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