

# Kanwarpal Brar

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## EDUCATION

University of Waterloo — Bachelor of Computer Science (BCS) (CGPA: 3.83) 2020 — Present

**Relevant Courses:** Data Structures & Algorithms, Operating Systems, Object-Oriented Programming, Concurrency, Databases

## WORK EXPERIENCE

Software Developer Co-op — Arctic Wolf Networks May — Aug 2023

- Developed a concurrency-safe **Prometheus** metrics monitoring system in **Go** for a custom **Apache Kafka** wrapper
- Played a pivotal role in the **v1.0.0** release of a Golang **Apache Kafka** wrapper, decoupling systems organization-wide
- Spearheaded design & development of Subscriber & Deserializer systems for in-house **Python Kafka** wrapper
- Implemented custom Subscriber & Deserializer interface logic based on **Apache Avro Schema** versions
- Developed **REST APIs** for numerous **AWS microservices** in Python and Go, adhering to **OpenAPI** specification
- Worked effectively across two teams to maintain legacy services, while implementing experimental new services
- Created stable and bug-free code by employing **Unit Testing** & **Integration Testing** best practices in Go & Python

Full Stack Software Developer Co-op — Genesys Laboratories Sept — Dec 2022

- Demonstrated exceptional skill with **AWS** technologies like **CloudFormation**, **DynamoDB**, **Lambda**, **EC2**, **SNS**, and **SQS**
- Developed **Event-Driven** Microservices using **Apache Kafka**
- Reduced codebase size by 25% by transitioning to **Serverless REST APIs** using Python, **Flask**, and **AWS Lambda**
- Designed attractive and user-friendly UI with **Vue.js**
- Developed robust microservices for a massive web platform based on **AWS** using Python, Java, and Kotlin to provide functionality to **hundreds of thousands** of users internationally

Software Engineering Intern — Cloudspark Labs (Startup) Jan — Apr 2022

- Designed and developed scalable **RESTful** and **Event-Driven microservices** for web apps leveraging Microsoft **Azure**
- Developed core microservices in **TypeScript** using **Nest.JS**, **CosmosDB**, **Microsoft Graph**, and **Dependency Injection**
- Led ground-up design and development of claims-based **Authorization**, **Licensing**, and **Notification** systems for MVP

DevOps Specialist — Pillar To Post May — Aug 2021

- Designed and Developed an **Automated** Web Software Testing Framework in **Selenium** using Python and JavaScript
- Saved hundreds of company hours by automating regression testing suite and eliminating manual testing

## PROJECTS

Simple-Event-Bus: Lightweight Event Streaming 2023

(C++ / Boost.ASIO / Websockets)

- A flexible C++ **event bus/event streaming** software designed to provide functionality similar to **Apache Kafka**
- Employed a **publish-subscribe** pattern to allow **real-time** event-based communication
- Designed support for multiple different event types and formats
- Developed using **asynchronous** programming and **Boost.ASIO** to efficiently execute **TCP** operations with low overhead

Loo Locator: Washroom Location Map 2022

(Python / React / Typescript / AWS / Nest.js / Mapbox)

- Developed a mobile web app using a **React** frontend, as well as a **TypeScript** & **Nest.js** backend hosted on **AWS**
- Implemented a Python **web scraper** to search for public washroom datasets across Canada
- Uses the **Mapbox API** to provide a real time map of nearby facilities

## SKILLS

**Programming:** C++, C#, C, Python, TypeScript, JavaScript, Java, Go, HTML + CSS, SQL, SCSS

**Knowledge:** Microservices, REST APIs, Object-Oriented Programming, Concurrency, CI/CD, Distributed Systems

**Technologies:** Azure, AWS, Git, Node.js, React, Vue.js, Nest.js, Docker, Kafka, Flask, Command Line, Selenium, Avro