RECOGNITION AND IDENTIFICATION OF EMOTIONS FOR MOVIE AND MUSIC RECOMMENDATION SYSTEM USING HAAR CASCADE CLASSIFIERS

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ABSTRACT

The daily lives of people are greatly influenced by music. Everyone wants to listen to music that suits their personal tastes and mood. Users are constantly required to manually browse the music and construct a play list based on their mood. The suggested project, which creates a music playlist depending on users' current moods, is quite effective. The most effective approach to convey a person's current mood is through their facial expressions. This project aims to use facial expressions to propose songs and movies to users based on their mood. Webcams are used to capture facial expressions, which are then fed into a learning system to predict the most likely emotion. The system offers a play-list for that feeling once it has been identified, thus saves a lot of time for a user.

Once the emotion is detected by CNN then the emotion is used by Spotify API and then the Spotify API generates a play list according the emotion of the user.

Keywords: Face detection, Emotion recognition, Web cam, CNN classification, Spotify API, Music Playlist.

1. INTRODUCTION

The project's primary strategy is to propose music or movies to the user based on real-time emotional data. We presented a method to categories various types of music into different moods, such as happy, sad, furious, etc. Existing techniques were employing collaborative techniques that would use past user data to select music and this technique needs a lot of manual work. Emotion-Based-music-player It is a music player that uses Chrome as its front-end and a machine learning algorithm written in Python to recognize emotions on the user's face. Song and movie lists will be provided or recommended to the user based on the mood that was detected for that user.

2. PROPOSED SYSTEM

Humans have a tendency to show their emotions unknowingly mainly they reflect the face. The proposed system helps us to provide an interaction between the user and the music system. This project mainly focuses on the user's preferred music that is recommended due to the emotional awareness. In the initial stage of the proposed system, we have given 3 options and each contains its functionality. To this, we have given a list of songs, movie and emotions based on spatial recognition.

The main aim in this system is making a sophisticated music player that could make the user mood better and music is one of the best aids to change the mood. In this images captured by the system are compared with the data sets, and mainly 4 emotions are taken because human have many emotions and it is hard to predict because they differ from person to person and it will be hard to predict so, four common and easily identifiable moods of the person. And here there is another alternative methods can be used with the main

concept i.e, random picking of songs or movies that could help us to brighten our moods and the other mode is queue mode with this we can make a playlist on our own and in all the modes we are not using the previous user data but we using individual user data.

