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Caleb Choi

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I am a creative thinker seeking opportunities to work in a collaborative, dynamic team and contribute to projects that make a difference.

Technical Skills

Languages: Javascript, HTML, CSS, SQL, MATLAB, C++, Python
Frameworks/Libraries: React, Redux, Angular, Node, Express, Mocha, Chai
Databases/ORMs: MySQL, Postgres, Sequelize, MongoDB, Mongoose, Cassandra, Redis
Misc. Tools: AWS (EC2), Webpack, Docker, Git, Travis CI

Projects

ATOM | *Client app server of Amazon clone designed to handle customer checkout processes*
Tech Stack: JavaScript, Node.js/Express, MySQL, Redis, Docker, AWS EC2

- Increased server throughput from 200 to 2700 requests per second by optimizing system architecture
- Benchmarked performance between MySQL and Cassandra for optimal choice given the data constraints
- Refactored server routes and implemented Redis cache to increase RPS by 200%
- Scaled system horizontally using multiple instances of EC2 and load balancer to handle 6 times traffic load

Shiftly | *Scheduling app that auto-generates weekly schedules given shift requirements* | *shiftly.herokuapp.com*
Tech Stack: JavaScript, Node.js/Express, React/Redux, PostgreSQL, Mocha/Chai, Travis CI

- Implemented constraint satisfaction algorithm to efficiently generate schedules fulfilling employer needs
- Designed schema using PostgreSQL to efficiently store and query data while maintaining data integrity
- Built modular front-end using React/Redux for fast rendering speed and enhanced state management

News Stand | *News aggregation app that serves trending news with smart recommendations and humorous twists*
Tech Stack: JavaScript, Node.js/Express, React, React Router, MongoDB, Material UI

- Created user comment and article favorite views with clean interface using Material UI
- Persisted data using MongoDB to store and deliver essential data while minimizing storage space
- Improved client-side rendering with React for managing states through multiple views

Butter-Passing Robot | *Automated robotic arm programmed to detect and retrieve color-coded objects*
Tech Stack: Python, MATLAB

- Designed and implemented control system for object detection and arm movement
- Implemented two-bar linkage calculator to control motor steps for horizontal movement
- Ensured system integration of the software with the robotic arm, camera, and sensors

Professional Experience

Nonlinear Ion Dynamics, Engineering Intern **Gardena, CA** | 06/16 - 09/16

- Improved energy input-to-output ratio by 10% after implementing changes based on experiment results
- Researched future solutions of alternative energy created by proton-Boron fusion
- Conducted and analyzed experiments using LabView to optimize variable configuration

Education

University of California, Los Angeles, *B.S. in Mechanical Engineering* June 2017

- Relevant Coursework: Intro to Computer Science I & II (C++), Computational Genetics
- Honors: *cum laude*, Member of Tau Beta Pi, *Engineering Honors Society*

Hack Reactor, Software Engineering Immersive Dec 2017