HONGYUAN GAO

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EDUCATION

University of Southern California May 2018
M.S. in Computer Science, GPA: 3.9 / 4.0 *Los Angeles, CA*

Shanghai Jiao Tong University June 2016
B.S. in Computer Science, GPA: 3.5 / 4.0 *Shanghai, China*

TECHNICAL SKILLS

Programming Languages	Python, JavaScript/Node.js, SQL, C, C++, Java, PHP
Web Frameworks	Bootstrap, React, AngularJS, Tornado, Three.js
Tools	*nix, Git, Apache, Nginx, ESLint, Mocha, Vim, Redshift, S3, JIRA, Jenkins

EXPERIENCE

Electronic Arts May 2017 - August 2017
Software Engineering Intern *Seattle, WA*

- Developed a 3D web application from scratch to inspect gameplay events (eg. player tick, player death) on a 3D game terrain map using React and Three.js (a WebGL-based 3D library).
- Proposed a solution for loading 3D map on web; compressed raw model to reduce size and loading time by 80%.
- Created a Node.js service to monitor latest player data of internal database, push them to Amazon S3 and import them to Amazon Redshift using COPY command with throughput of 60 thousand records / second.
- Communicated with other teams and settled down Redshift database schema that can store millions of records.
- Collaborated with team members to construct a set of powerful APIs to query games, maps and gameplay events.
- Wrote unit tests for the APIs using Mocha.

Embedded and Pervasive Computing Center of SJTU March 2015 - June 2016
Research Assistant *Shanghai, China*

- Devised an efficient chunk-based cache algorithm for data deduplication in backup systems based on spacial locality; improved cache hit ratio by 5.2% and reduced I/O latency by 17.3%.
- Combined the algorithm with container technique and saved memory consumption by 50.7%.
- Won A-Class Bachelor's Thesis Award (top 10%) and published a paper in IEEE ICPADS16.

Siemens Manufacturing and Engineering Center Ltd. January 2015 - February 2015
Intern, IT Department *Shanghai, China*

- Developed a GUI lucky draw system for staff in Python with Tkinter GUI package for the year-end party.

PROJECTS

Forum Posts Crawler (JavaScript, Python) December 2015 - April 2016

- Utilized Beautiful Soup to parse HTML files of 1point3acres (A forum for graduate school applicants) to JSON and visualized over 30,000 application results, which got about 1,000 visits from 17 countries within one month.
- Developed a data filter based on AngularJS and a query API based on Tornado web framework.
- Built a daemon program to manage and protect the crawler; deployed the daemon on DigitalOcean VPS.

The US Congress Database: An Android App (Java, PHP) November 2016 - December 2016

- Visualized the US Congress data with a user-friendly interface based on Material Design language.
- Constructed a powerful API to query thousands of legislators and bills data; hosted the API on AWS.
- Designed 7 interfaces for users to search the data and save preferences.

PDF Translation Platform (JavaScript, PHP) January 2015 - June 2015

- Collaborated with a team member and built an online platform for reading and translating public PDF files.
- Created an intuitive front-end interface for translators to select sections they want to translate.
- Devised an algorithm to bypass special characters and stored multiple versions of translations in database.

Machine Learning and Data Mining (Python) March 2015 - May 2015

- Led a team and constructed a multi-thread large-scale patents classifier with thread pool; achieved accuracy of 96.81% by applying Min-Max Modular SVM with LIBLINEAR and LIBSVM library.
- Built a movie recommendation system by predicting missing user ratings with stochastic gradient descent and collaborative filtering algorithms; reduced the standard deviation to 0.90.

PUBLICATIONS

H. Gao et al. An Efficient Cache Algorithm to Accelerate the I/O Processing of Data Deduplication in Storage Systems. In *Proc. of the IEEE ICPADS16*, 2016.