

MATTHEW DAVIES

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EDUCATION

University of Windsor

Honours Computer Science — AI Specialization, Math Minor

Windsor, ON

Sep. 2022 – April 2027

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, C++, Go, C#, SQL

Backend / Web: Spring Boot, FastAPI, Node.js, REST APIs, PostgreSQL, JPA/Hibernate, Maven

Cloud / DevOps: AWS Elastic Beanstalk, AWS EC2, AWS RDS, AWS S3, Docker, Containers, Procfile Deployment

Tools: Git, GitHub, VS Code, Postman, JUnit, xUnit, JavaFX

Data / ML: PyTorch, TensorFlow, NumPy, Pandas, Llama LLM (LoRA fine-tuning)

PROJECTS

Full-Stack Quote Generator — React + FastAPI + PostgreSQL

- Developed a full-stack web application using **React (TypeScript)** and **FastAPI** to create, store, and display user-submitted quotes.
- Built RESTful backend services with **SQLAlchemy + PostgreSQL**, implementing validation, error-handling, and clean API design.
- Handled schema design, API routing, UI development, and database integration end-to-end.

AWS–Spring Boot REST API — Elastic Beanstalk Deployment

- Built a production-ready **Spring Boot REST API** supporting task management using **Java 17, MVC architecture, JPA, and PostgreSQL**.
- Packaged and deployed the application to **AWS Elastic Beanstalk**, configuring Procfile routing, environment variables, and EC2 platform settings.
- Successfully exposed cloud-hosted endpoints (e.g., `/hello`, `/tasks`), verified via browser and REST clients.
- Gained experience with AWS logs, EC2 instance management, load balancers, networking, and troubleshooting cloud deployments.

Spring Boot + Docker Microservice — Containerized Backend API

- Developed and containerized a modular **Spring Boot REST API** using a custom Dockerfile and multi-stage build.
- Configured Docker image layers, exposed services via container ports, and validated functionality with Docker Desktop.
- Implemented JPA entities, repositories, and CRUD endpoints for users and tasks.
- Prepared AWS deployment path for containerized microservices; resolved Docker AWS platform compatibility issues.

Llama Chatbot — LoRA Fine-Tuned LLM

- Fine-tuning a **Llama-based model** using **LoRA** on domain-specific compiler coursework datasets to improve reasoning performance.
- Developed model training and inference pipelines using **PyTorch**, **HuggingFace**, and GPU-backed Colab runtimes.
- Designing backend services using **FastAPI + PostgreSQL** for conversation logging and evaluation.
- Planning a lightweight **React (TypeScript)** interface for interacting with the model and running evaluation tests, to be deployed by **AWS**.

EXPERIENCE

NASA Space Apps Challenge

Windsor, ON

Software Developer — Hackathon

Oct. 2025

- Worked in a multidisciplinary team to build an interactive web platform for exploring NASA's high-resolution images.
- Used **React (TypeScript) + Go** to implement UI functionality and image manipulation tools.
- Practiced Agile teamwork, Git collaboration, and rapid prototyping.

Google Developer Society

Windsor, ON

Team Member

Apr. 2024 – Present

- Mentored students on programming practices, debugging, and software tooling.
- Collaborated on workshops and contributed to a community of student developers.