

Yunzhe (Josh) Liu

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EDUCATION

University of Southern California, Master of Science in Computer Science

Los Angeles, California

GPA: 3.77/4.0

August 2020 - Expected Graduation: May 2022

CSCI 570 Analysis of Algorithms CSCI 571 Web Technologies CSCI 585 Databases

Baylor University, Bachelor of Science in Computer Science

Waco, Texas

Major GPA: 3.8/4.0

August 2016 - May 2020

Data structures and Algorithms, Operating Systems, Computer Networking, Software Engineering, Data Mining

WORK EXPERIENCE

USC Computational Social Science Lab, Research Assistant - Los Angeles, CA

September 2020 - Present

YourMorals.org (React, Node.js, MongoDB) A survey website for psychology studies

- Re-designed and implemented the frontend with **React** and **Bootstrap**, served on **AWS CloudFront**
- Designed a **NoSQL schema** and migrated data from the relational database to improve scalability and enable easy update
- Migrated old website from on-premises server in php & MySQL to **AWS** cloud platform with over 800,000 existing users
- Designed highly available, cost-effective, scalable system using AWS Services, implemented backend **RESTful** API services in **Node.js** and **MongoDB** to serve users around the world and over 200 daily active users
- Designed and implemented role-based admin functionality to let researchers publish study and collect study data via AWS S3

Neural Text Analysis Pipeline (NTAP)

- Involved in development, debugging and testing the NLP python library package NTAP using TensorFlow

VIPShop, Software Developer Internship - Guangzhou, CHINA

May 2018 - August 2018

- Optimized the Warning expression evaluation algorithm in cloud environment by 50% with **Java**
- Collaborated with the team and developed a monitor program in **Python** to monitor the status of the logging system
- Analyzed on the Java implementation of string-matching algorithms and used benchmark to compare the performance

Baylor University, Undergraduate Research Assistant - Waco, TX

August 2019 - January 2020

MHealth Hypertension Mobile App

- Created an educational **mobile app** using **React-Native**, deployed on both Android and iOS, with educational video, quizzes and games to teach people in poor country about the danger of high blood pressure and ways to avoid it
- Lead 3 developers to coordinate and communicate with customer from Baylor Nursing School about the requirements of the mobile app, arranged weekly code review and scrum meetings to improve existing features and requirements
- Implemented backend of the app using **AWS serverless services** with user authentication and API service to collect data
- Designed a feature to let user upload a picture of their food and use AWS rekognition service and serverless function with NLP technique to make decision of whether the food would cause hypertension

Baylor University, Undergraduate Research Assistant - Waco, TX

March 2019 - May 2020

Natural Language to SQL Query Conversion

- Conducted research on current studies about converting natural language statement to SQL query with machine learning
- Improved performance of existing algorithms with a two-layer structure with an intermediate language using TensorFlow

SKILLS

- Languages: JavaScript, TypeScript, Node.js, Python, Java, C/C++, Swift, SQL
- Certification: AWS Certified Developer – Associate
- Tools: React, HTML/CSS, Express.js, MongoDB, Angular, Docker, Bootstrap, Git, MySQL, Flask, SQL, Linux

PROJECTS

My Mobile Film Tracker App (SwiftUI, Node.js)

March 2021 - May 2021

- Built an iOS app with **SwiftUI** to display the current popular movies/tv shows and search functionalities with watchlist
- Coded the backend API service in **Node.js** to retrieve data from TMDB, serve with **Express.js** and hosted on **AWS**

Films Tracker Site (Angular, Node.js)

January 2021 - March 2021

- Wrote a responsive web app with **Angular** and **TypeScript** to display the top-rated movies and tv shows and related
- Implemented the backend in **Flask** hosted on **Google Cloud Platform**

Archway Capstone Management System (React, MongoDB, Docker)

January 2020 - May 2020

- Built a content management system that students, professors and parents from different departments can view, upload and modify a capstone showcase based on their role, student can easily create presentation of their projects
- Utilized **Docker** and Docker compose to orchestrate **React** as frontend, **Strapi.io** and **MongoDB** as backend
- Implemented highly configurable component such as themes, information pages and role-based access control

Shiip Network Protocol

August 2019 - December 2019

- Designed and implemented a **TCP** based data transfer protocol and a **UDP** based domain name protocol in Java, along with a set of scalable and secure clients and servers using **Java Asynchronous I/O** with SSL, applied Test Driven Development with **JUnit**

Pet Finder Site

August 2019 - December 2019

- Designed a web application using **React**, **Spring Boot**, Elasticsearch and deployed on Heroku, allow users to sign in and find the pet sitter to take care of their pets while the owner was away or let pet sitters to find pets