

Course Overview

Hello, and welcome to the **Advanced RAG with Vector Databases and Retrievers** course.

This course empowers learners to unlock the full potential of Retrieval-Augmented Generation (RAG) by mastering advanced retrieval techniques and vector database integration. Focused on practical, real-world application, the course delves into the powerful retrievers in LlamaIndex and LangChain, and also introduces Facebook AI Similarity Search (FAISS) as a core component of scalable vector search.

Through hands-on projects, learners will explore advanced retrieval patterns, integrate FAISS into RAG pipelines, and develop interactive AI applications using Gradio. Emphasis is placed on enhancing response accuracy in large language models (LLMs) through sophisticated retrieval strategies.

By the end of the course, learners will possess the skills to design, build, and deploy intelligent, production-ready RAG systems—preparing them to deliver high-performing AI-driven solutions across diverse domains.

This course is part of the [IBM RAG and Agentic AI Professional Certificate](#) .

Prerequisites

This course is accessible to a wide range of professionals but having some knowledge and experience of the Python programming language is required. Additional working knowledge of vector databases, RAG, and Similarity Search is advantageous.

It is recommended that you complete the following prior courses in the program before starting this one:

- [Develop Generative AI Applications: Get Started](#) 
- [Build RAG Applications: Get Started](#) 
- [Vector Databases for RAG: An Introduction](#) 

Objectives

After completing this course, you will be able to: