

# Alan Bui

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## Skills & Technologies

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**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

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

René Descartes National Scholarship Recipient (~10 recipients)

*Sept. 2024 – 2028 (expected)*

Waterloo, Canada

## Experience

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**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
- Applied 30+ statistical tests in **Python** (with sklearn, NumPy, pandas) to find **LLaMA outperformed GPT**

**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

**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 using **HTML/CSS/JS/Node/React** through project-based learning

**Windsor Chess Enrichment Program**

Co-Founder | Full-stack Developer

*Sep. 2021 – Present*

Windsor, ON

- Increased **70+ 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

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**LooLooLoo**

Hack the North | Sponsor API Prize Winner

*Sept. 2024*

Waterloo, ON

- Attached ESP32 Bluetooth 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 prevent regressions between old and new code using an **HTML/CSS** front-end
- Compared the outputs of two programs run in parallel on randomly generated inputs using **JS** and **Python**