

# 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**

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, Node.js, MongoDB)

- Re-designed and implemented the UI with React and Bootstrap, backend API service with Node.js and MongoDB
- Designed a NoSQL schema and migrated the relational schema data to improve scalability and simplify development
- Migrated old website from on-premise server in php & MySQL to AWS cloud platform with existing data and users
- Designed high available, cost-effective, scalable system using AWS Services for 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 developing and debugging the NLP python library package NTAP using TensorFlow

**VIPShop**, Software Developer Internship - Guangzhou, CHINA

**May 2018 - August 2018**

- Optimized the Warning expression evaluation algorithm of cloud server with Java by 50%
- Developed a Monitor in Python to monitor the logging system
- Analyzed on the JIT implementation of Java String.indexOf() function and benchmark on current string matching algorithms using jmh

**Baylor University**, Software Developer - Waco, TX

**August 2019 - January 2020**

mHealth Hypertension Mobile App

- Coordinated and communicated with customer from Baylor Nursing School about the requirements of the mobile app
- Created an educational mobile app using React-Native deployed on 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
- 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 image labeling service and NLP 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 queries
- Improved performance of existing algorithms with a two-layer structure with an intermediate language
- Utilized NLP tools such as Google Colab, TensorFlow and Spacy to process data and train NLP model

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## SKILLS

- Programming Languages: JavaScript, TypeScript, Node.js, Python, Java, C/C++, Swift, HTML5/CSS3
- 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 in Node.js, API service from TMDB and hosted on AWS Elastic Beanstalk

**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, Docker)

**January 2020 - May 2020**

- Built a content management system that users can view, upload and modify a capstone showcase
- Utilized Docker and Docker compose to manage React.js 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, used Test Driven Development with JUnit