

Harveer Deol

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EDUCATION

University of Alberta

Bachelor of Science in Computer Science

Sep. 2022 – Present

Edmonton, AB

EXPERIENCE

Software Developer

Jan. 2026 – Present

SAPAA (Stewards of Alberta's Protected Areas Association)

Edmonton, AB

- Evaluated **15+ cloud database platforms** using cost analysis, scalability testing, and **Google Workspace API** compatibility to select a production-ready solution within nonprofit constraints
- Designed and executed a full **Microsoft Access to PostgreSQL migration** using **SQL, Python migration scripts, schema normalization, and automated validation**, reducing data synchronization errors by **95%**
- Refactored an existing **mobile safety inspection MVP** by integrating PostgreSQL-backed historical data, updating business logic, and implementing revised inspection workflows used by field staff
- Created technical documentation and led onboarding for **20+ users**, presenting system architecture and migration outcomes to the board for production deployment approval

Software Developer

Sep. 2025 – Dec. 2025

Davidson Gregory Law Firm

Edmonton, AB

- Built an **automated legal document review pipeline** using **Python, LangChain, and LLM APIs**, reducing manual disclosure review time by **70%**
- Developed a **scheduled legal research automation system** that retrieves, summarizes, and categorizes Canadian criminal cases from **CanLII** on a weekly basis
- Implemented an **NLP-based transcript analysis tool** to detect contradictions across witness statements and generate visual inconsistency reports for trial preparation
- Deployed secure AI workflows on **AWS** using encrypted storage and access controls to ensure compliance with solicitor-client privilege

PROJECTS

Job Application Tracker | Next.js, React, PostgreSQL, AWS, LangChain

Dec. 2025 – Jan. 2026

- Developed a **full-stack web application** using **Next.js, React, and PostgreSQL** to track job applications and analytics for **200+ active users**
- Integrated a **LangChain-powered resume optimization pipeline** that analyzes job descriptions and dynamically matches user experience to role requirements
- Implemented an **event-driven notification system** using **AWS SNS and EventBridge** to automate email and SMS follow-ups

Transformer Language Model | Python, PyTorch, NumPy, React

Jul. 2025 – Aug. 2025

- Implemented a **transformer-based language model from scratch** in **PyTorch**, including multi-head self-attention, positional encoding, and feed-forward layers
- Trained the model on **50M tokens** using custom optimization and backpropagation logic, achieving **85% accuracy**
- Built a **React-based visualization interface** to demonstrate text generation and attention weight distributions across model layers

HTS Classification Tool | Python, LangChain, AWS, PostgreSQL, FastAPI

Oct. 2025 – Nov. 2025

- Developed an **AI-powered tariff classification system** using **retrieval-augmented generation (RAG)** to classify international trade goods with **92% accuracy**
- Designed a **vector embedding database** enabling semantic search across **34,000+ tariff classifications**
- Deployed a **scalable FastAPI backend on AWS**, handling **1,000+ daily requests** with sub-2-second latency

TECHNICAL SKILLS

Programming Languages: JavaScript, Python, C, SQL, HTML, CSS

Software Engineering Practices: Object-Oriented Design, Debugging, Code Review, Testing, Documentation

Frameworks & Platforms: React, Next.js, Node.js, Express, FastAPI, LangChain, AWS

Databases & Backend: PostgreSQL, SQL Schema Design, Data Migration, REST APIs, GraphQL

DevOps & Tooling: Git, Docker, AWS, CI/CD Pipelines, Cloud Deployment, Environment Configuration