ippon

Build Your AI Companion: Crafting Custom Chatbots with Amazon Bedrock

AGENDA

PART 01
Intro

What is Generative AI?

PART 02
Amazon Bedrock?

Building a GenAI Chatbot

PART 03
Best Practices & Tips

Conclusion and Q&A

INTRODUCTION
Théo Lebrun

lebruntheo

Falydoor

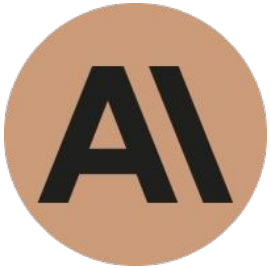
@Falydoor

https://theolebrun.com/

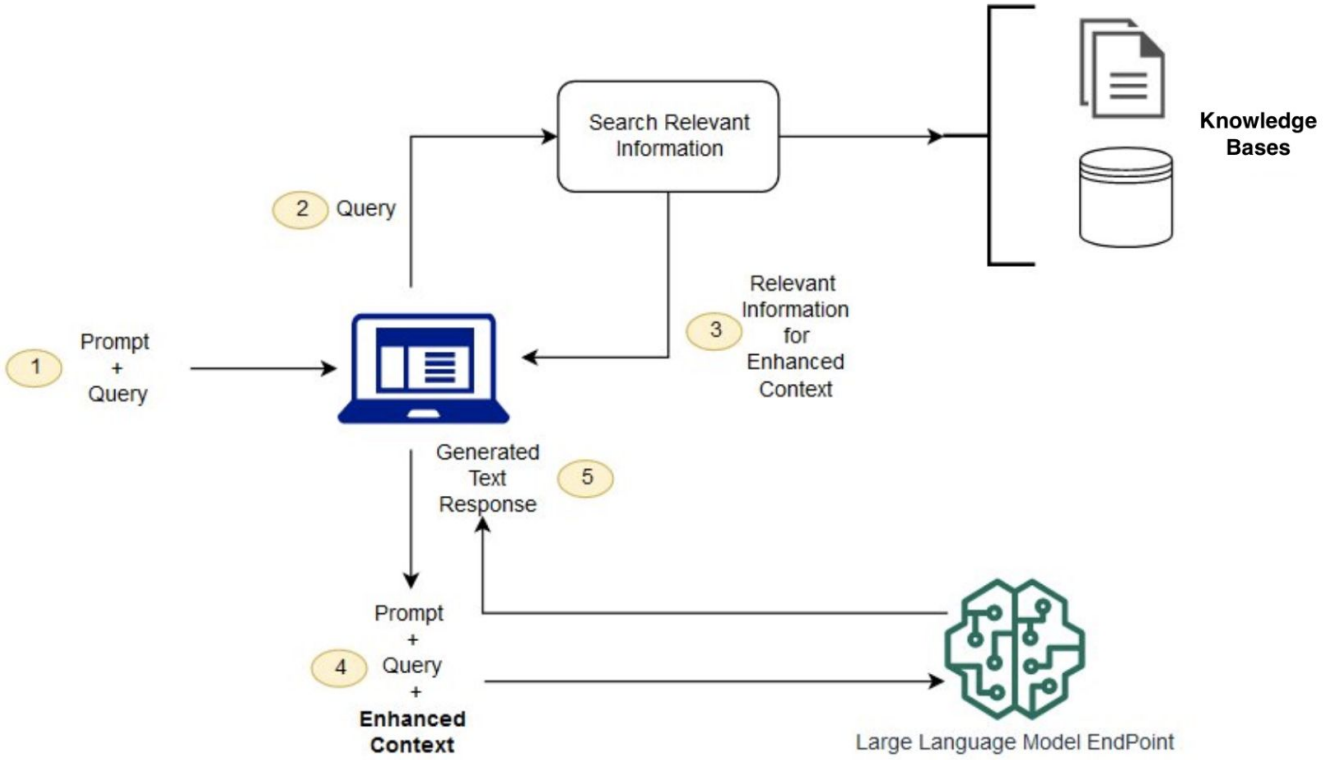
Data Engineer and Technical Manager at Ippon Technologies

What is Generative AI?

- **Generate Human-like Text**
  - Based on an input (or prompt)
  - Can be enhanced with a context (RAG)
- **Tailored**
  - Model provider
  - Model type
  - Temperature
- **Use Cases**
  - Customer support
  - Content creation
  - Virtual assistants
  - And more...



