

Nathan Tsai

App Developer | Web Developer | Volunteer

EDUCATION

University of California, Los Angeles | *Computer Science*

GRADUATION DATE: JUN 2018

GPA: **3.531**

EXPERIENCE

Mobile Developer | **BuildUCLA**

JAN 2017 – PRESENT

- Develop the official UCLA library app that provides users with real-time data (**Swift**)

Web Development Intern | **The Daily Bruin**

JAN 2017 – PRESENT

- Design and maintain the online edition of UCLA's newspaper (**JavaScript**, **jQuery**)

PROJECTS

Pocket Change | *Personal Finance App (iOS)*

- Constructed an iOS app with **Swift** that helps users manage their personal budgets by depicting how much, when, and why money was spent
- Designed animated pie charts and bar graphs that plot transaction data for each budget over various time intervals, creating beautiful visualizations of a user's spending history
- Implemented algorithms that utilize regular expressions to ensure that the input from a user is valid by dynamically enabling or disabling buttons and limiting text field inputs

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 (<http://nwtsai.me>)*

- 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 responsive table of contents

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SKILLS

Programming Languages:

C++, Swift 3 (iOS), JavaScript, Java, C, Bash, Python, Verilog

Markup Languages:

HTML, CSS

Programming Concepts:

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

Libraries / Frameworks:

jQuery, WebGL, Bootstrap, Materialize.io

IDE's:

XCode, Microsoft Visual Studio, Eclipse

Software:

Salesforce, Solidworks (CAD), Microsoft Excel, PowerPoint

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 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 **300** hours back to the community through volunteer work