GenAI and RAG Application Building Mentoring Program

ANI_423 | Expert-Led Live | Automation and Insights | Expert
Course Duration: 7 weeks

This mentoring program guides participants through the creation of a GenAI application using Retrieval-Augmented Generation (RAG). Over seven weeks, participants learn to build and integrate various components of RAG using CrewAI, LangChain, the OpenAI API, and Python. Each module focuses on a specific aspect of the AI application, with exercises that reinforce learning objectives and contribute to the overall project of building a technical assistant. Each week includes a half-day live session, followed by approximately four additional hours of self-paced development. The program culminates in student presentations of their AI applications.

Intended Audience

This course is for telecom professionals implementing AI-driven solutions. Ideal for enhancing technical skills and strategic understanding of AI.

Objectives

After completing this course, the learner will be able to:

- Describe the fundamental concepts and applications of Generative AI
- Connect to OpenAI API and perform RAG-based prompt engineering
- Build a chat interface
- Develop and optimize a retrieval system
- Implement guardrails in AI systems
- Deploy and maintain the AI app with considerations for future enhancements

Outline

1. Session 1: Introduction to Generative AI
1.1 Overview of Generative AI
1.2 Applications of Generative AI
1.3 Key concepts and terminology
1.4 Setting up the development environment
Exercise: Setting up your environment

2. Session 2: Connecting to LLM
2.1 Introduction to LLM APIs
2.2 Connecting to an LLM API
2.3 Basic Prompt Engineering
2.4 Using CrewAI and LangChain
Exercise: Connecting to the LLM environment

3. Session 3: Building a Chat Interface
3.1 Designing the user interface
3.2 Implementing user interaction features
3.3 Integrating the UI with backend systems
3.4 Testing and debugging the UI
Exercise: Building a chat interface

4. Session 4: Developing the Retrieval System
4.1 Introduction to information retrieval
4.2 Designing the retrieval system
4.3 Implementing search algorithms
4.4 Optimizing retrieval performance
Exercise: Developing your retrieval system

5. Session 5: Adding Guardrails
5.1 Introduction to guardrails
5.2 Implementing guardrails in AI systems
5.3 Testing guardrails
5.4 Evaluating guardrail performance
Exercise: Adding guardrails to your system

6. Session 6: Finalizing and Deploying the AI App
6.1 Preparing for deployment
6.2 Deployment strategies
6.3 Monitoring and maintenance
6.4 Future enhancements and scalability
Exercise: Finalizing and deploying your AI app

7. Session 7: Participants Use Case Presentation
7.1 Use case submission
7.2 Use case presentations
7.3 Feedback and wrap-up