3. STRUCTURE CHART
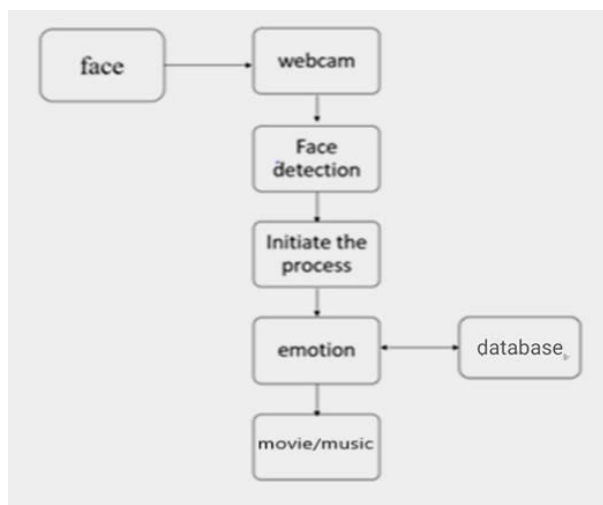
4. IMPLEMENTATION
4.1 SYSTEM ARCHITECTURE

By running the main web page it will trigger an XML file that then Open cv helps in capturing images from the webcam as well as for processing purposes made the implementation of the fisher face methodology of Open CV for classification. And fisher face to train the model and store it in a model-file(XML). While using a player it uses for prediction for the emotion which will show you the main media player web page. In this, it contains 2 options one for emotion-based detection and the other for random selection of songs Random picking we are a small library in python i.e, Eel On the other hand, we are having the emotion-based music system in this we are using 3 main algorithms for capturing, detection and playing of the music. This system, describes the facial expressions using detection and combination of spatial expressions.The main objective of face detection technique is to identify the frame i.e, face. And the other phase of the project is the random mode.
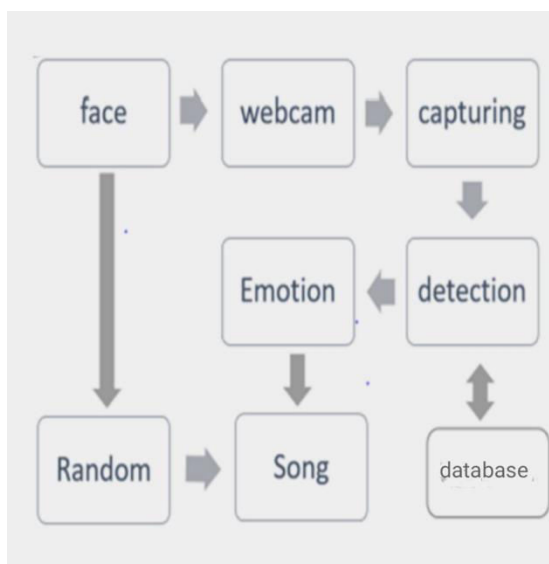
4.2 Emotion Classification

When the face is detected successfully, a box will appear as and it overlay the image to extract the face and for the further analysis.in the next step The images that are extracted previously will processed using the function .The code will extract the facial spatial positions from the face image and it is based on the pixel's intensity values that are indexed at each point and it uses boosting algorithm. It is performs the comparison between the input data and with stored one so it can predict the class that contain the emotion. If it contains one of the four emotions angry, sad, neutral or happy .and detection of the emotion as seems to be decreasing speed command and it will be executed so that it can reduce the speed of the wheelchair so, that we could prevent the user from endangerment.
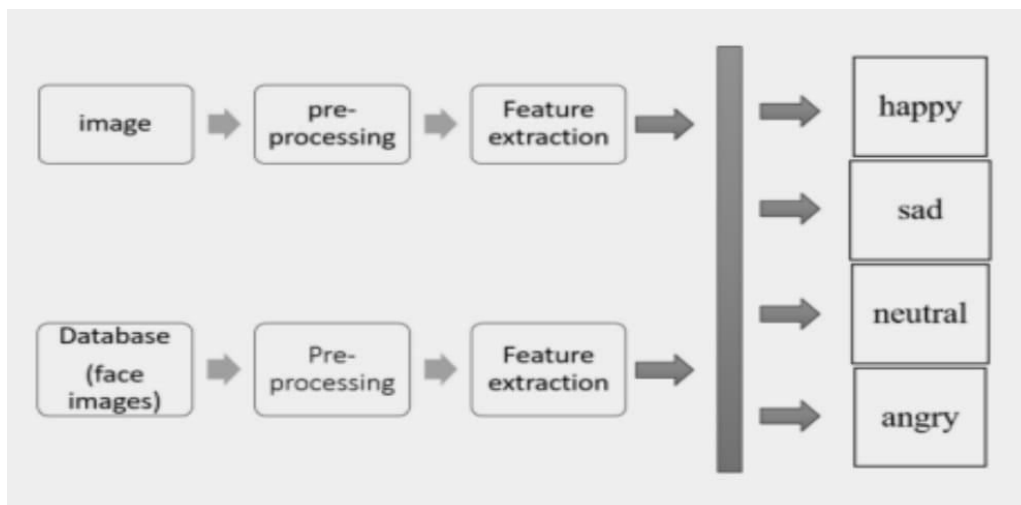
4.3 . MUSIC OR MOVIE RECOMMENDATION

