

Self-Learning & AI Certifications Portfolio

About Myself

I am **Dawood Sarfraz**, a **BSCS graduate** from **FAST National University of Computer and Emerging Sciences** in **2024**. Currently, I work as a **Machine Learning Engineer**, specializing in **Computer Vision** and **Video Processing**.

Professional Experience

I am actively working on a **video surveillance system** designed to enhance business security. By leveraging AI-powered **real-time monitoring** and **intrusion detection**, I develop solutions for **automated object detection**, **tracking**, and **anomaly detection**, ensuring a safer and more efficient environment.

Passion for Artificial Intelligence

My interest in **Artificial Intelligence** began during my undergraduate studies when I took an **Artificial Intelligence course**. This exposure led me to explore various domains, including **Machine Learning**, **Digital Image Processing**, **Natural Language Processing**, and **Data Science**.

To strengthen my expertise, I actively participated in **Kaggle competitions**, where I worked on real-world AI challenges. Additionally, I completed multiple courses from platforms like **Coursera**, **DeepLearning.AI**, and **Udemy**, further enhancing my knowledge and practical skills.

I am driven by curiosity and a strong desire to solve complex problems using **Artificial Intelligence**. I believe in the power of **teamwork** and **collaboration** to foster innovation and create impactful solutions.

My goal is to continuously explore **cutting-edge AI technologies** and contribute to advancements in the field, ensuring meaningful real-world applications.

My Primary Areas of Interest

- *Artificial Intelligence*
- *Machine Learning*
- *Deep Learning*
- *Digital Image Processing*
- *Computer Vision*
- *Video Processing*
- *Natural Language Processing*
- *Large Language Models*
- *Data Science*
- *MLOps & Model Deployment*
- *AI System Design*
- *Scalable AI Applications*

