

Project 1: Chatbot Development

Build a chatbot capable of answering question based on pdf uploaded

M. Hassan Shaikh

A decorative light blue triangle is located in the bottom right corner of the slide.

Framework used:

Langchain

Framework which contain tools and utilities for working with natural language processing tasks, such as text extraction, text processing, embeddings, and vector search.

Cohere.AI

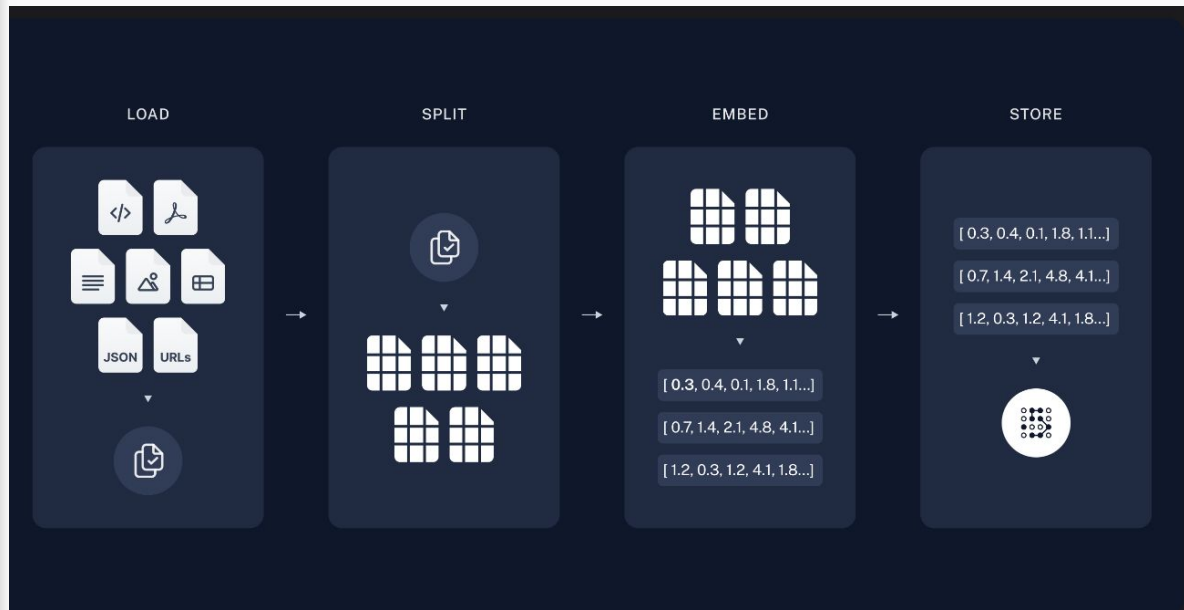
Provides a platform for natural language processing (NLP) tasks, offering services such as text embeddings, semantic search, and language models..

We are using conhere API key for embeddings.

RAG architecture

Indexing:

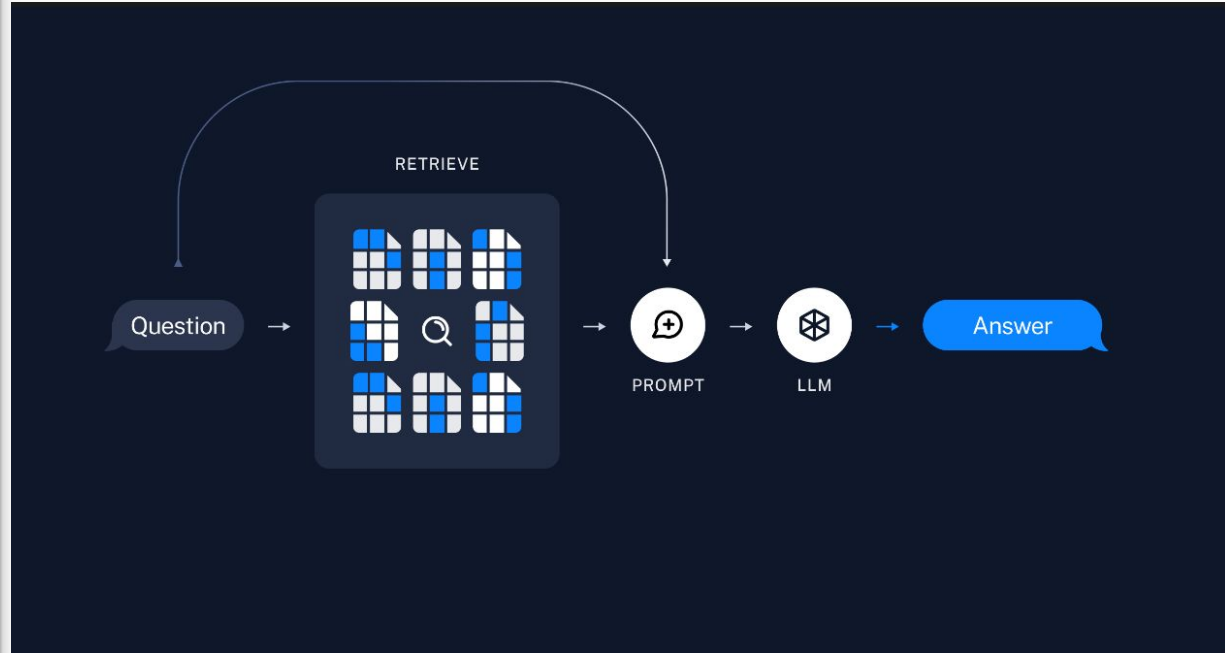
1. Load document: using document loader or pdfloader if you are using Pypdf.
2. Text split: using `textsplitter` imported from langchain.
3. Embed: using embedders here we used `conhereapi` embedder.
4. Store: used FAISS vector store



RAG - Continued

Retrieval and generation:

Relevant splits are retrieved and based on that search and generated using vectorstore.



Problems and assumptions:

- Problems with cost of API, hence tried implementing external model.
- Limited word can be embedded.
- Pdf should be text based not made by stacking pictures one after another.
- Gradio interface unresponsive

Results(1):

```
query = "give summary "  
docs = document_search.similarity_search(query)  
chain.run(input_documents=docs, question=query)
```

```
/opt/conda/lib/python3.10/site-packages/langchain_core/_api/deprecation.py:117: LangChainDeprecationWarning: The function `run` was deprecated in LangChain 0.1.0 and will be removed in 0.2.0. Use invoke instead.  
warn_deprecated()
```

```
' The intersection of art and technology has given rise to new methods of visual communication through illustration, especially with the adoption of digital media and Virtual Reality (VR). VR illustration utilise s special equipment such as head-mounted displays and sensors to create immersive experiences for users, allowing them to interact with 3D environments. While computers are tools for implementing design ideas, the responsibility for creating appealing VR experiences ultimately lies with designers who must adapt their practices to cater to this new medium. '
```


Results(2):

Here i uploaded a pdf on
“Looking through the sphere;
Illustration in virtual reality”
And asked to give summary.
Interface is incorporated using
Gradio Framework.

Enter a prompt

summary

Clear

Answer

I'm not entirely sure what information you are looking for, but here is the context that you provided me with:

The text discusses the field of illustration and its evolution with the recent technological advancements, specifically Virtual Reality (VR). It highlights how VR creates new avenues for illustrators to present their conceptual thinking and that this requires new design methods. It also mentions the special equipment needed to create a VR experience and how it allows users to feel like they are in another environment.

Let me know if there is anything else I may provide you with regarding this context.

Thanks!

Contact

shaikh Hassan0502@gmail.com

+ 91 98700 95725

Link to Github repo:

[https://github.com/hassan-byt0/
PDF_QnA_Langchain](https://github.com/hassan-byt0/PDF_QnA_Langchain)

