



الأكاديمية السعودية الرقمية  
SAUDI DIGITAL ACADEMY



# VidTalk

Automating Learning from YouTube content.

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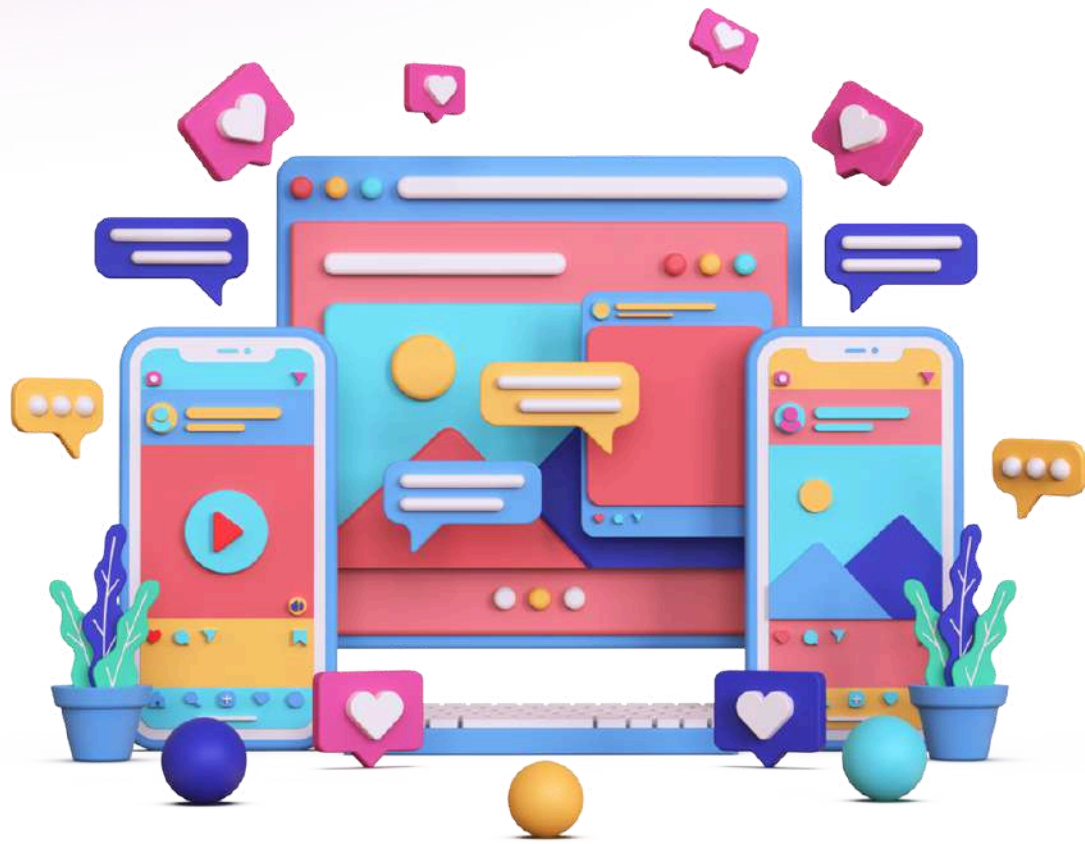
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# Introduction



**Content  
overload.**



**Unfocused  
search results.**



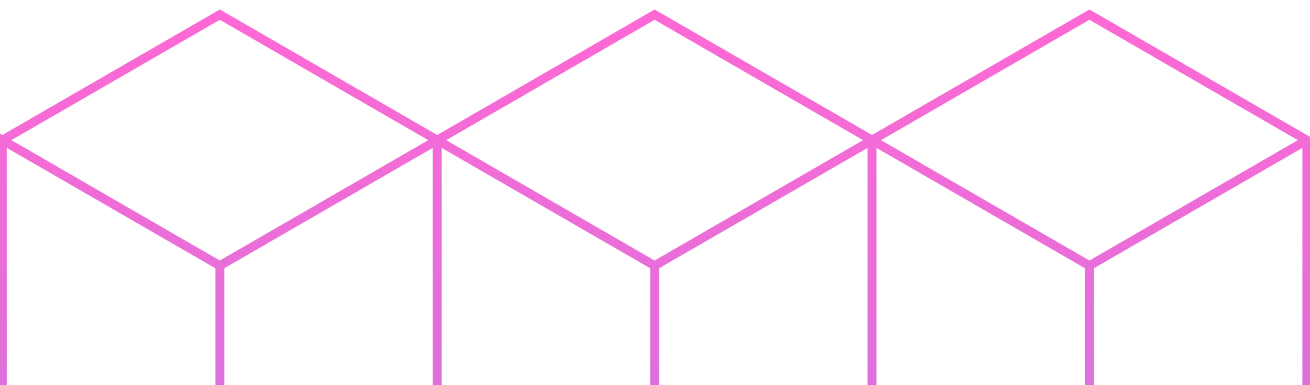
**Interactive  
learning.**





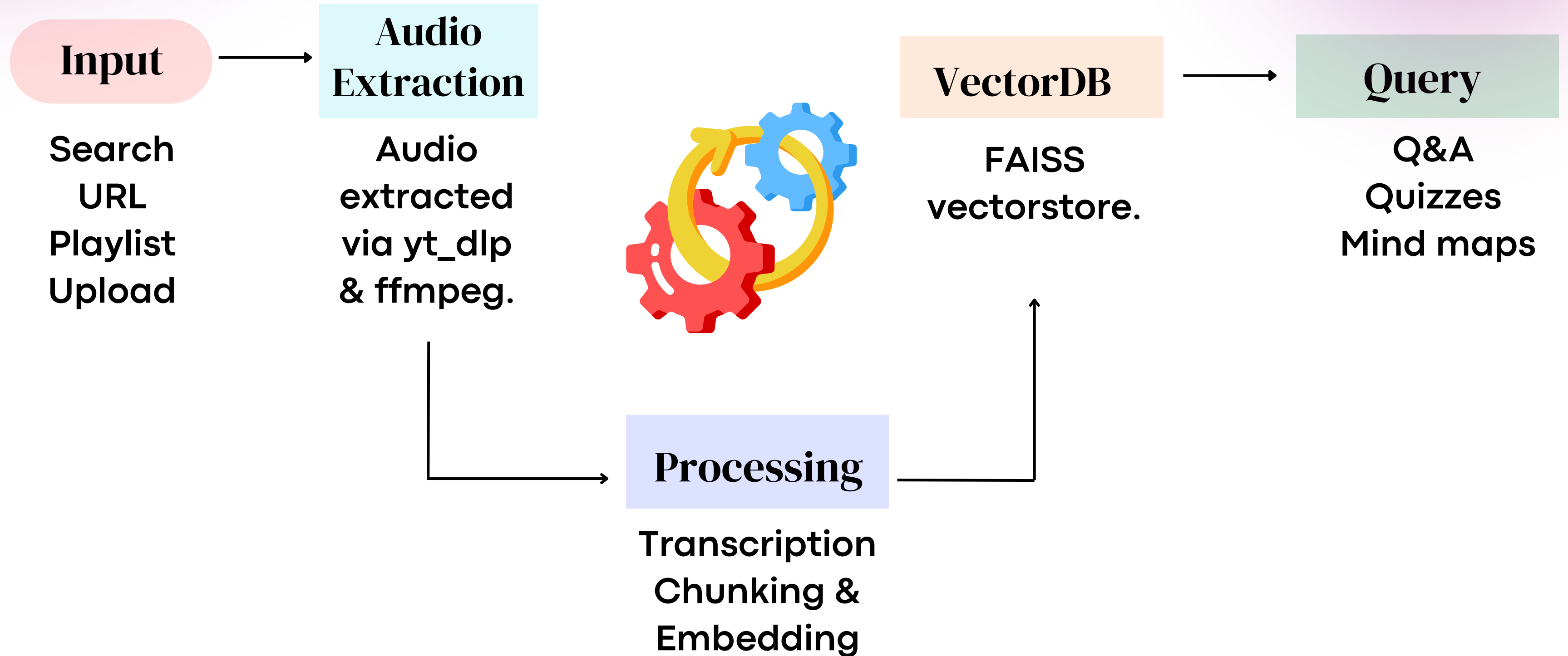
# Project Objectives

- Searchable YouTube Knowledge
- Ask questions like you're talking to a tutor.
- Quizzes and mind maps for learning.
- Supports uploads and video search.





