

# Ashley Huo

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## TECHNICAL SKILLS

**Languages:** C++, C, Kotlin, Java, Python, JavaScript/TypeScript, SQL, Rust, Go, Ruby, Bash, Assembly

**Tools:** Git, Hibernate, Node.js, Vue.js, React.js, Jenkins, JavaFX, Django, Flask, Ruby on Rails, AWS, Docker

## WORK EXPERIENCE

**UNIVERSITY OF WATERLOO** | UNDERGRADUATE RESEARCH ASSISTANT Waterloo, ON | May 2024 - Present

- Engaging in research on **database query compilation and optimization** within Professors David Toman and Grant Weddell's research group.

**KÙZU** | RESEARCHER & DEVELOPER

Waterloo, ON | Sep 2023 - Dec 2023

- Developed a **Graph Database Management System**(Kùzu) in **C++**. Enhanced database versatility by supporting diverse data types (e.g. INT128), and enabled multi-language support (Rust, Java, Node.js, Python) via **C Api**.
- Leveraged **Vue.js** to enhance the browser-based UI for Kùzu, incorporating features and integrating **OpenAI** to automate Cypher query generation, significantly improved user experience.
- Streamlined code verification and style correction processes by establishing **CI workflows**.
- Automated regression test migration from Gherkin to the company's framework using a **Python** script, achieving significant time savings.

**FAIRE** | BACKEND ENGINEER INTERN

Toronto, ON | Jan 2023 - Apr 2023

- Developed **API endpoints** and optimized **database queries** using Kotlin, improved data exchange between the backend and frontend as part of the **Translation Infrastructure and Customer Experience** team.
- Optimized translation server functionalities by **designing** documentation and **prototyping** a new translation structure for backend **micro-services**.

**FAIRE** | SOFTWARE ENGINEER INTERN

Waterloo, ON | May 2022 - Aug 2022

- Infrastructure-focused member of the DevOps Engineering Team, developed webhooks for Jira Issue summary posts and leveraged **Datadog** for log monitoring, contributed to E2E Test Framework that increased the main backend repository's test pass rate from **80%** to **95%**, a significant milestone for that quarter.
- Automated Jira ticket creation and updates, postmortem auditor assignments, and information syncing between Jira and Notion, streamlined operational workflows.

## PROJECTS

**WATDFS-DISTRIBUTED FILE SYSTEM** [↗](#)

C++, RPC, LIBFUSE

Created a **distributed file system** that supports both remote access mode and download/upload mode, utilizing advanced networking and system programming skills.

**ANSICODE GENERATOR** [↗](#)

REACT.JS, VITE, MANTINE, ANT DESIGN

Developed an **React application** that allows users to generate ANSI escape codes for text formatting, supporting RGB color selection and instant style previews. Streamlined creating colorful and styled terminal outputs.

**GITLET-RUST** [↗](#)

RUST

Developed a **version-control system in Rust**, mimicking basic features of Git, showcasing proficiency in system programming and understanding of version control concepts.

## EDUCATION

**Candidate for Bachelor of Computer Science, Honors Coop**

Waterloo, ON | Sep 2020 - Apr 2025

UNIVERSITY OF WATERLOO

**Relevant Coursework:** Computer Graphics, Machine Learning, Distributed Systems, Artificial Intelligence, Applied Cryptography, Operating System, User Interface, Algorithms, Compiler, Object-Oriented Software Development, Data Structure and Data management, Group and Rings, Real Analysis, Complex Analysis