

# Muhammad Sohail

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## EDUCATION

### McGill University

September 2020 – December 2024

Bachelor of Science in Honours Computer Science | 4.0 / 4.0 cGPA

Montreal, Quebec

- Dean's List 2020-2023. Coursework in Functional Programming/Programming Paradigms, Distributed Systems, Operating Systems, Artificial Intelligence, and Probability/Statistics.
- Development Coordinator at McHacks 11

## EXPERIENCE

### McGill University

September 2023 – Present

Undergraduate Researcher

Montreal, Quebec

- Undertaking an undergraduate research project studying the static analysis of test suite quality
- Developing an automated static analysis tool in **Java** to allow users to identify conventions in test suites

### Autodesk

May 2023 – August 2023

Software Engineering Intern

Montreal, Quebec

- Developed a scalable and extensible **Java Spring Boot** callback microservice with asynchronous processing of file events, enabling seamless handling of concurrent requests by users
- Remodeled application load tests using **Scala**, **Gatling**, and **BlazeMeter** to drastically increase concurrency and throughput, leading to a **10x** improvement in performance
- Coordinated and orchestrated a multi-team effort to seamlessly upgrade our internal data platform's Spring Boot framework, resulting in increased stability and security
- Used **Prometheus/Thanos**, **Grafana**, and **Kibana**, to pull and visualize key application metrics, increasing observability and allowing developers and stakeholders to monitor trends
- Leveraged **Apigee** proxy policies to introduce a tracing identifier across multiple services, allowing application logs to be unified across various observability tools and reducing developer overhead by **80%**

### Coveo

January 2023 – April 2023

Data Engineering Intern

Montreal, Quebec

- Designed and developed a data monitoring system using **Snowflake**, **SQL**, and **Prefect** to ensure data quality and accuracy across multiple critical data sources and pipelines
- Revamped our notification system using **Sentry**, **Python**, and **Terraform** to proactively identify and address data quality issues, reducing time to resolution by **30%**
- Promoted a culture of testing and storage/cost efficiency by implementing data purges and unit tests using **dbt**, ensuring data quality on high volume pipelines (over **150M** events daily)

### Pattern Labs


May 2022 – August 2022

Software Engineering Intern

Toronto, Ontario

- Instrumented monitoring for our web application using **Datadog** and **Node/Express**. Set up trace propagation to associate user activity with API processes, allowing complete end-to-end observability
- Automated resource syncing with 3rd party APIs up to **90%** by developing asynchronous serverless applications using **AWS Lambda**, **Cloudwatch**, and **Terraform**

## PROJECTS

**Wrappedify**  | Python, Django, D3.js, Redis, Celery, Heroku

December 2021

- Developed a full-stack listening analysis service with Spotify's Web API, built using **Python** and **Django**
- Ensured a user-friendly UX by using **Celery** and **Redis** to run asynchronous data processing

**Unix Shell, Thread Scheduling Library, FUSE File System**  | C, Docker, FUSE, pthreads

December 2022

- Wrote simple implementations of various OS services as a part of class projects. Used **FUSE** to create a mountable user-level file system and **pthreads** to build a user-level thread scheduler

## TECHNICAL SKILLS

**Languages:** Python, Java, C, SQL, JavaScript/TypeScript, Rust, OCaml, Scala, Bash

**Frameworks:** React, Node, Express, dbt, Prefect, Django, Spring Boot

**Technologies:** Git, Unix, Terraform, AWS, Docker, Snowflake, Jenkins, Postman