

Ousama Alabdullah

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EDUCATION

Toronto Metropolitan University

Toronto, Ontario

B. Eng in Software Engineering

Expected Graduation, May 2026

- **Certifications:** AWS Certified Cloud Practitioner, AWS Certified AI Practitioner

EXPERIENCE

Ministry Of Transportation Ontario

Toronto, Ontario

Engineering Intern

May 2024 – August 2025

- Developed a **Python** script to extract traffic data from the HERE traffic platform via **XML**, utilizing **Shapely** and **GeoPandas** to clean and process spatial data, enabling accurate route-based traffic data extraction and filtering
- Managed Oracle database systems using **SQL**, ensuring data integrity and security through rigorous code reviews that adhered to safety protocols
- Developed ITS Systems Inventory app, increasing task automation by 50% and reducing system lookup time by 30% with an interactive map for filtering by area or highway segments
- Designed and implemented **automated ETL pipelines** that consolidated traffic data from multiple sources (HERE, TomTom, Waze), reducing manual processing time by 45% and improving data completeness across 13 unique routes
- Streamlined development and deployment of **PowerApps** solutions using **Microsoft DevOps** for version control and pipeline management, improving release efficiency by 30% and enhancing team collaboration

Vanguard Financial

Mississauga, Ontario

Data Analyst Intern

April 2021 – July 2021

- Improved **SQL queries** to speed up data extraction by 35%, making weekly reports faster and more reliable
- Automated data cleaning and processing in **Python** which saved 40+ hours per month and improved accuracy to 99%
- Built dashboards in **Power BI** and **Tableau** that helped teams view key trends instantly, increasing report usage by 60% and cutting extra report requests by 25%

PROJECTS

Nao Interactive Robot

Capstone Project

- Built a speech-to-response pipeline where NAO records speech through NAOqi, sends text via a **WebSocket** to a Flask server, which calls ChatGPT's API and returns a response for NAO to speak using text-to-speech
- Implemented **facial recognition** and **object detection** using **vector encodings** and an **object detection model**. Faces are matched by comparing new encodings to stored ones, and camera images are labeled by model
- Integrated all systems through NAOqi APIs to synchronize speech, vision, and motion, enabling real-time interaction

[Break Even - Full-Stack Finance Application](#)

Personal Project

- Built a **RESTful backend** using **Ruby on Rails (API-only)** with **PostgreSQL**, implementing deterministic business logic for daily budgeting, automatic carryover, and historical budget tracking
- Designed a **pre-computed daily ledger system** using Rails service objects to support fast reads, consistent financial calculations, and correct recomputation when past expenses or budgets are modified
- Integrated **JWT-based authentication** with **Supabase Auth (Google OAuth)**, enforcing server-side token verification and access control to ensure the backend remains the single source of truth
- Applied **backend best practices** including integer-based currency storage, timezone-aware date handling, indexed queries, and versioned APIs to ensure accuracy, security, and scalability

[Interactive Portfolio Website](#)

Personal Project

- Designed and developed a retro-inspired, portfolio website using **HTML**, **CSS**, and **JavaScript**, featuring game-style navigation that reveals sections such as About, Projects, and Experience.
- Demonstrates strong **UI design** using interactive animations and structured navigation state

SKILLS

Ruby on Rails, Java, Python, JavaScript, SQL, React, Next.js, PostgreSQL, REST APIs, JWT Auth, AWS, Git, HTML, Tailwind CSS