The input images that is acquired is from the web camera and is used to capture real-time images. And here we are four main emotions because it is very hard to define all the emotions and by using limited options it can help the compilation time and the outcome is more sophisticated. it compares the values that are present as a threshold in the code. The values will be transferred to perform the web service. The song's will be played from the detected emotion. The emotions are assigned to every song. When the emotion is transferred the respective song and the emotions are numbered are arranged and assigned to every song..
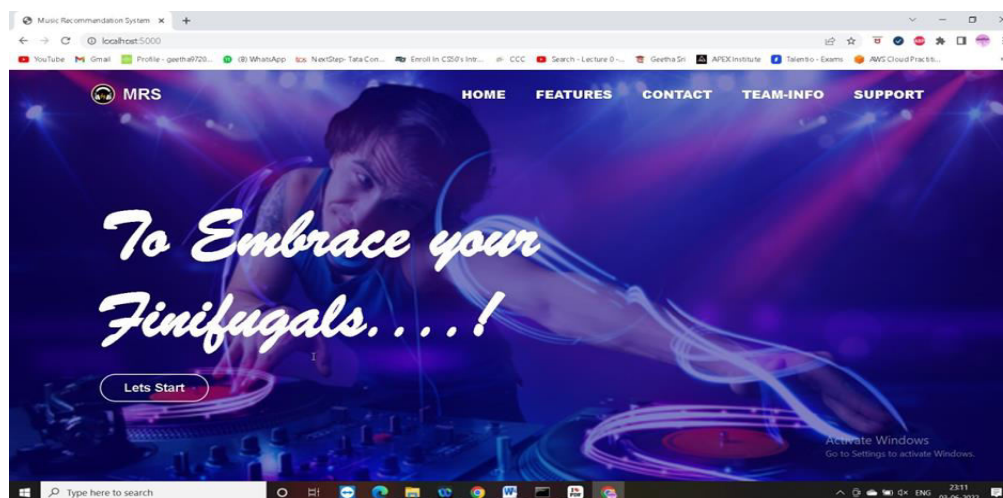
5. RESULT
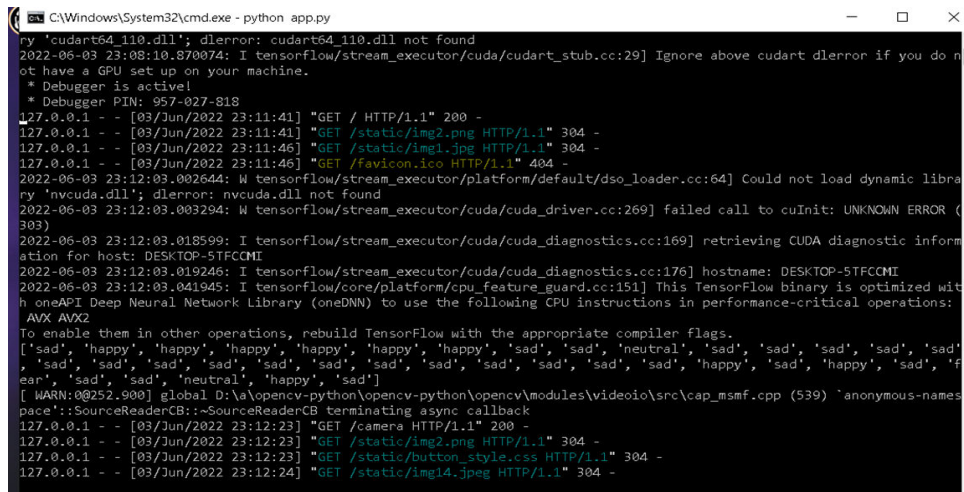

