

Kalyana Abenanth Gurunathan

Edmonton , Alberta

+1(825)-975-1398 | kalyanaa@ualberta.ca | linkedin.com/in/kalyanaabenanthg

EDUCATION

University of Alberta

Master's in Electrical and Computer Engineering

Edmonton , Canada

Sept 2024 – May 2026

EXPERIENCE

AppViewX

Chennai, India

Engineer - Automation II , Python Development

July 2021 – Aug 2024

- I built a RAG chatbot with a vector database and a locally hosted LLM, deployed on on-premise servers. Optimized retrieval pipelines for low-latency responses, enhancing AI-driven contextual retrieval.
- Led the data migration of legacy systems using kafka from MongoDB to SQL Server, which doubled application availability and significantly reduced operational costs and deploying in production using Docker, Cloud, CI/CD.
- Built REST API's using the FastAPI framework for user input validation in the frontend forms, increasing the backend application success rate by 90%.
- Led Agile development of microservice applications to automate the creation and management of objects on F5 load balancer, reducing manual effort and operational costs by 80%.
- Developed dynamic queue functionality for production workflows, increasing the overall success rate by 100%.

TECHNICAL SKILLS

Programming Languages: Python, Rust , SQL , C++, HTML/CSS.

Machine Learning Frameworks: RAG, Vector Database, LangChain, Tavily, Pincecone, TensorFlow, PyTorch, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib, OpenAI.

Tools and Frameworks: AWS , RedHat Openshift , Grafana , Streamlit, MongoDB , Apache Kafka , FastAPI , Docker, GIT , PowerBI , Kubernetes , Data Analytics , Agile SDLC, SSL/SSH , Venafi.

Networks and Cryptography: F5 LTM & GTM , Infoblox DNS , SSL Certificates Creation and Renewals , PKI.

Project Management: Jira , ServiceNow , Confluence.

CERTIFICATIONS

Supervised Machine Learning by DeepLearning.AI and Stanford University

January 2025

- Linear and Logistic Regression , Gradient Descent , Cost Minimization and Regularization.

Alberta Machine Intelligence Institute

December 2024 - Present

- Work-Integrated Learning Opportunity at the Alberta Machine Intelligence Institute (Amii) as a Technical Advisor, supporting startups in designing and implementing effective AI-driven solutions.

AWS Machine Learning Foundations

October 2024

- Fundamental concepts of machine learning and how to apply the machine learning pipeline to solve a business problem using AWS Cloud.

PROJECTS

RAG-Powered Canadian History Chatbot — Chatbot Link

February 2025

- Developed an NLP-driven chatbot that leverages RAG and LLMs to provide queries about Canadian history.
- Intelligent QA: Retrieves historical information using Pinecone vector embeddings and real-time web data.
- Interactive Chat Memory: Stores chat history using SQLite for long-term conversational context. User Authentication UI: Implements secure login, registration with password hashing and an intuitive Streamlit-based UI. Feedback Mechanism: Enables users to rate responses, improving chatbot accuracy.

Exploring Vision Models for Multimodal Interaction — GitHub Repo

December 2024

- Investigating the capabilities of vision-language models like LLaVA, focusing on multimodal chat, text and image content generation, and instruction-following for fine-tuning.
- Developing functionality for creating bounding boxes around regions of interest in images based on instructions.
- Implemented image composition techniques, enabling model-driven image editing.
- Implemented Supervised Fine-Tuning with images using text data and annotated images, to perform Image composition tasks.