flask.

**UCLA Biomedical Engineering Society - Design Team Project Manager**

*Robotic Arm with 3D Scanner* **Jun. 2021 – Present**

* Creating a motion system with a 3D scanning end-attachment to generate high-quality scans of body parts.
* Leading a team of 5 students to learn and apply Computer Vision, ML, and robotic movement towards this goal.

*Immersive Sleep Device* **Apr. 2020 – Jun. 2021**

* Led a team of 10 students to engineer a novel device to improve general sleep quality and flag indicators of sleep-related diseases and disorders by monitoring physiological parameters (heart rate, blood oxygenation, movement).

**ENGINEERING PROJECTS**

**Examining Use of Convolutional Neural Networks in Universal Accelerators Mar. 2021 – Jun. 2021**

* Extended on ACT Lab’s work on using Neural Networks to replace and accelerate “approximable” code workloads.
* We simulated the energy, time, and accuracy costs of using modern NN architectures, especially various CNN designs, on a SOTA CNN accelerator simulator. Comparatively evaluated on JPEG, FFT, and Sobel benchmarks.

**Automatic Ethanol Sterilizer Jan. 2020 – May 2020**

* Designed and prototyped an automatic ethanol sprayer for lab usage with 5 other Biomedical Engineering Society members. The spray mechanism is actuated by a distance-sensing IR sensor, and includes variable spray frequency.
* Created spray mechanism using CAD and 3D printing, assisted with circuit design and iterative testing, and translated circuit design to a PCB design with Autodesk EAGLE.

**AFFILIATIONS**

* **Biomedical Engineering Society***,* *Design Team Project Manager, Design Team Member.* **Sept. 2018 – Present**
* **UCLA DevX***, BruinBot Hardware Team Member.* **Oct. 2020 – Jun 2021**
* **Institute of Electrical and Electronics Engineers (IEEE)***, Open Project Space Member.* **Sept. 2019 – Jun 2020**

**INTERESTS**

* Biomedical Devices, AI, Embedded Systems, Computer Hardware, 3D Printing, Cooking, Piano, Drawing