Fig.1. Main Page
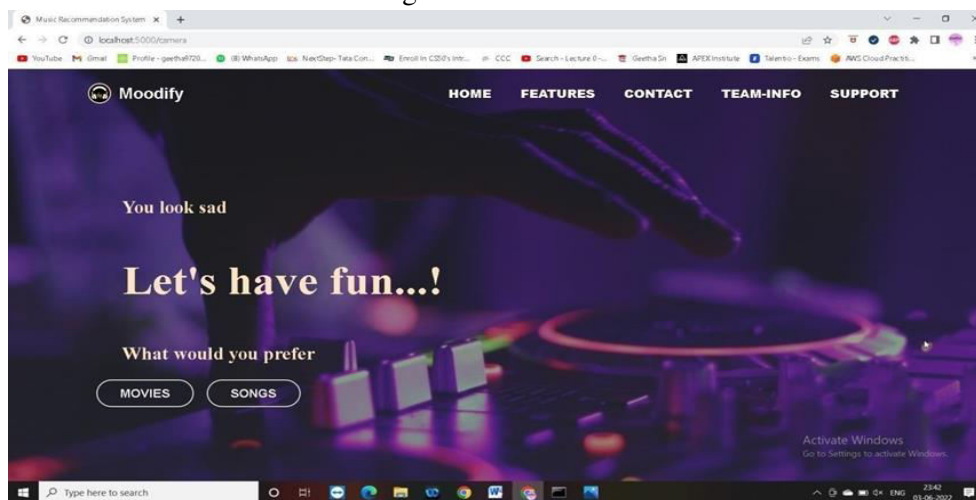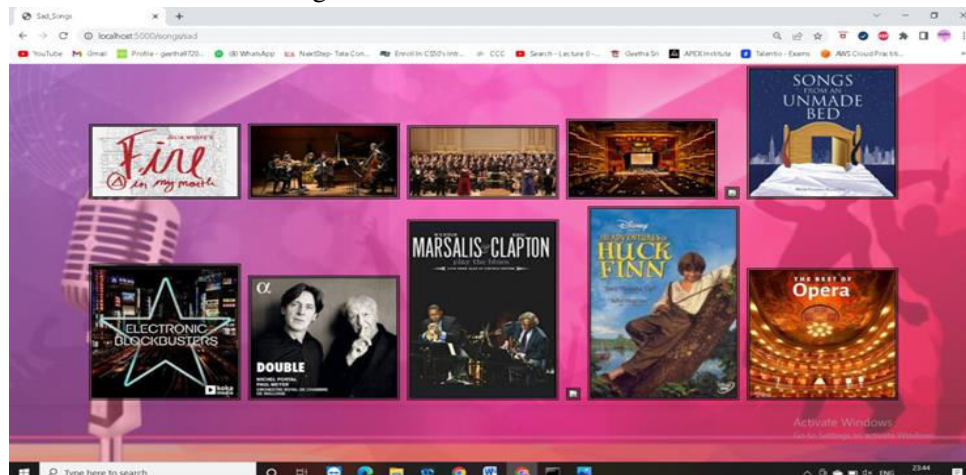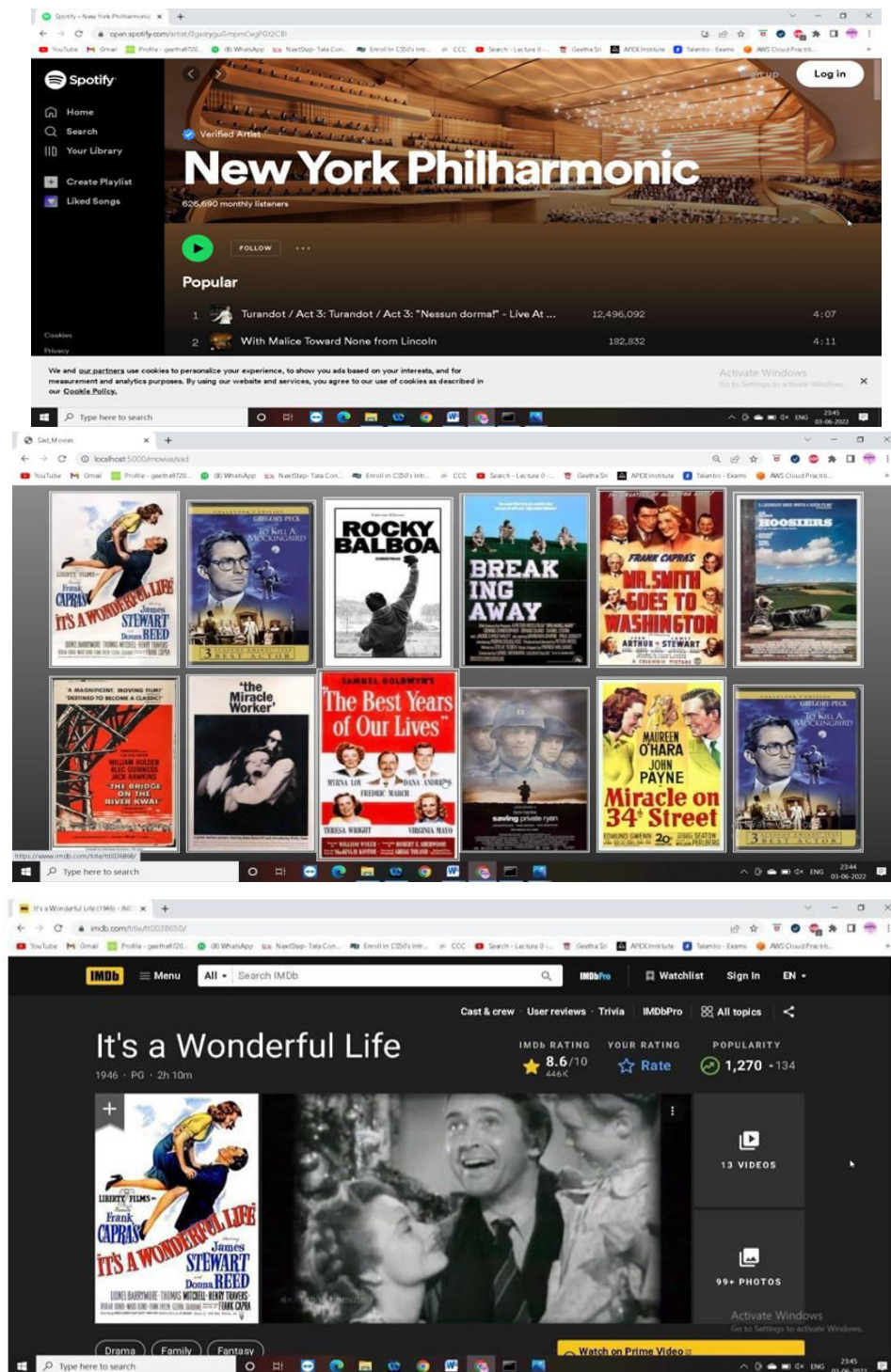
Fig.2.Cam Detection

