

# Nathan Tsai

App Developer | College Student | Volunteer

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## EDUCATION

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

SEPTEMBER 2015 - PRESENT

GPA: 3.5

## EXPERIENCE

### iOS Developer | BuildUCLA

JANUARY 2017 - PRESENT

- Develop a UCLA Library app that provides users with essential library information

### Web Development Intern | The Daily Bruin

JANUARY 2017 - PRESENT

- Design and maintain the online edition of UCLA's premier source of campus news

## PROJECTS

### Pocket Change | *Personal Finance App (iOS)*

- Constructed an IOS app with Swift that helps users manage their personal budget by logging how much, when, and why money was spent
- Designed dynamic, reactive buttons that disable when an input results in a negative balance or if the input is not a number
- Implemented a class to store pertinent information for each corresponding budget, which allows many budgets to function at once while maintaining their respective values

### Frackman | *Interactive Video Game (User vs. AI)*

- Implemented a game with C++ based on the classic 1982 arcade game 'Dig Dug,' exhibiting concepts such as polymorphism, inheritance, and encapsulation
- Designed a method for the AI to follow the location of the player on the grid with a queue-based algorithm that performs a breadth-first search
- Devised a hierarchy of game objects to both distinguish the different objects and store them in a single array under a superclass to prevent code duplication

### Blackjack | *Virtual Card Game (User vs. AI)*

- Programmed a virtual card game with Java based on one of the most popular casino games, by implementing an aesthetic interface and interactive graphics
- Constructed a decision tree that guides the AI and teaches it how to play the game and make smart decisions based on intuitive game logic
- Developed code that takes into account the varying values of the Ace card, assigning the card a value when it is advantageous for the player or the AI

### Professional Portfolio | *Personal Website*

- Implemented parallax effects, typing animations, hover zoom capabilities, and button animations using HTML, CSS, and Javascript to enhance the navigation experience
- Developed a scrolling functionality that animates the text based on the location of the window and highlights the current section in a table of contents

## SKILLS

### Programming Languages:

Swift (iOS), C++, C, Java, Javascript, Bash (Shell Scripting), Python

### Markup Languages:

HTML, CSS

### Programming Concepts:

Object-Oriented Programming, Data Structures, Sorting Algorithms, Inheritance, Polymorphism, Big O Notation, Encapsulation

### IDE's:

Eclipse, XCode, Microsoft Visual Studio

### Software:

Salesforce, Solidworks (CAD), Microsoft Excel, Powerpoint

### Operating Systems:

Windows, Mac OS X, UNIX

### Languages:

English, Chinese, Latin

## AWARDS

### Dean's Honor List

Scholastic distinction granted to UCLA engineering students who obtain a GPA of 3.7 or above and enroll in at least 15 units (Spring 2016, Fall 2016)

### 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 200 hours back to the community through volunteer work