# System Workflow





# System Workflow

## Input

Search  
URL  
Playlist  
Upload

**Searching and download :**  
YouTubeSearchTool , yt\_dlp

**Video Duration :**  
Maximum 30 minutes : faster processing.



# System Workflow

**Transcription with Whisper-1 openai API :**

Chosen for its state-of-the-art  
accuracy on real-world audio.

**Processing**

Transcription  
Chunking &  
Embedding



# System Workflow

**VectorDB**

FAISS  
vectorstore.

Simple setup  
Fast & local  
Privacy-friendly.





# System Workflow

## Agent Design

Type : CHAT\_CONVERSATIONAL\_REACT\_DESCRIPTION

LLM used : OpenAI gpt-4.1

## Query

Q&A

Quizzes

Mind maps





# Tools Configuration (LangChain)

01

**Learning Tool**

Answers from documents only.

02

**Quiz Tool**

Generates a quiz using only embedded content.

03

**Quiz Answer Tool**

Shows previous quiz questions and correct answers.

04

**SummarizeTool**

Creates bullet-point summaries.

05

**MindMapImageTool**

Shows a mind-map image from video



# Extra Features

- **Mind Map Generator:**

Creates mind maps using external API ([ideogram.ai](https://ideogram.ai)).

- **Text-to-Speech:**

Uses OpenAI gpt-4o-mini-tts for reading responses aloud.

- **Speech-To-Text:**

Uses Javascript's `webkitSpeechRecognition()` function.





# Testing & Evaluation

The answer's chunk in the YouTube Video :



I couldn't find that information in the provided videos and stop. 🐞

GPT-3 has 175 billion parameters. 🐞



How many parameters in gpt4o ? 🐞

How many parameters in gpt 3 ? 🐞





# Testing & Evaluation



LLM stands for 'large language models.' 



# Testing & Evaluation

LARGE LANGUAGE MODELS

- 1 WHAT IS AN LLM?
- 2 HOW DO THEY WORK?
- 3 BUSINESS APPLICATIONS

178 M. words 1GB 1GB 45

LLM FOUNDATION MODEL

GPT-3, for example, is pre-trained on a corpus of actually 45 terabytes of data,

"THE SKY IS..."



- 8- GPT-3 is pre-trained on approximately how much data?
- a) 45 megabytes
  - b) 45 gigabytes
  - c) 45 terabytes
  - d) 45 petabytes





# Problems and Challenges





# Problems and Challenges

## Hallucinations in responses

It's difficult to control the model because the user chooses any topic, not a fixed one. This makes hallucination happen more.



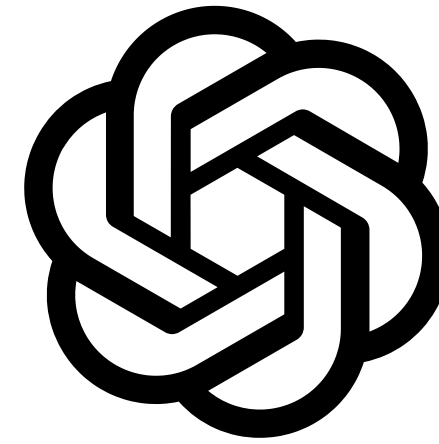




# Problems and Challenges

Unable to upload long voice duration.