Intro to AI Ethics



Figure 1: Intro to AI Ethics

Machine Learning Explainability



Figure 2: Machine Learning Explainability

Intro to Machine Learning



Figure 3: Intro to Machine Learning

Intermediate Machine Learning



Figure 4: Intermediate Machine Learning

Intro to Deep Learning



Figure 5: Intro to Deep Learning

Computer Vision



Figure 6: Computer Vision

Time Series



Figure 7: Time Series

Intro to Game AI and Reinforcement Learning



Figure 8: Intro to Game AI and Reinforcement Learning

Data Cleaning



Figure 9: Data Cleaning

Feature Engineering



Figure 10: Feature Engineering

Data Visualization



Figure 11: Data Visualization

Geospatial Analysis



Figure 12: Geospatial Analysis

Introduction to Machine Learning

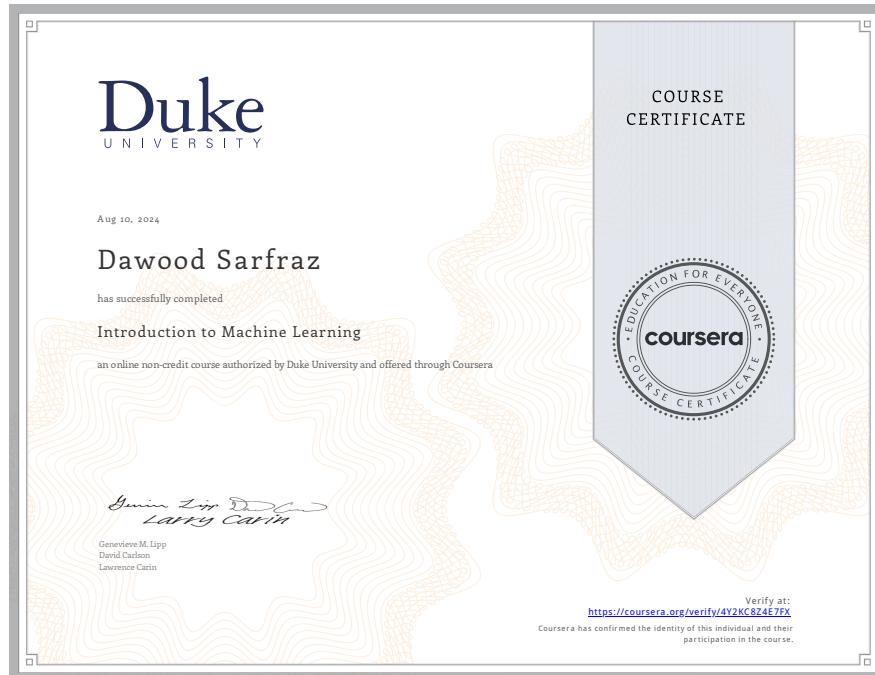


Figure 13: Introduction to Machine Learning

Supervised Machine Learning Regression and Classification

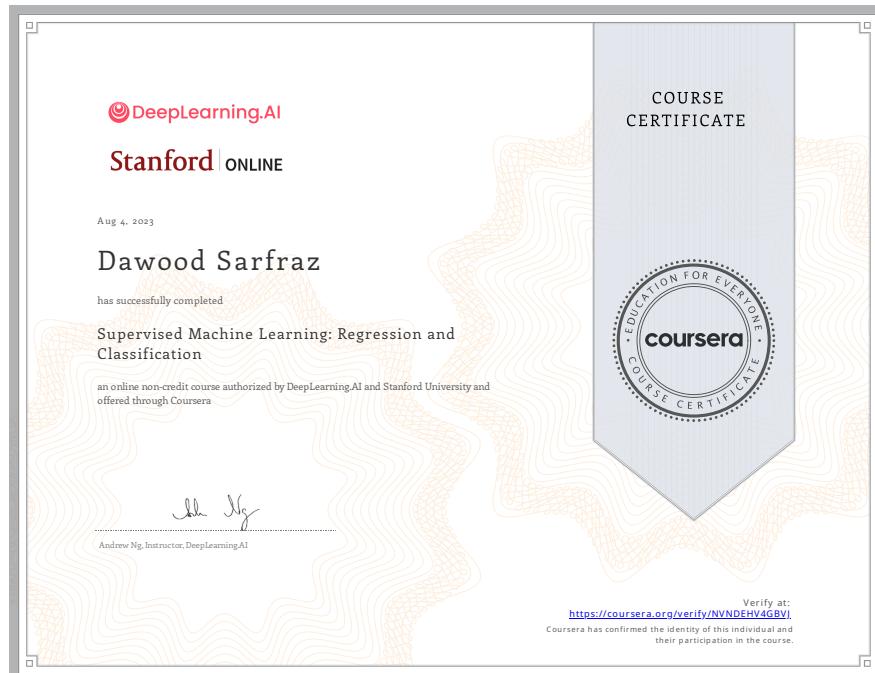


Figure 14: Supervised Machine Learning Regression and Classification

Natural Language Processing in TensorFlow

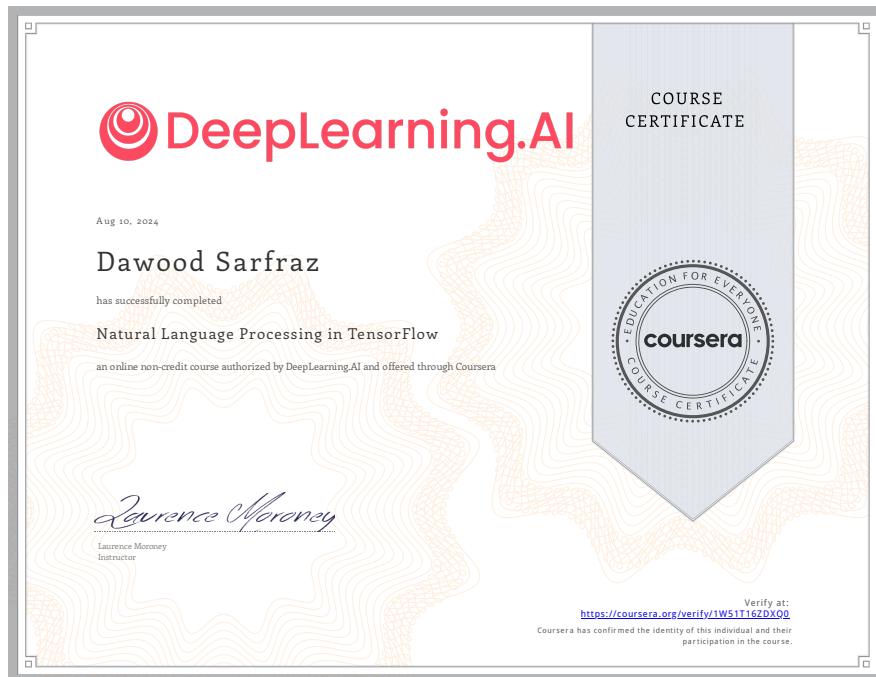


Figure 15: Natural Language Processing in TensorFlow

Sentiment Analysis, Beginner to Expert



Figure 16: Sentiment Analysis, Beginner to Expert

Project-Based Text Mining in Python



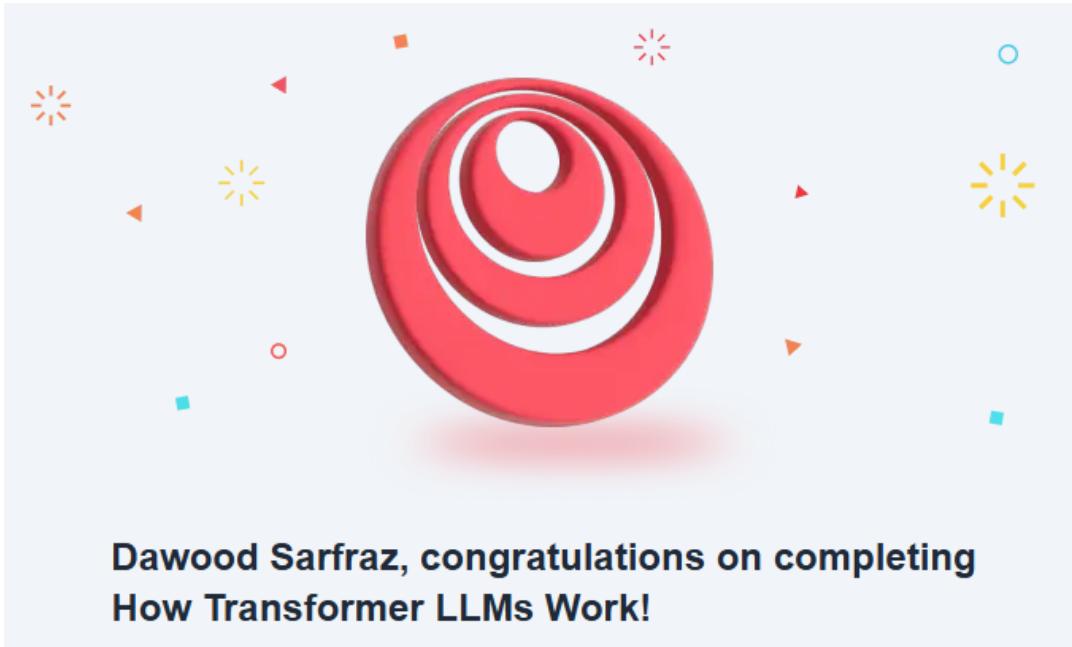
Figure 17: Project-Based Text Mining in Python

