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MUSIC RECOMMENDATION SYSTEM USING FACIAL EXPRESSION RECOGNITION

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Abstract - The majority of people will first think of smart speakers, wearables, and smart home gadgets that broadcast music when discussing artificial intelligence applications in music. Despite the fact that these developments are unquestionably important, the music industry is increasingly utilizing machine learning technologies that are based on artificial intelligence. These days, researchers are looking at new technologies that include emotional intelligence into current machine learning applications. Research on emotional analysis for the purpose of offering various music services has attracted a lot of interest recently among these technologies. The development of emotional intelligence technology will result in several focus areas that can perceive emotions; hence, the project that is being presented is an artificial intelligence-based machine learning application that will suggest music depending on mood.

1. INTRODUCTION

Deep learning is widely employed in picture recognition, image processing, and particularly facial expression detection with the advent of the information age. Face identification

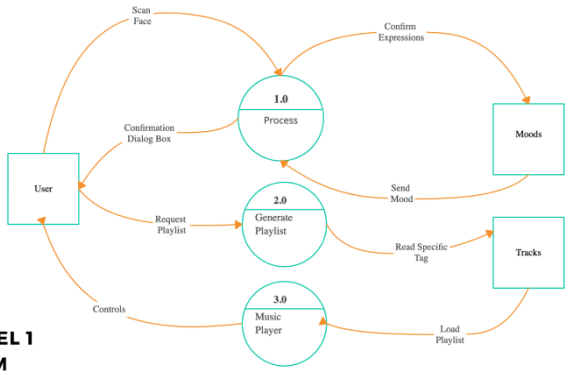
has emerged as a hub for study in the area of human-computer interaction, however there are still restrictions on how image processing results can be used. picture research frequently focuses on increasing recognition accuracy, and the picture data lacks the use of secondary processing, i.e., the image information has not been fully and effectively utilized in the actual production and life process. In this study, a convolutional neural network expression recognition model is created and trained using a deep learning technique. A music recommendation algorithm and the outcomes of image processing are integrated, and the music that adjusts they are unavoidable. The recommended mood is determined by evaluating the person's display of mood. Data sets for music are produced by mining the manual annotations and playlists of prominent music websites. The outputs of image processing have a suitably broader range of applications.

2. BODY OF PAPER

The real-time operation of the system will be the primary focus of this system. For the purpose of predicting emotions, the system will be taking real-time pictures. The system's real-time operation may lead to ease and simplicity in living. The system will take the predicted emotion as input, and then it

will categories the music in order to play the songs that are most appropriate for your mood. At the first occurrence of an acronym, spell it out

Fig -1: DFD



DFD LEVEL 1 DIAGRAM

3. CONCLUSIONS

This was a Python-based project to create a system for "Music Recommendation System Using Facial Expression Recognition." This system's development requires a lot of work because it requires the integration of several different technologies. With the programmed. The users and music enthusiasts of this system stand to benefit greatly. Even if this system may still benefit from refinement, the primary goal of this project is to play music that correspond to a person's emotions, and as of now, that goal has been met to some extent. However, not every task in this development sector can be stated to be flawless. I have picked up a lot of knowledge about the topic of development and learned a lot of new things. I'm hoping that this will work out well for us.

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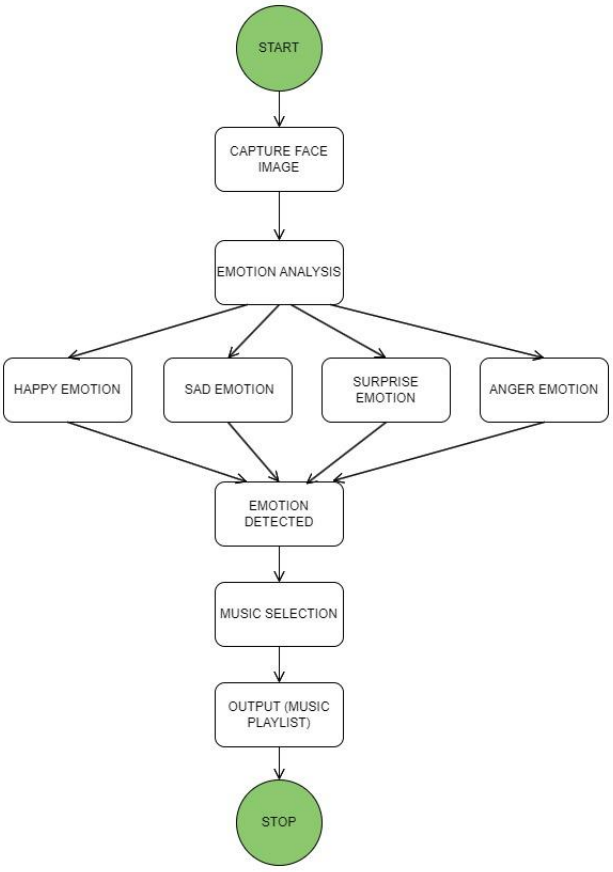


