

Allen Liu

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Technologies

Languages: C++, Java, JavaScript, TypeScript, Python, HTML/CSS, Go, C#

Technologies: Git, Node.js, React, MongoDB, Unity

Education

2020 – 2025 **University of Waterloo, Bachelor of Software Engineering**
93% Cumulative Average
3.9 GPA
President's Scholarship of Distinction

Experience

- Sep 2022 – Dec 2022 **Huawei Canada, Compiler Software Engineer**
- Assisted in compiler backend development for an AI co-processor unit using **C++** and **LLVM**
 - Solved issues in the compilation of hardware-managed vector loops, resulting in a 50% reduction in test case failures
 - Resolved two major failures involving invalid register assignment and software pipelining, resulting in over 50 resolved test cases
- Jan 2022 – Apr 2022 **ContextLogic (Wish), Software Engineer Intern**
- Transitioned merchant users to primary service in **Python**, allowing over 15000 users to easily convert within three months without disruption of service
 - Handled inventory transfer process using **Go** microservice and **MongoDB** to handle manual and automatic transfers for over 50000 products across four international warehouses
 - Modified primary merchant facing web application in **React** and **Typescript** to update pages, notifications, and resources for over 15000 users
- Jul 2021 – Aug 2021 **Replic, Full Stack Developer**
- Developed a Shopify app using **Node.js**, **React.js**, and **Next.js**, providing faster account signup and improved product views for users
 - Implemented backend routing system and data validation, allowing for frontend access to seven data models using **Next.js** and **MongoDB**, resulting in reduced frontend development time
 - Managed staging, deployment, and development instances in Shopify and Heroku, resulting in a 200% increase in productivity for developers
- Sep 2018 – Jun 2020 **RHHS Science Council, Computer Science Representative** 
- Created computer science events using **Google App Engine** for hosting and **Cloud Datastore** for automatic score tracking on over 20 student teams
 - Developed a team-based puzzle game using **Unity** with a focus on computer science related concepts and skills for eighth-grade students
 - Organized computer science events with a team for school-hosted Grade 8 STEM Olympics involving over 100 students

Projects

- Jun 2021 – Jun 2021 **Ontario Trail App**
- Developed an API to serve trail data from the Ontario Data Catalogue using **Express.js**, giving users access to information on over 4800 trails, along with a separate selection of uncrowded trails
 - Optimized trails API within **Express.js** by splitting endpoints, reducing total data sent, and staggering client side fetch requests, resulting in an 80% reduction in load times
- Sep 2020 **Waterlookup** 
- Developed a Discord bot to allow for the lookup of courses by their codes using **Discord.py**
 - Optimized calls to the Waterloo Open Data API using **SQLite** to pre-emptively store API results, minimizing requests needed and reducing response times