Third week

NLP Internship

Learning is slow strength. Each step, even the hard ones, builds the mind you're becoming. Struggle is not failure—it's growth in progress. Keep going; tomorrow's clarity is built from today's persistence.

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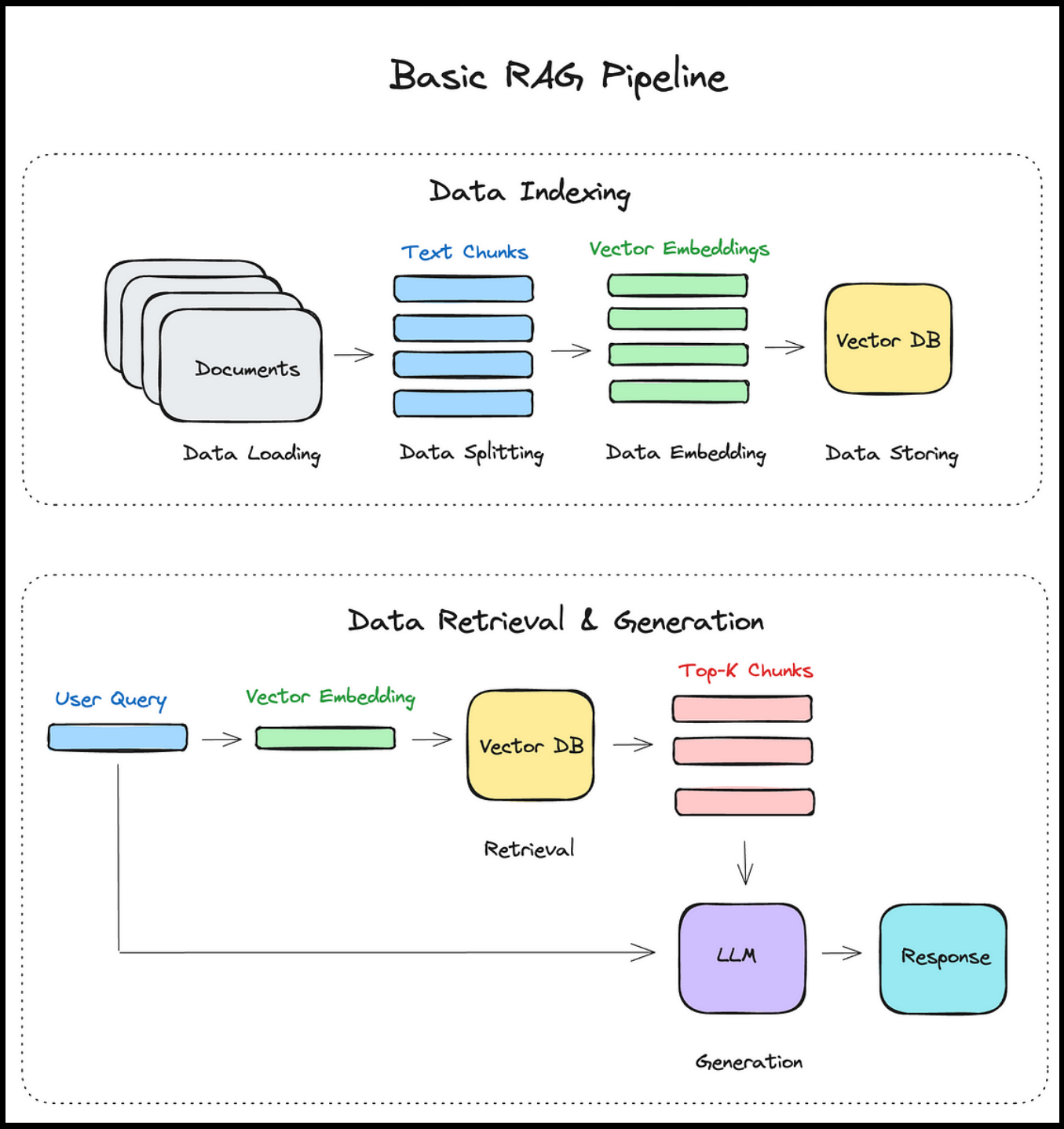
Basic RAG Pipeline
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First Watch these videos :

Part one : Introduction to RAG

[video 1] (20 min)

https://youtu.be/LIFyBPDkluI?si=xU8XpyJshSoST8dY

[video 2] (24 min)

https://youtu.be/s00dkGuK3rE?si=DJd77EciJqvvNgxm

[video 3] (31 min)

https://youtu.be/zxGWUJyB2V4?si=a_pdIvcLBomfe4io

[video 4] (25 min)

https://youtu.be/OGw023kOzR0?si=vVClyA9WByvdp8PJ

[video 5] (30 min)

https://youtu.be/sgRHmT896yY?si=mElV5cSd2Hzdgdr_

Part two : Vector database and FAISS

[video 1] (19 min)

