

# Kalyana Abenanth Gurunathan

Edmonton , Alberta

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## EDUCATION

### University of Alberta

*Master's in Electrical and Computer Engineering*  
focus in Computer Vision and NLP

GPA: 3.43

Edmonton , Canada

*Sept 2024 – May 2026*

## EXPERIENCE

### AppViewX

*Engineer - Automation II , Python Development*

Chennai, India

*July 2021 – Aug 2024*

- Led the data migration of legacy systems using kafka from MongoDB to SQL Server, which doubled application availability and significantly reduced operational costs.
- 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 Virtual IPs and Wide IPs on F5 Big-IP using command-line tools and iControl APIs. Integrated Infoblox DNS with F5 devices for object creation, reducing manual effort and operational costs by 80%.
- Developed dynamic queue functionality for production workflows, increasing the overall success rate by 100%.

## 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

### Exploring Vision Models for Multimodal Interaction | *Python, CV*

September 2024 - Present

- 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.
- Exploring image composition techniques, enabling model-driven image editing.
- Conducting instruction fine-tuning with images using text data and annotated images, with plans to implement Supervised Fine-Tuning (SFT) for customized tasks.

### Cisco ThingQbator | *Python, Machine Learning, Firebase, MIT App*

June 2021

- Developed a smart home automation system using machine learning algorithms to optimize daily appliance usage and predict power consumption.
- Built a mobile app interface to allow users to control and monitor appliances, reducing energy consumption.
- Created a unique machine learning solution to detect and prevent unnecessary energy wastage.
- Utilized Firebase (NoSQL) for data storage and processing.

## TECHNICAL SKILLS

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

**Machine Learning Frameworks:** TensorFlow, PyTorch, Scikit-learn, OpenCV, NumPy, Pandas, Matplotlib.

**Tools and Frameworks:** AWS , RedHat Openshift , 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.