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Look Based Media Player

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Abstract - In this project, we are developing an advanced media player which plays and pauses the video by detecting the users face looking at screen or not. System monitors whether the user is looking at the screen or not using a web camera. If yes then doesn't interrupts the video and allows it to play. In case if the user is not looking at the or say the system couldn't detect the users face then it immediately stops the video. We are trying to add a feature of controlling other features of media player such as noise detection**.**

Keywords – *Media Player*

1. Introduction

Usually when you are watching a video and someone calls you, you have to look somewhere else or go away from pc for some time, so you miss some part of the video. Later you need to drag back the video from where you saw it. Well here is a solution to this problem. A look based media player that pauses itself when user is not looking at it. The player starts running again as soon as the user looks at it again. This is done using the camera or web camera on top of the computer. As long as the camera detects the users face looking at it, the media is played. The player pauses as soon as users face is not completely seen. This system also provides the feature of controlling functions of media players such as detection and comparing noise from environment's input to machine's output and if the input is higher, then the media player pause.

2. Aims and goals of project

The goal of our project is to create an advanced media player based on looks and voice detection.

We have set the following objectives for our media player to achieve the target:
1. The user interface of media player should be efficient and user friendly.
2. The media player should be accurate in terms of result.
3. The media player pause the video as soon as the user's face is not detected without much latency.

3. Literature survey

- A vision based interface for controlling media player.
  Author: Siddhart Rautay, Anupam Agarwal
  Result: simple to control real-time system
- Emotion detection using face detection.
  Author: Jyoti Rani, Kangwal garg.
  Result: Easily able to control media player applications.
- Video based face detection using hidden markov.
  Author: Xiao ming lu, Tusha Chen.
  Result: face detection using video sequence.
- Music playing with face mood detection.
  Author: Yash Bagadia, parul Tambe, Taher Khalil.

4. Evaluation

Existed model:
Mostly existing systems use eye recognition. Due to which results aren't accurate. Face recognition and voice detection system are not implemented properly together and not even individually.
Proposed model:
In this project, we are using face detection and voice detection for controlling media player like pausing and playing.

5. Implementation Method

5.1 Face Detection

In the Viola-Jones object detection framework, the Haar-like features square measure thus organised in one thing referred to as a classifier cascade to create powerful learner or classifier. The key advantage of Haar-like features over most alternative features is its calculation speed. Haar-like options square measure digital image options utilized in visual perception. They owe them name to their intuitive similarity with haar wavelets and were utilized in 1st period face detector.
In the detection section of the viola-Jones object detection framework, a window of the target size is captive over the input image, and for every section of the image the haar like feature is calculated. This distinction is then compared to a learned threshold that separates non-objects from objects. Because such Haar-like feature is barely weak learner or classifier (its detection quality is slightly higher than random

guessing) an oversized variety of Haar-like options square measure necessary to describe an object with amply accuracy, within the viola-Jones object detection framework, the Haar-like options square measure therefore are organised in one thing referred to as classifier. The key advantage of a Haar-like feature over most alternative features is its calculation speed. Owing to the employment of integral images, a Haar-like feature of any size is calculated in constant time (PPROXIMATELY 60 instruction for 2-rectangle feature).

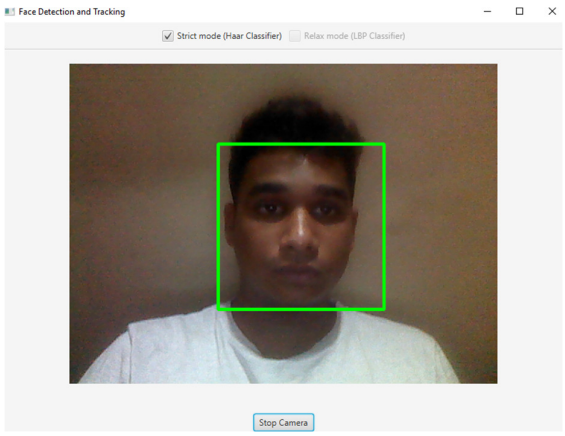

Fig 1 Player detecting face

5.2 Voice Detection

We are using a feature in our Media player which listens to the outside noise and if it's above a threshold value the media player pauses for 5 seconds. For this feature, we decided to use Java's sound API. We chose the sound API because it is very easy the implement and provides all the necessary classes we need for our feature avoiding any complexities. So, we capture the sound using the machine's microphone and compare its AMPLITUDE with the threshold value we have set by default. If the amplitude at any instance goes above the given threshold value, the media player pauses for about 5 seconds indicating that the audio is inaudible and the user needs to pause it. The threshold value for machine like laptops has 87 db, but we also had to consider the distance between user and the machine (which we have assumed around 3ft). So, considering distance, we have set threshold value around 80db. The amplitude of the input sound has been taken by using Values () function from the sample class. Then is converted to RSA values by multiplying amplitude with each other. After that we compare with are predefined value 80db and the system checks for the result. It resumes again after 5 seconds and check again ifn the threshold has lower down, if yes the is resumes the video immediately.

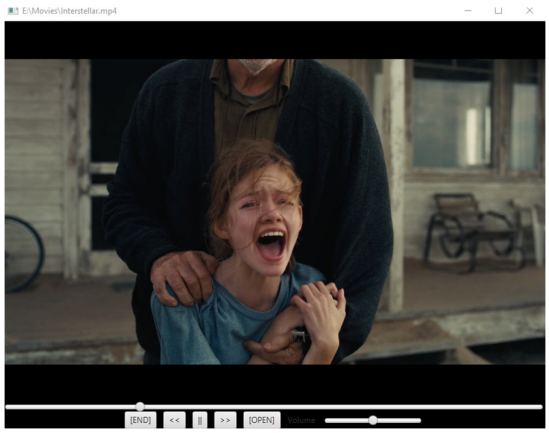

Fig 2 Media player playing video

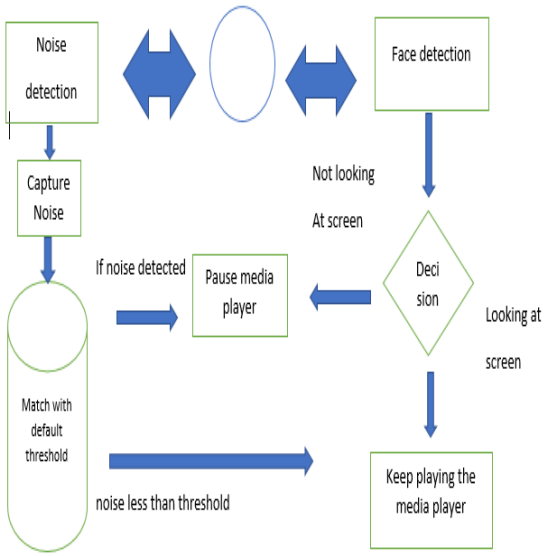

Fig 3 *Block diagram for system*

6. Conclusion

The main concern of this project is to assist the user to get best experience of using a media player. We have tried to realize this goal by automating the media player in a very wide extent. We do this by implementing face detection and noise detection for dominant variety of options of the media player such as pausing and again and again when the user is not monitoring the screen.

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