MATLAB Master Class: Go from Beginner to Expert



Figure 18: MATLAB Master Class: Go from Beginner to Expert

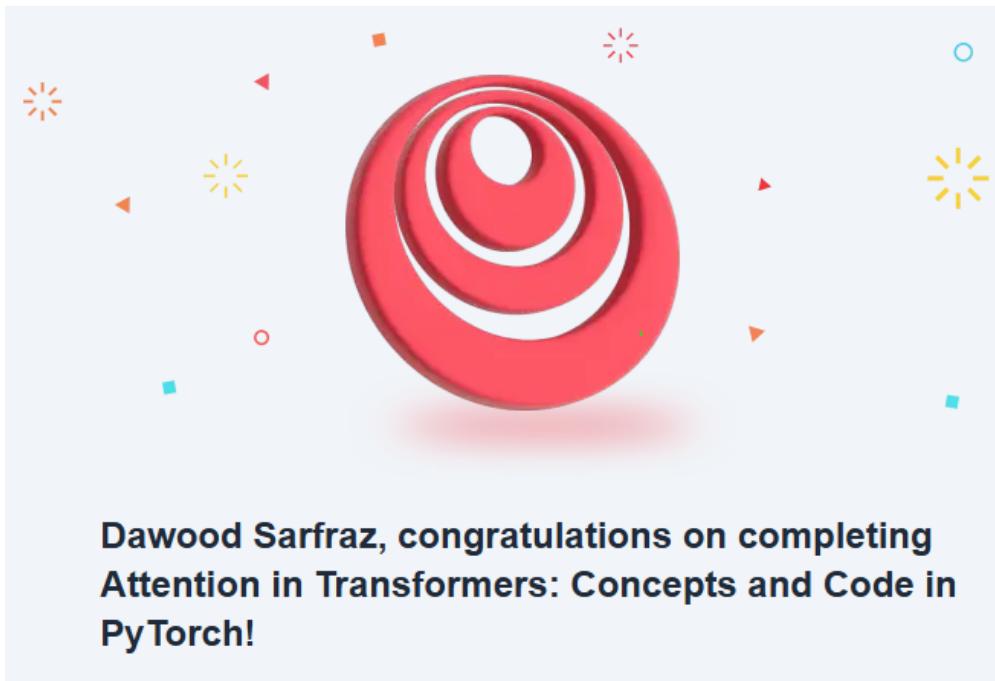
How Transformer LLMs Work



**Dawood Sarfraz, congratulations on completing
How Transformer LLMs Work!**

Figure 19: How Transformer LLMs Work

Attention in Transformers Concepts and Code in PyTorch



**Dawood Sarfraz, congratulations on completing
Attention in Transformers: Concepts and Code in
PyTorch!**

Figure 20: Attention in Transformers Concepts and Code in PyTorch

Getting Started with Mistral



Figure 21: Getting Started with Mistral

Quantization Fundamentals with Hugging Face



