

UDAY SINGH KANWAR

Canadian Citizen | ✉ udaykanwar007@gmail.com | [🌐 linkedin.com/in/uday-kanwar](https://www.linkedin.com/in/uday-kanwar) | [Portfolio](#) | [Github](#)

EDUCATION

McMaster University

Bachelor of Engineering in Software Engineering- GPA: 3.9/4.0, Dean's Honour List

Expected Graduation, April 2027

Hamilton, Ontario

WORK EXPERIENCE

Software Developer Intern

IBM [🔗](#): IBM Toronto Software Lab

Sep 2025- Present

Markham, ON

- Building an AI-powered web editor for interactive Skills Network Labs used by over **9 million** learners worldwide.

AI Engineer Intern

Blu Creative [🔗](#)- A software company providing AI-powered web solutions across North America.

May 2025 - Aug 2025

Toronto, ON

- Developed an **Retrieval-Augmented Generation chatbot** using **LLMs, LlamaIndex, LangChain, and SQLAlchemy**, providing natural language query support over company data and RFPs, deployed across **50+** organizations
- Engineered smart chat history summarization and query **caching**, boosting response efficiency by **30%**.
- Engineered AI-powered FastAPI endpoints with structured **prompt engineering** and **OpenAI Responses API**, enabling context-aware query analysis, real-time context injection from chat history, and seamless **Next.js** integration.
- Integrated RFP marketplace APIs into a **PostgreSQL** system with automated validation and **LLM-powered** screening, enabling **classification** of 100+ new RFPs daily with reduced manual review.

Machine Learning Engineer

McMaster Aerial Robotics and Drone Team [🔗](#): Student Club building drones for SUAS Canada competition.

Jan 2025 - Present

Hamilton, ON

- Engineered a **TensorFlow object detection CNN** with **93%** accuracy to enable autonomous drone flight to targets.
- Integrated **NVIDIA Jetson Nano AI Devkit** with drone flight controller to enable real-time, **low-latency** perception to control pipeline, validated in a **Gazebo** simulation.

Software Engineer Intern

Learning Mode AI [🔗](#)- EdTech startup transforming YouTube videos into interactive learning with LLMs.

Jan 2025 - March 2025

Toronto, ON

- Built **3+** **Go** and **Python** based **RESTful** APIs to enable dynamic quiz generation, concise video summaries, and real-time Q&A by leveraging **Redis** and **GPT-4o** LLM integration, working in a **docker** based environment.
- Developed **10+** **UI features** and resolved **15+** **bugs**, improving responsiveness by **30%** using **React** and **JavaScript**.

Embedded Full-Stack Engineer

Human Endeavour [🔗](#): Organization advancing senior care with smart and assistive technology

June 2024 - Oct 2024

Vaughan, ON

- Managed a **MySQL** database handling real-time data from **15+ IoT sensors**, improving query performance by **40%** through index optimization and efficient schema design.
- Built an interactive dashboard using **React.js**, a **Flask** backend, and **Tableau** integration, enabling real-time visualization of **500+** daily data points, with front-end workflows prototyped in **Figma** for intuitive UI/UX design.
- Developed a **trilateration** algorithm with **Ultra-Wideband, AT Commands**, and C++ for indoor tracking at **80%** accuracy.

TECHNICAL PROJECTS

AI Travel Agent — LLM-Based Flight Search Assistant | NVIDIA AIQ Toolkit, Python, NVIDIA NIM, SerpAPI

May 2025

- Developed an AI-powered travel assistant using **NVIDIA AIQ Toolkit, ReAct agent** architecture, and **LLaMA-3.3-70B-Instruct** via **NVIDIA NIM** for natural language processing and delivering real-time flight data through a structured integration with the **SerpAPI Google Flights tool**.
- Engineered a **YAML-configured** agent workflow with tool chaining and LLM-guided **slot extraction** for flight details (dates, locations, travel class), enabling accurate, context-aware responses with robust error handling and retry logic.

LearnBridge- AI Agent for Students | Google Agent Development Kit, Python, Google Classroom & Calendar API

Dec 2024

- Architected **ReAct-based** multi-agent workflows with memory, **sequential/parallel** execution, and tool integration (Google Classroom & Calendar) in a **Streamlit UI**, enhanced through prompt tuning for context-aware task handling.
- Accelerated assignment workflows by **80%** by auto-extracting key concepts from assignments, announcements, and slides into formatted outputs (graphs, tables, bolded summaries) and syncing deadlines to **Google Calendar**.

Hobbies and Clubs | Google Student Developers' Club, Intramural: Hockey, Cricket, Basketball and Volleyball

SKILLS

Languages: Python, JavaScript, Java C++, C, React, TypeScript

Technical Proficiencies: NVIDIA AIQ toolkit, Next.js, Node.js, Flask, FastAPI, phpMyAdmin, PostgreSQL, TensorFlow, OpenCV, Arduino IDE, MatLab, GitHub, Maven, Docker, Pandas, Numpy, Scikit Learn, Amazon AWS, JUnit, Pytorch, OpenAI API, Pinecone, LlamaIndex, LangChain, RAG pipelines