ISSN (Online): 2583 648X

I J I R I D

International Journal of Ingenious Research, Invention and Development

Volume 1 | Issue 3 | April 2023

Scientific Journal Impact Factor (SJIF 2023): 3.647

DOI: 10.5281/zenodo.7970202

www.ijirid.in

EMOTION BASED MUSIC PLAYER

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Abstract: *Mortal expressions play an important part in the extraction of an existent's emotional state. It helps in determining the current state and mood of an individual, extracting and understanding the emotion that an existent has grounded on colorful features of the face similar as eyes, cheeks, forehead, or indeed through the wind of the smile. A check verified that people use Music as a form of expression. They frequently relate to a particular piece of music according to their emotions. Considering these aspects of how music impacts a part of the mortal brain and body, this research deal with extracting the user's facial expressions and features to determine the current mood of the user.*

Keywords: *Emotion Detection, Computer Vision, Camera, Music, Categorization, Recommendation.*

I. INTRODUCTION

Emotional- predicated music player is a substitutive way that helps the user to automate itself play songs based on user heartstrings. now, the population is raising hold further stress due to poor frugality, high living costs, etc. conformity music is a stress- relieving exertion. However, it may be useless if the music doesn't match the current feeling of the listener. To answer this problem the program proposes a music player based on emotions, which is suitable to propose songs based on user heartstrings videlicet sadness, joy, impartiality and wrathfulness. Webcam captures the image (PNG, JPEG) of the user, and also extracts the user's face features from the captured image. Face is a form of non-verbal communication, feelings are seen using machine literacy (vector support algorithm) when feelings are detected, the system raises playlists from a website loaded with playlists of that emotion saving a lot of user time over opting and playing songs directly. It also uses a separation system to identify user passions. also, the app returns a song with the same mood as the user.

II. LITERATURE REVIEW

Barbara Raskauskas published an article saying that music is widely accepted as a form of culture and language. She expresses that music can occupy empty spaces and mask unwanted sound. Music can convey cultural upbringing. Music is pleasurable and speaks to us, whether or not the song has words. I've never met a person who didn't like some form of music. Even a deaf friend of mine said she liked music; she could feel the vibration caused by the music. Emily Sohn (2011) stated that people are drawn to music for similar reasons as they are to sex, drugs, gambling, and delicious food to new research‖. Through the actions and activities carried out by the people around, the statement mentioned is widely accepted by the public.

Study had proved that the human brain will release dopamine, a kind of chemical generated by the body that involved addiction and motivation when people listen to harmony or melody that touch an individual.[3] Comparison with similar expressions can be done in order to detect the facial expression of an individual. In the year of 2005, Mary Duenwald published an article summarizes this scientist conducted studies and research indicating that facial expression worldwide has common meanings roughly into seven categories:

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1. **Sadness:**
   The eyelids droop while the inner corners of the brows rise. When in extreme sadness, the brows will all push nearer together.
2. **Surprise:**
   The upper eyelids and brows rise, and the jaw drops gets open in surprise.
3. **Anger:**
   Both the lower and upper eyelids squeeze in as the brows move down and draw together. The jaw pushes forward lip press on each other when the lower lip pushes upper a bit.
4. **Disgust:**
   The individual ‘s nose wrinkles and the upper lip rise while the lower lip protrudes.
5. **Fear:**
   The eyes widen and the upper lids rise. The person’s brows furrowed while their lips stretched horizontally
6. **Happiness:**
   When someone is happy, their lips form a smile, their eyelids become tighter, their cheeks rise, and the corners of their eyebrows pull down.

III. PROPOSED SYSTEM

The proposed automatic playlist generation scheme is a combination of multiple schemes together. In this research, we consider the notion of collecting mortal emotion from the user's expressions and explore how this data could be used to enrich the user experience with music players. We mount a new emotion- based and user-interactive music system MUSIC PLAYER BASED ON EMOTIONS. It aims to give user appertained music with emotional mindfulness. The system starts recommendations with expert knowledge. If the user doesn't like the recommendation. he she can decline the recommendation and elect the asked music himself herself.

