

Nathan Tsai

App Developer | Web Developer | Volunteer

EDUCATION

University of California, Los Angeles | *Computer Science*

GRADUATION DATE: JUN 2018

GPA: 3.5

EXPERIENCE

Mobile Developer | **BuildUCLA**

JAN 2017 – PRESENT

- Develop a UCLA library app that provides users with library information (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 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 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 (<http://nwnsai.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 table of contents

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SKILLS

Programming Languages:

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

Markup Languages:

HTML, CSS

Programming Concepts:

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

IDE's:

XCode, Eclipse, Microsoft Visual Studio

Software:

Salesforce, Solidworks (CAD), Microsoft Excel, PowerPoint

Operating Systems:

Mac OS X, Windows, UNIX

Languages:

English (native), Mandarin (native), Latin (reading, writing)

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