

SHANGWAY CALVIN HSU

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EDUCATION

University of California, San Diego
B.S. Computer Science, Minor - Cognitive Science

Expected Graduation: 2018
Cumulative GPA: 3.72 - Major GPA: 3.82

Related Coursework:

Advanced Data Structures and OOD
Software Engineering

Design and Analysis of Algorithms
Introduction to Operating Systems

Introduction to Parallel Computing
Database System Principles

EXPERIENCE

Qualtrics

Seattle, WA

Software Engineer Intern

Jun 2017 – Sept 2017

- Developed file upload feature within Qualtrics' world class Customer Experience Management product using NodeJs, AngularJs, SQL Database and AWS S3.
- Implemented REST API endpoints to support PUT, GET and DELETE requests to securely upload, retrieve and delete files.
- Integrated and tested feature on the product's main page to be used by major customers around the world.
- Gained thorough understanding of asynchronous web requests, Amazon services and the MEAN web development stack.

SSL – Space Systems Loral

Palo Alto, CA

Software Engineer Intern

Jun 2016 – Sept 2016

- Developed an internal RESTful Web Server using various Python frameworks such as Flask and Tornado with the goal of distributing satellite telemetry to other programmers in a standardized manner.
- Implemented REST styled realtime data streaming with WebSockets on both server and client sides.
- Created front-end web interfaces using Javascript/CSS/HTML to generate queries and plot historical and streaming data.
- Gained thorough understanding of networking through the development of RESTful APIs and socket connections.

SLAC (Stanford Linear Accelerator Center) National Accelerator Laboratory

Menlo Park, CA

XFEL Software Intern

Jun 2015 - Aug 2015

- Implemented an optimization algorithm in C++ called Particle Swarm to find an optimal configuration for SLAC's LCLS (particle accelerator) in order to form a coherent electron beam.
- Used the Python MATLAB library for data visualization of the optimization results from the accelerator simulation.
- Made improvements to the algorithm responsible for the electron beam bandwidth calculation.

PROJECTS

Personal Website – <https://shangwayhsu.github.io>

Continuous

- Implemented personal website to showcase projects through the use of Bootstrap/HTML/CSS/Javascript.
- Single-page website with scrolling animations and dynamic background.
- Responsive page with mobile support such as collapsible navigation bar to fit devices with smaller screen sizes.
- Email Contact form powered by Formspre.io.

Chorus, Chore Management App – Web App Development - <http://chore-us.herokuapp.com>

Jan 2017

- Developed using NodeJs paired with ExpressJs framework and MongoDB/MLab as database.
- Implemented REST server to allow front-end application retrieve, add, edit and delete user, chore, and group data.
- Implemented front-end with Google's Material design and created responsive and pop-up behavior using jQuery.
- Applied human-computer-interaction design elements learned from the Human-Computer-Interaction course offered at UCSD.

Free & For Sale 3.0 App – Web App Development

Oct 2016

- Developed using Angular 2 TypeScript framework paired with Ionic 2 and Firebase as database.
- Created majority of the front-end such as the item-listing-details, inbox/messages, home-page item displays, etc.
- Implemented middle-layer services that communicated with the database for posting listings, updating ratings, updating bids, manage purchase and sending out notifications.
- Worked in a fast-paced 7 person team practicing agile software development.

Instagram Replica App – iOS App Development

May 2016

- Developed using Parse as a backend cloud database in order to create custom data entries such as user logins/passwords, followers, posts, etc. Deployed using Heroku cloud platform.
- Extensive transfer of user data between application and the Parse server using Swift.
- Obtained a comprehensive grasp on application development in iOS/Swift/xCode.

Autocomplete - C++

Jan 2016

- Used Multiway Trie to implement a dictionary capable of Autocomplete.
- Use of Priority Queue to store relations between nodes to decrease autocomplete time at the cost of space.
- Multiway Trie guarantees $O(L)$ in `find()` and `autocomplete()`, where L is length of the longest word.

SKILLS

Experience in: REST, Web Development, Networking, Databases

Tools: NodeJS, AngularJS, MongoDB, Git, Unix

Languages: Java, Javascript, Python, C/C++, HTML, CSS, SQL