DEVELOPING GENERATIVE AI APPLICATIONS ON AWS

Duration: 2 Days **Course Code: GK910010**

Overview:

Learn to build and customize AI solutions by using Amazon Bedrock programmatically
In this advanced two-day course, software developers learn to build and customize AI solutions by using Amazon Bedrock programmatically. Through hands-on exercises and labs, participants will invoke foundation models through Amazon Bedrock APIs, implement Retrieval Augmented Generation (RAG) patterns with Amazon Bedrock Knowledge Bases and develop AI agents with tool integration. The course focuses on the practical implementation of prompt engineering techniques, responsible AI practices with Amazon Bedrock Guardrails, open-source framework integration, and architectural patterns for real-world business application

Target Audience:

This course is intended for Software developers.

Prerequisites:

We recommend that attendees of this course have:

- Completed the Generative AI Essentials AWS instructor-led course
- Intermediate-level proficiency in Python
- Familiarity with AWS Cloud

Content:

Day 1

Module 1: Exploring Components of Generative AI Applications on AWS

- Understanding generative AI concepts
- Identifying AWS generative AI stack components
- Designing generative AI application components

Module 2: Programming with Amazon Bedrock

- Guiding model response generation
- Using Amazon Bedrock programmatically

Hands-on lab: Develop with Amazon Bedrock APIs

Hands-on lab: Develop Streaming Patterns with Amazon Bedrock APIs

Module 3: Applying Prompt Engineering for Developers

- Introducing prompt engineering
- Introducing prompt techniques
- Optimizing prompts for better result

Module 4: Using Amazon Bedrock APIs in Common Architectures

- Implementing architecture patterns with Amazon Bedrock APIs
- Exploring common use cases
- Adding conversational memory to extend context

Hands-on lab: Develop Conversation Patterns with Amazon Bedrock APIs

Day 2

Module 5: Customizing Generative AI Responses with RAG

- Implementing Retrieval Augmented Generation (RAG)
- Using Amazon Bedrock Knowledge Bases

Hands-on lab: Develop Retrieval Augmented Generation (RAG) Applications with Amazon Bedrock Knowledge Base

Module 6: Integrating Open Source Frameworks with Amazon Bedrock

- Invoking a foundation model in Amazon Bedrock using LangChain
- Using LangChain for context-aware responses

Hands-on lab: Develop a Generative AI Application Pattern using Open Source Frameworks and Amazon Bedrock Knowledge Bases

Module 7: Evaluating Generative AI Application Components

- Evaluating application components
- Evaluating model output
- Evaluating RAG output
- Optimizing latency and cost

Hands-on lab: Evaluating Retrieval Augmented Generation (RAG) Applications

Module 8: Implementing Responsible AI

- Understanding responsible AI
- Mitigating bias and addressing prompt misuses
- Using Amazon Bedrock Guardrails

Hands-on lab: Securing Generative AI Applications Using Bedrock Guardrails

Module 9: Using Tools and Agents in Generative AI Applications

- Using tools
- Understanding AI agents
- Understanding open source agentic frameworks
- Understanding agent interoperability

Module 10: Developing Amazon Bedrock Agents

- Implementing Amazon Bedrock Flows
- Designing Amazon Bedrock Agents
- Developing Amazon Bedrock Inline Agents
- Designing multi-agent collaboration
- Using Amazon Bedrock AgentCore

Hands-on lab: Developing Amazon Bedrock Agents Integrated with Amazon Bedrock Knowledge Bases and Guardrails

Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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