

AI-Powered Video Summarization Project

This project automatically generates concise summaries from YouTube videos using state-of-the-art speech recognition and natural language processing models.

■ Features

- Automatic YouTube video download
- Audio extraction using FFmpeg
- Speech-to-text transcription using OpenAI Whisper
- Text summarization using Transformer-based models
- Saves summary output to a text file

■ Tech Stack

- Python
- OpenAI Whisper
- HuggingFace Transformers (BART)
- MoviePy
- yt-dlp
- FFmpeg

■ Project Structure

```
video_summarizer/
└─── video.mp4
└─── audio.wav
└─── summary.txt
└─── video_summarizer.py
└─── README.md
```

■■ Installation & Setup (Google Colab)

- Install dependencies using pip
- Provide a YouTube video URL
- Run the script to generate summary

■■ How It Works

- Downloads YouTube video using yt-dlp
- Extracts audio using MoviePy + FFmpeg
- Transcribes speech using Whisper
- Summarizes transcription using BART model

■ Use Cases

- Online lecture summarization
- Podcast summarization
- Meeting recordings
- Educational and research assistance

■ Output

The final summarized text is printed on the console and saved as summary.txt for future use.

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