Fig.3. Sad face Detected

CONCLUSION

The music recommendation mechanism in this project is based on the user's real-time emotions as seen in their photographs. The goal of this project is to improve communication between the user and the music system because music can change a person's mood and can be a stress relief for some folks. Recent progress demonstrates a broad scope for creating an emotion-based music recommendation system. As a result, the current system offers a face-based identification system that uses facial expressions to identify emotions and play music in response.

FUTURE ENHANCEMENT

The music player that we are using it can be used locally and nowadays everything became portable and efficient to carry but it the emotion of a person can be taken by different of wearable sensors and easy to use rather than the whole manual work it would be possible using GSR(galvanic skin response) and PPG (plethysmography physiological sensors).that would give us enough data to predict the mood of the customer accurately. This system with enhanced will be able to benefit and the system with advanced features and needs to be constantly upgraded. The methodology that enhances the automatic playing of songs is done by the detection. The facial expression's are detected with the help of programming interface that is present in the local machine. An the alternative method, that is based on the additional emotions which are being excluded in our system.

REFERENCES

1. Aljanaki, F. Wiering, R. C. Veltkamp. Studying emotion induced by music through a crowdsourcing game. Information Processing & Management, 2015.
2. S. Koldijk, M. A. Neerincx, and W. Kraaij, "Detecting Work Stress in Offices by Combining Unobtrusive Sensors," IEEE Trans. Affect. Comput., vol. 9, no. 2, pp. 227–239, 2018.
3. R. R. Londhe, P. Vrushshen and Pawar, Analysis of Facial Expression and Recognition Based On Statistical Approach, Jan. 2012.
4. Z. Zeng, M. Pantic, G. I. Roisman and T. S. Huang, "A survey of affect recognition methods: audio visual and spontaneous expressions", *IEEE Trans. Pattern Anal. Mach. Intell.*, vol. 31, no. 1, pp. 39-58, Jan. 2009.
5. P. Tambe, Y. Bagadia, T. Khalil and N. U. Shaikh, "Advanced Music Player with Integrated Face Recognition Mechanism", *undefined*, 2015.
6. B. Hu, C. Shi, J. Liu, Z. Shi, B. Goertzel and J. Feng, "Playlist recommendation based on reinforcement learning" in Intelligence Science I, Cham:Springer International Publishing, vol. 510, pp. 172-182, 2017.
7. D. Ayata, Y. Yaslan and M. E. Kamasak, "Emotion based music recommendation system using wearable physiological sensors", *IEEE Trans. Consumer Electron.*, vol. 64, no. 2, pp. 196-203, May 2018.
8. R. L. Rosa, D. Z. Rodriguez and G. Bressan, "Music recommendation system based on user's sentiments extracted from social networks", *IEEE Trans. Consumer Electron.*, vol. 61, no. 3, pp. 359-367, Aug. 2015.
9. S. K. et al., "Facial Emotion Based Music Recommendation System using computer vision and machine learning techiniques", *TURCOMAT*, vol. 12, no. 2, pp. 912-917, Apr. 2021.
10. Dureha, "An Accurate Algorithm for Generating a Music Playlist based on Facial Expressions", *IJCA*, vol. 100, no. 9, pp. 33-39, Aug. 2014.
11. J. Zhang, "Movies and Pop Songs Recommendation System by Emotion Detection through Facial Recognition", *J. Phys.: Conf. Ser.*, vol. 1650, pp. 032076, Oct. 2020.