

Alain Zhang

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EDUCATION

University of California San Diego (UCSD)

San Diego, CA

BS in Mathematics and Computer Science, GPA: 3.87/4.00.

June 2022 – Present

Coursework: Data Structures, Discrete Mathematics, Computer Organization, Systems Programming, Theory of Computation.

EXPERIENCE

UCSD School of Medicine, Fisch Bioinformatics Laboratory

San Diego, CA

Research Intern

September 2023 – Present

- Designed and developed a lab information management system for new placental samples and data.
- Performed scRNA-seq analysis on bulk RNAseq raw counts from human placentas, comparing columns Groups_for_PE_siPE to and PE vs Normal to produce useful graphical representations of differential expression results.

MDVIP

San Diego, CA

Software Engineering Intern

June 2023 – September 2023

- Optimized database connections in Jitterbit API to reduce redundancy and running costs by fifteen percent.
- Developed documents database with SQL Server Management Studio for insurance data conversion from hex format, enabling PDF generation accessible through the customer portal using Salesforce.

Birch Aquarium

San Diego, CA

Volunteer Teaching Staff

April 2023 – June 2023

- Taught elementary students about local sealife and preservation tactics employed by Birch and other agencies.
- Held and planned sessions for hands-on learning and work about sealife.

SKILLS

Languages: Python, C, Java, JavaScript, SQL, Linux, Windows, Git, Bash, Batch, Powershell, AWS, R, Native Japanese & English

Frameworks/Libraries/Tools: Express, React, Node.js, Firebase Realtime, MYSQL, Git, Ghidra, Autopsy, Burp Suite, Wireshark

Interests: Association for Computing Machinery (ACM), IEEE, Women in Computing (WIC), CalAnime Newsletter

LEADERSHIP

San Diego Unified School District

San Diego, CA

Lieutenant Commander

January 2021 – September 2021

- Reorganized SDUSD brigade website with local scholarship information and joint events between neighboring high schools.
- Managed sound equipment on the field for NJROTC events and configured routers and hubs for classroom use.

Cyberpatriot PHHS Varsity

San Diego, CA

Team Captain

September 2020 – September 2021

- Helped over 50 students weekly by mentoring them, planning and supervising training for cybersecurity competitions.

PROJECTS

Full Stack Development – Mock Stock Portfolio App

- Developed a mock app to add and delete stocks with real-time data using Yahoo Finance API.
- AWS Lambda, AWS API gateway, AWS DynamoDB, and React.js/ReactStrap Library, briefly deployed using AWS Amplify.

The Library – Content Driven Design

- Created a relational database to track patrons' library card numbers and books on and off their accounts using HTML and PHP.
- Briefly hosted using Apache Web Server in a Cloud9 Ubuntu Server environment, set-up project with MySQL phpmyadmin.

Big Bang Theory API & Webpage

- Developed an API, configuring BBT routes to execute callback functions for any http call. Used Express.js framework and Javascript. Deployed as a firebase cloud function to be used in Big Bang Theory Episode Directory.
- Used BBT public JSON dataset to add metadata to episode descriptors and images on my single-page app in React.

Chat-App

- Created a real-time Chat-App using Firebase for backend and React for frontend.
- Made various react components for user input, object state, and logs under a simple data model.

HOBBIES

- Video Games, Programming, Gym, Teaching, CTF Player, CCDC & Hivestorm Competitor, Writing