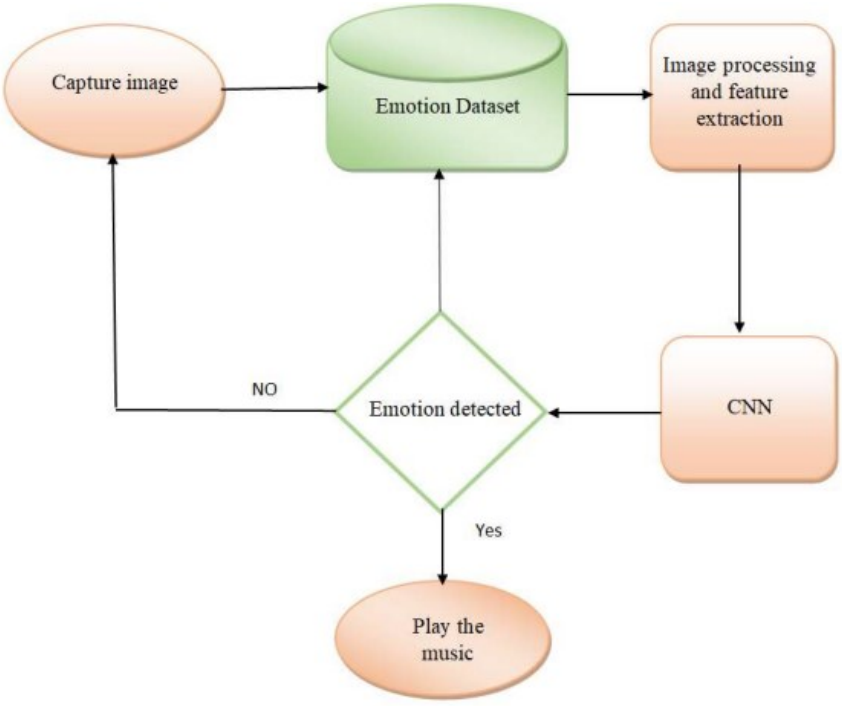

Figure 1: Flowchart of Proposed System

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It introduces a" smart" music player that learns its user's feelings and tailors its music selections consequently. After an original training period, the EMOTION- Grounded MUSIC PLAYER can use its internal algorithms to make an educated selection of the song that would best fit its user's feelings.

The proposed system can descry the facial expressions of the user and grounded on his/ her facial expressions extract the facial milestones, which would also be classified to get a particular emotion of the user. Once the emotion has been classified the songs matching the user's feelings would be shown to the user. The proposed system can prisoner the user's facial expressions, and grounded on his facial expressions, excerpt facial feelings, and also classify them to gain the stoner's specific feelings. After the feelings are classified, songs corresponding to the stoner's feelings are displayed to the stoner. The emotion discovery model is trained using the CNN algorithm. On the base of the model, the real time emotion is prognosticated and music is displayed as per emotion.

IV. IMPLEMENTATION PROCESS

Face Detection:

The goal of face detection is to find human faces in picture by first identifying the eyes, nose, and mouth. Using the CNN, comprehensive facial detecting technology which produces precise results. The Objects are identified via machine learning object detection software. The program needs lots of photos that are favorable to train the classifier, usage of negative photos of non-faces and faces are used.[9]

Feature Extraction:

For feature extraction, to detect the face the training data used is stored in the XML files. This training data is used to best identify the features that it can consider a face. Then convert our input image in grayscale mode. Using detect Multiscale function, the face is detected now we find the faces in the image. For methods like face tracking, facial emotion detection, or face recognition, facial feature extraction is crucial.[9] The technique of removing facial features from a human face image, such as eyes, nose, mouth, and so forth. Face identification, it consists of segmentation, image rendering, and scaling.

User Emotion Recognition:

In the emotion detection module, we use the code of CNN. First all the packages that are required throughout the module are imported. Then the images from dataset are read from file. The images are converted to readable arrays. This is done by using the convert_numpy() function

Emotion Mapping:

Expressions can be classified into basic emotions like anger, disgust, fear, joy, sadness, and surprise. User-given expression is compared with user expressions in the dataset. It displays the recognize expression as a result

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V. RESULT

Proposed system captures the input from the user and detect the emotion i.e., Happy face shown in figure 2 and give output as Happy music.

