Music Player System for User Facial Recognition Using CNN Algorithm

Chaudhari Snehal[1], Mule Sonal[2], Jagtap Aditi[3] ,Dr. Chaudhari N.J.[4]

Student, Dept. of Computer Engg., Samarth Group of Institutions College of Engineering, Belhe, Maharashtra, India[1-3] Asst Prof, Dept. of Computer Engg., Samarth Group of Institutions College of Engineering, Belhe, Maharashtra, India[4]

---***---

Abstract – A strong language for expressing your emotion is music . Many pepole utilise music therapy to get through difficult time in their life. Emotion and moods can be easily reflected in music , when we are doing sports,we tend to listen to enrgetic music,similarly when we are anxious or tired a nice relaxed song can help use to calm down.”Mood Music ” is a music player which play song based on your mood ,it uses neural network to categorise the many emotions on a person's face, such as anger ,disgust ,fear etc.

Neural network is a method in artificial intelligence .It is a type of machine learning process called deep learning .These neural networks reflect the behavior of the human brain,allowing computer programs to recognize patterns and solve common problems in diverse domains .The project also aims to create a playlist according to different emotion .Thus deep learning algorithms helps one automate a task that can take a long time to perform.

Key Words: Face Recognition, Capture Image, Detect Mood, Emotions, Fetch Song

1.INTRODUCTION

They are very few pepole who do not have a deep connection to music . Even if you aren't musically inclined ,you certainly think of a few songs that cheer you up and bring back pleasant memories . Studies have indicated that enabling patients to listen to music improves surgical outcomes , and surgeons have traditionally listened to their own music in the operating room to relax. During Covid-19 the resurgence of an-timicrobial resistance toward certain medicines became a major problem . Resurgence of anti microbial resistance (AMR) has prompted the medical and health care sector to look for alternatives treatment for particular diseases .

This brought our attention towards the emerging sector of music therapy . Music not only conveys emotion and meaning but can also stir a listener's mood. This music therapy is still at an infant stage in India whose potential has not been completely tapped .This system of " Mood Musics" givesa boost to this sector of chemotherapy and also to the sector of telemedicine

2. RELATED WORK
[2.1] Emotion Recognition Using Facial Expressions

The results of recognizing seven emotional states(neutral,joy,sadness,surprise,anger,fear,and disgust) based on facial expressions are provided in this article. As features ,six participants coefficient representing aspects of facial expressions were used. For a three dimensional facial Page 2 model ,the various features were estimated by the neural networks .The characteristics were classified using a K-NN classifier and an MLP neural network.

[2.2] Video-Based Emotion Recognition in the wild

Emotion identification necessitates dealing with substantial differences in input signals, many sources of noise that distract learners, and tough annotation and ground truth acquisition settings .This chapter discusses our approach to the challenges and covers recent break throughs in multi model techniques for video-based emotion recognition in the wild .

It procees employing summing functionals of complementary visual descriptors for the visual

modality .It presents a common computational pipeline for paralinguistics in the audio modality. It uses least – square regression – based classifiers and weighted score -level fusion to merge audio and visual information

[2.3] Music Player Integrating Facial Emotion Recognition and Music Recommendation

This work,introduce emotion based music recommendation system, an affective cross-platform music player that recommends music based on the user's current mood . Emotion module ,music classification module ,and recommendation module are the three components that make up the music player . The emotion module uses a photo of the user's face as input and uses deep learning algorithms to accurately detect their mood with 90.23percent accuracy rate. The music classification module uses audio features to categorize songs into 4 different mood classes and reach a stunning result of 97.69 percent . The recommendation module recommends music to the user by mapping their feelings to the song's mood type and taking into account the user's preferences

