

Tianhao Chen

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EDUCATION

University of California San Diego

GPA 3.7/4.0

Class of 25, La Jolla, CA

- **Major:** Computer Science **Minor:** Mathematics
 - **Skills:** Java, WPS, C, C++, React, Matlab, AndroidStudio, GitHub Actions CI, GitHub Project, Junit, Espresso, Agile Languages, SQL, Python, Machine Learning, Data Mining
 - **Relevant Courses:** *Design and Analysis of Algorithms, Software Engineering, Data Statistics, SQL, 3-D Modeling*
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PROJECTS

Social Compass Android App Project

Winter 2023

- Led a team of six classmates to develop a Zenly-inspired app using Android Studio. Managed app features such as location sharing, friend connections, and remote and local databases and assigned them to the GitHub sprints. Successfully completed the app; project available on GitHub (<https://github.com/CSE-110-Winter-2023/cse-110-project-cse-110-team-30>)

Data Training and Recommender System

Fall 2023

- Designed and implemented a recommender system in Python utilizing the scikit-learn package, applying principles of data training with a focus on linear and logistic regression algorithms.
- Leveraged Amazon's historical datasets to generate personalized product recommender systems, enhancing user experience through targeted suggestions.
- Developed proficiency in manipulating large datasets, employing data preprocessing techniques to ensure model accuracy and efficiency and utilized collaborative filtering to discern user preferences.

Computer Graphics Rendering in C++

Fall 2023

- Developed a C++ application to render various geometric shapes, showcasing versatility in computer graphics.
- Leveraged linear algebra and 3D modeling techniques to critically evaluate and implement different rendering methods, including rasterization and ray tracing.
- Conceptualized and designed a unique scene comprising multiple shapes, subsequently producing a video capturing its dynamic transformation sequence.

File Compression and Restoration

Fall 2022

- Developed a comprehensive data compression solution in C++, encompassing both encoding for file compression and paired decoding for accurate file restoration. Integrated a custom file header to ensure seamless data restoration post-compression.
- Implemented the Huffman tree data structure, bridging abstract data concepts with tangible file compression outcomes.

Custom Memory Allocator in C

Spring 2022

- Designed and implemented a dynamic memory allocator utilizing implicit free lists for optimized heap management. Facilitated operations to initialize, display content, and liberate heap memory, ensuring resource efficiency. Acquired deep expertise in nuanced aspects such as double-word alignment, discerning allocation policies, and adept payload management.
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ACTIVITIES & EXPERIENCE

CSE Department Tutoring Experience

September 2023 – Present

- Specialized in Python, teaching basics to advanced topics like OOP, resulting in improved student understanding
- Developed hands-on exercises for data structures like linked lists and trees, enhancing students' problem-solving skills.
- Collaborated with faculty to align tutoring content with course objectives, ensuring seamless integration of materials.
- Conducted weekly interactive coding sessions that encouraged applied learning, seeing improvement in coding skills.

University Computer Science Club ---TripleC

September 2022 - Present

- Contributed as an active member of TripleC, the largest Chinese Computer Science Club at UCSD
- Completed an educational program focused on React and SQL programming, acquiring practical skills and knowledge in web development and database management.
- Successfully initiated and participated in a winter project, leveraging my newly acquired programming expertise to deliver a solution that solved real-world problems.

UCSD Integrity Proctor

January 2023 - Present

- Served as a proctor at a specialized testing center, supporting individuals with disabilities.
- Collaborated with a dedicated team to ensure a smooth and accessible testing experience.
- Enhanced communication and teamwork skills through active engagement with test-takers and colleagues.
- Contributed to the success of numerous test-takers by providing a supportive and inclusive environment.