

Aaron Chen

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EDUCATION

School: University of California, Irvine

Student Standing: Junior | Graduation Year: June 2021

Major: Computer Science

GPA: 3.979

Coursework: Data Structure Implementation and Analysis, Python and C++ Programming, System Design, Principles of Operating System, Introduction to Data Management, Software Engineering, Linear Algebra, Statistics, and Discrete Math.

SKILLS

Programming Languages: Python, Java, C++, C#, C, JavaScript, MySQL, HTML, CSS

Technologies: Linux Shell Scripting, Github Version Control, GDB Debugging, App/Game/Web Dev.

EXPERIENCE

Mailbox Server / System Design Project

December 2019

- Implemented a **multithreaded** mailbox server in **C** that relays messages between clients.
- Stored unique message inboxes and outboxes for each client.
- Sorted messages from client inboxes to their corresponding outbox.
- Prevented data corruption by utilizing **mutexes** and binary **semaphores**.

Simple Shell / System Design Project

November 2019

- Developed a simple shell in **C** that supports **Unix** commands, **piping**, and **redirection**.
- Utilized system calls like fork, execve, waitpid, dup2, and pipe.
- Supported the execution of both background and foreground processes.
- Handled the termination of background processes by installing custom **signal** handlers.
- Prevented race conditions by **blocking** particular signals.

Dynamic Memory Allocator / System Design Project

October 2019

- Created an **explicit** free list allocator in **C** with **first-fit** placement.
 - Implemented the functions **malloc**, **free**, and **realloc** from scratch.
 - **Aligned** memory blocks by adding necessary **padding** for speed optimization.
 - Used a **doubly linked list** to manage unallocated memory.
 - Performed **coalescing** on free blocks to satisfy large malloc requests.
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LEADERSHIP

Green Apples Education / Java Instructor | Cupertino, CA

July 2019 - August 2019

- Taught students advanced **Java** concepts including **data structures** and sorting **algorithms**.
- Followed a curriculum and conducted four hour lectures five times a week for three weeks.

My Learning Square / Java Instructor | Cupertino, CA

June 2018 - July 2018

- Taught middle and high school students the basics of **Java** programming language.
 - Assembled a curriculum and conducted two hour lectures twice a week for six weeks.
 - **Communicated** with students to help **debug** or clarify programming concepts.
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ACTIVITIES

ICS Student Council / Programmer | Irvine, CA

January 2020 - Present

- Joined the **Projects Committee** to work on a course catalogue **web** application.
- Wrote the **web scraping** script in **Python** to gather course information.
- Worked in a team of 4 to create a working prototype with **React** and **Elasticsearch**.