Adrian Ye

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EDUCATION

University of California, San Diego **June, 2024**
B.S. Computer Science & Engineering *San Diego, CA*

- **Systems and Architecture**: Computer Organization & Systems Programming, Operating Systems, Computer Architecture, Computer Security
- **Theory and AI**: Design & Analysis of Algorithms, Database System Principles, Machine Learning: Learning Algorithms, ML for Music, Computational Theory, Advanced Data Structures
- **Software and Tools**: Software Engineering, Interaction Design, Computer Networks, Working with Large Codebases
- **GPA**: 3.65

SKILLS

Languages: C++, C, C#, Python, Java, JavaScript, HTML/CSS
Frameworks/Tools: Git/GitHub, React, Node.js, Docker, Jupyter, LaTeX, Agile development
Communication: English (native), Chinese (native)

WORK EXPERIENCE

VIA-SEEs Satellite Project **February 2024 - January 2025**
Software Engineer *Honolulu, HI*

- Contributed to the design and development of flight control and scientific data collection software for the University of Hawai'i at Manoa's VIA-SEEs CubeSat, part of NASA's CubeSat Launch Initiative (CSLI)
- Implemented command and response logic in C for Teensy 4.1 to interface with an AvaSpec spectrometer payload
- Researched flight control agents and peripheral modules through C++ and the NASA F' (F Prime) embedded systems framework

Projects

Custom 8-Bit CPU & ISA **May 2024 – June 2024**

- Designed and synthesized a custom 8-bit processor with a 9-bit instruction width using SystemVerilog
- Wrote a custom instruction set architecture and assembler from scratch
- Wrote two programs for the CPU to convert between 8.8 fixed-point and IEEE 754 floating-point formats
- Achievement #2: Challenge/Action/Result

Custom GAN for Regenerating Music from Mel Spectrograms **May 2024 - June 2024**

- Created a custom Generative Adversarial Model (GAN) model that reconstructs audio from Mel-Spectrogram input
- Processed 360k audio clips from MTG-Jamendo data subset
- Handled pre-processing, training, and evaluation pipeline using Pytorch

TCP with Congestion Control **Oct 2024 - Nov 2024**

- Implemented a reliable TCP variant with Slow Start, AIMD, and Fast Recovery in C
    - Achieved robust transmission of 20,000+ character messages under high packet loss conditions

H.A.R.D Hack Hackathon **April 2024 & Feb 2025**

- Participated in the 24 hour H.A.R.D Hack hackathon in 2024 and 2025 in a team of 4
- 2024: Created a collection of web-based minigames that reads inputs from a custom built hardware controller
    - Implemented A* maze search for randomly generated maze & solution
    - Read outputs from potentiometers & analog sticks to for precision tuning game
    - Connected hardware components to computer using arduino zero and C
- 2025: Created application & hardware that scans the barcodes of grocery products, keeping track of ingredients in your pantry/fridge.
    - Created a webscraper to collect information from a barcode database
    - Made our own wireless barcode reader using a ras-pi & pi-cam, and a secondary wireless camera.
    - Created an android application that reads from the database and receives live camera feed.

Association for Computing Machinery (ACM) Hack Team Lead **Oct 2023 - Jan 2024**

- Led a 5-person team to develop a MERN-stack student-matching app for shared classes and interests with guidance from a mentor
- Facilitated sprints, delegated tasks, and integrated frontend/backend using React, Node.js, and MongoDB

PantryPal **September - December 2023**

- Built a Java-based 3-tier app that generates and speaks recipes using ChatGPT, Whisper, and DALL-E APIs
- Enabled persistent user accounts with device-independent access and shareable recipe URLs