Zach Zhong

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EDUCATION
University of California San Diego
Bachelor of Science, Computer Science   **September 2020 - June 2024**
- **Award:** IDEA Scholar, Marshall College Honors Prog, Provost Honors
- **Major GPA**: 3.837
- **Coursework**: Advanced Data Structure; Design Analysis of Algorithm; Deep Learning; Recommender System; Operating Systems; Computer Network; Computer Security; Database System Implementation;

RELEVANT EXPERIENCE
CutiePet
Tech Lead / Front End Developer
- Developed the frontend for a user-friendly and interactive social media app for pet owners using **React Native**, **AWS**, and **MongoDB**.
- Implemented optimization techniques such as image caching and pre-loading, resulting in over **200%** improvement in total image load time.
- Refactored existing code into **Typescript** and built reusable components like hooks, forms, and contexts to enhance code readability.
- Integrated **websocket** technology to allow for live chat functionality and real-time updates on user matches.
- Mentored and onboarded new team members, collaborating closely with project managers and designers following agile principles.

South Hills Countdown [Git Repo](#)
Founder / Front End Developer
- Led team of students in developing a cross-platform mobile app to serve over **1000+** students and teachers at the high school to remind them of class schedules and upcoming events.
- Build the frontend using **Xamarin.Forms** with **C#** following client side **MVC** pattern.
- Integrated app with **Google Firebase** and **push notification** to send real time reminders even when the device is off.
- Expanded cross-platform support for MacOS by building a menu bar application using **AppKit**.

Data Collection Analytics Dashboard
- Built a data analytics website with LAMB(**Linux, Apache, MySQL**) stack to collect and analyze user data on a website.
- Configured and deployed the entire web app on **DigitalOcean** and setup reverse proxies with **Express.JS** for the backend.
- Utilized **server-side MVC** to dynamically serve appropriate files and to minimize load time for users.
- Developed a REST API with **session** based authentication and implemented permission based control for secure data access.
- Created a user site for **client-side data collection**, capturing user interactions like mouse movements, keyboard inputs, and other demographics.
- Built an admin dashboard with data visualization components such as heatmaps, charts, and grids to provide useful statistics and to help troubleshoot common **JavaScript** runtime error issues.

School Database Management System [Git Repo](#)
- Designed a relational schema for **PostGresSQL** modeling school's backend system with appropriate constraints, adhering to appropriate constraints and **3NF** design principles.
- Wrote over **50** test cases in **Python** to ensure correct functionality and constraint satisfaction.
- Developed web based CRUD forms using **HTML, CSS, Bootstrap, JSP** and backend with **Apache Tomcat.**
- Optimized SQL queries using materialized views and update triggers, resulting in significant speed improvements for complex queries.

Steam Game Data Analytics [Git Repo](#)
- Deployed and compared results between different classifiers using the Sklearn library and created data visualizations to show.
- Built and fine tuned a deep learning model using pytorch to achieve 50% accuracy in the categorization of playtime based on profile.
- Collected data using the Steam API and performed data scraping to gather missing data, leveraging **pandas** and **numpy** in Python.

WORK EXPERIENCE
University of California San Diego   **March 2023 - June 2023**
Computer Science and Engineering Instructional Assistant
- Tutored a class in **Reinforcement Learning** with over **300** students through discussions and holding weekly office hours.
- Prepared and presented slides for discussions, which were recorded and made available to all students through the UCSD podcasts system.
- Wrote **Python** scripts to assist and speed up the grading process on the Final Exam.

SKILLS
- **Tech Stacks:** React.JS, React Native, Xamarin Forms, Firebase, PostgreSQL, MySQL, MongolDB, AWS S3, AWS Lambda, AWS Cognito, Azure Cloud, Node.JS, Express.js, Django, JSP, Apache Tomcat, Git, Docker, DigitalOcean, Pytorch, Pandas.
- **Language and Tools**: C, C#, C++, Python, Javascript, Typescript, Java, PHP, HTML, CSS
- **Systems**: Verilog, ARM, x86, Linux