model = whisper-1



Open AI



The voice is very long

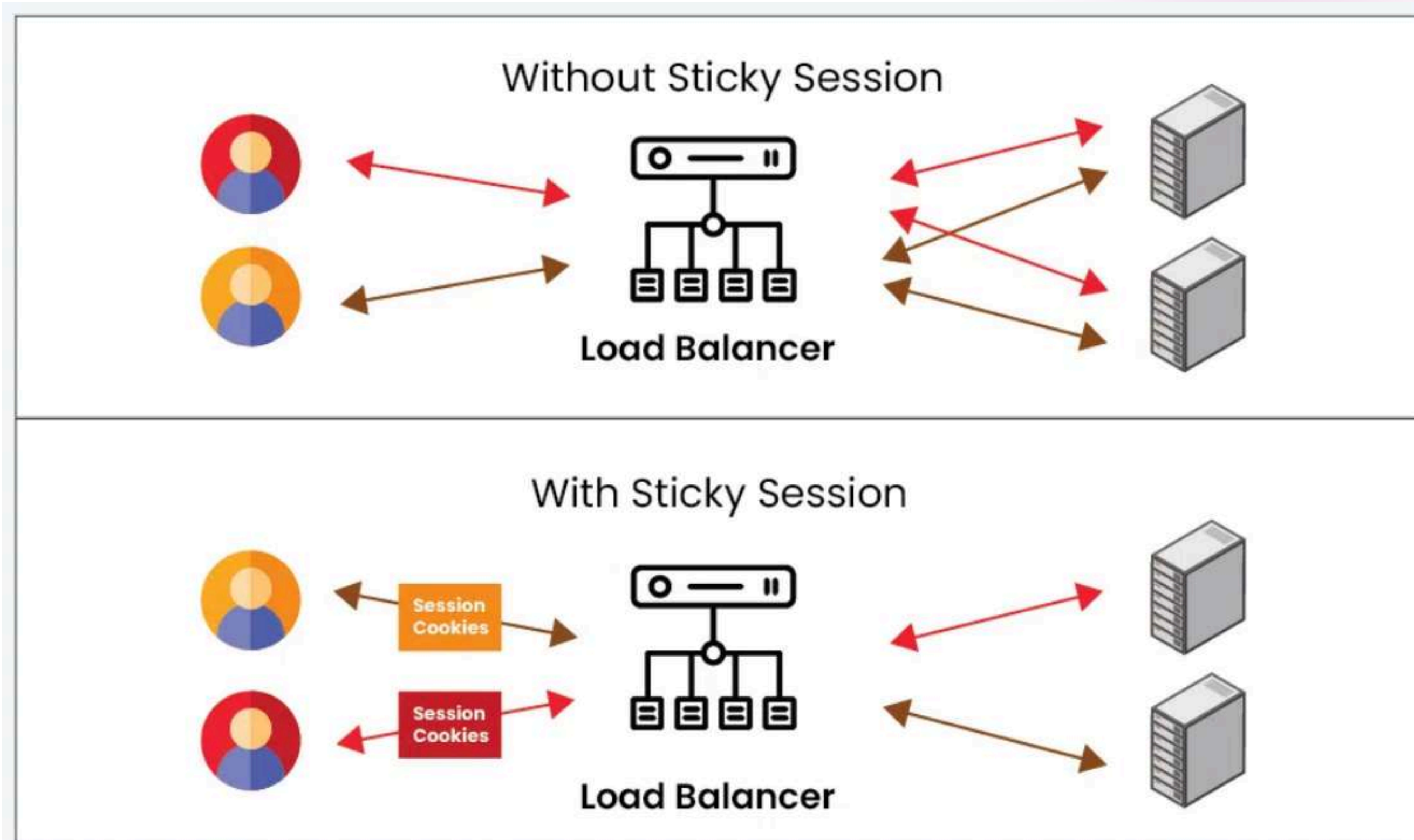




# Problems and Challenges

For each user session,  
use a different.

vector DB  
and  
memory buffer





# Problems and Challenges

We deployed on AWS EC2, but we're having a problem



Authorization failed: YouTube can't connect







# Get cookies.txt LOCALLY

Featured 4.8 ★ (51 ratings) Share

Extension

Developer Tools

200,000 users

パッケージのタイトル

## Get cookies.txt LOCALLY

パッケージの概要

Get cookies.txt, NEVER send information outside.

説明\*

This extension exports cookies in Netscape or JSO

This extension never sends information outside.  
Its source code is open-source, very small, and not checked on GitHub or in the extension's installation

