Zachary Chan

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**Work Experience**



**Software Development Engineer Intern**

**Netflare.dev** **January 2023 - April 2023**

* Developed reliable and scalable serverless systems using AWS, JavaScript and React.
* Practiced agile methodologies to deliver high-quality software, collaborating on design and implementation to solve broadly defined problems.
* Involved in making informed system design choices to improve performance, scalability, and maintainability.



**PERSONAL PROJECTS**



**Website that builds itself (JavaScript, HTML and CSS)**

**October 2022 - Present**

* Utilised Node.js and git as part of the development workflow.
* Created a file parser to read and interpret a custom CSS file.
* Animate and entertain those who view it!

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

**June 2022 - October 2022**

* 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 AI using Monte Carlo Tree Search and Deep Neural Networks (Python)**

**February 2023 - Current**

* Designed a sophisticated deep neural network to enhance MCTS search capabilities, leveraging PyTorch for high-performance GPU-accelerated computation.
* Introduced various optimizations to strike a balance between performance and move exploration, significantly improving Chess AI gameplay and optimizing potential move exploration while reducing computational bottlenecks.
* Incorporated early stopping and adaptive learning rate scheduling techniques to prevent overfitting and boost overall model performance.



**EDUCATION**



**B.Sc Computer Science**

**Simon Fraser University • Burnaby, BC • 2022 - now • 3.72 CGPA**

**Associate of Computer Science (Transferred)**

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



**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).

**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.



**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



**INTERESTS**



**Programming**

Participated in “A Strange Programming Competition”

Participated in “Fall Hacks 2022”  
Participated in “New Year’s MASH Programming Contest”

Qualified for the “ICPC Pacific NorthWest Regional Programming Contest”

**Chess**

2000 Rapid, 1700 Blitz, 1250 Bullet, 2250 Puzzle on chess.com.

**Finance**

Self-directed investments. Took economics related electives.