

Muhammad Sohail

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EDUCATION

McGill University

September 2020 – Present

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

Montreal, Quebec

- Dean's List 2020-2023. Coursework in Computer Systems/Architecture, Functional Programming/Programming Paradigms, Software Design, Operating Systems, and Probability
- Development Coordinator at McHacks 11

EXPERIENCE

Autodesk

May 2023 – Present

Software Engineering Intern

Montreal, Quebec

- Developing backend solutions using **Spring Boot**, **AWS**, **Prometheus/Thanos**, and **Grafana**

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
- Established key monitoring metrics for anomaly detection in collaboration with stakeholders, leading to yearly savings of over **\$30K** and enabling adjacent teams to identify issues in their own implementations
- 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

- Implemented scalable and modular RESTful API services using **Docker**, **Node**, and **Express**, with a focus on test-driven development, resulting in improved development efficiency and reduced maintenance efforts
- Instrumented monitoring for our web application using **Datadog**. 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**
- Provided increased architectural security by creating an SSH tunnel using **Terraform** modules to provision AWS resources, allowing observable connections to our database in a VPC

PROJECTS

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

December 2021

- Developed a full-stack data analysis solution 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
- Produced interactive infographics to visualise users' listening statistics using **D3.js**

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

NeoNES | Rust, SDL

Ongoing

- Built an NES emulator by implementing various hardware components including the CPU, memory, buses, PPU, and APU to support simple first-gen NES games

TECHNICAL SKILLS

Languages: Python, Java, C, SQL, JavaScript/TypeScript, Rust, OCaml, HTML, Bash, MIPS Assembly

Frameworks: React, Node, Express, dbt, Prefect, Django, Jest

Technologies: Git, Unix, Terraform, AWS, Docker, Snowflake, Jenkins, Postman, CSS/Sass