

ABDEMALEK ANES

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[LinkedIn](#) | [GitHub](#) | [Website](#)

LANGUAGES

English, Spoken & Written | French, Spoken & Written

TECHNICAL SKILLS

Front End: React, Angular, Tailwind CSS, TypeScript, Next.js
Back End: Java/Spring Boot, Python/Django, C#, C/C++, Go, Node.js/Express.js
Other: Azure, AWS, Docker, Jenkins, Git, Jest, JUnit

WORK EXPERIENCE

Embedded Software Developer Intern at Caterpillar

Fall 2024 - Winter 2025

Laval, Quebec

- Developed backend features for autonomous mining machines using **C++** and implemented machine control interfaces using **Angular**
- Debugged critical backend issues and developed automated test procedures to validate software modules, improving system reliability by **40%**
- Analyzed requirements, specifications, and validation test plans to align software development with project goals, ensuring compliance with **safety standards**
- Collaborated in a scaled **Agile** environment with cross-functional teams, participating in daily standups and sprint planning to optimize development workflows

Software Developer Intern at Bombardier

Summer 2023

Montreal, Quebec

- Engineered data pipeline solutions using **Power BI** and **DAX**, implementing advanced filtering algorithms that reduced reporting time by **65%**
- Developed **Python** and **Power Automate** automation scripts that streamlined routine processes, saving **20+ hours** weekly in operational tasks
- Architected and deployed scalable **Azure SQL** database solutions, achieving **99.9%** uptime and **30%** improved query performance
- Delivered executive presentations highlighting automation achievements, demonstrating **\$50K** annual cost savings and **85%** reduction in data processing errors

PROJECTS

Quolance | *Spring Boot, React.js, Next.js*

Fall 2024 - Winter 2025

- Architected and implemented a full-stack application using **Spring Boot** backend with **PostgreSQL/Redis** and **React/Next.js** frontend
- Implemented comprehensive testing strategy with **JUnit/Mockito** for backend and **Cypress** for E2E testing

SmartClass A.I.ssistant | *Python, PyTorch, Matplotlib*

Summer 2024

- Developed a **real-time emotion detection system** using **Convolutional Neural Networks** achieving **85%** accuracy in classroom environments
- Created interactive visualization dashboard using **Matplotlib** to display emotion analytics and student engagement metrics

System Performance Monitor | *Python, asyncio, matplotlib, SQLite*

Winter 2025

- Built a real-time monitoring app for **CPU**, **memory**, **disk**, and **network** metrics.
- Utilized **asyncio** and **ThreadPoolExecutor** for efficient parallel data collection.
- Implemented **SQLite** persistence with async operations using **aiosqlite**.
- Designed a responsive **matplotlib** dashboard with real-time visual updates.

EDUCATION

Concordia University

Winter 2022 - Winter 2025

Bachelor of Engineering, Software Engineering

Montreal, QC

Vanier College

Fall 2019 - Winter 2021

DEC, Health Science

Montreal, QC