Ian Loo

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PROFILE SUMMARY

Accomplished, innovative, and results-driven individual with strong leadership and entrepreneurial skills. *Eager to earn an internship, research, or work opportunity utilizing my technical skills and to expand my knowledge in the field of computer science.*

EDUCATION

REDMOND HIGH SCHOOL   Redmond, Wa
CALIFORNIA POLYTECHNIC UNIVERSITY, SAN LUIS OBISPO   San Luis Obispo, Ca
Bachelor of Science, Computer Science, June 2025
GPA: 3.3/4.0

Relevant Coursework:

Fundamentals of Computer Science (Python), Computational Art (JavaScript), Data Structures (Python), Objected Oriented Programming (Java), Introduction to Computer Organization (C)

SKILLS

- Languages: English (Native), Cantonese (Intermediate)
- Skills: Java, Python, JavaScript (Intermediate), C (Intermediate), HTML (Intermediate)

EXPERIENCE

PRIVATE TUTOR   3 hours/week
6th Grade Math, Geometry, Algebra 1   *Sep 2018 – Apr 2021*

- Taught math to middle schooler with ADHD (300+ hours of teaching)
- Raised student's grade from C+ (6th grade) to A (present)
- Conducted monthly meetings with parents to discuss student's progress and soliciting feedback and advice for teaching strategies

RESELLER   1-4 hours/week
- Created eBay and Depop pages with 1000+ visits   Sep 2017-Present
- Resell clothing, video games and other commodities
- Generated $2000+ in revenue

PROJECTS

HUFFMAN ENCODING/DECODING (PYTHON)

- Created a program to compress text files using Huffman Coding where each character is assigned a variable length code (depending on frequency of character) consisting of 0's and 1's
- Utilized a tree data structure, in the form of a doubly linked list with priority, to store character, character frequency and the path from the root of the tree to the character (left is 0, right is 1)
- Utilized recursion to traverse through the "tree" to generate the code of 0's and 1's for each character
- Returned a compressed file of strings and a compressed file of bits; decoding is vice versa.

CONCORDANCE/HASH TABLE (PYTHON)

- Created a hash table using open addressing in the form of quadratic probing for collision resolution; hash table can grow and rehash when the load factor is greater than 0.5
- Concordance program reads files and processes words into the hash table as keys and the corresponding line numbers the word occurs on as values
- File is returned which contains each word and corresponding line number(s) separated with a new line for each new word

VIRTUAL WORLD SIMULATION (JAVA)

- Created a simulation with different entities (octopus, crab, fish, etc.) and events (earthquakes, lava spawn).
- Programmed A Star Pathing algorithm for entities to find the quickest route to their respective targets (ex. octopus eats fish; crab eats seaweed)
- Implemented user input with mouse pressed at certain point which spawns lava and bird entity that also utilizes A Star to eat crabs.