Fig -1: State Diagram

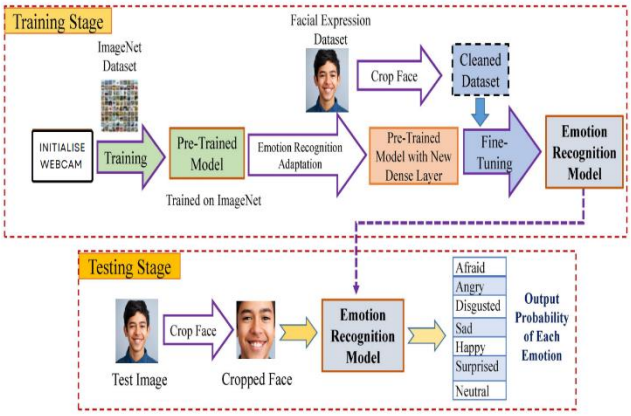
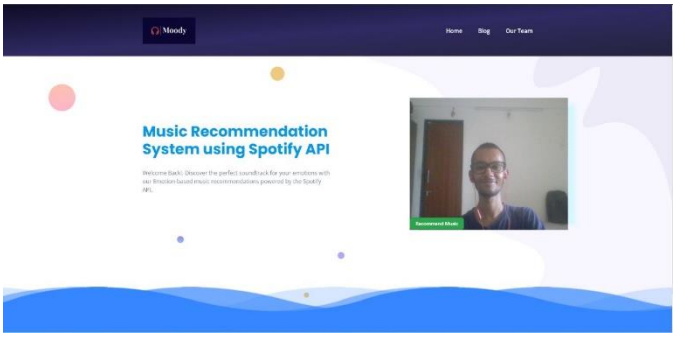
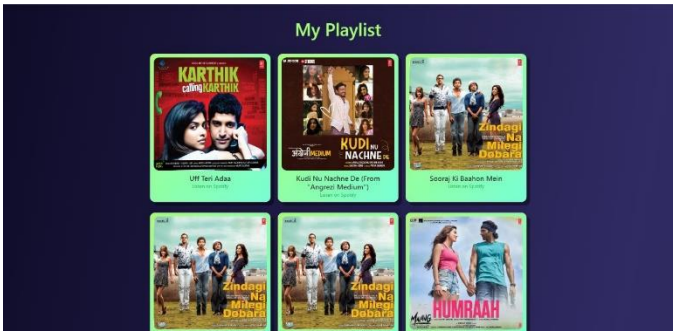


Fig-2: Architecture Diagram

OUTPUT:





And the steps to be followed by the proposed system will be as follows:

1. The webcam will be invoked first.
2. The system will start collecting the video frames available in front of it.
3. Now, the face of the person will be detected out of the whole video frame available.
4. After, the facial part will be cropped from the frame.
5. Now that cropped image will be converted to grayscale image.
6. The captured image will be now compared with the dataset available.
7. Now the facial expression of the person will be predicted and you'll get the predicted expression name as a text.
8. Now this text (predicted expression name) will be the input to the music classification part.
9. On the other hand, simultaneously music will be classified according to the mood.
10. After music classification, for every specified mood a playlist will be generated.
11. When music part will get the predicted mood/expression name as the input, the playlist generated for that specific mood will be shuffled, the music player in the machine will be invoked and randomly songs will start playing according to the mood of the person.

3. CONCLUSIONS

This was a Python-based project to create a system for "Music Recommendation System Using Facial Expression Recognition." This system's development requires a lot of work because it requires the integration of several different technologies. With the programmed. The users and music enthusiasts of this system stand to benefit greatly. Even if this system may still benefit from refinement, the primary goal of this project is to play music that correspond to a person's emotions, and as of now, that goal has been met to some extent. However, not every task in this development sector can be stated to be flawless. I have picked up a lot of knowledge about the topic of development and learned a lot of new things. I'm hoping that this will work out well for us.

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