

# Mohammed Nouredine

Seattle, WA | mohammednd522@gmail.com | LinkedIn | Portfolio

## EDUCATION

### Northeastern University

Master of Science in Computer Science (MSCS)

Seattle, WA

Dec 2025

- **GPA:** 4.0/4.0

• Relevant coursework: Distributed Systems, Algorithms, Machine Learning, Object-Oriented Design, Databases

### University of British Columbia

Bachelor of Commerce (Data Science + Finance)

Vancouver, BC

Nov 2022

- **GPA:** 3.7/4.0

## EXPERIENCE

### Software Engineer

Jan 2026 – Present

Motive - Credit Card Team | Ruby on Rails, AWS, Microservices

Remote

- Built ML-based fraud detection pipeline with multi-source validation across Plaid, credit bureaus, and fraud intelligence networks, identifying **300+** suspicious payment methods with **80%** confirmed fraud rate within 3 months.
- Increased credit card application conversion by **30%** for publicly traded entities, non-profits, and federal agencies through custom approval workflows, eliminating **30-40 monthly** manual override requests from sales teams.
- Developed 3D Secure and Mastercard webhook integration, reducing unauthorized disputes by **10%**.
- Implemented Canada expansion infrastructure including Micro-Deposit verification, KYC/KYB validation, and third-party API integrations for compliance monitoring, enabling secure cross-border payment processing at scale.

### Software Engineer Intern

Jan 2025 – Apr 2025

Shopify | Ruby on Rails, TypeScript, GraphQL, React, GCP

Ottawa, ON

- Built GraphQL APIs and React components for AI Assistant across all merchant segments, driving merchant adoption from **10% to 55%** within one quarter and improving operational efficiency for product discovery.
- Improved AI recommendation accuracy from **70% to 90%** by integrating multi-image matching into ML pipelines and API logic, achieving **sub-4%** hallucination rate and increasing conversion rates.
- Optimized product pages with server-side rendering and GCP infrastructure, reducing load times by **15%**.
- Implemented Playwright and Jest test suites identifying 15+ bugs, reducing defect escape rate by **40%**.

### Data Analyst

Jan 2023 – Aug 2023

Definity Financial | Python, Pandas, SQL, ETL

Toronto, ON

- Automated capital expenditure forecasting using Pandas, reducing monthly report preparation time by **80%**.
- Rebuilt legacy debt analysis tools in Python, achieving **5x performance improvement** (hours to minutes).
- Designed SQL queries and ETL pipelines for corporate banking data, optimizing query execution time by **25%**.

### Systems Analyst Intern

May 2022 – Aug 2022

Fraser Health | Java, SQL, Power BI

Vancouver, BC

- Engineered Java-based financial metrics tool aggregating data from **100+** medical institutions serving **2M+** patients, reducing executive reporting time from **hours to seconds** and enabling real-time budget decisions.
- Developed optimized SQL queries feeding real-time clinical data into Power BI dashboards for operational analysts.
- Led documentation initiative mapping financial system workflows to establish institutional knowledge base.

## PROJECTS

### ChatFlow - Distributed Chat Infrastructure | Java, WebSocket, Redis, AWS

Oct 2025 – Dec 2025

- Engineered WebSocket chat system processing **500K messages at 50K msg/s** with PostgreSQL time-series partitioning, Redis pub/sub, and RabbitMQ queuing achieving **100% delivery** in load tests.
- Deployed across AWS EC2 instances with HikariCP connection pooling and application load balancing.

### Financial Market Insights Agent | Python, FastAPI, OpenAI, Phidata, Groq LLMs

Dec 2024 – Mar 2025

- Built multi-agent system with Groq LLMs for stock analysis, financial news summarization, and investment insights.
- Designed FastAPI backend delivering real-time market data integration and portfolio recommendation endpoints.

## SKILLS

**Languages:** Java, Python, Ruby, Golang, TypeScript/JavaScript, C/C++, SQL

**Frameworks & Databases:** SpringBoot, Ruby on Rails, NodeJS, ReactJS, MongoDB, MySQL, PostgreSQL, Docker

**Developer Tools:** Git, Linux/Unix, AWS, GCP, Pandas, Numpy, Playwright, Postman, Jira, Redash, DataDog