

Liao Zhu

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TECHNICAL SKILLS

Languages: C/C++, Python, Pytorch, JavaScript, SQL (Postgres), HTML/CSS, R, DrRacket

Developer Tools: Git, VS Code, Visual Studio, PyCharm, Jupyter Notebook

Others: Linux(Ubuntu), Google Cloud Platform

PROJECTS

Canada Wildfire Prediction | *Pytorch, Jupyter Notebook*

May 2024 – Present

- Developed a predictive model for wildfire growth using weather data, fire weather indices, topography, fuel, and low-resolution fire hotspots.
- Trained the model on data from 8 major wildfires in British Columbia (2018), covering over 250,000 hectares, achieving 75% accuracy.

Weather fetcher application | *Flask, Html/CSS, JavaScript, API, Python, AJAX*

May 2024 – Present

- Developed a full-stack weather application using Flask for the backend and HTML/CSS/JavaScript for the frontend, enabling real-time weather data retrieval and display from the OpenWeatherMap API.
- Implemented temperature conversion functionality to display temperatures in both Fahrenheit and Celsius, enhancing the user experience with accurate and flexible weather information.
- Ensured efficient data handling and secure cross-origin resource sharing (CORS) compliance, protecting the application against potential security risks and ensuring smooth data integration.
- Utilized asynchronous JavaScript (AJAX) calls to dynamically update weather data on the frontend without page refresh, providing a seamless and responsive user interface.

Game-2048 | *Python, Pygame*

April 2024 – Present

- Developed a fully functional 2048 game with core mechanics like tile movement, merging, and random tile generation.
- Designed a responsive graphical user interface with dynamic tile coloring and smooth transitions.
- Integrated a real-time scoring system, dynamically calculating and displaying the player's score during gameplay.

Personal webpage | *HTML, CSS and Javascript*

April 2024 – Present

- Used HTML, CSS, and JavaScript, showcasing my technical skills and portfolio projects
- Optimized website performance and load times by strategically managing scripts and stylesheets.
- Designed and maintained a clean user interface.
- Focused on usability and aesthetic details.

EXPERIENCE/AWARDS

Wild Fire Hachathon

May 2024

University of Waterloo

Waterloo, ON

- Collaborated in a team to enhance a predictive model for wildfire growth.
- Improved model accuracy by integrating weather data, fire weather indices, topography, fuel, and low-resolution fire hotspots.
- Achieved a prediction accuracy of 75%, demonstrating the model's reliability and effectiveness.

President's Scholarship of Distinction

September 2023

University of Waterloo

Waterloo, ON

- Admitted to the University of Waterloo with an early-May admission average of over 95%.

Student Union Department President

October 2020 – May 2023

Nanjing No.13 Middle School

JS, China

- Organized and led school-wide mathematics competitions, attracting 200 participants and significantly enhancing student engagement while fostering a competitive academic environment.
- Served as the Event Coordinator for school sports meetings, managing logistics, scheduling, and team coordination to ensure smooth execution of events.

Chinese Physics Olympiad

May 2019 – July 2019

Nanjing

JS, China

- Top Prize* in Jiangsu Province (first 100 among 440'000 high school students), recognizing exceptional knowledge and problem-solving skills in physics among provincial competitors.

LANGUAGE

English | Native Proficiency
Mandarin | Native Proficiency

EDUCATION

University of Waterloo
Bachelor of Mathematics in Computer Science
• First year cGPA over 90

Waterloo, ON
Sep. 2023 – Present