

Face Emotion based Music Player System

Babita Sonare¹, Sarvesh Thube², Sandesh V Sirsat³, Pranita M Ghode⁴, Akshay Shimpi⁵

*1-5*Department of Information Technology, Pimpri Chinchwad College of Engineering, Nigdi, Pune, Maharashtra

Abstract-It is an approach in which the play list of songs will generate automatically on the basis of facial expression of the user. For various mood creation of large play list difficulties can be solved by using this technology. This system will detect the mood of user and according to that mood it will select the song itself. An automatic Facial Expression Recognition System needs to solve the following problems by using the Convolutional Neural Network (CNN) algorithm which is widely used in pattern recognition. Location and Detection of faces in cluster manner, Facial Feature Extraction and Classification of facial expression, pattern recognition. Then, the application returns songs that have the same mood as the user's mood.

Key words: Audio Emotion Recognition, Music Information Retrieval, Emotion Extraction Module, Audio Feature Extraction Module, Confusion Matrix.

I. INTRODUCTION

This type of approach deletes the risk of manually browsing of songs play list. Here an accurate and efficient algorithm which provides the play list on the basis of user's current facial expression and facial behavior. The introduction of Emotion Recognition and Music Information Retrieval in the traditional music players provided automatically parsing the play list based on various classes of emotions and moods. Facial expression is the natural and most ancient way of expressing the emotions, expression and mood.

II. MOTIVATION

Our Motivation in this work is to use facial mood and emotion recognition techniques with suitable computing device to produce additional inputs for the music recommendation systems algorithms and to increase the accuracy in the result of music recommendation system. In previous works we have studied emotion recognition from only GSR signals. In this study, we are developing signals with PPG and propose a data fusion based emotion recognition method for music recommendation system. The proposed wearable attached music recommendation framework utilizes not only the user's demographics but also user's emotion state at the time of the recommendation. Using GSR and PPG signals we have obtained promising results for emotion prediction.

III. LITERATURE SURVEY

1. "Emotion Based Music Player"

Listening to music is a key to reduce the stress level but it is unhelpful if the music does not suit the current emotion of the listener. To get the solution of this problem this paper proposes an emotion-based music player, which can propose the song based on the current motions of user i.e. sad, happy, neutral and angry. This paper proposes an intelligent agent that selects the song based on the emotions conveyed by each song and give suggestion of appropriate play list to the user based on user's current mood.

2. Emotion Based Music System

The face of human is an important organ of any individual's body and its play important role in the extraction of each individuals face emotion and behaviour state. Different algorithms have been proposed and developed for automating the system generation process. However the proposed algorithms in use are slow in computational capacity, less accuracy and sometimes it requires the hardware part like sensor. This proposed system is based on individual's facial emotions and it will create playlist reducing the efforts and time.

3. Emotion Based Music Player –XBeats

This paper shows the development of an Android platform based application named XBeats which acts as a Music Player working on Image Processing fundamentals to capture, analyze and present music as per the emotion or mood of the user using this application. The Android application was developed using the Android SDK software and Open CV software was used to implement facial recognition algorithms and cascades. Most of the Emotions based music system is collaborative with hardware.

V. EXISTING SYSTEM AND DISADVANTAGES

We preferred the use of Deep Convolution Neural Network (DCNN) to extract the facial emotions recognition by using the Tensor Flow Machine-Learning library in previous existing system, there is no software system to detect facial extraction and recommendation. It was time consuming process. There was no guarantee that the detection result is correct all the time.

VI. PROPOSED SYSTEM

The existing system made use of wearable physiological sensors whereas in this system live face emotion is detected using webcam where in the facial expressions are detected, captured and classified into their respective types Accordingly the system plays music from the collected facial expressions. This system makes use of Convolutional Neural Network (CNN) model for image classification. The model trains itself according to the results thus improving the efficiency and effectiveness of the system.

VII. ADVANCED SYSTEM AND ADVANTAGES

In this study, geometric information is used to reduce the search regions for the facial component from the detected face in order. The existing scheme cannot work reasonably to balance privacy and data utility. Existing systems are complicated in use due to high time and memory requirements for getting facial features extraction in real-time. There is no need of use of any physical wearable physiological sensors which in turn adds to the cost of the system. Some existing system tends to employ the use of human speech for the generation of an automated playlist

thereby increasing the total cost incurred. As music therapy has a big impact on our day to day life this system can not only help for music recommendation but also can prove helpful in improving the mental state of a person suffering from stress.

VIII. FUTURE SCOPE

Future work should attempt to combine our technique with other modalities such as audio modality, including working with other data set. It would further help in physiotherapy treatment where a patient's mood can be given a music treatment which can be an alternative and an additional help with use of medicines. Music therapy provides healing mentally, emotionally as well as physically. This system can also be used in drug rehab programs and mental trauma problems where a person's mental state can be recovered.

IV. DATA SETS



IX. CONCLUSION

In this paper, we proposed an algorithm for web cam-based emotion recognition with no manual design of features using a CNN. And various types of advantages like High speed Extraction, and features selection is efficient and easy to gets its result and we work on feature scaling instead of image scaling.

REFERENCES

1. Raghuvanshi, Arushi, and Vivek Choksi. "Facial Expression Recognition with Convolutional Neural Network" Stanford University, 2018
2. Healthcare Department, "Healthcare Department news," 2 February 2018. [Online].
3. McFee, Brian, Colin Raffel, Dawen Liang, Daniel PW Ellis, Matt McVicar, Eric Battenberg, and Oriol Nieto. "Libros: Audio and music signal analysis in python." In Proceedings of the 14th python inscience conference, pp. 18-25. 2015. [9] Giannakopoulos, Theodoros."
4. Xiao Luan, Huaming Wang, Weihua Ou and Linghui Liu "Facial expressions Detection using cnn" 2017 International Conference on SPAC Security, Pattern Analysis.