

# Kanwarpal Brar

🏠 kanwarpal.com | 🌐 github.com/kanwarpal-brar | 👤 linkedin.com/in/kanwarpal-brar

✉ kanwarpal.brar@uwaterloo.ca | ☎ (647) 325-6062

## EDUCATION

University of Waterloo — Bachelor of Computer Science (BCS) (CGPA: 3.83/4.0)

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

### UWaterloo Locator: Crowdsourced Campus Washrooms

2023 — Present

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

- Developed a mobile web app using a **CSS + React + JavaScript** frontend, mapping through **Leaflet** & **MapBox API**
- Architected & Deployed a **TypeScript** & **Nest.js** backend to **AWS**, aggregating washroom data from all users
- Applied **NoSQL** principles in **DynamoDB** to perform **CRUD** operations on washroom data in real-time

### Simple-Event-Bus: Lightweight Event Streaming

2023 — Present

(C++ / Boost.ASIO / Websockets / Concurrency)

- 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

## SKILLS

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

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

**Technologies:** AWS, Azure, Git, Node.js, React, Vue.js, Nest.js, Docker, Kafka, Flask, Linux, NoSQL, Avro, Cloud