Nathan Tsai

Aspiring Software Engineer | College Student | Volunteer

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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