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Orchestrating AI Knowledge Bases with Apache Airflow 3.0

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Agenda

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PART 01

Intro

What is Generative AI?

PART 02

Knowledge Bases?

Orchestration with Airflow

PART 03

Best Practices & Tips

Conclusion and Q&A

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Senior Data Engineer and Technical Manager at Ippon Technologies

What is Generative AI?

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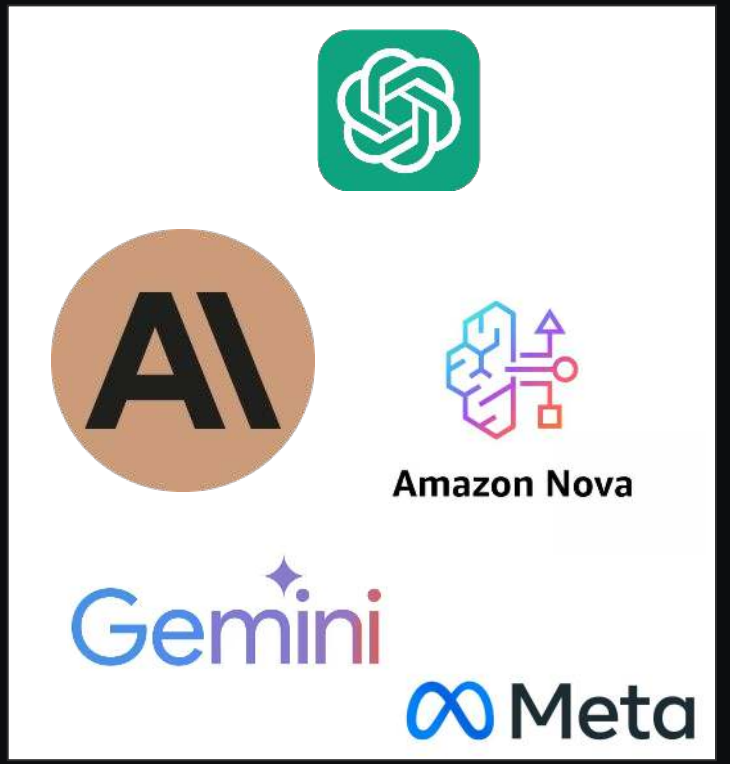
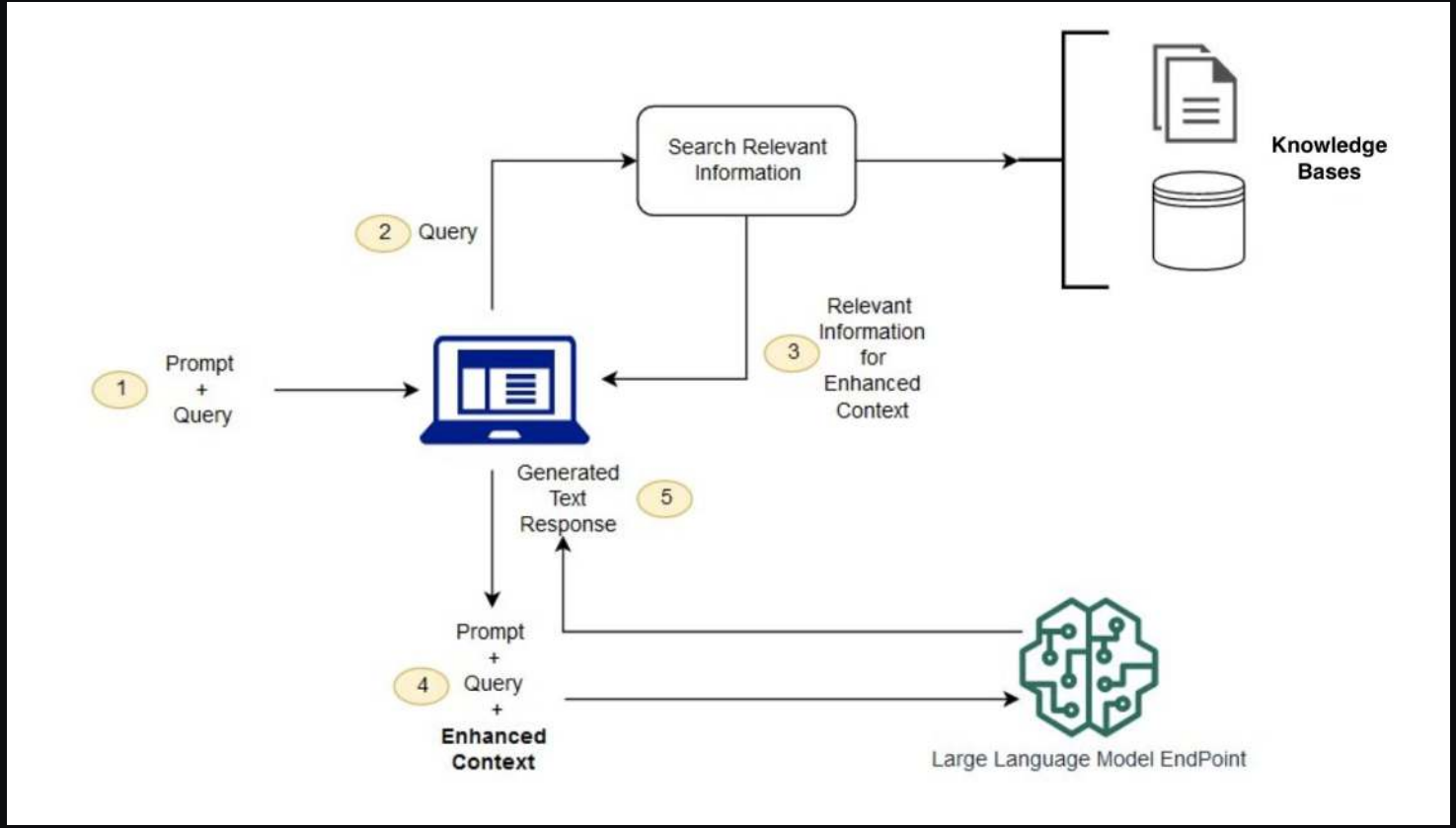
- Generate Human-like Text
  - Based on a query (or prompt)
  - Can be enhanced with a context (RAG)
- Tailored
  - Model provider
  - Model type
  - Temperature
- Use Cases
  - Customer support
  - Content creation
  - Virtual assistants
  - And more…



