

# Nathan Tsai

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## EDUCATION

### University of California, Los Angeles | B.S. Computer Science

EXPECTED GRADUATION: JUNE 2019

▸ GPA: 3.64

## EXPERIENCE

### Software Engineer Intern | Qualtrics

JUNE 2018 – SEPTEMBER 2018

- Deployed Angular modules for customizable data visualization widgets into production
- Constructed a generic template generator that dynamically fetches customer-facing data
- 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

[github.com/nwtsai/BrainLesionSegmentation](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

[github.com/nwtsai/PocketChange](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

[github.com/nwtsai/MarkItPlace](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

## SKILLS

### Languages

- C++, Java, Golang, Swift, C
- Python, JavaScript, Bash
- SQL
- HTML, CSS, Less

### Frameworks | APIs

- AngularJS, Angular, React
- Node, Flask
- Apache Spark
- Lodash, jQuery, WebGL
- iOS SDK, CoreData
- Bootstrap, Materialize
- Docker, Box, DocuSign
- Git, Gitlab, Github

### Databases

- MySQL
- MongoDB

## COURSEWORK

### Computer Science

- Algorithms and Complexity
- Computer Graphics
- Medical Imaging
- Logical Design of Digital Systems
- Systems Architecture
- Machine Learning
- Database Systems
- Software Engineering
- Computational Genetics
- Bioinformatics Algorithms
- Bioinformatics
- Computer Networks
- Operating System Principles
- Software Construction
- Computer Organization

## ORGANIZATIONS

### Theta Tau

- Hackathon Coordinator
- Networking Event Organizer
- Resume Workshop Facilitator
- Professional Development Officer

## AWARDS

### Dean's Honor List