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 Database Systems, Distributed Systems, Operating Systems, Artificial Intelligence, Compiler Design, and Probability/Statistics
- Development Coordinator at McHacks 11

Experience

McGill University **September 2023 – December 2023**

Undergraduate Researcher | Publication Pending *Montreal, Quebec*

- Refined an automated static analysis tool in **Java** to allow users to identify conventions in test suites
- Utilized multi-threading to reduce executions times by **10-50%** (about **100 hours**) across the codebase

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 with **Scala**, **Gatling**, and **BlazeMeter** to drastically improve concurrency and throughput, leading to a **10x** gain in performance
- Coordinated and orchestrated a multi-team effort to seamlessly upgrade our internal data platform's Spring Boot framework, supporting stability and security
- Employed **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 with **Snowflake**, **SQL**, and **Prefect** to ensure data quality and accuracy across multiple critical data sources and pipelines
- Revamped 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/Borderless AI **May 2022 – August 2022**

Software Engineering Intern *Toronto, Ontario*

- Deployed 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 | *SvelteKit, Express, D3.js, Redis, BullMQ* **December 2021**

- Developed a full-stack listening analysis service with Spotify's Web API, built with **SvelteKit** and **Express**
- Ensured a user-friendly UX by using **BullMQ** and **Redis** for an asynchronous data processing architecture

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, Scala, Bash
Frameworks: React, Node, Express, dbt, Prefect, Django, Spring Boot, SvelteKit
Technologies: Git, Unix, Terraform, AWS, Docker, Snowflake, Jenkins, Postman