Retrieval-Augmented Generation (RAG)



IpponAssistant

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

Knowledge Bases

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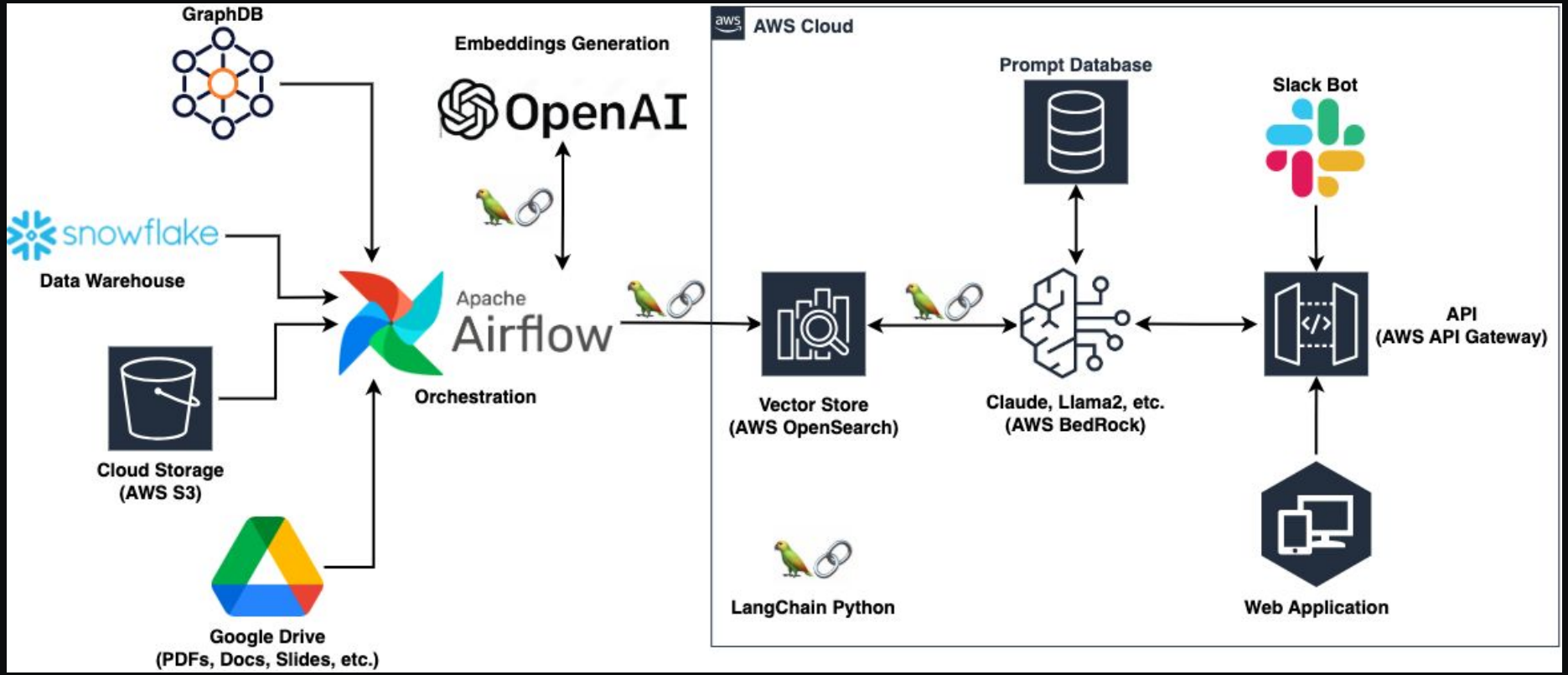
- Sources
  - File based
  - Database
  - Third party
- Data Requirements
  - Collect, clean and standardize
  - Update frequency
  - Metadata and tagging
- Document Integration
  - Type of documents (doc, pdf, txt, etc.)
  - Chunking strategies

Architecture



DAG Example

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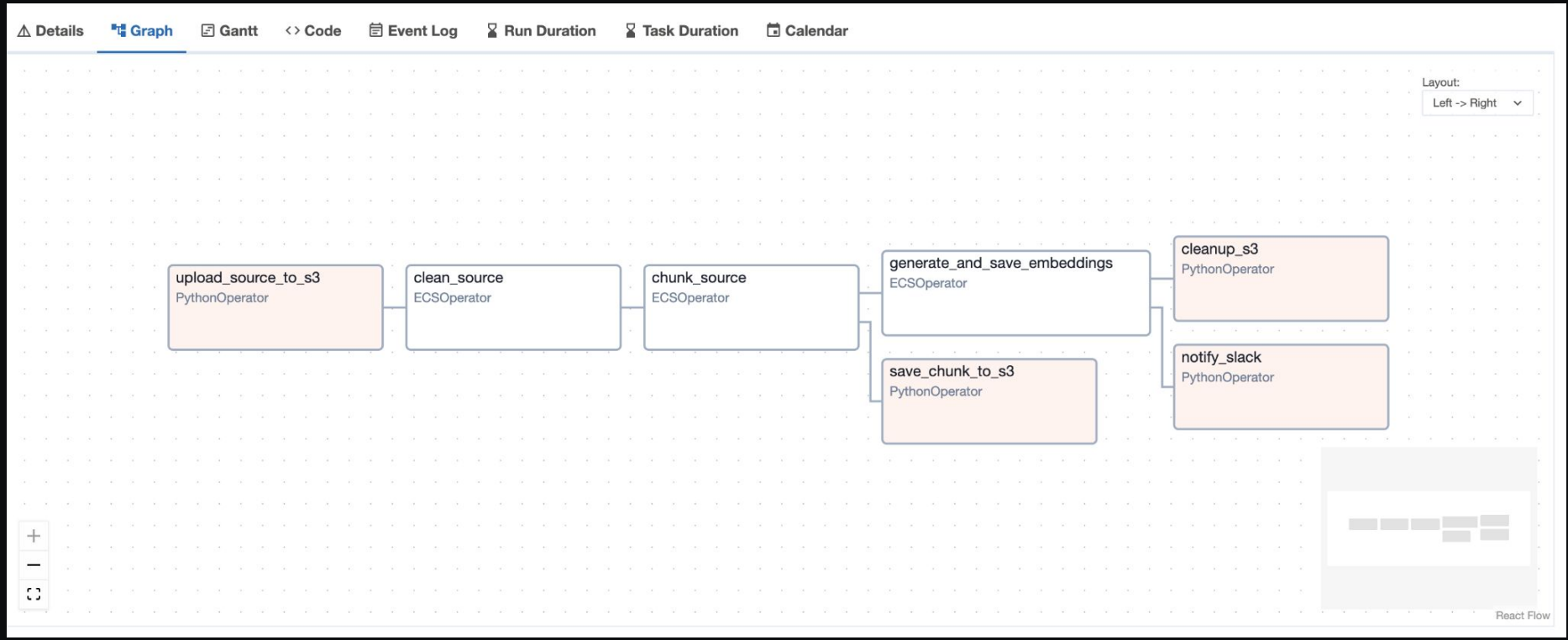

Tips and Tricks

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- Dag Processing
  - Delegate data processing (ECS, k8s pod operator, etc.)
  - Dags should be idempotent
  - Atomize your tasks

- Knowledge Base
  - Multi index and prompt (reduce LLM hallucination)
  - Prepare, clean and standardize your data
  - Add metadata to your documents

Thank You for Your Time!

I would love to chat more with you about using Airflow to build GenAI applications.

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

Questions?