

Alan Bui

☎ +1 226-506-8458 | ✉ a4bui@uwaterloo.ca | [in alan-bui1](#) | [G AlanBui1](#) | [🌐 alanbui.ca](#)

Skills & Technologies

Languages: Python, JavaScript, Java, C++, TypeScript, HTML, CSS, R, Dart, Racket

Frameworks & Tools: React.js, Node.js, Firebase, Git, Express.js, NumPy, Flutter, Docker

Education

University of Waterloo (Bachelor of Computer Science)

Sept. 2024 – 2028 (expected)

René Descartes National Scholarship Recipient (~10 recipients in Canada)

Waterloo, Canada

Experience

University of Windsor

July 2023 – Aug. 2023

Research Assistant

Windsor, ON

- Co-authored a **research paper** on the performance of LLM embeddings for molecular property prediction
- Developed tools to transform molecular structure text encoding into vector embeddings using **7 AI models**
- Applied **30+ statistical tests** in Python (with sklearn, NumPy, pandas) to find **LLaMA outperformed GPT**

Vincent Massey Computer Science Club

Sept. 2022 – June 2024

Senior Stream Teacher | Contest Organizer

Windsor, ON

- Curated **20+ lesson plans** in Python and C++ to teach data structures & algorithms for programming contests
- Tracked **50+ members'** homework progress by creating a full-stack leaderboard using React, Node, Firebase
- Taught web development fundamentals through project-based learning using **HTML/CSS/JS/Node/React**

MasseyHacks

Sept. 2022 – June 2024

Co-Director (2023) | Operations Organizer (2022)

Windsor, ON

- Coordinated the Finance team to receive \$12000 in sponsorships for **Canada's oldest high school hackathon**
- Developed a **15-puzzle hackenger hunt** in React and Node to test front-end and back-end knowledge
- Led the Tech team to develop the event website using HTML/CSS/JS, increasing hackers by **30% from 2023**

Windsor Chess Enrichment Program

Sep. 2021 – Present

Co-Founder | Full-stack Developer

Windsor, ON

- Co-founded the **largest local chess club** for **70+ children** from underserved communities
- Increased students' pattern recognition by developing a chess puzzle app with **React, Node, and Firebase**
- Published a **chess book with 20,000+ downloads** using Python to format text, annotations, and diagrams

Projects

LooLooLoo

Sept. 2024

Hack the North | Winner

Waterloo, ON

- Attached ESP32 sensors to water fountains to detect nearby phones and text nearby users
- Linked users to an **interactive indoor map** app built using **TypeScript** and **React** (with Vite) on the front-end
- Implemented **shortest path navigation** using **TypeScript** and containerized the back-end using **Docker**

Fast-Slow Debugger

Sept. 2022

Hack the North

Waterloo, ON

- Created a **debugging tool** to detect regressions between old and new code with a UI made with **HTML/CSS**
- Compared the outputs of two programs run in parallel on randomly generated inputs using **JS** and **Python**