

Kanwarpal Brar

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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

- Played a pivotal role in the **v1.0.0** release of a Golang **Apache Kafka** wrapper, decoupling systems organization-wide
- Developed a concurrent **Prometheus** monitoring system in **Go** for an **Apache Kafka** wrapper, reducing threads by **50%**
- 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 and **SchemaVer**
- Developed **REST APIs** for numerous **AWS microservices** in Python and Go, adhering to **OpenAPI** specification
- Dexterously worked across two teams to maintain legacy services, while implementing new **core infrastructure 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**, increasing scalability and efficiency over **REST**
- Reduced **hosting costs** by transitioning to **Serverless REST APIs** using Python, **Flask**, and **AWS Lambda + API Gateway**
- Designed attractive and user-friendly UI with **Vue.js**, interacting with Kafka-based frontend event-forwarding system
- 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

- Led ground-up design/development of **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**
- Headed the design/development of claims-based **Authorization**, **Licensing**, and **Notification** services for a startup 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 **100+** 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 **concurrent** 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