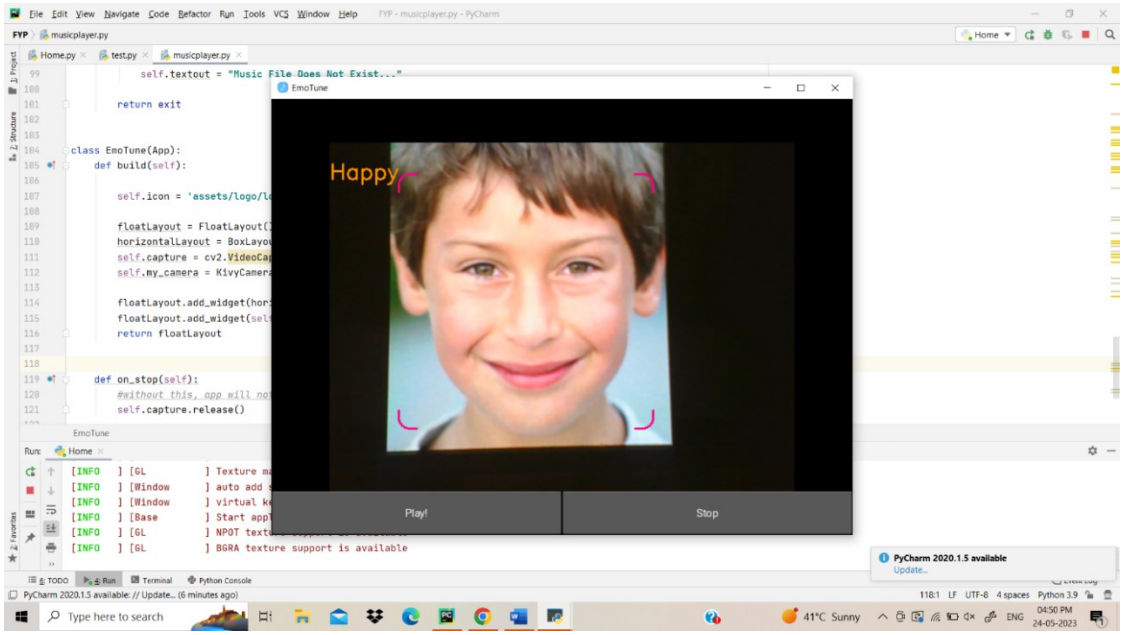

Figure 2: Detected Happy Face

Figure 3 shows that system captures the input from the user and detect the emotion i.e., neutral face and give output as neutral music.

