

# 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

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## WORK EXPERIENCE

**USC Computational Social Science Lab**, Research Assistant - Los Angeles, CA **September 2020 - Present**

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

- Re-designed and implemented the frontend with React and Bootstrap, backend API service with Node.js and MongoDB
- Designed a NoSQL schema and migrated data from the relational database to improve scalability and enable easy update
- Migrated old website from on-premise server in php & MySQL to AWS cloud platform with existing data and users
- Designed highly available, cost-effective, scalable system using AWS Services, implemented backend 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

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
- Communicate 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**, Software Developer - 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

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## SKILLS

- Languages: JavaScript, TypeScript, Node.js, Python, Java, C/C++, Swift, HTML5/CSS3, SQL
- Certification: AWS Certified Developer – Associate
- Tools: React.js, Express.js, MongoDB, Angular, Docker, Bootstrap, Git, MySQL, Flask, SQL, Linux

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## PROJECTS

**My Mobile Film 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 using to retrieve data from TMDB, serve with Express.js and hosted on AWS

**Films Web app** (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.js, 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.js as frontend, Strapi.io and MongoDB as backend
- Implement 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