Figure 22: Quantization Fundamentals with Hugging Face

Quantization in Depth

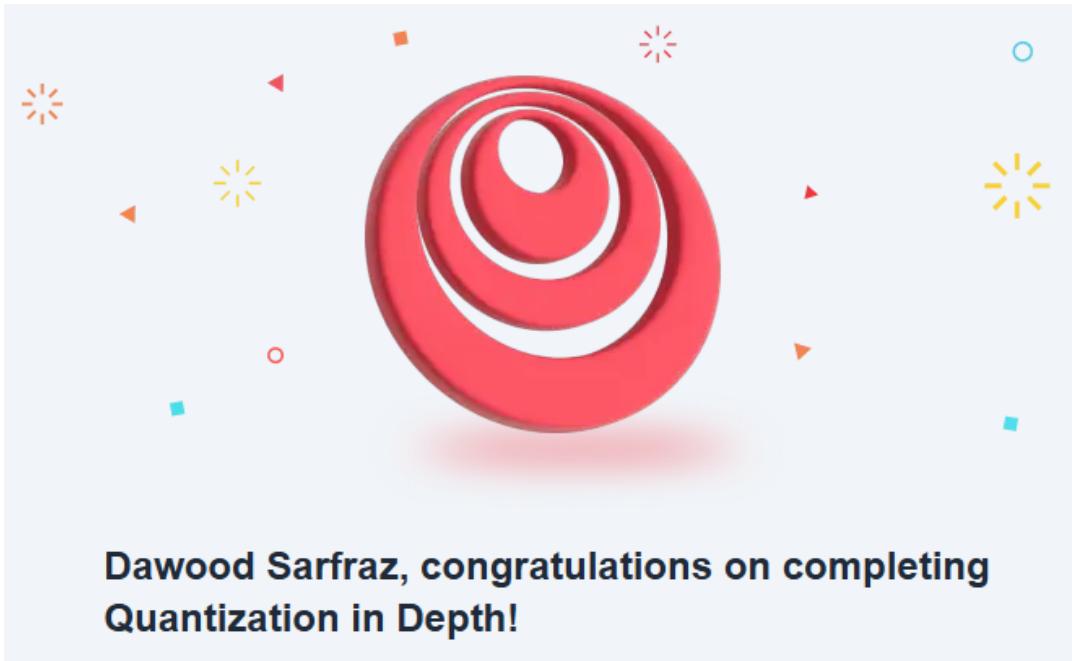


Figure 23: Quantization in Depth

LangChain Chat with Your Data

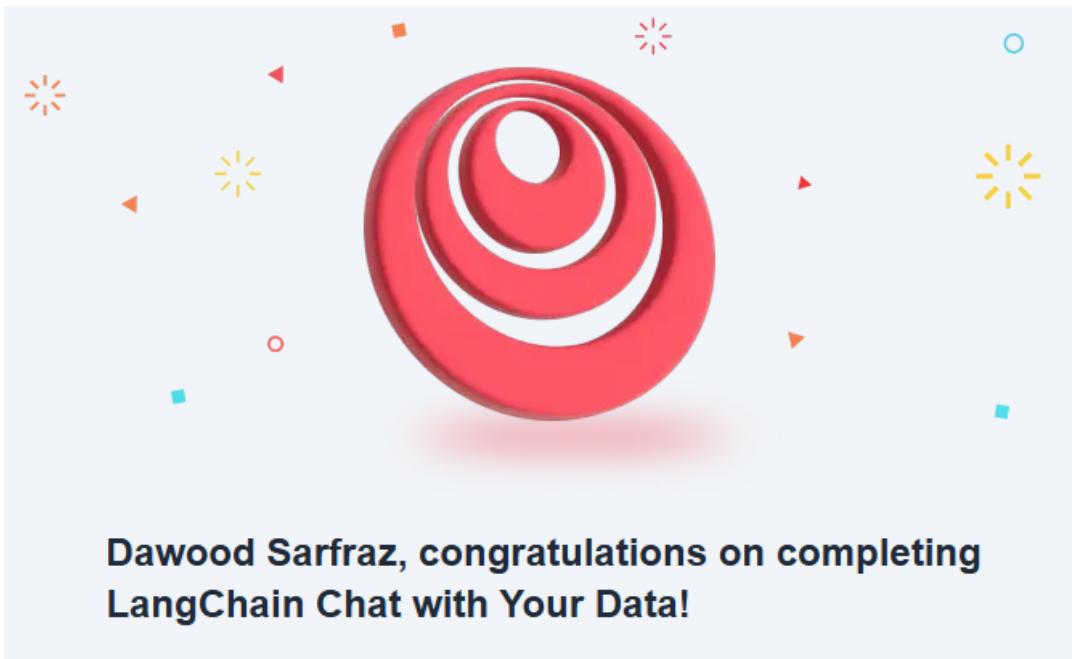


Figure 24: LangChain Chat with Your Data

Multimodal RAG Chat with Videos

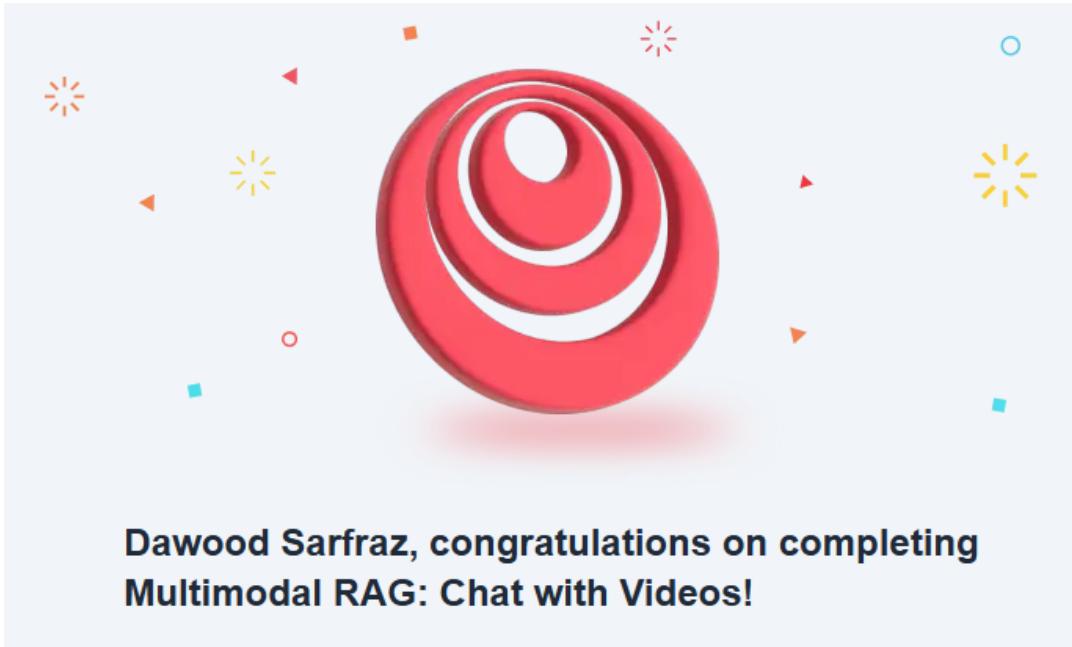


Figure 25: Multimodal RAG Chat with Videos

Multimodal RAG Chat with Videos

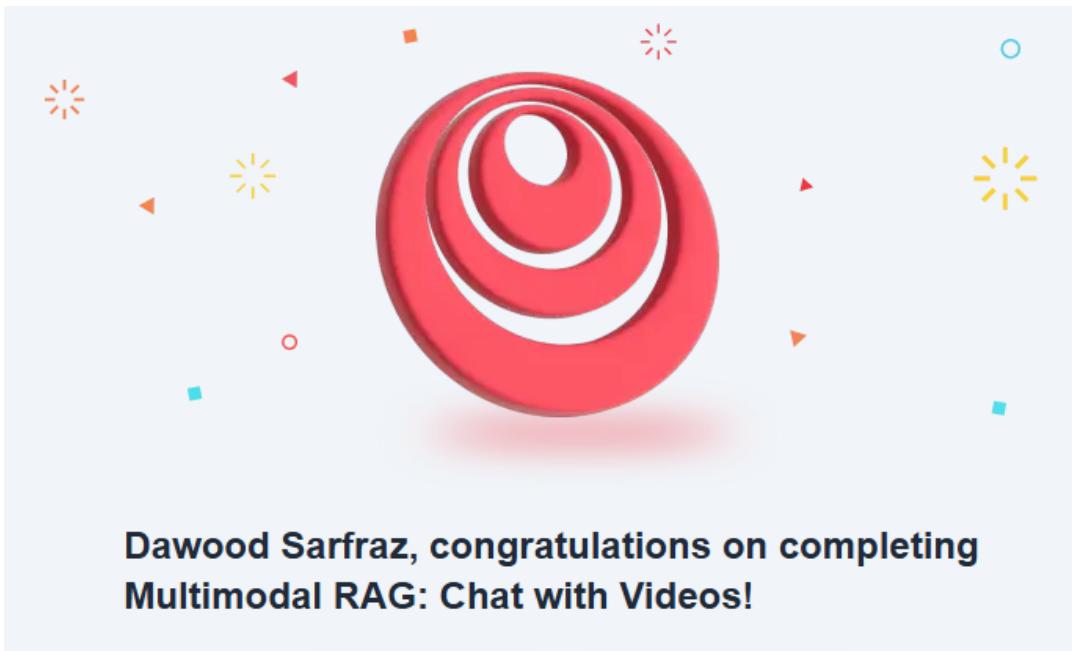


Figure 26: Multimodal RAG Chat with Videos

Finetuning Large Language Models



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Finetuning Large Language Models!**

