Andrew Cai
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Education

- **Cornell University** — Ithaca, NY
  B.S. in Electrical and Computer Engineering and Computer Science — Sep. 2019 - May. 2023
  - major G.P.A.: 3.82

Skills

Languages: Python, C, Verilog, Assembly, Java, MATLAB, C++.

Libraries: PyMTL, Keras, Pytorch.

Tools and Software: Altium Designer, git, shell.

Relevant Coursework: Computer Architecture, Embedded Systems, Operating Systems, Computer Graphics, Data Structures and Functional Programming, OOP, Discrete Structures, Digital Signal Processing. in-progress- ASIC Design, Microelectronics, Probability and Inference.

Experience

- **Cornell Electric Vehicles** — September 2019 - Present
  - Built Data Acquisition PCB for logging IMU, GPS, and energy consumption data onto SD card and sending it over Bluetooth to phone for server upload. Chose and implemented sensors for autonomous system. Began introduction of CAN protocol over I2C and SPI.
  - Directed group designing Battery Management PCB for monitoring and ensuring battery cell voltage balance. Simplified PCB by selecting BMS IC. Fixed SPI communication issues between BMS IC and microcontroller.
  - Designed PCB's in Altium Designer and programmed in C/ Arduino.

- **Biological Systems Lab, New Mexico State University** — May 2021 - August 2021
  - Assisted as student researcher in Professor Joe Song's lab developing algorithm to find optimal clustering in circular univariate data.
  - Accelerated development of linear time C++ program for assigning points in circular data to clusters.

- **RISC V CPU** — Aug 2021 - December 2021
  - Collaborated with group of students to build RISC V CPU in Verilog.
  - Implemented CPU core and cache system.
  - Generated benchmarks to analyze tradeoffs between single vs multicore CPU configurations and cache associativity.

- **Reddit Shopping Notifier** — Aug 2021 - December 2021
  - Developed Python program to automate process of finding used products on Reddit.
  - Implemented fuzzy text matching and natural language processing to find posts based on user-defined keywords from several different subreddits.
  - Set up program with MongoDB and Heroku.

Awards

- Hilton Hospitality Hackathon Winner 2021, Dean's List.

Interests and Non-technical Skills

Interests: Soccer, Photography, Pool, Music, HiFI Audio Devices, PC Gaming.

Skills: Chinese, Violin, Piano.