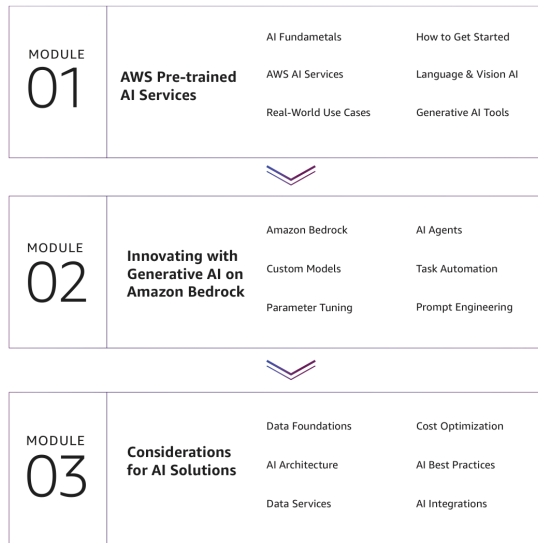


- Road Map



- AWS AI categories:

- generative AI ^{Q.} BedRock
- Language AI (purpose-built) Polly / Lex
- Computer Vision ^{Q.} Rekognition
- Augmented Analysis ^{Q.} Textract / Comprehend
- Customer Experience ^{Q.} Personalize / Kendra

- Amazon Q

Q: use it for general purpose

BedRock: -- for building AI tools

- Amazon Rekognition

- Amazon Comprehend

· Prompt Engineering

· Chain of Thoughts Prompting

guide AI step by step (reasoning, calculation)

· Few-shot Prompting

feed with few examples

· Zero-shot Prompting

when the prompt is clear and context is well-defined

· Contextual Prompting

provide AI with background info

· Iterative Refining

Ask & Refine.

· Fine Tuning

· Temperature . control randomness .

$[0, 1]$ predictable \rightarrow creative
code/font creative writing.

· Top P . control how many options are even considered

$[0, 1]$, precise \rightarrow variety

· Length . control how much text model generate & manage cost

- charge for every input token processed & output token generated.

· Automating Task with AI Agents

· AI Agent workflow :

- 1° interpret user input using FM
- 2° determine the next step to full-fill request
(breakdown task, elicit parameters, plan actions)
- 3° complete steps by calling AWS Lambda, interacting with API, retrieving info from knowledge base.

· Components of AI Agent :

- FM.
- Instruction
- Action group
- Knowledge bases
- Prompt template
- Guardrails
- Multi-agent collaboration (optional)

· Data Foundation

- labeled / unlabeled data ← JSON, XML
- Structured / unstructured / semi-structured data

Data Type	Description	Example Use Case
Tabular	Rows and columns, like a CSV or SQL table	Forecasting sales
Time-series	Data indexed by time, often continuous	Monitoring sensors or stock trends
Text	Natural language documents, logs, or messages	Chatbots, document summarization
Image	Pixel-based files (JPEG, PNG)	Facial recognition, classification
Audio/Video	MP4 files, etc.	Speech recognition, object tracking

· Data lifecycle for AI solution

1° collection

2° preparation & cleaning

3° quality check

4° visualization & analysis

5° monitoring & debugging

6° deployment & automation

7° access control & governance

