

Nathan Tsai

Volunteer | College Student | Aspiring Software Engineer

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EDUCATION

University of California, Los Angeles | Computer Science

SEPTEMBER 2015 - PRESENT

GPA: **3.4**

Major: Bachelor of Science, Computer Science and Engineering
Completed Courses: Algorithms, Data Structures, Comp. Organization, Discrete Mathematics, Multivariable Calculus, Linear Algebra, Mechanics
In Progress: Software Construction, Logic Design of Digital Systems

Dos Pueblos High School, Santa Barbara

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

PROJECTS

Personal Website — Professional Portfolio

- › Combined both static and dynamic features to create an aesthetic and interactive webpage using HTML, CSS, and Javascript
- › 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 both tablet and mobile friendly
- › Implemented parallax effects, typing animations, hover zoom capabilities, and button animations to enhance the navigation experience

Frackman — Interactive User vs. AI Video Game

- › Based on the 1982 game Dig Dug, I implemented a game using C++, 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 User vs. AI Card Game

- › 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

SKILLS

Programming Languages:

C++, Java, Javascript, Assembly

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

Operating Systems:

Windows, Mac OS X, Linux

Programs:

Salesforce, Solidworks (CAD), Microsoft Excel, Powerpoint

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 during any quarter (Spring 2016)

AP Scholar With Honor

Granted to students who score at least a **3.25** on all AP Exams

Community Service Award

Awarded to students who have given at least **200** hours to the community thru volunteer work