

Aryan Ahlawat

Bachelor of Computing (Honours) • AI Specialization • Economics Minor

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001 EDUCATION

Queen's University Bachelor of Computing (Honours), AI Specialization Stream

Kingston, ON • 2024 – Present

002 EXPERIENCE

Software Developer Co-op [Co-operators](#)

May 2026 – Aug 2026

Python • TypeScript • Node.js • Playwright • OpenAPI • AWS • Lambda • Lex

- Worked on developing **RESTful Prefill API integrations** that auto-populate insurance quoting forms in real time, orchestrating data retrieval across internal services and partner endpoints to remove manual entry from the quoting flow
- Developed the **spec-driven** publishing pipeline behind the public **developer portal**: a **GitHub Actions** job that pulls the Postman collection, converts it to **OpenAPI**, generates every documentation page, and rewrites site navigation, keeping partner-facing docs in sync with the API contract, without manual editing
- Wrote a **static analyzer** over **774 low-code modules** (41k components, 176k extracted references) that builds a cross-module reference graph and narrows unused component deletion candidates to **2%**, with a safety gate encoding every false-positive class found during calibration
- Built a **Playwright/TypeScript** end-to-end suite for the live chatbot widget embedded in customer journeys, driving the full flow through a semantic driver interface so widget DOM changes touch one file; runs in English and French

Design Team Engineer [QMIND](#)

Sep 2025 – Apr 2026

LangChain • HuggingFace • RAGAS • Python

- Architected the **vector storage** and **conversational memory** infrastructure for an agentic **RAG** pipeline, engineering an **episodic memory** layer that deduplicates semantically relevant queries, while persisting context across multiple queries
- Engineered a hybrid retrieval pipeline using **Pinecone**, merging **BM25 sparse search** and **dense semantic embeddings** with **reciprocal rank fusion (RRF)** to maximize context recall
- Implemented a defensive **multi-hop failsafe** mechanism that evaluates context sufficiency, automatically decomposing complex queries and executing secondary retrieval hops when initial evidence is weak

Machine Learning Co-op [Acetech](#)

May 2025 – Aug 2025

PyTorch • Pandas • SQL • NumPy

- Developed **Multi-Layer Perceptron (MLP)** regression models in PyTorch to predict lab test durations, tuning hyperparameters to achieve a **12% reduction** in Mean Squared Error loss against the previous baseline
- Engineered an end-to-end pipeline from an extensive SQL dataset using **Pandas** and **NumPy**, combining **cyclical sine/cosine encodings** with one-hot encoding to capture the real-time lab state, while filtering statistical outliers and scaling numerical features

003 PROJECTS

CardIQ [Hack the 6ix](#) [devpost](#) [github](#) [↗](#)

Jul 2026

Python • FastAPI • PuLP/CBC • Pydantic • Streamlit

- Built a deterministic multi-card payment router, formulating spending allocation as an **integer program (PuLP/CBC)** that optimizes for hard credit limits, utilization ceilings, and sign up bonus constraints, with a greedy solver as a verified fallback
- Fine-tuned a **small language model** on synthetic data to translate plain-text financial goals into the exact mathematical weights required by the solver, enabling natural language routing and verifying decision accuracy

Visualizelt [QHacks](#) [WINNER • MAYOR'S INNOVATION AWARD](#) [devpost](#) [↗](#)

Feb 2025

YOLOv8 • PyTorch • Stable Diffusion • OpenCV

- Engineered a real-time augmented reality pipeline using **YOLOv8 Nano** and **Mask R-CNN** for rapid object detection, integrating **MediaPipe** and **OpenCV ORB feature matching** for continuous, low-latency tracking
- Integrated **Stable Diffusion** to generate custom textures, replacing manual editing by dynamically perspective-warping and alpha-blending stylized AR graphics directly onto moving targets in live video feeds

004 SKILLS & CERTIFICATIONS

Languages • Frameworks Python, Java, C, SQL, JavaScript, PyTorch, LangChain, FastAPI, Flutter, Scikit-Learn, OpenCV

Tools • Platforms AWS, Azure, Oracle Cloud, Git, Postman, OpenAPI, MATLAB, Databricks, Docker

Certifications Oracle Cloud Infrastructure Foundations, Microsoft AZ-900, NVIDIA Building RAG Agents with LLMs