# JASPER HUANG

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## EDUCATION

**University of Southern California, Los Angeles, CA, United States** **Grad 2021**
***B.S. Computer Science***
**Relevant Coursework:** Algorithms and Theory of Computing, Data Structures and Object Oriented Design, Software Engineering, Interneworking, Web Development, Computer Graphics, Computer Systems.
**Presidential Scholar; *GPA 3.44***

## SKILLS AND KNOWLEDGE

- Product-driven full stack developer with a passion for developing web and mobile applications, proficient with Typescript, Javascript, Python, Java, GraphQL, PHP, and SQL.
- Software Architectures (Async, Client/Server, MVC, RESTful APIs) with Node.js, Express.js, and Apollo GraphQL.
- Front-end frameworks/component-based systems (React/React Native), state management patterns (Redux),
- Complex, event-driven applications using reactive and functional programming paradigms (ReactiveX).
- Relational (Google Cloud SQL, MySQL) and NoSQL databases (MongoDB, Firebase, DynamoDB).
- Unit tests (Jest, jUnit) and acceptance tests (Selenium) as well as using CI/CD tools (CircleCI/TravisCI).
- Git Versioning (GitFlow), VSCode, WebStorm, Eclipse, PyCharm, MAMP, MySQLWorkbench, and various CLI tools.
- Strong Data Structures and Algorithms fundamentals, experience participating in Scrum and Waterfall.

## PROFESSIONAL EXPERIENCE

***Software Engineer Intern - PicCollage, Taipei, Taiwan*** ***2020 August - Present***
- Ideated, implemented, and tested features for a real-time collaborative collage editor with Typescript, React, RxJS, GraphQL, and Firebase using an in-house software architecture (*MDDV*) employing the Observer pattern.
- Decoupled and refactored editor logic into reusable modules for use in future real-time editor projects.
- Contributed utility functions and Jest unit tests for RxJS, Firebase and GraphQL to a company npm module.
- Authored documentation describing best practices for the MDDV software architecture as well as reactive programming using RxJS.

***Software Engineer Intern - Intertrust Technologies, Sunnyvale, CA, USA*** ***2019 June - August***
- Developed testing framework for company's code obfuscation technology on self-developed 3D C# Unity games.
- Protected software against reverse-engineering and code tampering attacks by applying and testing code obfuscation, integrity protection, and anti-debugging, and anti-piracy techniques.
- Uncovered areas for performance optimization through designing performance benchmarking procedures.
- Prepared presentation for business team presented in Japan's Game Developer's Conference.

## PROJECTS

***podscribe. [link]***
- Podcast listening and note-taking companion developed with Typescript, Expo React Native, Redux, Apollo Express Server, GraphQL, Firebase, and the Spotify Web API
- Optimized algorithm syncing Spotify playback, allowing implementations of a seamless in-app podcast player that doesn't overload the Spotify server with requests.
- Utilized Apollo Express Server's caching API to optimize the speed of nested and repeated GraphQL queries.

***Doozy Task Manager Web App [link]***
- Fully-fledged task manager web application developed with React.js, Redux, Node.js Express.js, and MongoDB.
- Developed algorithm translating natural language into due dates/priorities, streamlining the process of adding todo items.
- Optimized real-time server performance and scalability by minimizing calls to MongoDB.
- Improved user experience by implementing other features, including Google OAuth, smart lists and notifications.

***Comic Relief Multiplayer Web Game [link]***
- Developed with Javascript, the WebSocket API, jQuery, Node.js, Express.js, and HTML/CSS.
- Developed Express Node.js game server that creates and assigns concurrent game rooms and processes in-game events and logic through WebSockets.
- Configured game server to adapt to user disconnection events that would otherwise break gameplay.

***Pathfinding Algorithm Visualizer [link]***
- Educational tool developed in Javascript, HTML and CSS.
- User-friendly UI providing visualizations of Greedy BFS, Dijkstra's Algorithm, A* Search, and Bidirectional A* using Javascript and CSS animations.
- Click and drag mechanic to place walls and weights to alter how algorithms pick the shortest path between start and finish nodes.
- Ability to choose different simulation speeds to view each algorithm's execution in more/less detail.

***WeatherPlanning Web App***

- Developed Java Tomcat server managing a Google Cloud MySQL database, encrypting user information with RSA.
- Translated Software Requirements Specification into technical specifications for my team.
- Used TravisCI for CI/CD and wrote white box tests (JUnit) and black box tests (Selenium and Cucumber).
- Followed agile (scrum) processes over 3 two-week long sprints with small team of USC students, acted as scrum master and spearheaded sprint review process for my team.