

# Alan Bui

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

## Skills & Technologies

---

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

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

## Education

---

**University of Waterloo (Bachelor of Computer Science)**

René Descartes National Scholarship Recipient (\$20000)

*Sept. 2024 – 2028 (expected)*

Waterloo, Canada

## Experience

---

**University of Windsor**

Research Assistant

*July 2023 – Aug. 2023*

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**

Senior Stream Teacher | Contest Organizer

*Sept. 2022 – June 2024*

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**

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

*Sept. 2022 – June 2024*

Windsor, ON

- Coordinated the Finance team to receive \$12000 in sponsorships for **Canada's oldest high school hackathon**
- Developed a **15-puzzle hacker hunt** in React and Node to test front-end and back-end knowledge
- Led the Technology team to develop the event website and Discord bot by breaking projects into smaller tasks

**Windsor Chess Enrichment Program**

Co-Founder | Full-stack Developer

*Sept. 2021 – Present*

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**
- Developed the company website
- Published a **chess book with 20,000+ downloads** using Python to format text, annotations, and diagrams

## Projects

---

**LooLooLoo**

Hack the North | Sponsor API Prize Winner

*Sept. 2024*

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**

Hack the North

*Sept. 2022*

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**