Jennifer Zhu

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EDUCATION

Computer Science (STEM) Endorsement   **May 2024**
Seven Lakes High School Honors
Overall GPA: 4.78/5.00 (By 08/12/2023)   **Unweighted GPA:** 4.00/4.00   **ACT:** 36   **Class Rank:** 33/877

PROFESSIONAL EXPERIENCE

Berkeley Computer Science Academy, UC Berkeley Computer Science, 6/2023
- Used Snap! to recreate multiplayer game of Pong and demoed to UC Berkeley Professor Dan Garcia
- Added 5 complex power-ups (speed up ball, slow opponent, double points, shield self, double paddle size)
- Applied tree recursions to generate graphics and higher order functions to improve code legibility
- Following Berkeley CS Academy, independently remade Snap! Pong game on Scratch and published to public
  https://scratch.mit.edu/projects/871226876/

Academy for Game Development, UT Austin Computer Science, 7/2022
- Used JavaScript, Phaser, HTML, and Windows PowerShell to deploy web game on local server
- Allowed user to move squirrel around lava cave, jump on green platform blocks, and collect coins
- Drew paper prototypes to simulate game interaction and determine game algorithm
- Analyzed game mechanics of popular games using MDA analysis (Mechanics, Dynamics, Aesthetics)

Academy for All, UT Austin Computer Science, 6/2022
- Chosen as Academy Scholar, demoed to UTCS Professors, studied computer architecture from Turing Director
- Developed innovative light show game that detects when player stops rotating lights at cat eyes
- Coded C++ on Arduino to change light colors and detect player interaction with potentiometer device

Academy for iOS App Development, UT Austin Computer Science, 7/2021
- Used Swift to create shopping app (add shopping list, calculate total price, view nearby shops) with MapKit
- Applied animations and incorporated UITableView to display lists of friends to show details in new page
- Utilized SpriteKit and GameplayKit to display colorful square where user clicks and fade greeting message
- Programmed UIScrollView and UIImageview to drag and view details of large picture

Python Data Structure and Algorithms at Ameriduo, 2022
- Learned data structures (set, stacks, queues, maps, trees, linked list), recursion, Big O Notation, and algorithms using Python. Received Certificate.

Python for Beginners at Ameriduo, 2021
- Learned Python including conditionals, looping, functions and exceptions, data structures, classes and objects, and functional programming. Received Certificate.

PERSONAL PROJECT

Personal Website, 8/2023 – Present
- Self learned HTML, CSS, and Javascript to create website to demo projects and summer camp experiences
- Provided YouTube link for each project which goes over project functionality and graphics
- Website: https://jennypenguin.github.io/My-Profile/

SKILLS

Languages: Java, JavaScript, Swift, C++, Python, HTML, CSS and C#
Tools: Xcode, Unity, IntelliJ / Eclipse, Visual Studio Code, Arduino, Atom, Scratch, and Code.org, Snap!
Citizen of USA who is fluent in English and Mandarin

CERTIFICATIONS

- Unity Certificate for Unity Certified User: Programmer (2023)

COMPUTER SCIENCE ACADEMIC EXPERIENCE, Seven Lakes High School

KAP Unity Game Development, Seven Lakes High School, 8/2022 – 5/2023
- Used Unity to create 3D game where user can wander through forest and initiate dialogues with NPC
- Created 2D games and features (platform, storyline, character animations, dialogues, drag and drop, etc)
- Incorporated Unity Camera to allow user to view world through player's view and played sound effects
- Demo Video Link: https://drive.google.com/drive/u/0/folders/1_tpg88djr4-abh1as40nAkK-C_aPpHjC

KAP Data Structures, Seven Lakes High School, 8/2022 – 5/2023
- Developed data structures in Java (set, map, binary trees, red and black tree, AVL tree, queues, stacks)
- Used Java Swing to graphically recreate complex games (Azul, Kingdom Builder, Love Letter)
- Demo Video Link: https://drive.google.com/drive/u/0/folders/1_tpg88djr4-abh1as40nAkK-C_aPpHjC

AP Computer Science A and Principles, Seven Lakes High School, 8/2020 – 5/2022
- Used JavaScript to build divisibility app on Code.org to present to AP College Board
- Learned advanced Java, including recursion, search and sort algorithms, and matrix traversal

Senior Year Computer Science and STEM Classes: KAP Data Science; KAP Independent Study, KAP Amazon Web Service Development (AWS); KAP Multivariable Calculus; AP Physics 2

HONORS & AWARDS

- National Merit Semifinalist (2024, probably with NMSC:221)
- AP Scholar with Distinction Award (2022 and 2023)
- UC Berkeley Computer Science Academy Pre-College Scholar (2023)
- UT Austin Computer Science Academy for All Scholar (2022)
- Seven Lakes Certificate of Membership in National Honor Society (2022 and 2023)

Legacy Honor Award (For student with strong performance in all classes and exceptional in at least one area)
- Seven Lakes Certificate of Honor in Honor Category of Legacy (2022)

Underclassmen Academic Awards (Given by each teacher to a student with genuine interest and outstanding academic achievement)
- Seven Lakes Certificate of Academic Achievement in AP Statistics (2023)
- Seven Lakes Certificate of Academic Achievement in KAP Computer Science 3 Data Structures (2023)
- Seven Lakes Certificate of Academic Achievement in KAP Chinese 3 (2022)
- Seven Lakes Certificate of Academic Achievement in AP Computer Science Principles (2021)
- Seven Lakes Certificate of Academic Achievement in KAP English I (2021)

ACADEMIC COURSEWORK

Math and Computer Science AP Exams: AP Computer Science A (5); AP Computer Science Principles (5); AP Calculus BC (5); AP Calculus AB (5); AP Statistics (5); AP Physics 1 (5)

Other Computer Science Classes: KAP Data Structures (A); KAP Unity Game Development (A)

Other AP Exams: AP English Language and Composition (5); AP Chinese Language and Culture (5); AP United States History (5); AP Human Geography (5); AP Seminar (5)

Future AP Exams: AP Physics 2; AP Physics C Mechanics; AP Physics C Electricity and Mechanism; AP English Literature and Composition; AP Macroeconomics; AP Comparative Government and Politics; AP Psychology

VOLUNTEER EXPERIENCE

- Raised $1,406 for Seven Lakes Speech and Debate Tournament Attendees (2022)
- Food Bank
- Private counseling for immigrant students