

EDUCATION

University of Waterloo – Bachelors in Computer Science, Co-op	Fourth Year
September 2019 – Present, Graduating Spring 2025	Cumulative GPA: 86%
Kyoto University (Study Abroad – Exchange)	October 2023 – August 2024

SKILLS

Languages:	C++, Java, Kotlin, TypeScript/JavaScript, Python, C, SQL, R, HTML/CSS
Technologies:	AWS, Google Cloud, Spring, Node.js, PostgreSQL, Kubernetes, Docker, Datadog, Git

WORK EXPERIENCE

Federato Software Engineer Intern	September 2024 – Present
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Faire Software Engineer Intern (Backend)	May 2023 – August 2023
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- Led a coordinated effort across data, backend, and frontend teams to scope, design, and implement a new search suggestions spellcheck system to improve user experience.
- Parallelized suggestions generation process using Kotlin executors querying Apache Lucene through Elasticsearch to reduce user side latency by up to 80%.
- Resolved over 300,000 missed search suggestions by fixing encoding issues in AWS DynamoDB.
- Conducted A/B testing, performed regular production deployments, built and oversaw Datadog monitors, as well as assisted with incident investigations.

Mercari Software Engineer Intern (Backend)	January 2023 – April 2023
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- Set up Github Actions CI pipeline for automated building and deployment of notification templates on a Google Cloud Spanner database in under 10 minutes, reducing need for manual work.
- Created Kubernetes cron pods for scheduled notification management tasks, processing over 8 million notifications per day and automatically scaling horizontally through Datadog metrics.

Autonomic Software Engineer Intern (Backend)	September 2022 – December 2022
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- Designed and implemented microservices for vehicle command processing in Java Spring capable of handling over 1,500 Kafka records per second to meet throughput targets.
- Improved command state consistency logic across multiple Kafka streams applications and PostgreSQL databases, eliminating over 48,000 commands stuck in non-terminal states.
- Created features and endpoints for the launch of a new custom command initiative to reduce developer time by allowing customers to bootstrap their own command definitions.

Undergraduate Research Assistant University of Waterloo	May 2022 – August 2022
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- Developed a fluid simulation system in C++ implementing the incompressible Navier-Stokes equations on a 2-D marker-and-cell grid as part of the Computational Motion Group.

Infor Software Engineer Intern (Backend)	January 2022 – April 2022
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- Conducted an overhaul of the Workforce Management Spring application's logging framework from Log4j to Logback to address security concerns and decouple configuration from code.
- Revised database access logic to improve Flyway database migration speeds by up to 50%.

Honeybee Hub Software Engineer Intern (Fullstack)	May 2021 – August 2021
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- Led the implementation of a subscription-based pricing model across a Node.js, Express, React, and MongoDB application using Stripe to securely handle payments.
- Created prescreening survey system with Next.js with survey and response pages.

PROJECTS

FlowerID Mobile app that identifies flowers species	tonylizj.com/flower
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- Android app built with React Native and TensorFlow.js that uses a camera image and a custom trained convolutional neural network to identify flower species with over 80% accuracy.

highlighter Better code syntax highlighting in Discord	tonylizj.com/hl
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- Node.js and Express REST API that syntax highlights code of over 30 languages and a Discord bot that allows users to highlight their code in chat within seconds.