

Alan Bui

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Skills & Technologies

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

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

Experience

University of Windsor

July 2023 – Aug. 2023

Research Assistant

Windsor, ON

- Developed tools to measure the performance of GPT and LLaMA embeddings on molecular property prediction by applying 30+ statistical tests in **Python** with **sklearn**, **NumPy**, and **pandas**
- Co-authored a research paper published in BMC Bioinformatics with 1500+ accesses to showcase the results

MasseyHacks

Sept. 2022 – June 2024

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

Windsor, ON

- Led the Technology team by breaking down projects like the event website and Discord bot into smaller tasks, delegating them to ensure they are completed on time
- Developed a 15-puzzle hackenger hunt focused on testing knowledge of front-end and back-end, implemented in **React** (with Next.js) and **Node** (with Express.js)

Vincent Massey Computer Science Club

Sept. 2022 – June 2024

Senior Stream Teacher | Contest Organizer

Windsor, ON

- Created 20+ lesson plans in **Python** and **C++** to teach data structures and algorithms, including graph theory algorithms and binary trees
- Designed and implemented a full-stack homework leaderboard using **React**, **Node**, **Firebase**, and a competitive programming website's API to track 50+ members' progress on problems solved

Projects

LooLooLoo

Sept. 2024

Hack the North | Sponsor API Prize Winner

Waterloo, ON

- Attached ESP32 Bluetooth sensors to water fountains to detect nearby phones and send users a text message with a link to an interactive indoor map app built using **TypeScript** and **React** (with Vite)
- Implemented shortest path navigation from water fountains to restrooms using **TypeScript** and deployed the back-end using **Docker** (with Defang)

Fast-Slow Debugger

Sept. 2022

Hack the North

Waterloo, ON

- A debugging tool to prevent regressions between old and new optimizations by comparing the outputs of two programs run in parallel using a **JS** and **Python** back-end
- Implemented a user-friendly UI with **HTML** and **CSS** to display mismatches between outputs on test cases

Education

University of Waterloo (Bachelor of Computer Science)

Sept. 2024 – 2028 (expected)

René Descartes National Scholarship Recipient (~10 recipients)

Waterloo, ON