3. SYSTEM ARCHITECTURE
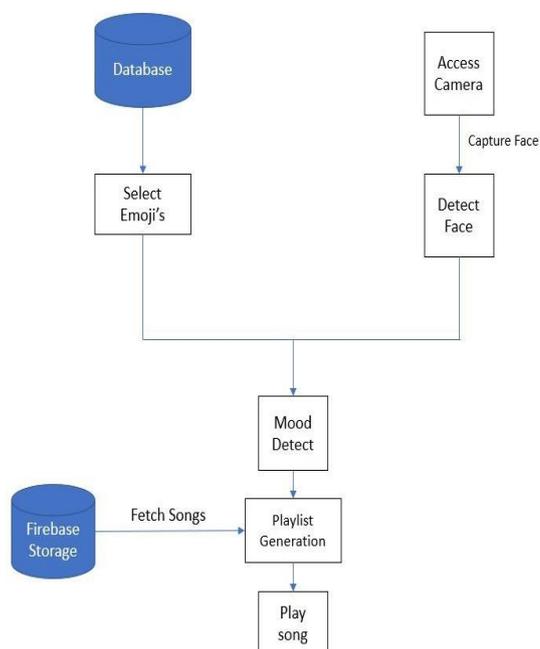
System architecture ,we have database which contain emoji's and songs also it has access camera.

Face expression will be detected by to components like emoji's and camera for that we have a database .Which he has emoji's this face expression will be detect like sad,happy,angry etc.According to the mood songs will play.

4. ALGORITHM

4.1 Conventional Neural Network:

A conventional neural network (CNN) may be a sort of profound neural arrange outlined to handle grid-like information such as pictures or real-time data. CNNs have been amazingly successful and have accomplished extraordinary victory in numerous computer vision assignments, counting picture classification, question location,and picture division. An important feature of CNNs is their capacity to memories progressive representation from input information .

4.2 Collaborative Filtering(CF)

User – based collaborative filtering is based on implicit observations of normal user behavior(as opposed to the artificial behavior imposed by a rating task) . These systems observe what a user has done together with what all users have done(what music they have listened to , what items they have bought) and use that data to predict the user's behavior in the feature ,or to predict how a user might like to behave given the chance .

Item -based collaborative filtering calculates the similarity between items calculated using people's ratings of those items . Item-item models use rating distributions per item , not per user . With more users than items , each item tends to have more ratings than each user, so an item's average rating usually doesn't change quickly .

This leads to more stable rating distributions in the model , so the model doesn't have to be rebuilt as often .When users consume and then rate and item, that item's similar are picked from the existing system model and added to the user's recommendations .First ,the system executes a model-building stage by finding the similarity between all pairs of items . This similarity function can take many forms , such as correlation between ratings or cosine of those rating vectors .

Second, the system executes a recommendation stage .It uses the most similar items to user's already -rated items to generate a list off recommendations .Usually this calculation is a weighted some or linear regression .Item-based CF had lesser errors compared to user-based CF method.

5. CONCLUSIONS

Overall , the Emotion Based Music System aims to bridge the gap between users and music recommendations systems by incorporating emotions as a crucial factor in the selection process. By providing music that aligns with the user's emotions and , mood , the system enhances user satistaction , contributes to emotional well-being , and increases the overall correctness and effectivness of the recommendations system .

ACKNOWLEDGEMENT

REFERENCES

[1] Sneha Lukose "Music Player Based On Emotion Recognition Of Voice signals",2017 International Conference on Intelligent Computing , Instrumentation and Control Technologies (ICICICT),pp.1751-1754

[2] Vassu Gupta , Siddharth Kumar , M. Vishwanath , " Mood Based Music Player", International Journal Of Engg. Research and Gerneral Science Volume 2, Issue 11,2019 ISSN 2581-5792,pp.299-304 , November 2019

[3] Aurobind V. Iyer,"Emotion Based Mood Enhancing Music Recommendation",Submitted to the Program in Media Arts and Science , pp.1573-1577 , May 2019

[4] Krittrin Chankuptarat," Emotion Based Music Player ",Bogazici Univercity computer Engg. Istanbul, Turkey 3442,IEEE 2019

[5] S. Debbika , K.A. Indra, Dr.Jesline, "A Machine Learning Based Music Player By Detecting Emotions ", 2019 Fifth International Conference

On Science Technology Engg. and Mathematics(ICONSTEM) ,pp.196-200,2019

[6] Ankita Mahadik, Vijaya Bharati Jagan, "Mood Music Recommendation system",2022,352780489

[7] S.Yang and B. Bhanu,"Facial Expression Recognition Using Emotion Avatar Image," pp.8-871,2011.