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Music Recommendation Using Human Facial Expression

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Abstract-: ***One of the hot topics in the security industry right now that offers solutions to many problems is face detection and emotion selection. Together with the standard difficulties in capturing facial photos in unpredictable environments, such as varied stances, various lighting conditions, and various facial expressions for face recognition and various sound frequencies for emotion recognition. The key component for comparing facial traits and sound Mel frequency components in any face and emotion identification system is the database. One of the most fruitful forms of media is music since it has the power to evoke strong emotions and in still listeners with subliminal messages. It deftly manipulates our emotions, which in turn influence our mood. Books, movies, and television shows are a few other options, but music conveys its message in a matter of seconds. It can help us when we are down and trust us. When we listen to sad songs, our mood tends to drop. We feel happier when we listen to happy songs. Several Internet services have investigated sentiment analysis to endorse contents that are in line with human emotions expressed through casual texts posted on social networks. Music recommendation will primarily work on improving the user's mood by providing songs by detecting the end user's facial expression and recommending the preferred song based on that expression. This paper extract the human expression and suggest the music according to it.***

Keywords— Recommendation system, Sentiment analysis, Emotion detection

I. INTRODUCTION

Many of the studies in recent years admit that humans reply and react to music and this music has a high impression on the activity of the human brain. In one examination of the explanations why people hear music, researchers discovered that mu-sic played a crucial role in relating arousal and mood. Two of the most important functions of music are it is ability is partici-pants rated to help them achieve a good mood and become more self-aware. Musical preferences have been demonstrated to be highly related to personality traits and moods [1].

In this we use sentiment analysis for recommending song to the enjoyer by judging their emotion through the facial expression. For the sake of to discover the correlation between music and the emotion that it may evoke, sentiment have been categorized into many types and pattern recognition procedures have been referred to the song [4-5]. Emotions such as pleasure, anger, and sadness have been classified using various emotion models, such as Thayer's model [6], the arousal-valence model [7] Russell's model [8]. Sentiment analysis is starting to be examined in song recommendation systems to suggest a distinct song depending on the psychological state of a person, since the song is totally associated to the current emotion and feelings of the person. There is

sentiment analysis research placed on emotional signals [9], [10], subjective emotion estimation [11], tag-based extractions [12], [13], web semantic [14], [15], ML, such as, Support Vector Machines (SVM) and its derivation [16], and the lexicon-based technique like ANEW[17]. We use facial expressions to propose a recommender system for emotion recognition that can detect user emotions and suggest a list of appropriate songs [13-24]. And if the emotion is positive, a specific playlist will be presented which contains different types of music that will inflate the positive emotions [4].

II. LITERATURE SURVEY

These are the literature survey which is based on different research paper that related to our own project
"Music recommendation system using sentiment analysis"-

Author [1] Recommend a music recommendation system, which includes music genre classification, music emotion classification and music similarity query functions. A new tempo feature extraction method is presented and effectively combined with conventional timbre features by AdaBoost algorithm, which significantly improves the accuracy of music classification. Furthermore, an efficient similarity query strategy based on the results of music classification is adopted in our system. The high precision of music classification results in better recall rate and higher query speed than the traditional brute-force searching scheme.

Author [19] Proposed a system 'EmoPlayer', which is an Android based application. It captures an image of the user using camera of his device and detects the face from this image. The application will then identify the emotion from the face detected. In this paper author used approaches like Canny Edge Detection, Viola Jones Algorithm, SVM and so on. In this the simulation has been carried out successfully on multiple Android devices connected to Internet and running on android version 5.0 and above.

Author [20] Proposed system which processes images of frontal and profile face view. Face boundaries have been found using Vertical and horizontal Histogram Analysis. Then, face contour is obtained by thresholding the image with HSV color space values.

Author [22] In this paper "An Efficient Method to Face and Emotion Detection" have detected face from the input image using Viola-Jones face detection algorithm and evaluated the face and emotion detection using KNearest Neighbours classifier.

Author [23] Proposed a correlation-coefficient-based approach to find emotional music sequences which may evoke a specific emotion in subjects. The SFFS method is applied to select significant music features from emotional music sequences. The selected features are used to train SVM classifiers for an individual subject. results show that the proposed method achieves high classification accuracy, and that the recommended music is close to a subject's emotion perception.

Author [24] This paper presents a recommendation system establish on a sentiment intensity metric, named enhanced Sentiment Metric (eSM) that is the corporation of a lexicon-based sentiment metric with a correction factor establish on the enjoyer's profile. Results showed that 78% of end user preferred to listen to a musical genre similar to their current sentimental state, and only 22% preferred to listen to a different musical genre in relation to their current sentimental state.

