



DP-3028: Implement Generative AI engineering with Azure Databricks

Course ID #: 7000-1071-ZZ-Z

Hours: 7

Course Content

Description:

Generative Artificial Intelligence (AI) engineering with Azure Databricks uses the platform's capabilities to explore, fine-tune, evaluate, and integrate advanced language models. By using Apache Spark's scalability and Azure Databricks' collaborative environment, you can design complex AI systems.

Prerequisites:

Before starting this module, you should be familiar with fundamental AI concepts and Azure Databricks.

Target Audience:

Data Scientist

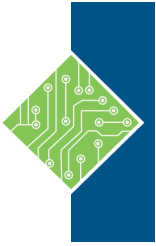
Topics:

Lesson 1: Get started with language models in Azure Databricks

- Introduction
- Understand Generative AI
- Understand Large Language Models (LLMs)
- Identify key components of LLM applications
- Use LLMs for Natural Language Processing (NLP) tasks
- Exercise - Explore language models
- Module assessment
- Summary

Lesson 2: Implement Retrieval Augmented Generation (RAG) with Azure Databricks

- Introduction
- Explore the main concepts of a RAG workflow
- Prepare your data for RAG
- Find relevant data with vector search
- Rerank your retrieved results
- Exercise - Set up RAG
- Module assessment
- Summary



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Lesson 3: Implement multi-stage reasoning in Azure Databricks

- Introduction
- What are multi-stage reasoning systems?
- Explore LangChain
- Explore LlamaIndex
- Explore Haystack
- Explore the DSPy framework
- Exercise - Implement multi-stage reasoning with LangChain
- Module assessment
- Summary

Lesson 4: Fine-tune language models with Azure Databricks

- Introduction
- What is fine-tuning?
- Prepare your data for fine-tuning
- Fine-tune an Azure OpenAI model
- Exercise - Fine-tune an Azure OpenAI model
- Module assessment
- Summary

Lesson 5: Evaluate language models with Azure Databricks

- Introduction
- Compare LLM and traditional ML evaluations
- Evaluate LLMs and AI systems
- Evaluate LLMs with standard metrics
- Describe LLM-as-a-judge for evaluation
- Exercise - Evaluate an Azure OpenAI model
- Module assessment
- Summary

Lesson 6: Review responsible AI principles for language models in Azure Databricks

- Introduction
- What is responsible AI?
- Identify risks
- Mitigate issues
- Use key security tooling to protect your AI systems
- Exercise - Implement responsible AI
- Module assessment
- Summary

Lesson 7: Implement LLMOps in Azure Databricks

- Introduction
- Transition from traditional MLOps to LLMOps
- Understand model deployments
- Describe MLflow deployment capabilities
- Use Unity Catalog to manage models
- Exercise - Implement LLMOps
- Module assessment
- Summary

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NASBA Information

Attendance Requirement: To be awarded the full credit hours, you must sign in and attend the entire course.

Recommended Field(s) of Study:

Recommended CPEs: 7.80

Policies: Course Registration, Cancellation, Refund, and Complaint Resolution

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