AHMED MOHAMED

(437)-239-4232 | ahmedk.mohamed@mail.utoronto.ca | github.com/Ahmed-Labs

EDUCATION

University of Toronto St. George — Toronto, ON
Bachelor of Applied Science in Computer Engineering (PEY Co-op) — *Expected June 2026*
- **Awards:** Edward S. Rogers Sr. Admission Scholarship, Dean's Honour List × 4
- **Relevant coursework:** Data Structures and Algorithms, Object Oriented Programming, Operating Systems, Software Design, Computer Networks

EXPERIENCE

Sentry — September 2025 – Present
Software Engineer Intern — *Toronto, ON*
- Joined the Performance team to improve the granularity of error metrics within Dashboards and Insights.

Stripe — May 2025 – August 2025
Software Engineer Intern — *San Francisco, CA*
- Led a project within the Data Orchestration team to provide estimated delivery times for Airflow Tasks based on their upstream task lineage in an effort to identify and remediate upstream task failures.
- Designed a real-time change data capture system for an AWS RDS hosted database to produce task lifecycle events, utilizing logical replication via AWS Database Migration Service, Kinesis, Firehose, S3, and Event Bus (Terraform).
- Implemented data pipelines to compute median historical landing times of tasks while factoring in the delivery times of upstream dependencies through recursive SQL, graph travesal algorithms, and job/dataset mapping.
- Surfaced this data through a Task Delivery dashboard to be used by Airflow teams at Stripe. Displaying estimated task delivery times, cluster-wide delivery metrics and distributions to seamlessly monitor cluster health.
- Orchestrated a real-time stream of **1 million daily** Airflow Task Lifecycle events for both Airflow 1 & 2 which is now being used by other teams like Data Quality for computing dataset staleness.

FreshBooks — May 2024 – August 2024
Software Engineer Intern — *Toronto, ON*
- Integrated Amazon SES into the FreshBooks invoice system, mailing over **3 million monthly** invoice notifications.
- Built a high-performance invoice mail tracking service in Python that receives **1 million daily** events from SMTP providers via Webhook, asynchronously processes them with RabbitMQ, and stores them in a MySQL database.
- Designed a standardized model for invoice mail tracking data, transformed ingested data to fit this model, and surfaced it to the support team and user platform, making invoice delivery statuses easily accessible.
- Automated deployment to Kubernetes clusters using Helm charts and provisioned resources with Terraform.

Goodself — May 2023 – August 2023
Software Developer Intern — *Toronto, ON*
- Spearheaded the expansion of the Goodself React Native app to a Next.js web app, laying a strong foundation through Redux state management, rendering optimizations, caching, and security best practices.
- Collaborated within a cross-functional team to develop a core feature for the React Native app, increasing average user engagement by approximately **40%** in the month of launch.

PROJECTS

Mechanical Keyboard Market Aggregator | *Golang, WebSocket, PostgreSQL*
- Developed a live feed for mechanical keyboard listings from Discord and Reddit online second-hand markets
- Maintained uninterrupted monitoring of over **100k+** listings through a robust loosely coupled architecture
- Implemented a real-time alert system with WebSockets to instantly match **200+ users** to their desired items

Geographical Information System Mapper | *C++, GTK, Glade*
- Developed a light-weight GIS mapper built with C++ that features searching, recent locations, and live traffic
- Implemented Parallel Djikstra and A* algorithms with 3-Opt and other heuristics to solve the vehicle routing problem with pickup and delivery (VRPPD) in multiple cities with **22 million nodes** in total

TECHNICAL SKILLS

Languages: C, C++, Python, Go, Java, Scala, JavaScript, TypeScript, HTML/CSS, SQL, Bash, Assembly, Verilog
Frameworks: Express.js, React, React Native, Next.js, Flask, Gin, Bootstrap, Tailwind
Technologies: Git, Node.js, MySQL, PostgreSQL, MongoDB, Firebase, Redis, RabbitMQ, Selenium
DevOps: Terraform, Docker, Kubernetes, GitHub Actions CI/CD, Google Cloud Platform, Amazon Web Services (AWS)