

# Melanie Kwon

Los Angeles, CA - 949.351.8387 - melaniemkwon@gmail.com - linkedin.com/in/melaniekwon - github.com/melaniemkwon

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## SKILLS

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### SOFTWARE DEVELOPMENT

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Git, TDD, UNIX CLI, Bash, Basic Linux server administration (SSH), AWS, GCP, Jenkins, Docker

### DATA ENGINEERING / MACHINE LEARNING

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MS SQL Server, MySQL/MariaDB, PostgreSQL, MongoDB, Redis, Apache Airflow, Data Processing, Cleansing & Modeling, ETL, PySpark, SQL Alchemy, Numpy, Pandas, Scikit-Learn, TensorFlow/Keras

### FULL-STACK WEB AND MOBILE APP DEVELOPMENT

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FRONT-END: Bootstrap, Sass, Angular, Vue

BACK-END: NodeJS/Express, Go

TOOLS: NPM scripts, Grunt, Webpack

TESTING: Mocha, Jasmine, Karma, Protractor

MOBILE: Ionic/Cordova, Nativescript

### PROGRAMMING LANGUAGES

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Python, Javascript, Golang, SQL, Java, CSS, C++, Haskell

## EXPERIENCE

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### FIRST QUADRANT

Pasadena, CA

#### Data Engineer, Investments – Research Technology

May 2018 - Present

- Design, develop, test, and deploy custom data solutions across the firm while maintaining in-house database infrastructure and data flow control systems built in Python. Monitor and maintain large-scale error free datasets for researchers.
- Experience in large-scale batch data processing of time-series data. Database indexing, partitioning, and query optimization.

### DATA SCIENCE RESEARCH LAB – CSULA

Los Angeles, CA

#### Research Project Manager / Python Developer

May 2017 - Present

- Plan, lead, and coordinate an original, collaborative study with pathologists of LAC+USC/Keck Hospital to assess the diagnostic accuracy of convolutional neural networks trained on whole slide scanned cytology images.
- Engineered a data processing pipeline with Numpy, Pandas, OpenCV & OpenSlide APIs to pre-process large-scale Gigapixel pathology specimen images (100,000 x 300,000 pixels) for input into Tensorflow Object Detection API.

### KAISER PERMANENTE – DEPARTMENT OF RESEARCH AND EVALUATION

Pasadena, CA

#### Operations Analyst / Programmer

Aug 2015 - Sept 2017

- Experience in Microsoft BI stack (SSRS reports, ETL with SSIS, writing stored procedures/views in MS SQL Server).
- Automated business intelligence reports in VBA/Excel/Access (Space Management, Grant Projection Tool).

### MERCURY INSURANCE GROUP

Brea, CA

#### Business Systems Analyst

Jan 2015 – Aug 2015

- Liaison between business and project team to translate business requirements to functional requirements for developers.
- Review requirements with QA, send UAT Approval requests, facilitate meetings to assess scope, gather estimates, determine dependencies to coordinate integration, and check project status to meet multiple upcoming deadlines.

## PROJECTS

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- K-Star-Cafe-Angular:** **Single-page Application** using Typescript and **Angular** framework (Ver 4.x). Responsive UI design in **Angular Material** and **Angular Flex-Layout**. Demonstrates use of Observables, reactive programming with **RxJS**, and **Restangular** for communicating with a server supporting REST API.
- K-Star-Cafe-RESTAPI:** Full-fledged back-end **RESTful API** server developed using **NodeJS**, **Express**, **MongoDB** and **Mongoose**. Token-based **user authentication** with Passport-JWT. Includes **HTTPS** secure communication, form-based file upload with Multer, Cross-Origin Resource Sharing (CORS) and **OAuth2** for authentication via Facebook credentials.

## EDUCATION

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M.S., Computer Science, California State University Los Angeles, Concentration: Data Science. 2018.

B.A., Political Science, University of California Los Angeles, Concentration: American Government & Politics. 2010.

## PUBLICATIONS

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**M. Kwon**, M. Kuko, V. Martin, T. H. Kim, S. E. Martin, M. Pourhomayoun, "Multi-label Classification of Single and Clustered Cervical Cells Using Deep Convolutional Networks," The 14th Int. Conference on Data Science (ICDATA'18), 2018