

Of course. Here is the content formatted for clarity.

# Video Face & Voice Detector

A Python script to analyse video files for the presence of human faces and voices.

---

## Description

This tool processes a given video file to determine if it contains human faces and/or audible speech. It uses a combination of computer vision and audio processing libraries to perform the analysis.

---

## Key Features

- **Face Detection:** Uses OpenCV's Haar Cascade classifier to scan video frames for faces.
  - **Voice Detection:** Extracts the audio track and uses pydub to check for non-silent segments that likely contain speech.
  - **Command-Line Interface:** Accepts a video file path as a command-line argument.
  - **Clear Output:** Provides a simple summary of whether a face, voice, both, or neither were detected.
- 

## How to Run the Script

### Step 1: Install Prerequisites (Python and FFmpeg)

The script has two main dependencies that must be installed on your computer.

#### A. Python

The script is written in Python. If you don't have it, download **Python 3.8 or newer** from the official Python website and install it. During installation on Windows, make sure to check the box that says "Add Python to PATH".

To check if Python is installed, open your terminal and type `python --version` or `python3 --version`.

#### B. FFmpeg

This is a command-line tool for handling video and audio files. The script will fail without it.

- **On Windows:**
  1. Download a build from the [FFmpeg download page](#) (e.g., from "gyan.dev").
  2. Unzip the folder and place it somewhere permanent, like C:\ffmpeg.
  3. Add FFmpeg to the Windows PATH: Search for "Edit the system environment variables" in the Start Menu. Click "Environment Variables...", select the Path variable, click "Edit...", and add a new entry for the bin folder (e.g., C:\ffmpeg\bin).
  4. To verify, open a new terminal window and type ffmpeg -version.
- **On macOS (using Homebrew):**

Bash

```
brew install ffmpeg
```

- **On Linux (Debian/Ubuntu):**

Bash

```
sudo apt update && sudo apt install ffmpeg
```

## Step 2: Set Up the Project and Install Libraries

1. Create a folder for your project (e.g., VideoAnalyzer) and save the video\_analyzer.py file inside it.
2. Open your terminal and navigate into that folder.

Bash

```
cd path/to/your/VideoAnalyzer
```

3. (Recommended) Create a Virtual Environment:

Bash

```
# Create the environment
python -m venv venv

# Activate it
# On Windows: .\venv\Scripts\activate
# On macOS/Linux: source venv/bin/activate
```

4. Install the Python libraries:

Bash

```
pip install opencv-python numpy pydub
```

## Step 3: Execute the Script

Run the script from your terminal, providing the path to your video file as an argument. Use quotes around the file path if it contains spaces.

- **Example** (if video is in the same folder):

Bash

```
python video_analyzer.py "my_test_video.mp4"
```

- **Example** (with a full path):

Bash

```
python video_analyzer.py "C:\Users\YourUser\Videos\cool_video.mp4"
```