Zachary Chan

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**SKILLS**



**Programming Languages (In Order of Confidence):** C++, Python, JavaScript, C#, Java, HTML, CSS, RISC V

**Software:** Visual Studio Code, Git, Unity, GoogleTest, Microsoft Office Suite

**Languages:** English, French, Mandarin

**General:** Creative, Fast learner, Communicative, Curious



**PERSONAL PROJECTS**



**Chess AI Tournament (JavaScript and C++)**

**June 2022 - Present**

* Wrote 16 different chess AIs based around specific playstyles or strategies with JavaScript to objectively rank the best strategy or playstyle.
* Evaluated their relative performance against each other in a round-robin tournament.
* Processed roughly 15 million chess games to create an opening book and a Markov chain for a performance boost to the AI with C++.

**Chess With Friends Discord Bot (JavaScript)**

**July 2022 - Present**

* Wrote a Discord bot completely from scratch with Nodejs and the Discord.js library to improve my familiarity with Nodejs.
* Utilised APIs to generate images to display the state of the board.
* Linked a SQL database to the bot using Sequelize and SqLite3 for keeping track of user info.

**Automated Crossword Puzzle Generator (Python)**

**May 2022 - June 2022**

* Scalped a word bank and word definitions from various websites using Selenium, BeautifulSoup4 and requests to generate the crossword hints.
* Designed a generic page format with Matplotlib and PIL to better automate the creation of puzzle pages.
* Built a unit testing suite with native python to assist with debugging unexpected results.
* Sold the finished puzzles through Amazon Kindle Direct Publishing (KDP).



**COURSES**



**Algorithms & Data Structures II**

**Langara College • 2021 • A**

Performed algorithm analysis. Implemented binary trees, heaps, priority queues, graphs and various algorithm paradigms (divide and conquer, greedy, dynamic programming, etc). Wrote unit tests to rigorously find and fix bugs and other unexpected behaviours. Explored object oriented programming (OOP).



**COURSES (CONTINUED)**



**Program Design**

**Langara College • 2021 • A**

Using good software development and design principles, build and implement algorithms. Developed problem-solving techniques and tools while learning the basics of algorithm development, procedural abstraction, and data representation.

**Networking**

**Langara College • 2020 • A**

Learned about network topology, ports, MAC addresses, IP addresses, TCP/IP and UDP packets, terminal commands, the OSI 7 layer model and in general, wired and wireless data communication.



**VOLUNTEER EXPERIENCE**



**Support**

**Karuta.com** **February 2021 - Present, Discord.gg/Karuta**

* Collaborated with the rest of the team to provide ideas for the direction of the game.
* Answered questions and guided new players on how to play Karuta.
* Resolved complex situations (E.g. arguments and disagreements) with a level head.



**EDUCATION**



**B.Sc Computer Science**

**Simon Fraser University • Burnaby, BC • 2022 - now • 3.56/4.33 CGPA**

**Associate of Computer Science (Transferred)**

**Langara College • Vancouver, BC • 2020 - 2022 • 3.87/4.33 CGPA**



**INTERESTS**



**Programming**

Participated in “A Strange Programming Competition”

Participated in “Fall Hacks 2022”

**Chess**

1900 Rapid, 1600 Blitz, 1150 Bullet, 2150 Puzzle on chess.com.

**Finance**

Self-directed investments. Took economics related electives.

**Music**

Played the piano for a decade. Composed music for a video game; Currently still in development.