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 (Dr. Lu's Lab)   *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 1000+ 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 homework leaderboard using **React**, **Node**, **Firebase**, and a competitive programming website's API to track 50+ members' progress on problems solved

Projects

www.LooLooLoo   *Sept. 2024*
Hack the North | Sponsor API Prize Winner   Waterloo, ON

– Developed an app that senses your phone's Bluetooth signals when you are near a water fountain and sends the user a link to our interactive indoor map with instructions to the nearest bathroom
– Implemented a full-stack solution using **TypeScript** and **React** (with Vite) for front-end and deployed the **Node.js** 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 on inputs from a test set generator
– Implemented a user-friendly front-end with **HTML** and **CSS** with **JS** and **Python** on the back-end

Education

University of Waterloo (Bachelor of Computer Science)   *Sept. 2024 – Present*
René Descartes National Scholarship Recipient   Waterloo, ON