Retrieval-Augmented Generation (RAG)



Amazon Bedrock

- **Fully Managed Serverless Service**
  - High-performing foundation models (Llama, Claude, Nova, Mistral, etc.)
  - Interactive playgrounds
  - Bring your own custom models
- **Knowledge Bases**
  - S3, web crawler
  - Third party (Salesforces, Confluence, etc)
- **Builder Tools**
  - Prompt management (versioning, caching, etc.)
  - AI Agents
- **Data Protection and Privacy**
  - Encrypted in transit and at rest
  - Not shared with model providers
  - Monitoring and logging capabilities

Developing Your Chatbot

- **Picking a LLM Framework**

LangChain

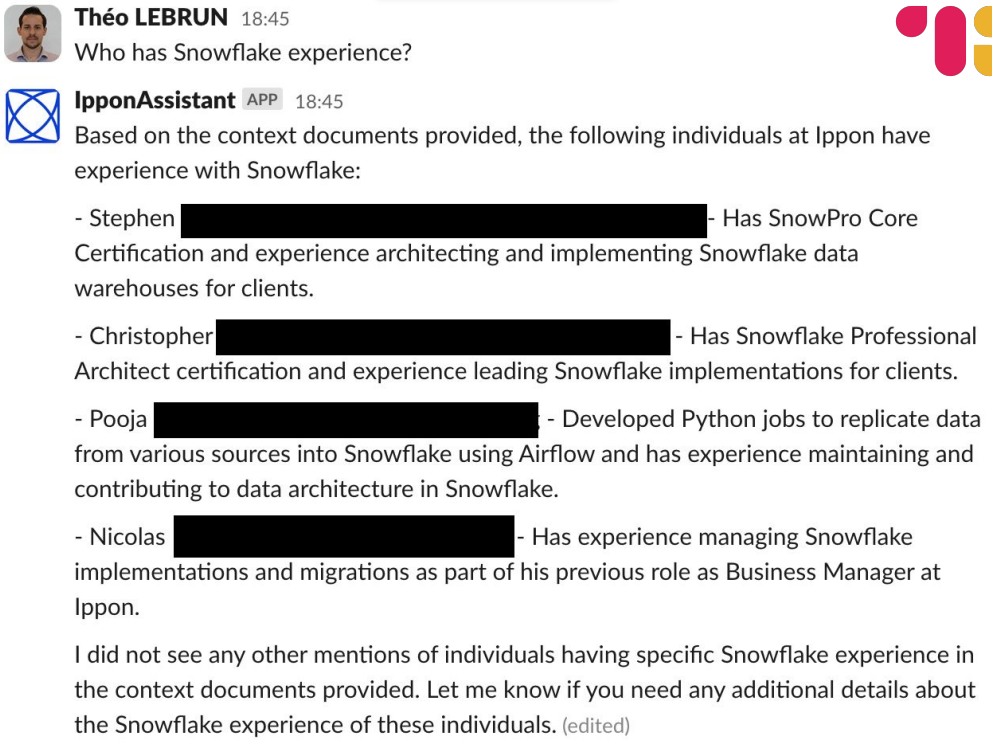
- **LLM and Embeddings**
  - Vectorstore
  - Model

