

# Nathan Tsai

Software Engineer | Hackathon Enthusiast

## EDUCATION

### University of California, Los Angeles | Computer Science

EXPECTED GRADUATION: JUNE 2019

▸ GPA: 3.8

## EXPERIENCE

### Software Engineer Intern | Qualtrics

JUNE 2018 – SEPTEMBER 2018

- Developed Angular modules for preconfiguring templates of data visualization widgets
- Constructed a dependency tree to efficiently inject customer data into generic templates
- Unit tested Angular components with Mocha and Sinon to achieve 100% test coverage

### Software Engineer Intern | Novacoast

APRIL 2017 – JUNE 2018

- Built a REST API with Go that queries 2,500+ customer contracts stored in MongoDB
- Automated customer acquisition processes by integrating with Box and DocuSign APIs
- Deployed Docker containers to facilitate communication between server and client code

### Web Developer | Daily Bruin

SEPTEMBER 2016 – APRIL 2017

- Transformed research and journalism into informative pages viewed by thousands/day
- Designed interactive map elements to allow users to virtually explore UCLA's campus
- Implemented lazy loading techniques to dynamically call APIs when data is requested

## PROJECTS

### Brain Lesion Segmentation | Machine Learning Model

<https://github.com/nwtsai/BrainLesionSegmentation>

- Presented a conditional adversarial network model to UCLA professors and PhD students that isolates brain lesions from real MRI scans, achieving a structural accuracy of over 96%
- Tuned the model's hyperparameters to ensure a high accuracy while avoiding underfitting and overfitting by graphing test accuracy against epoch, step, and discriminator filter count

### Pocket Change | Personal Finance App

<https://github.com/nwtsai/PocketChange>

- Constructed an iOS app with Swift and the Core Data framework that allows a user to analyze their personal spending habits by observing trends with charts, graphs, and maps
- Utilized regular expressions for data validation by dynamically enabling or disabling buttons and limiting text field inputs to ensure data integrity, validity, and legitimacy

### MarkItPlace | E-Commerce Platform

<https://github.com/nwtsai/MarkItPlace>

- Created a full-stack web application with JavaScript and Amazon AWS, providing an online platform for users to buy, sell, and search for items by interacting with a live map
- Devised filtering algorithms that allow users to find items by key word, category, price range, and location, displaying only the markers on the map that match the search criteria

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<https://www.github.com/nwtsai>

<https://www.linkedin.com/in/nwtsai>

## SKILLS

### Programming Languages

C++, JavaScript, python, Golang, Swift, Java, C, Bash

### Relevant Coursework

CS 180 | Algorithms and Complexity  
CS 152 | Design of Digital Systems  
CS 146 | Machine Learning  
CS 130 | Software Engineering  
CS 117 | Computer Networks  
CS 111 | Operating System Principles

### Platforms

Docker, Github, Gitlab, Box, DocuSign, Salesforce, Solidworks

### Libraries | Frameworks

Angular, React, Node, Lodash, jQuery, WebGL, Handlebars, Bootstrap, Materialize

### Markup Languages

XML, HTML

### IDEs

Sublime, XCode, Android Studio, Microsoft Visual Studio, Eclipse

### Languages

English [native], Mandarin [fluent]

## AWARDS

### Dean's Honor List

Scholastic distinction granted to UCLA engineering students who obtain a GPA of **3.7** or above

- Winter 2017
- Spring 2017
- Fall 2017
- Winter 2018
- Spring 2018

### AP Scholar with Honor

Granted to students who receive an average score of at least **3.25** on all AP exams taken, and scores of **3** or higher on four or more of these exams

### Community Service Award

Awarded to students who have given at least **300** hours back to the community through volunteer work