

GenAl 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 GenAl application using Retrieval-Augmented Generation (RAG). Over seven weeks, participants learn to build and integrate various components of RAG using CrewAl, LangChain, the OpenAl API, and Python. Each module focuses on a specific aspect of the Al 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 Al applications.

Intended Audience

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

Objectives

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

- Describe the fundamental concepts and applications of Generative AI
- Connect to OpenAl 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 Al
- 1.1 Overview of Generative AI
- 1.2 Applications of Generative Al
- 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 CrewAl 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 Al 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 Al app
- 7. Session 7: Participants Use Case Presentation
- 7.1 Use case submission
- 7.2 Use case presentations
- 7.3 Feedback and wrap-up