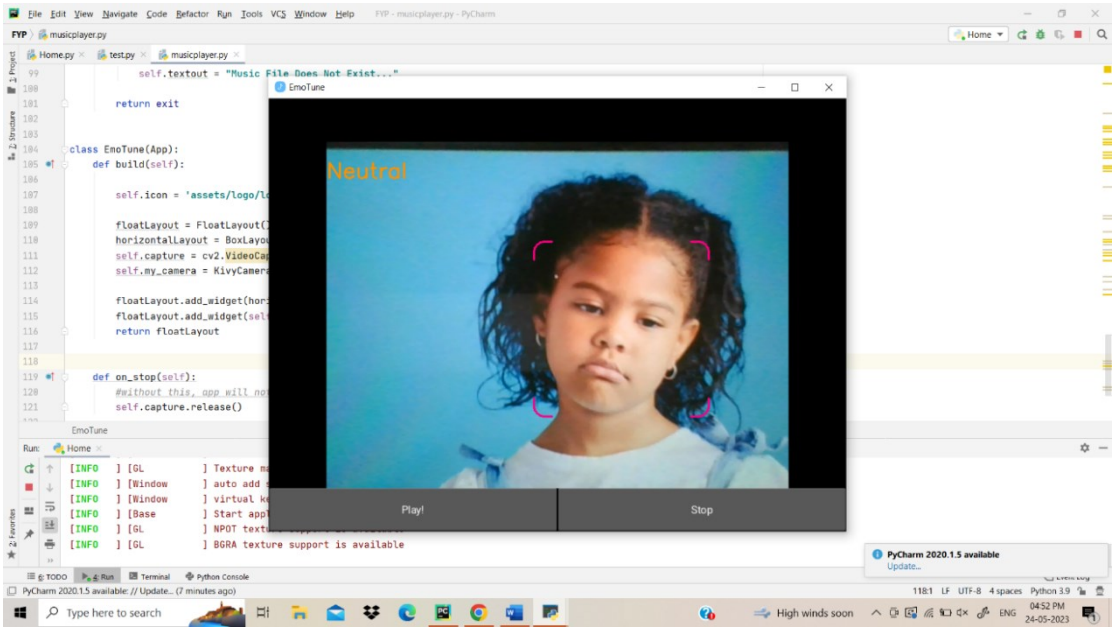

Figure 3: Detected Neutral Face

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Figure 4 Shows that system captures the input from the user and detect the emotion i.e., surprise face and give output as surprise music

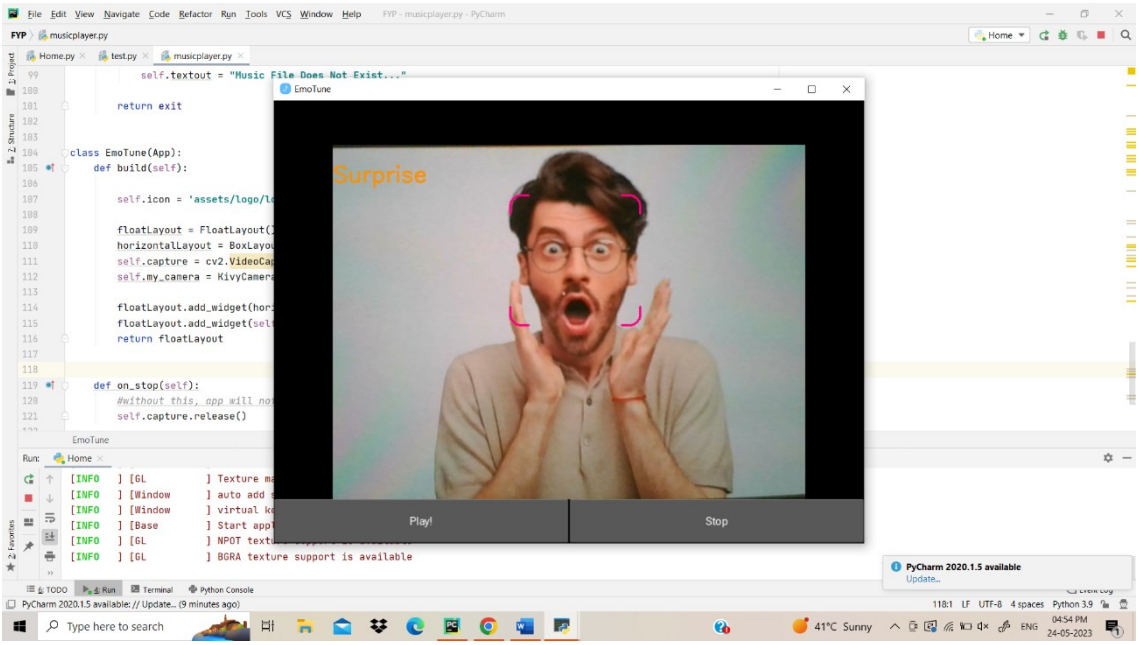

Figure 4: Detected Surprise Face

VI. CONCLUSION

The significance of this project is the emotion detection of the images loaded into the proposed model. The main purpose is emotion detection functionality. Through the integration between emotion detection technology and music player, the proposed model is aimed to provide betterment in the individual ‘s entertainment. The plan is to detect the four emotions i.e., neutral, happy, and sad of the captured images loaded into it. Once the proposed model is compared and detected the emotion of the user, the music player will play the song accordingly. Thus, with this Emotion Based Music Player, users can have an alternative way of listening to songs, which is a more interactive and simpler way. Music lovers will not have to search through the long list of songs for the songs to be played but to match the emotion in the song ‘s selection. The proposed model can be improved by having auto adjustment on the resolution or brightness and contrast of the images. The accuracy of emotion detection for the current application is greatly influenced by the quality of the images captured. Hence by having the auto adjustment, the user can capture images with any kind of webcam. The future model will be able to adjust the quality of the images which can be detected and processed.

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