Andrew K. Heng

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Education

University of California, Santa Cruz — Santa Cruz, CA

B.S. Computer Engineering | Concentration: Digital Hardware — *Sept. 2019 – June 2023*

- Achievements: Undergraduate Dean's Scholarship; Dean's Honors, Spring 2019
- Affiliations: Acquire A Cappella (President)

Technical Skills

Programming Languages: C, C++, VHDL, Verilog, MIPS, Python, MATLAB, Javascript
Software & OS: Vivado, PSpice, MPLabX, Arduino, KiCad, Linux, Git, Fusion 360, Photoshop, Premiere Pro
Additional: Soldering, Digital Circuit Design, Oscilloscope, Signal Generator, Product prototyping
Languages: English, Thai, Spanish (Elementary)

Projects

Portable Climate Display | *C++, Arduino, KiCad, Cura, Fusion 360* — Mar. 2023

- Prototyped a device that displays room temperature, humidity, and CO2 levels on an LED matrix display.
- Fabricated prototype by writing C++ code on Arduino microcontroller.
- Used KiCad to create custom PCB, along with custom 3D printed enclosure.

slugpoints.tech Website | *Hackathon Winner, Javascript, CSS, HTML* — Feb. 2023

- Developed dining hall swipe counting website for UCSC students.
- Worked in a team of 4 to develop and deliver for CruzHacks 2023 Hackathon within 48 hours.
- Won "Best Slug Hack" category award

FPGA Game "Frog Frenzy" | *Verilog, Vivado* — May 2022 – June 2022

- Developed and implemented a clone of video game Flappy Bird using Basys 3 Artix-7 FPGA
- Programmed a VGA display driver in Verilog through Vivado, interfaced with VGA, 7-segment display and LEDs.
- Learned the importance of specializing individual component I/O by making modules and interconnecting with a top-level module.

UNO32 Toaster Oven | *C, UART* — May 2021

- Created virtual toaster oven using chipKIT interface for UNO32 board.
- Implemented state machine in C to maintain oven state, programmed multiple modes to display on OLED screen.
- Strengthened knowledge of working in IDE environments through MPLAB X, familiarized with UART communication protocols

Experience

Student Life and University Guide — Dec 2021 – Present

UC Santa Cruz Admissions — *Santa Cruz, CA*

- Provided walking tours of UCSC campus to prospective students, and assisted tour and event coordinators with international and administrative tasks.
- Developed excellent communication and organizational skills, as well as finding new methods to understand the university's history, programs, and resources.
- Proven ability to handle large groups and answer complex questions. Strong ability to work in a team and collaborate with other staff.

Class Grader / Reader: CSE 80N Introduction to Networking — Dec 2021 – Present

UCSC Baskin School of Engineering — *Santa Cruz, CA*

- Assistant to professor and graduate students as class grader for CSE 80N: Introduction to Networking
- Evaluated and provided detailed feedback on student assignments and assessments.
- Worked both independently and under guidance of professor and graduate instructors.