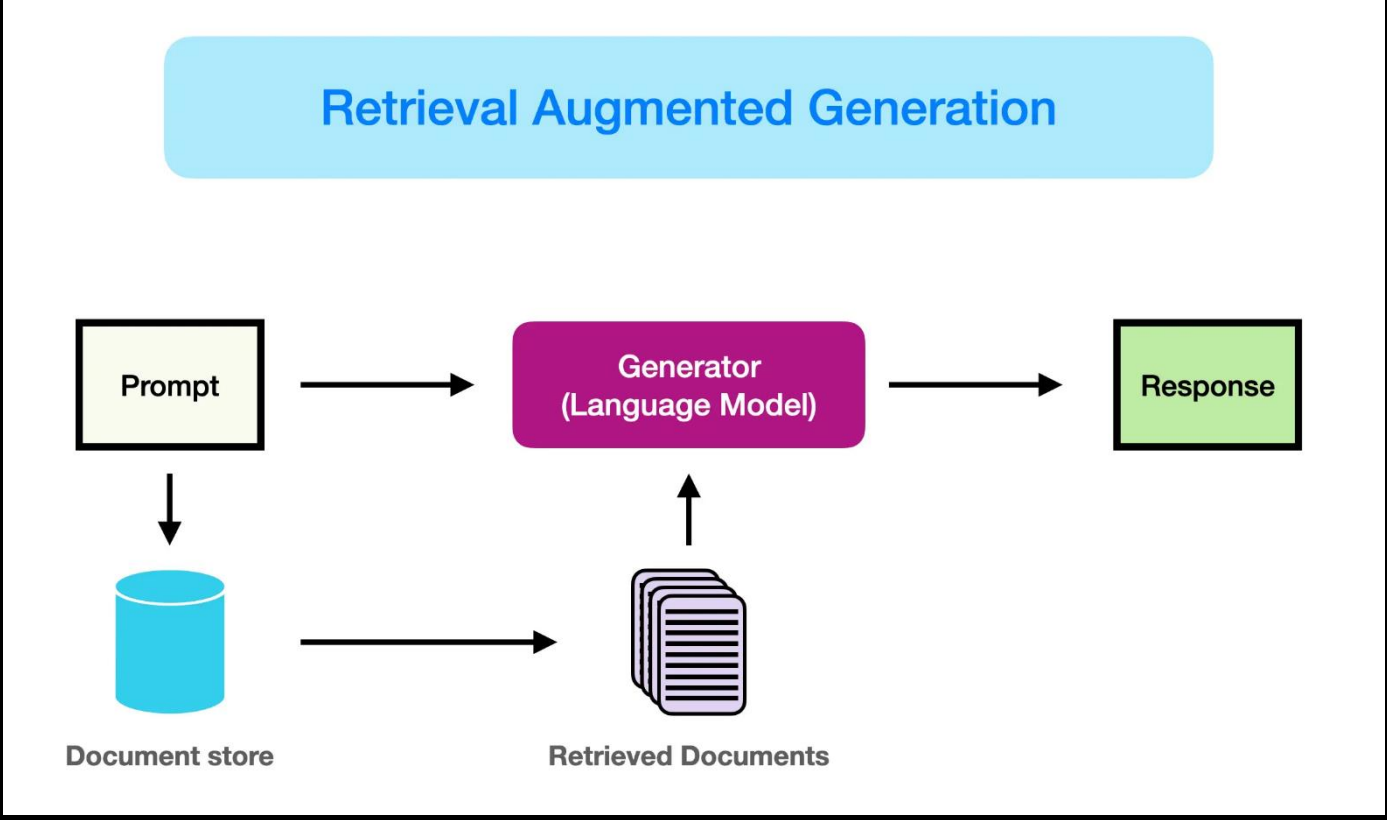
https://youtu.be/rp-IMDekA6I?si=Rb2SEmVQoDa00_HO

[video 2] (45 min)

https://youtu.be/reAmcocQyBA?si=8xgRrqeWzkVP1D8W

[video 3] (52 min)

https://youtu.be/VCnhiF88a9c?si=lYfEqUcrbxThjPVY



Task

Design and implement a RAG code generation system that takes a natural language programming task description and retrieves similar coding examples from the HumanEval dataset, then uses an open source LLM from Openrouter or huggingface to generate a complete function based on the context

Dataset preparation

- Load and process the HumanEval dataset, then Extract task_id , prompt , canonical_solution field

Embedding pipeline

- Use an open source LLM (e.g., Falcon or sentence Transformers) to embed the prompt fields (task description)
- Store these embeddings in a vector database like FAISS or ChromaDB

Code generation

- Use an open source code generation model with coding knowledge to generate python code using the prompt and retrieved code snippets as context

Integration

- **Combine embedding, retrieval and generation into a clean modular pipeline**

Dataset link :

https://huggingface.co/datasets/openai/openai_humaneval/viewer/openai_humaneval/test?views%5B%5D=test&row=26