

Zhiyuan Wang

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EDUCATION

University of Waterloo

Waterloo, ON | Aug 2025

3RD YEAR BACHELOR OF MATHEMATICS, MAJOR IN Data Science (Co-op), GPA: 90%

Coursework: Data Structures and Algorithms; Database Management; Numerical Computation; Machine Learning

WORK EXPERIENCE

SOFTWARE ENGINEER INTERN | HUAWEI CANADA CO.

Markham, ON | May 2023 – Present

- Analyzing and optimizing **LLVM** compiler based on Team Planning, including conducting **unit tests** and **regression tests** on CPU performance assessment, and optimizing **C++** source code.
- Generated **Python** and **bash** scripts to integrate new benchmarks into existing workflows.
- **Key Accomplishment:** Optimized **LLVM** source code to improve SLP vectorization, reducing CPU perf count on benchmark function by **9%**

WEB DEVELOPER | HORIZN STUDIOS

Toronto, ON | Sep 2022 - Dec 2022

- Developed and optimized web projects based on Product Manager's requirements and Team Planning, including content updates with **Laravel** and improved interactivity using **React**.
- Conducted local server tests using **MAMP** and **Behat** with **ChromeDriver** and utilized **Jenkins** for testing on development sites
- **Key Accomplishment:** Integrated existing methods in **Laravel** to perform CRUD operations on databases and modify website content easier, reducing required migration code by **40%**.

SELECTED PROJECTS

ELIBRARY SIMULATOR 🚫

NEXT.JS, REACT, JAVA, SPRINGBOOT, MYSQL, GIT, FULL STACK

- Developed a library website simulator using **Next.js**, **Springboot** and **MySQL** as an innovative team project
- Collaborated with the team to analyze the database schema and website functionality to identify key areas for **index** optimization.
- **Most Challenging Feature:** Created **RESTful** API using **Spring MVC** and fetched data using **Axios**.

GOCHAT 🚫

GOLANG, NEXT.JS, SOCKET, AWS EC2, MONGODB, VERCEL

- Developed a Chat Server and Chat Client using **Golang** and **Next.js** and using **Socket** to connect.
- Utilized **MongoDB** to store Chat history and User information.
- Server deployed in **AWS EC2** with **Nginx** as a reverse proxy for server protection and Client deployed using **Vercel**.

KNIGHT-MAZE 2D GAME 🚫

UNITY, C#, CONCURRENCY

- Developed 2D Unity side-scroller Game using **C#** and **UnityEngine**, exploring topics such as AI navigation, procedural animation.
- **Most Challenging Feature:** Implemented various components (prefab) such as boomerang, one-way platform and hide spike.

ROGUE-LIKE GAME

C++, OOP, DESIGN PATTERN, ARTIFICIAL INTELLIGENCE

- Designed and developed a **C++** game with **object-oriented programming** as an innovative team project.
- Implemented **Decorator** design pattern to enhance player abilities using different potions
- **Most Challenging Feature:** Implemented **A* searching Algorithm** on Monsters Move method such that all monsters will chase player using the shortest path.

SKILLS

Languages: C++, C, Go, Java (Springboot), Python (Numpy), PHP (Laravel), Racket, R, Matlab

Web Development: Next.js, React, JavaScript, TypeScript, HTML/CSS

Technology: Linux, Bash, Git, Vercel, Node.js, MySQL, MongoDB, Redis, Jenkins Nginx, AWS(EC2 S3), Docker, Unity, \LaTeX