Backend Engineering Launchpad – Case Study

VideoGPT :
Interactive Video Analysis System

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Background & Problem Statement

The digital age has seen an exponential rise in the consumption of video content. Platforms like YouTube have become the go-to source for educational, entertainment, and informational content. However, the process of extracting specific information from these videos remains a significant challenge. Existing tools and technologies are either inefficient or incapable of allowing users to interact with video content in a meaningful and efficient manner. The primary problem this project aims to address is the development of a backend system that enables users to load, query, and interact with video content, particularly from platforms like YouTube or videos hosted on other platforms. The system should allow users to provide a video URL, load the video, and then ask questions, analyze, and parse through the video content.

Objectives

1. To design an efficient backend system that can handle the loading and querying of video content.

2. To develop a robust system that can handle a large volume of queries and provide accurate results.

3. To ensure the system is scalable and can handle an increasing volume of video content and user queries over time.

4. To ensure the system provides accurate and timely responses to user queries.

Scope

The project will focus on the backend development. It will involve designing the system architecture, developing the necessary algorithms, and implementing the backend system. The project will not cover the development of the front-end user interface but it would be great if you can add minimal front-end.

Expected Outcomes

1. A backend system capable of process YouTube / Hosted MP4 video URLs and extract video transcripts.
2. An algorithm that can analyze video content and answer user queries based on the content.
3. The system should be able to handle multiple users and multiple videos simultaneously.
4. The system should provide accurate and timely responses to user queries.

Assessment Criteria

1. **Functionality:** Does the system work as intended? Does it meet all the requirements stated above?

2. **Code Quality:** Is your code clean, organized, well-commented, and following best practices.

3. **Design and Structure:** Is the system well-designed? Does it demonstrate a good understanding of system design principles And patterns?

4. **Documentation:** Is your report comprehensive and clear? Does it effectively explain the choices made and how to use the project?

5. **Presentation:** Do you effectively demonstrate and explain your system and the decisions made during its development?

Deliverables

1. The final, functional product.
2. README file outlining how to use the system, API documentation, the design decisions and other necessary information.
3. Public link of the Github repository
4. Explainer video demonstrating your project work