

Chia-Han Chen

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EDUCATION

University of California San Diego

June 2024

Bachelor of Science with Computer Science

- Cumulative GPA: 3.91/4.00
- Relevant Courses: Advanced Data Structures, Design and Analysis of Algorithm, Software Engineering, Web Client Languages, Online Database Analytics Applications, Introduction to Artificial Intelligence: Search and Reasoning, Introduction to Machine Learning, Recommender System and Web Mining

EXPERIENCE

Instructional Assistant

March 2023 - Present

University of California San Diego Computer Science and Engineering Department - La Jolla, CA

- Tutored 200+ students in **computer organization** and **system programming** with **C** and **ARM Assembly** through one-on-one and group sessions and received 100% approval rating from students.
- Assisted students to improve their familiarity with **GDB** and **Valgrind**.
- Proctored, scanned, and graded the exams.

Research Intern

July 2023 - August 2023

Academia Sinica - Taipei, Taiwan

- Researched into single-pass and multi-pass **graph streaming algorithms**.
- Focused on applying mathematical methods to prove space lower bounds of graph problems.

Software Tester

March 2021 - July 2021

books.com.tw - Taipei, Taiwan

- Conducted e-book App and website **testing** in various web browsers, devices, and operating systems.
- Analyzed the testing results and reported to development teams.

Academic Tutor

September 2019 - April 2020

Seattle Central College - Seattle, WA

- Provided students with one-on-one academic support to improve their comprehension and assisted them with coursework.
- Subjects Tutored: Mathematics, Physics, Computer Science

PROJECTS

2048 Game with AI

- Built a 2048 game using **HTML**, **CSS**, and **JavaScript** that can be controlled by keyboard, screen scrolling for mobile devices, and **AI**.
- Implemented an AI using **expectimax** that achieves 2048 with 94% rate.
- Used **local storage** and **Shadow DOM** to store and display user's played history.

Sudoku Solver

- Implemented a **constraint solver** for Sudoku puzzles using propagation and backtracking search in **Python**.
- Improved the performance to solve hard-level Sudoku puzzles within 1 second by encoding Sudoku as **propositional logic formulas** in conjunctive normal forms and using SAT solver to solve the puzzle.

Server Side Web Data Visualization Application

- Configured and managed a site and web server with a standard LAMP (**Linux**, **Apache**, **MySQL**, **PHP**) environment.
- Collected user data and created a database and a **REST** endpoint to access and manage the data.
- Created a secured analytics user-centered dashboard and report page for data visualization.

Huffman Compression and Decompression Tool

- Implemented a compression and decompression tool using **Huffman coding** in **C++**.
- Constructed the Huffman tree using **tree serialization** that can decrease file size by 20% - 30%.

TECHNICAL SKILLS

- **Languages:** C, C++, Python, Java, HTML, CSS, JavaScript, ARM Assembly, x86 Assembly
- **Tools:** Linux, Git, Node.js, PyTorch, scikit-learn
- **Others:** Agile Methodologies, CI/CD, REST