Figure 27: Finetuning Large Language Models

AI Agents in LangGraph



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Agents in LangGraph!**

Figure 28: AI Agents in LangGraph

Building and Evaluating Advanced RAG

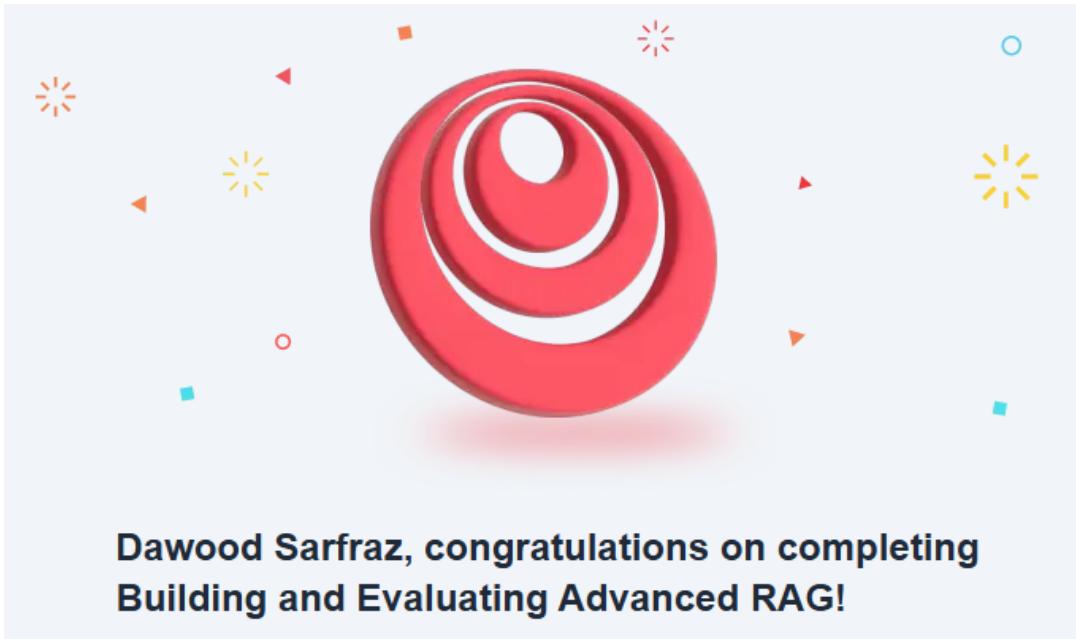


Figure 29: Building and Evaluating Advanced RAG

Building Applications with Vector Databases



Figure 30: Building Applications with Vector Databases

Building Multimodal Search and RAG

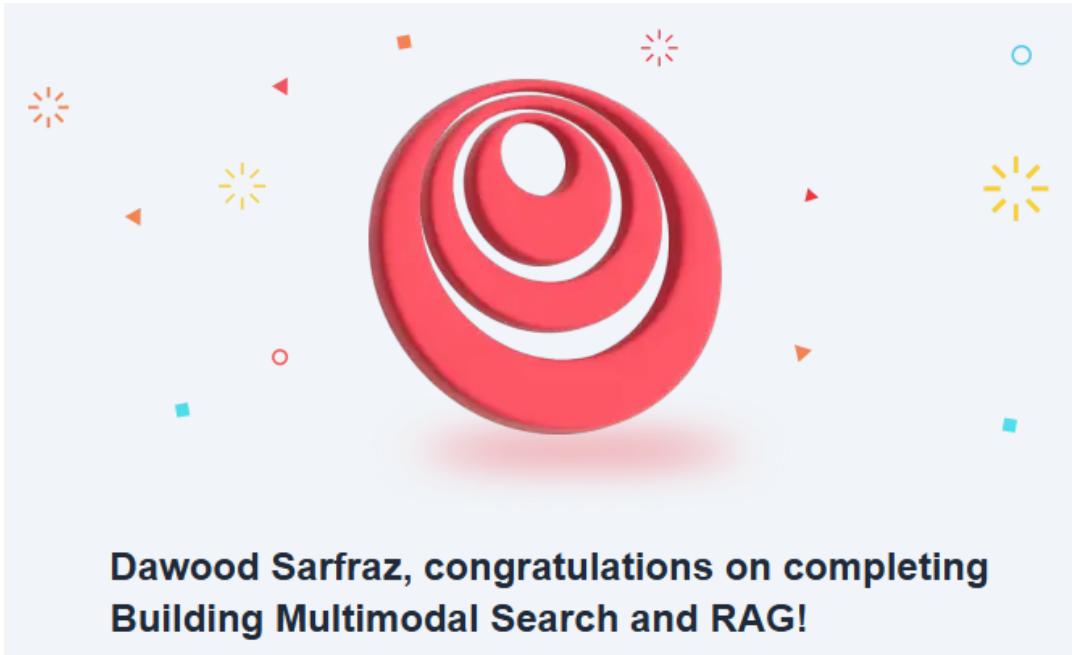


Figure 31: Building Multimodal Search and RAG

Prompt Engineering for Vision Models



Figure 32: Prompt Engineering for Vision Models

Prompt Engineering with Llama 2&3



Figure 33: Prompt Engineering with Llama 2&3

How Diffusion Models Work



Figure 34: How Diffusion Models Work

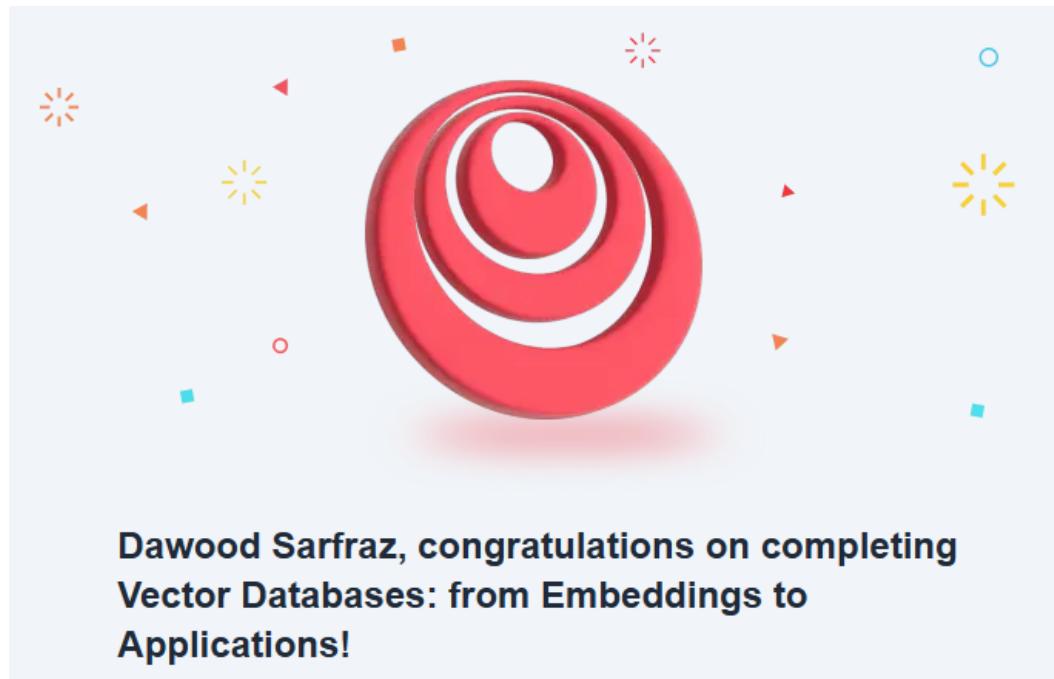
Introducing Multimodal Llama 3.2



**Dawood Sarfraz, congratulations on completing
Introducing Multimodal Llama 3.2!**

Figure 35: Introducing Multimodal Llama 3.2

Vector Databases from Embeddings to Applications



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Vector Databases: from Embeddings to
Applications!**