III. PROPOSED SYSTEM

We gain from the proposed technique by presenting user-music player interface. The system's goal is to get a clear photo of the face using the camera. Neural Network Model, which forecasts emotion, is fed captured images. The setlist of songs is then generated using the emotion gleaned from the taken image. Our system's primary goal is to automatically generate a music playlist that will alter the user's mood, which may be joyful, sad, natural, or astonished. The suggested system analyses the sentiments, and if the topic includes a negative emotion, a chosen playlist will be played, which contains the best types of music to lift the listener's spirits.

- Real-Time Capture: In this module, the system is to capture the face of the user correctly
- Face Recognition: Here it will take the user's face as input. The convolutional neural network is programmed to evaluate the features of the user image.

- Emotion Detection: In this section extraction of the features of the user image is done to detect the emotion and depending on the user's emotions, the system will generate captions.
- Music Recommendation: Song is suggested by the recommendation module to the user by mapping their emotions to the mood type of the song.

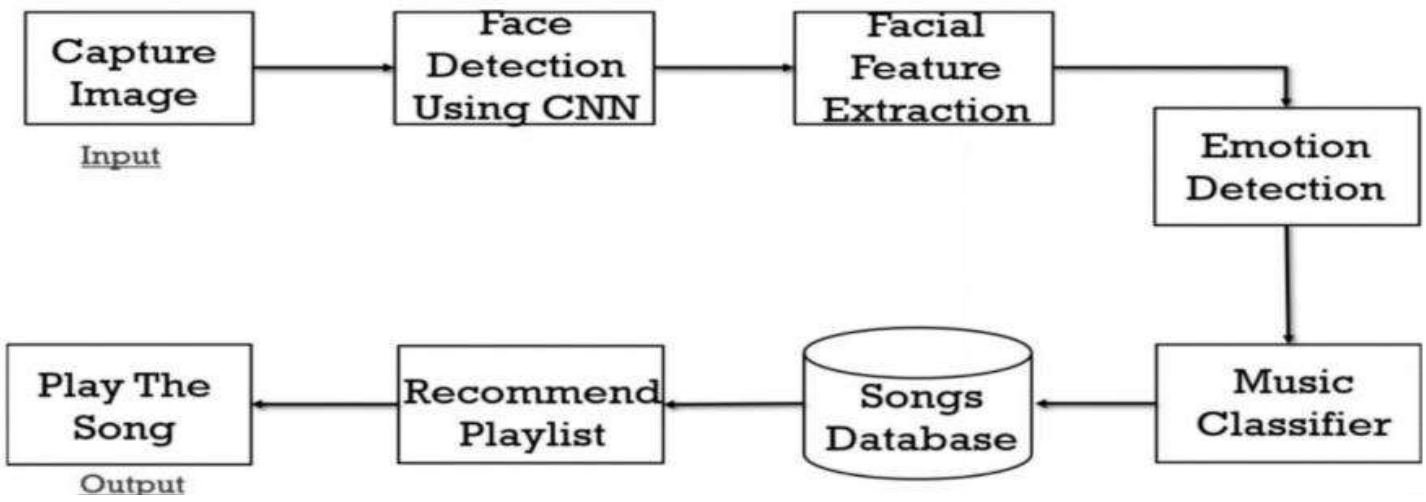

Fig -1: Proposed System

Security monitoring on the cloud is important, because computers sharing data are most readily available to an attacker. Without mechanisms in place to detect attacks as they occur, an system may not realize its security. There- fore it is vitally important that computers residing in the cloud are carefully monitored for a wide range of audit events. The auditing in a system con- sists of three steps. The first step is the attack has attempted on any node in system, secondly the attack is detected by the system by hashing algorithm after detection of attack the notifications are send to data owner. Due to this security is improved.

We use the pre-trained network, which is a sequence of stages, as an arbitrary feature representation while conducting feature extraction. allowing the input image to progress to the next layer, stopping there, and using that layer's outputs as our features. Use only a few filters because the initial fully convolutional layers retrieve the highest-level characteristics from the captured image. As we add deeper levels, we multiply the number of filters by two or three, depending on how big the filter was in the preceding layer. The deeper layer filters have more features, but they require a lot more processing.

CONCLUSION

In this paper, following analysis of the client's profile, it was discovered that 68% of listeners preferred to listen to musical genres that were comparable to their present emotional state, while only 32% chose to listen to musical genres that were dissimilar to their current emotional state. For instance, if someone is in a melancholy mood, they can prefer to listen to a sadder tune. The proposed approach uses minimal resources from current electronic devices because it does not use complicated programming languages. The addition assessed a slight obstruction regarding the electronic device's preoccupy resources. Although sentiment measurements could be used to many other domains, the study indicates how emotion analysis was applied to a music recommendation system.

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