

YouTube AI Assistant



Overview

- Overview An intelligent system that converts YouTube video content into searchable and interactive text

Problem Statement

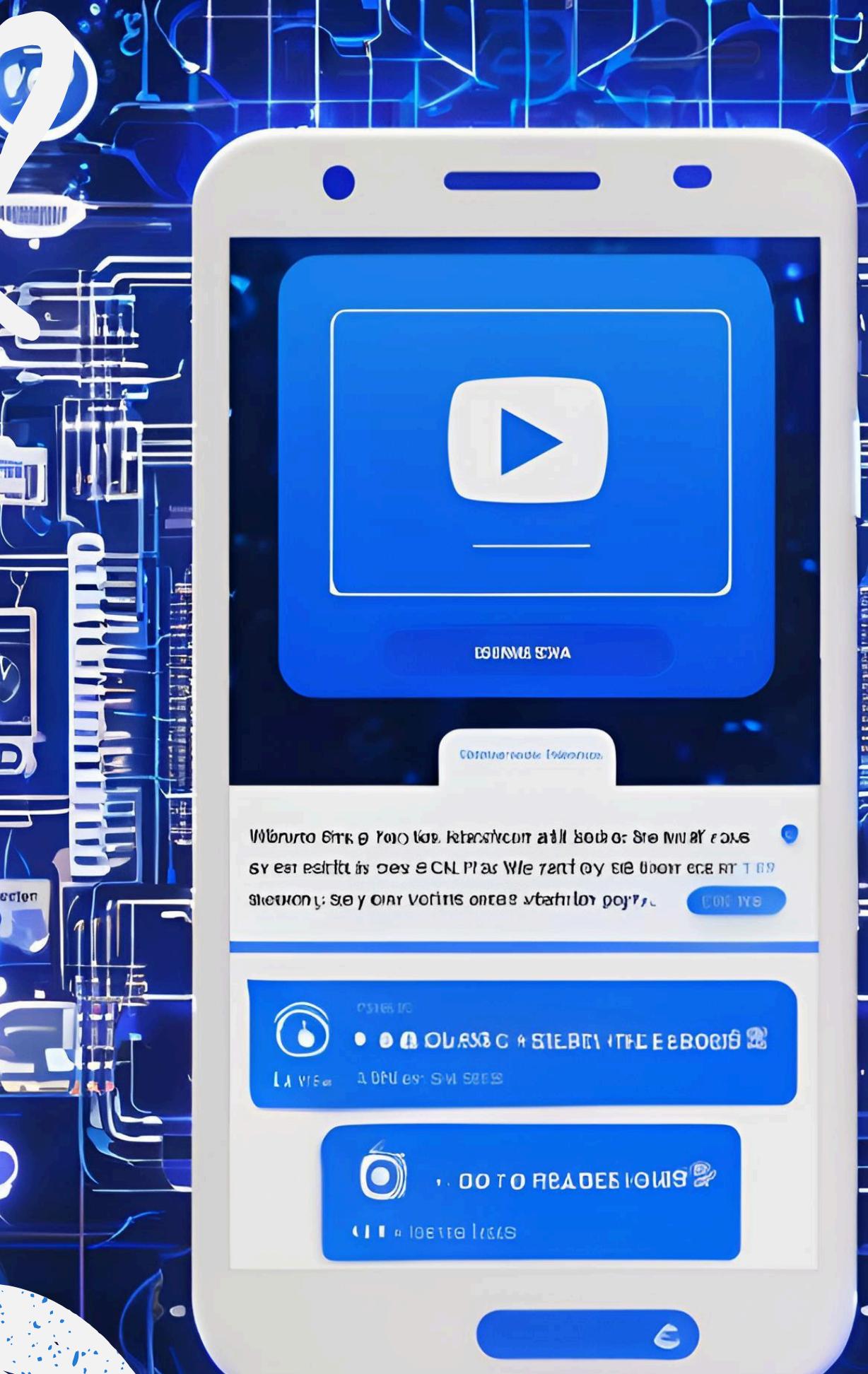
- Problem Statement
- YouTube has too much content that's hard to browse. Some videos are long, unclear, or difficult to understand due to dialects.

My Solution

The user submits a YouTube video
and asks a question.

The system:

- 1.Sends the question to the Chroma database
- 2.Generates embeddings for the transcript
- 3.Retrieves the top-k relevant chunks
- 4.Combines them with the user's question
- 5.Sends the full context to the LLM
- 6.Returns a clear and accurate final answer





Technologies Behind the Solution

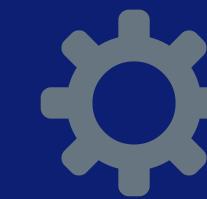
TO BUILD THIS INTELLIGENT ASSISTANT, THE SYSTEM
LEVERAGES MODERN AI TECHNIQUES:

RAG Agent

LangChain Framework

Vector Database (Chroma)

Embeddings + Similarity



Performance

Works efficiently on both short and long YouTube videos.

Handles various types of video scenes (dialogue, narration and like that).

Used LangSmith to trace and evaluate each step of the pipeline.

pipeline Performance
Processing Time: 40 seconds to analyze a Y-minute video
•Token Usage: ~Z tokens generated for each Y-minute video

Future Work

- Add support for more languages.
- Adapt content based on user age.
- Enable mode switching with parental controls.



Thank you

Any question?

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