Figure 36: Vector Databases from Embeddings to Applications

Event-Driven Agentic Document Workflows

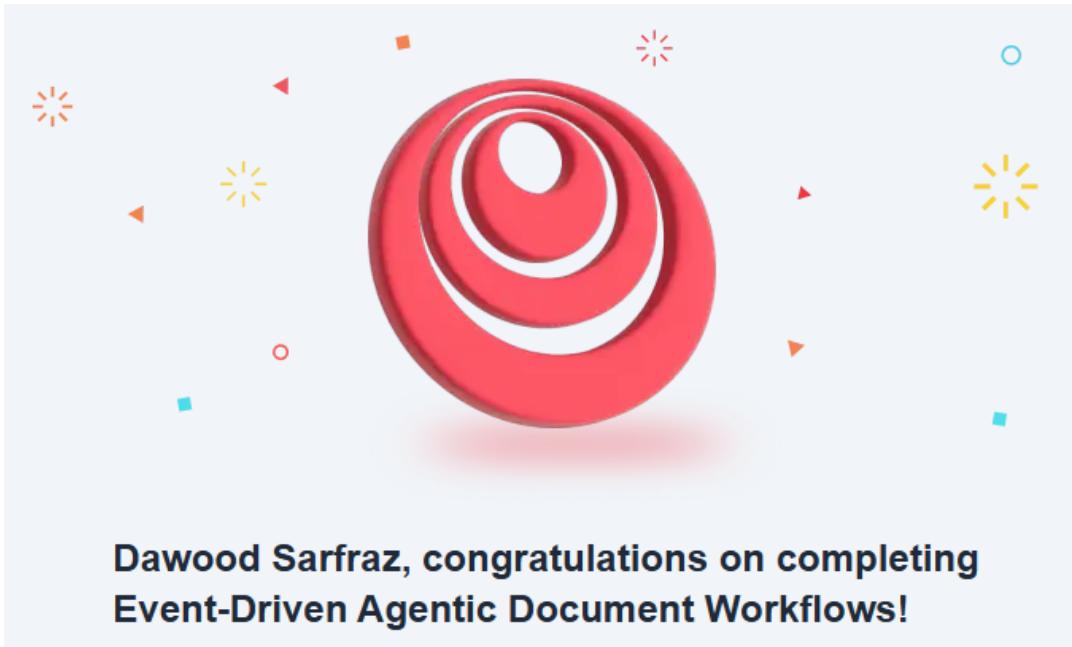


Figure 37: Event-Driven Agentic Document Workflows

Function-calling and data extraction with LLMs

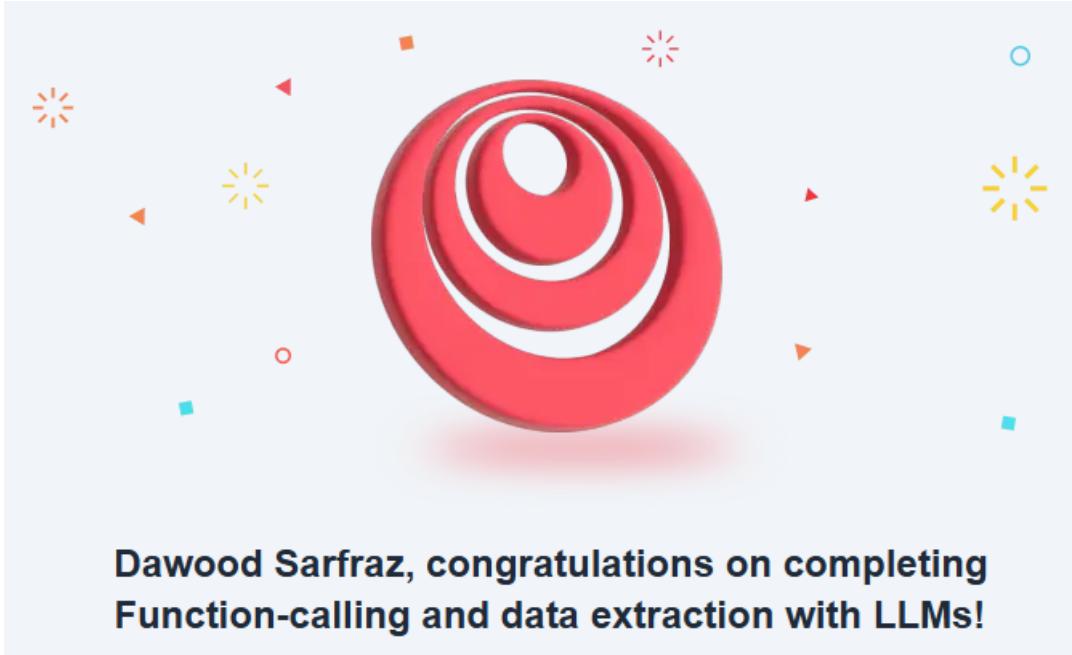


Figure 38: Function-calling and data extraction with LLMs

Functions, Tools and Agents with LangChain



Figure 39: Functions, Tools and Agents with LangChain

Knowledge Graphs for RAG



Figure 40: Knowledge Graphs for RAG

Large Language Models with Semantic Search



Figure 41: Large Language Models with Semantic Search

Retrieval Optimization Tokenization to Vector Quantization