- **Bot Platform**
  - Gradio
  - Slack, Teams, etc

- **DevOps**
  - Deployment
  - Scaling

IpponAssistant

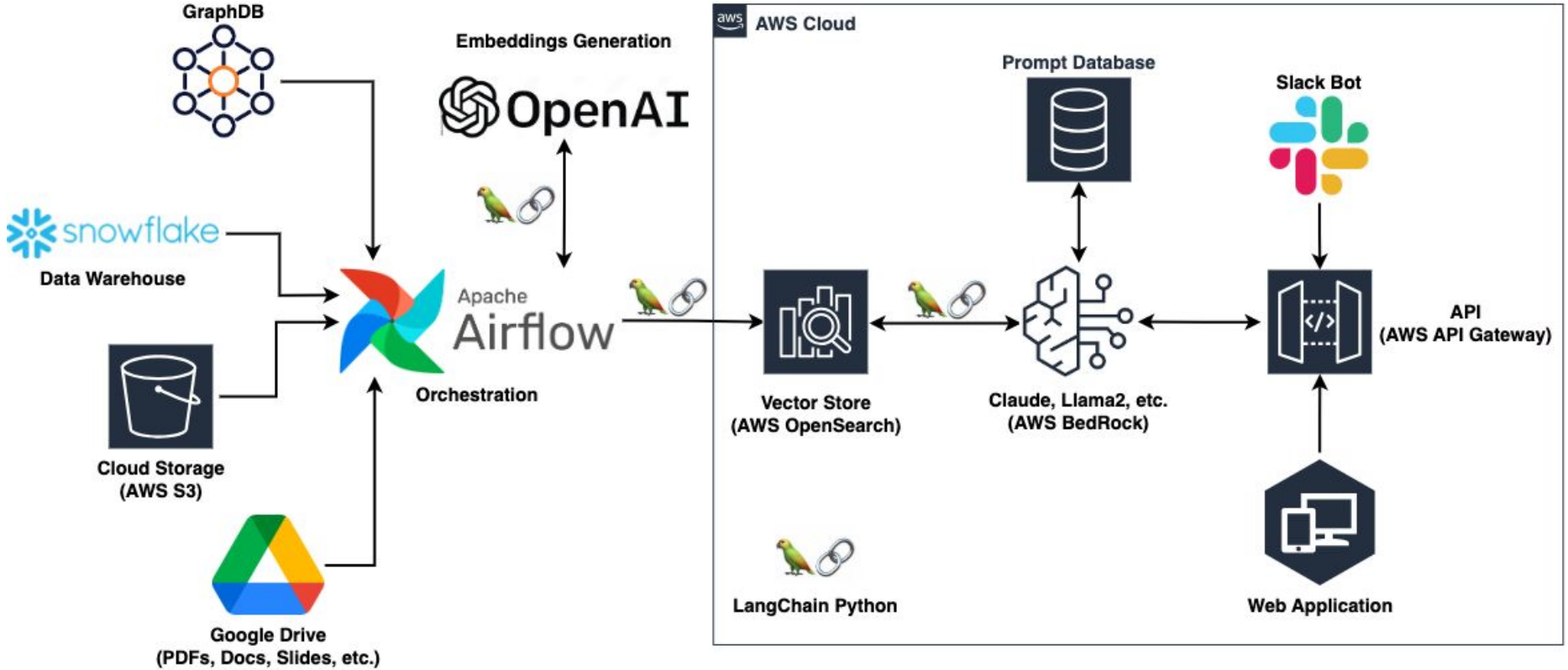
- **GenAI Slack Chatbot**
- **Knowledge Bases**
  - Resumes
  - Case studies
  - Internal docs (handbook, healthcare benefits, etc)



Knowledge Bases

- **Sources**
  - File based
  - Database
  - Third party
- **Data Requirements**
  - Collect, clean and standardize
  - Update frequency
- **Document Integration**
  - Type of documents (doc, pdf, txt, etc)
  - Chunking strategies

Architecture



Best Practices

- **Security Considerations**
  - User’s data not shared
  - Amazon Bedrock Guardrails

- **Ongoing Maintenance**
  - Monitoring
  - Feedback system

- **AI Agents for Amazon Bedrock**
  - Automate repetitive tasks
  - Improve generated response
  - Reduce LLM hallucinations

Tips and Tricks

- **Conversational Retrieval**
  - Timestamp, who is speaking, etc
  - History, converse API
  - Include source documents
  - Multi-index and prompt (reduce LLM hallucination)

- **Performance Optimization**
  - Streaming
  - Max tokens
  - Model type (SLMs vs LLMs)

Bedrock Pricing

- **Pricing Plans**
  - On Demand (pay for what you use)
  - Batch (50% cheaper)
  - Provisioned Throughput (charged by the hour)
- **SLMs vs LLMs**

Meta models	1,000 input tokens	1,000 output tokens	1,000 input tokens (batch)	1,000 output tokens (batch)
Llama 3.1 Instruct (8B)	$0.00022	$0.00022	$0.00011	$0.00011
Llama 3.1 Instruct (70B)	$0.00072	$0.00072	$0.00036	$0.00036
Llama 3.1 Instruct (405B)	$0.0024	$0.0024	$0.0012	$0.0012

Useful Links

- https://aws.amazon.com/bedrock/
- https://www.langchain.com/
- https://blog.ippon.tech/building-a-document-powered-chatbot-with-langchain-amazon-bedrock-and-rag
- https://github.com/Falydoor/talks

Thank You for Your Time!

I would love to chat more with you about building a successful Gen AI Chatbot using Amazon Bedrock or any other technology.

You can email me at tlebrun@ipponusa.com or message me on

Q & A