

# Jiasheng Wu

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## EDUCATION

**University of Southern California (USC)**, Los Angeles, CA Jan 2018 - Dec 2019  
*M.S. in Computer Science, 3.62* (Artificial Intelligence, Machine Learning, Natural Language Processing)  
**Zhejiang University of Technology**, Hangzhou, China Sep 2013 - Jun 2017  
*B.Eng. in Software Engineering, 3.75* (Algorithm, Data Structure, Web Tech., Database, Network, Operating System)

## SKILLS

<b>Programming Languages</b>	Java, Python, SQL, Shell, C/C++, Swift, PHP
<b>Web Development</b>	HTML5, CSS3, JavaScript, jQuery, AJAX, Bootstrap, React, Angular, Node.js, Spring, Maven, Flask
<b>Software &amp; Tools</b>	AWS, GCP, Git, Docker, Selenium, Redis, MongoDB, Tomcat, Hadoop, Spark, RabbitMQ, Kafka
<b>Architecture</b>	RESTful APIs, Microservices, Object-Oriented Programming, Design Pattern

## EXPERIENCES

**Software Engineer Intern** at USC Information Sciences Institute (ISI) 7 months / Jun 2019 - Dec 2019  
*T2WML: Cell-Based Language to Map Tables into Wikidata Records* [📁 [github.com/usc-isi-i2/t2wml](https://github.com/usc-isi-i2/t2wml)]

- Brought T2WML into practice by building web-based GUI from scratch using **React**, **Bootstrap**, **Webpack**. GUI includes Excel-like table viewer, **YAML** editor with grammar check, and interactive preview panel of mapping result.
- Designed highly scalable **RESTful APIs**, such as uploading Excel files and applying T2WML onto spreadsheets, documented in **OpenAPI**, and implemented using **Python**, **Flask**. Automated unit testing using **Selenium**, **Postman**.
- Integrated third-party **Social Login** services, and reproduced Overleaf-like file management features using **Redis**. Allowed T2WML to handle multiple user sessions without file conflicts. Laid solid foundation for T2WML release.
- Created **Docker** containers to migrate T2WML, and deployed on ISI's server running **Nginx**. Opened for inner access and utilized as essential tool to convert Excel files to Wikidata entries in Center on Knowledge Graphs.

*Wikidata Fuzzy Search of Time Series* [📁 [github.com/usc-isi-i2/wikidata-fuzzy-search](https://github.com/usc-isi-i2/wikidata-fuzzy-search)]

- Implemented fuzzy search by estimating semantic similarity between words using **Word Embedding**. Built **Microservices** with **AWS Lambda**, **AWS API Gateway** to find synonyms of keyword, and to search in ISI's Wikidata mirror.
- Delivered **Responsive Web App** using **React**, **Bootstrap**, **Webpack**, **Flask**. Like Google Images, results are displayed as card collection. Card is uplifted when mouse hover, and half-window preview panel can be toggled when click.
- Wrote robust **SPARQL** queries to fetch time series data from Wikidata in **JSON** format, plotted as interactive scatter chart using **D3.js**, and embedded into app as result preview. Tested on desktop browsers and mobile devices.
- Deployed app to **AWS Elastic Beanstalk** using **Git**, **EB CLI**. Enforced **HTTPS** and customized domain as ISI's.

**Visiting Research Intern** at University of California, Davis 3 months / Jul 2016 - Sep 2016  
*Team leader of 3D Reconstruction and Measurement of Chronic Wound*

- Reproduced **3D Reconstruction** solutions (like SfM, Structured Light) using **Matlab**, **OpenCV**. Devised and published 3D point cloud acquisition algorithm based on linear laser and homography.
- Developed **3D Rendering** app to display OBJ files on **Android** using **Java**, **OpenGL ES**. Implemented interactive features like move, pinch-to-zoom and ArcBall rotation. Cached series of files in **Multi-Threads** to play animation.

## PROJECTS

**Artificial Intelligent Courseworks** - AI, Algorithm Sep 2018 - Nov 2018

- Accomplished pathfinding agents using A\* algorithm and utility theory respectively.
- Developed an adversarial agent using minimax algorithm with alpha-beta pruning to reduce search space.
- Solved a Constraint Satisfaction Problem (CSP) of airline scheduling using **Backtracking** algorithm.

**Chinese AI and Law Challenge (CAIL '18)** - ML, NLP May 2018 - Jul 2018

*Given fact descriptions of criminal cases, predicting judgment results, e.g. applicable law articles, charges, and prison terms*

- Achieved Chinese **Word Segmentation** with Jieba, and trained **Word2Vec** model with Gensim.
- Generated additional training data for minor labels to improve prediction performance.
- Assembled deep learning models (**TextCNN**, **BiLSTM**) and fusion model, and reached F1 score of 82%.