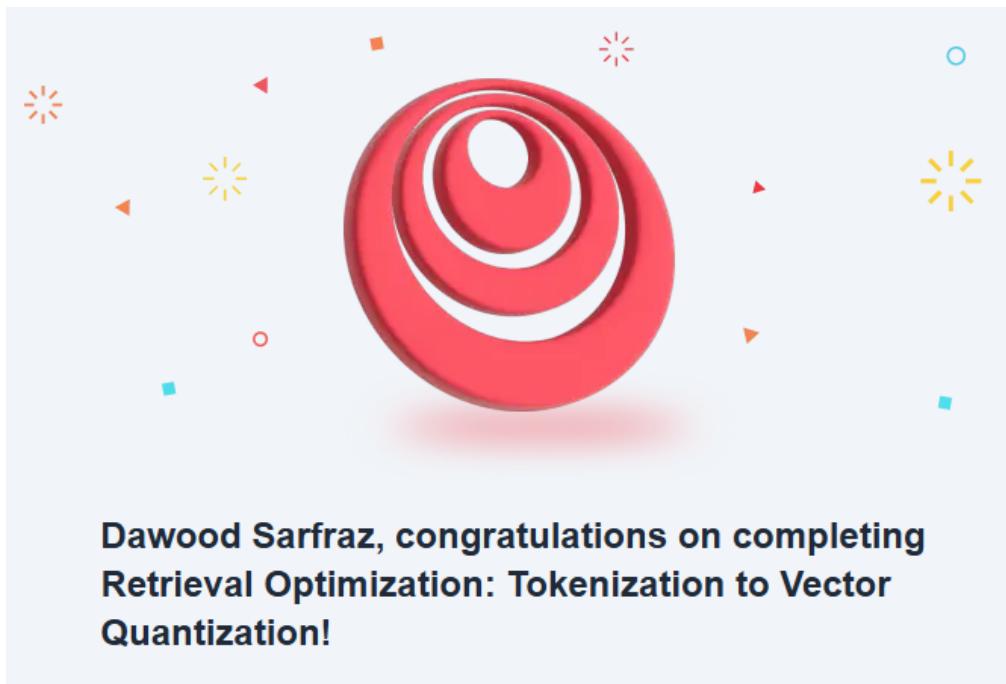


Figure 42: Retrieval Optimization Tokenization to Vector Quantization

Reasoning with o1

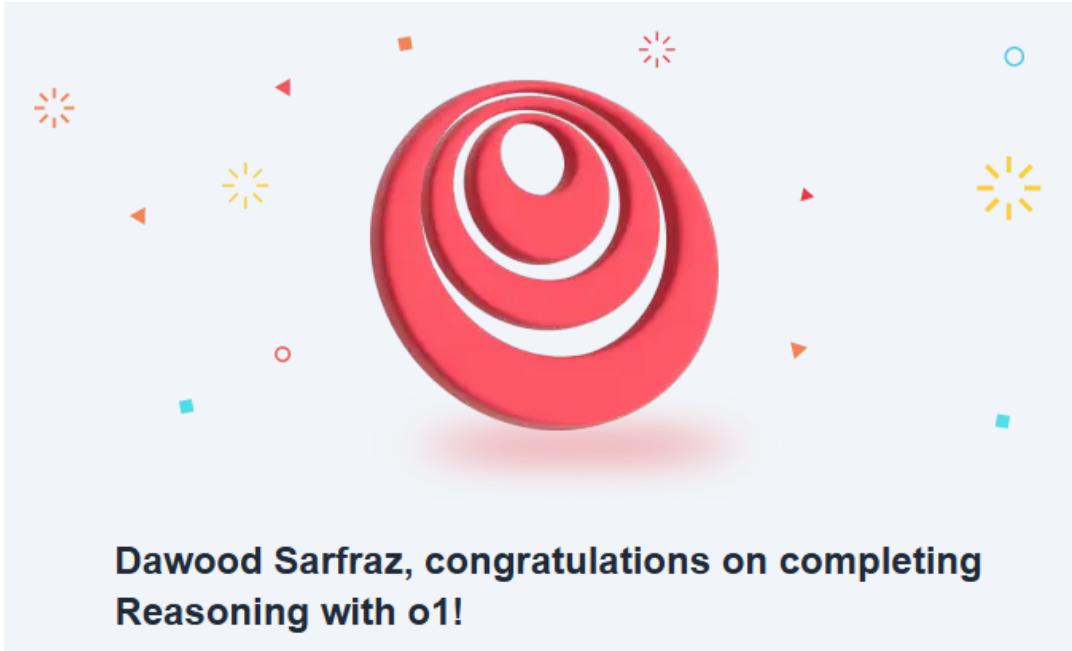


Figure 43: Reasoning with o1

Intro to Federated Learning



Figure 44: Intro to Federated Learning

Quality and Safety for LLM Applications



Figure 45: Quality and Safety for LLM Applications

Automated Testing for LLMOps

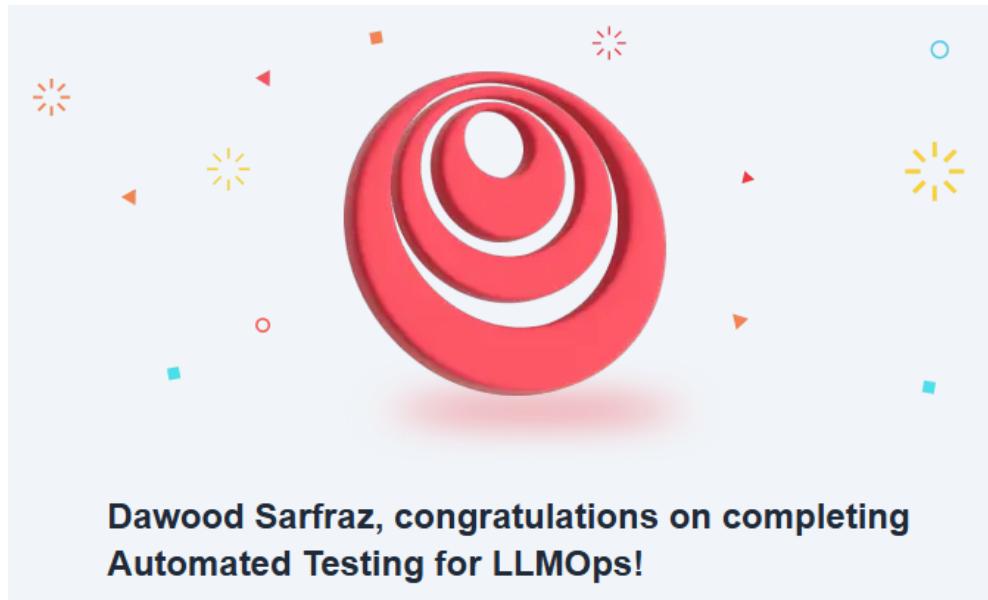


Figure 46: Automated Testing for LLMOps

Credit Card Fraud Detection



Figure 47: Credit Card Fraud Detection

Building Recommendation Systems



Figure 48: Building Recommendation Systems