Nathan Tsai

App Developer | College Student | Volunteer

nwtsai@gmail.com
805.452.8162
www.nwtsai.me
www.github.com/nwtsai
www.linkedin.com/in/nwtsai

EDUCATION

University of California, Los Angeles | *Computer Science*

SEPTEMBER 2015 - PRESENT GPA: **3.4**

Degree (Expected June 2019): Bachelor of Science, Computer Science and Engineering
Completed Courses: Algorithms, Data Structures, Software Construction Lab, Logic Design of Digital Systems, Computer Architecture, Discrete Mathematics
In Progress: Computer Graphics (C++), Computer Networks: Physical Layer

Dos Pueblos High School | *Santa Barbara*

AUGUST 2011 - JUNE 2015 Community Service Hours: **302** ACT: **34** GPA: **4.76**

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

Personal Website | *Professional Portfolio*

- 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
- Created alternative code for varying screen sizes that dynamically alters the layout of the screen, ensuring that the website is desktop, tablet, and mobile friendly

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