GitHub: <https://github.com/kairi003/Get-cookies.tx>

Get cookies.txt for <https://chrome.google.com/u/1/web...>

Export ↓ Export As ↓ Copy

Export All Cookies ↓

Export Format: Netscape ▾

Domain	Include Subdomains	Path	Secure	Expiry	Name
.google.com	TRUE	/	FALSE	1692185470	
.google.com	TRUE	/	FALSE	1679225471	
.chrome.google.com	TRUE	/	FALSE	1711625250	
.chrome.google.com	TRUE	/	FALSE	1692833250	
.google.com	TRUE	/	TRUE	1679623308	
.google.com	TRUE	/	TRUE	1680203932	
.chrome.google.com	TRUE	/	FALSE	1712238042	
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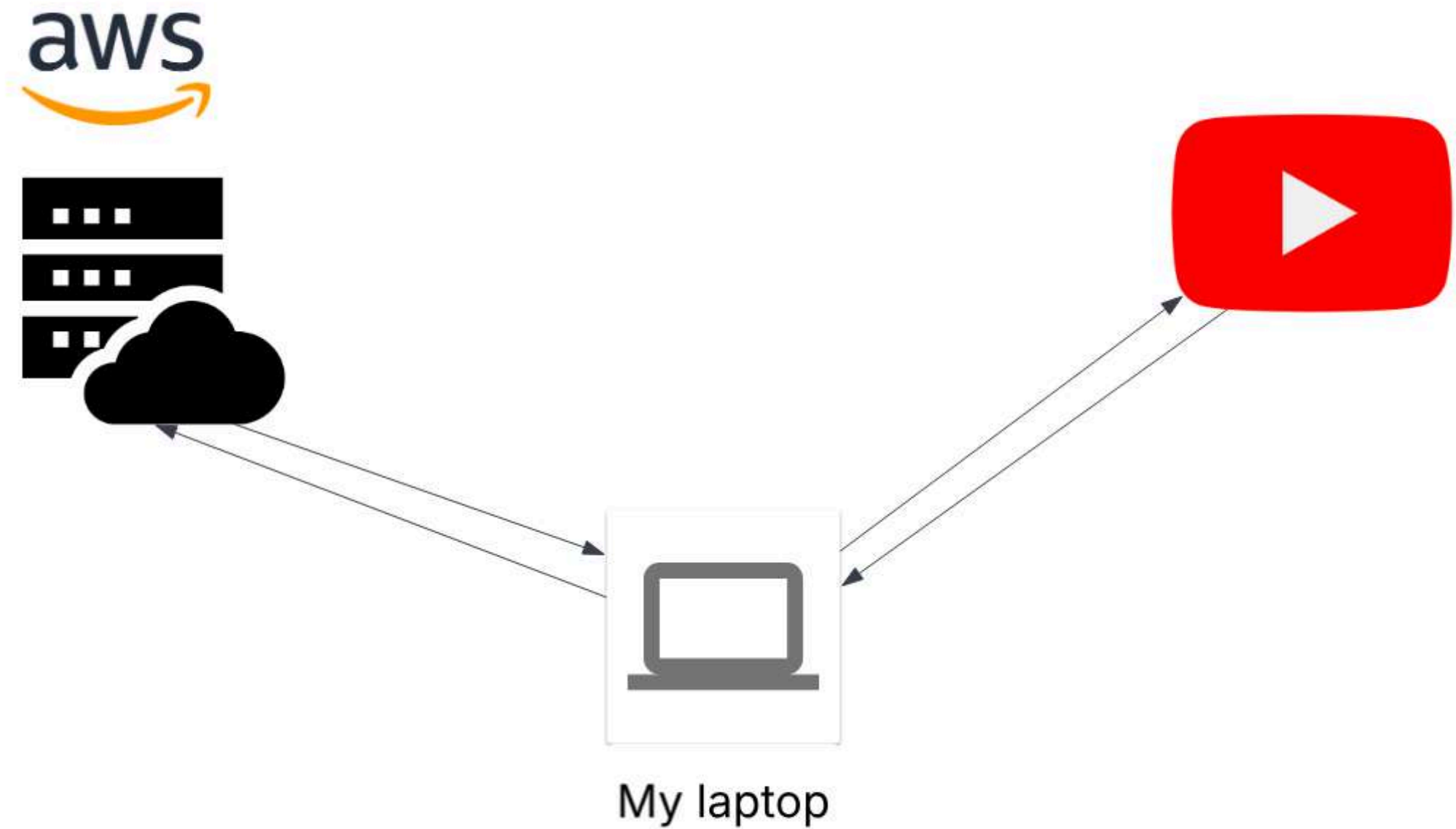




# Problems and Challenges


Using proxy from my laptop

## Good Solution





# UI & Live Demo

 VidTalk

Video URL

Playlist

Search Topic

Upload File

Process

Chat Boot

Welcome! Please process a video or voice, then ask me questions about it.





# Future Improvements

- Support multiple languages (Arabic, Spanish, etc.).
- Support long lectures and videos.







**Thank you!**