

# Developing GenAI Applications on AWS – Useful Learning Links

## Module 1: Intro to GenAI

- What is AI: <https://aws.amazon.com/what-is/artificial-intelligence>
- GenAI on AWS: <https://aws.amazon.com/generative-ai>
- Amazon Q Developer User Guide: <https://docs.aws.amazon.com/amazonq/latest/qdeveloper-ug/what-is.html>
- GenAI Use cases: <https://aws.amazon.com/generative-ai/use-cases/>

## Module 2: Plan GenAI Project

- What is Foundation Model: <https://aws.amazon.com/what-is/foundation-models/>
- Transformers in AI: <https://aws.amazon.com/what-is/transformers-in-artificial-intelligence/>
- Responsible AI in generative era: <https://www.amazon.science/blog/responsible-ai-in-the-generative-era/>

## Module 3: Bedrock getting started

- Bedrock document: <https://aws.amazon.com/bedrock>
- Bedrock Pricing: <https://aws.amazon.com/bedrock/pricing>
- Bedrock User Guide: <https://docs.aws.amazon.com/bedrock/latest/userguide/what-is-bedrock.html>
- Playgrounds: <https://docs.aws.amazon.com/bedrock/latest/userguide/using-console.html#console-description-playgrounds>
- SDK Code Examples: [https://docs.aws.amazon.com/bedrock/latest/userguide/service\\_code\\_examples.html](https://docs.aws.amazon.com/bedrock/latest/userguide/service_code_examples.html)
- Bedrock API Guide: <https://docs.aws.amazon.com/bedrock/latest/APIReference/welcome.html>

## Module 4: Prompt Engineering

- Supported FMs: <https://docs.aws.amazon.com/bedrock/latest/userguide/models-supported.html>
- What is artificial intelligence (AI)? (<https://aws.amazon.com/what-is/artificial-intelligence/>)
- What is machine learning (ML)? (<https://aws.amazon.com/what-is/machine-learning/>)
- What is generative AI? (<https://aws.amazon.com/what-is/generative-ai/>)
- "Self-supervised learning" in the *Amazon Science* blog (<https://www.amazon.science/tag/self-supervised-learning>)
- "Train self-supervised vision transformers on overhead imagery with Amazon SageMaker" in the *AWS Machine Learning* blog (<https://aws.amazon.com/blogs/machine-learning/train-self-supervised-vision-transformers-on-overhead-imagery-with-amazon-sagemaker/>)
- Automatic multi-step reasoning and tool-use for large language models: <https://arxiv.org/abs/2303.09014>.
- ReAct- Synergizing Reasoning and Acting in Language Models: <https://arxiv.org/abs/2210.03629>

## Module 5: Bedrock Application Components

- What are Large Language Models? <https://aws.amazon.com/what-is/large-language-model/>
- k-Nearest Neighbor (k-NN) search in Amazon OpenSearch Service at <https://docs.aws.amazon.com/opensearch-service/latest/developerguide/knn.html>
- Vector Engine for Amazon OpenSearch Serverless at <https://aws.amazon.com/opensearch-service/serverless-vector-engine/>
- Using PostgreSQL Extensions with Amazon RDS for PostgreSQL at <https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Appendix.PostgreSQL.CommonDBATasks.Extensions.html>
- Amazon Aurora PostgreSQL Now Supports pgvector for Vector Storage and Similarity Search at <https://aws.amazon.com/about-aws/whats-new/2023/07/amazon-aurora-postgresql-pgvector-vector-storage-similarity-search/>

## Module 6: Foundation Models

- Inference Parameters: <https://docs.aws.amazon.com/bedrock/latest/userguide/inference-parameters.html>
- Use the API to invoke a model with a single prompt: <https://docs.aws.amazon.com/bedrock/latest/userguide/inference-invoke.html>

## Module 7: LangChain

- What is LangChain?" - <https://aws.amazon.com/what-is/langchain/>
- Integrations of LangChain for AWS: <https://python.langchain.com/docs/integrations/platforms/aws/>
- Using Amazon Bedrock as a LangChain LLM component <https://python.langchain.com/docs/integrations/llms/bedrock/>
- Document Loaders: [https://python.langchain.com/docs/modules/data\\_connection/document\\_loaders.html](https://python.langchain.com/docs/modules/data_connection/document_loaders.html)
- Retrievers : [https://python.langchain.com/docs/modules/data\\_connection/retrievers/](https://python.langchain.com/docs/modules/data_connection/retrievers/)
- ReAct Prompting - [https://python.langchain.com/docs/modules/agents/agent\\_types/react/](https://python.langchain.com/docs/modules/agents/agent_types/react/)

## Module 8: Architecture Patterns

- Converse API: <https://docs.aws.amazon.com/bedrock/latest/userguide/conversation-inference.html#message-inference-examples>

## AI Practitioner Exam: Preparation

- Certification Page: <https://aws.amazon.com/certification/certified-ai-practitioner/>
- Exam Prep Plan: [https://explore.skillbuilder.aws/learn/public/learning\\_plan/view/2193/standard-exam-prep-plan-aws-certified-ai-practitioner-aif-c01](https://explore.skillbuilder.aws/learn/public/learning_plan/view/2193/standard-exam-prep-plan-aws-certified-ai-practitioner-aif-c01)
- Official Practice Test: <https://explore.skillbuilder.aws/learn/course/external/view/elearning/19790/exam-prep-official-practice-question-set-aws-certified-ai-practitioner-aif-c01-english>

- Udemy Courses & Practice Exams:  
<https://allegisgroup.udemy.com/organization/home/>
- Skillbuilder courses for AI/ML/GenAI:  
<https://skillbuilder.aws/exam-prep/ai-practitioner>

### Additional GenAI Training Courses

- Bedrock - Getting Started:  
<https://explore.skillbuilder.aws/learn/course/external/view/elearning/17508/amazon-bedrock-getting-started%E2%80%8B>
- Building GenAI:  
<https://explore.skillbuilder.aws/learn/course/17904/Building%2520Generative%2520AI%2520Applications%2520Using%2520Amazon%2520Bedrock>
- Practical Demo – Amazon Q & Bedrock  
<https://explore.skillbuilder.aws/learn/course/external/view/elearning/18865/aws-flash-practical-demo-of-amazon-q-and-amazon-bedrock>