



INTELLIGENT MUSIC PLAYER USING EMOTION RECOGNITION

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ABSTRACT

The external body part is a vital a part of somebody's body and it particularly plays a vital role in knowing somebody's mood. Extracting the desired input from the external body part will currently be done directly employing a camera. This input will then be employed in some ways. One in all the applications of this input is for extracting the knowledge to deduce the mood of a personal. This information will then be wont to get an inventory of songs that befits the mood derived from the input provided earlier. This eliminates the long Associate in nursing tedious task of manually segregating or grouping songs into totally different lists and helps in generating an acceptable listing supported somebody's emotional options. Varied algorithms are developed and planned for automating the listing generation method. Countenance based mostly Music Player aims at scanning and deciphering the information and consequently making a listing based the parameters provided. The scanning and deciphering includes audio feature extraction and classification to induce an inventory of songs happiness to an analogous genre or to induce an inventory of comparable sounding songs.

Keywords: Euclidean Distance classifier, Expression Recognition, Facial Feature Extraction, PCA

I. INTRODUCTION

Music plays a awfully vital role in enhancing AN individual's life because it is a crucial medium of recreation for music lovers and listeners and generally even imparts a therapeutic approach. In today's world, with ever increasing

advancements within the field of multimedia and technology, varied music players are developed with options like quick forward, reverse, variable playback speed (seek & time compression), local playback, streaming playback with multicast streams. Though these options satisfy the user's basic needs, nonetheless the user must face the task of manually browsing through the play list of songs and choose songs supported his current mood and behaviour. The introduction of Audio feeling Recognition (AER) and Music data Retrieval within the traditional music players provided mechanically parsing the play list supported varied categories of emotions and moods. AER may be a technique that deals with classifying a received audio signal, by considering its varied audio options into varied categories of emotions and moods, whereas MIR may be a field that extracts some crucial data from AN audio signal by exploring some audio features like pitch ,energy,MFCC, flux etc. Though each AER and MIR enclosed the capabilities of avoiding manual segregation of songs and generation of play list, nonetheless it's unable to include absolutely somebody's feeling controlled music player. Though human speech and gesture ar a typical approach of expressing emotions, however face expression is that the most ancient and natural approach of expressing feelings, emotions and mood. The main objective of this paper is to style AN economical and correct formula that will generate a play list supported current emotional state and behaviour of the user. The formula designed needs less memory overheads, less procedure and process time, reducing the price of any further hardware like electroencephalogram or sensors. The face expression would reason into five differing kinds of facial expressions like anger, joy, surprise,

sad, and excitement. A high correct audio extraction technique is projected that extracts significant, crucial and relevant data from an audio signal supported certain audio options in an exceedingly a lot of lesser time. An emotion model is projected that classifies a song supported any of the seven categories of emotions viz unhappy, joy-anger, joy-surprise, joy-excitement, joy, anger, and sad-anger. The feeling extraction module and audio feature extraction module is combined mistreatment an Emotion-Audio integration module. The projected mechanism achieves a more robust potency and real time performance than the present methodologies. This paper is organized into: Section two provides the temporary study of literature survey. Section three explains the methodology; Section four provides the experimental analysis and results. Section five provides the conclusion of the paper and future work.

II. EXISTING SYSTEM

- Mood Player

This app uses face detection and mood recognition to work out the user's mood and supported this; it gives a personalized play list. The face detection rule is predicated on OpenCV library and also the mood detection half are going to be based on pattern matching. If we all know he knowledge that is required, we tend to use the last.fm information that joins each song with tags that describe it. These implementations square measure designed so as to get a list per the user mood's and provide these functionalities:

1. Set your mood manually: happy/sad
2. Get your mood mechanically by analysing a periodical camera capture (frequency may be set from menu)
3. Set the music tempo, from calm to energetic

- Stereo mood

Stereo mood may be a mobile or pill application. With the press of a button we'll have a ready-made play list for each time in our life: we will opt for our mood from our tags, listen, discover new music, share and tag our emotions in music. This application offers the subsequent functionalities:

1. Hear over a hundred mood playlists.
2. Share your mood and music together with your friends on Facebook and Twitter.
3. Tag the songs by mood, serving to United States to create the mood primarily based playlists.

4. Discover new artists through your mood.
5. Discover your emotional profile of the week by clicking on "my mood" filter

III. PROPOSED SYSTEM

The planned model is ready to extract user's expressions and therefore find user's feeling. The music player in our propound model can then play the songs in keeping with the class of feeling detected. It's aimed to supply a more robust enjoyment to music lovers in music listening. The operating of the system is to acknowledge the feeling from matter info and supply a music play list from the music player in keeping with mood of the user. Matter info are often collected from the user once user plays any song from the play list of music player. We tend to then determine lyrics of song and with the assistance of classification techniques; emotions can be extracted from lyrics of song by emotional keyword and linguistics info. When mood identification system can provide music list to the user and in keeping with his /her mood selected songs are going to be compete. This method will raise user if he desires to alter the mood and desires another play list.

IV. LITERATURE SURVEY

1. Paper Name: Automatic Facial Expression Recognition Using Features of Salient Facial Patches Author Name: S L Happy and Aurobinda Routray

This paper proposes a completely unique framework for expression recognition by victimization look options of elite facial patches. a number of outstanding facial patches, reckoning on the position of facial landmarks, area unit extracted that area unit active throughout feeling stimulus. These active patches area unit more processed to get the salient patches that contain discriminative options for classification of every try of expressions, thereby choosing completely different facial patches as salient for various try of expression categories. One-against-one classification methodology is adopted victimization these options. Additionally, an automatic learning-free facial landmark detection technique has been projected, that achieves similar performances as that of different state-of-art landmark detection strategies, nonetheless needs considerably less execution

time. The projected methodology is found to perform well systematically in several resolutions, hence, providing an answer for expression recognition in low resolution pictures. Experiments on CK+ and JAFFE face expression databases show the effectiveness of the projected system.

2. Paper Name: A survey of signal processing algorithms in brain-computer interfaces based on electrical brain signals

Author Name: Ali Bashashati, Mehrdad Fatourehchi, Rabab K Ward and Gary E Birch

Brain-computer interfaces (BCIs) aim at providing a non-muscular channel for causing commands to the external world exploitation the medical instrument activity or alternative electrophysiological measures of the brain perform. an important think about the successful operation of BCI systems is that the strategies accustomed method the brain signals. Within the BCI literature, however, there's no comprehensive review of the signal process techniques used. This work presents the first such comprehensive survey of all BCI styles exploitation electrical signal recordings printed before Jan 2006. Elaborated results from this survey area unit conferred and mentioned. the subsequent key analysis queries area unit addressed: what area unit the key signal process parts of a BCI, what signal process algorithms are utilized in BCIs and that signal process techniques have received a lot of attention.

3. Paper Name: Classification of human emotions from EEG signals using SVM and LDA Classifiers

Author Name: Aayush Bhardwaj, Ankit Gupta, Pallavi Jain, Asha Rani

Emotion Detection has been a subject of nice analysis within the previous couple of decades. It plays a awfully vital role in establishing human pc interface. We have a tendency to as human's square measure able to perceive the emotions of different person however it's virtually not possible for the pc to try and do therefore. This work is to attain a similar as accurately as potential. Feeling detection is done either through text, speech, face expression or gesture. Within the gift work the emotions square measure detected victimisation Electroencephalography (EEG) signals. EEG records the electrical activity inside the neurons

of the brain. The most advantage of victimisation EEG signals is that it detects real emotions arising straight from our mind and ignores external options like facial expressions or gesture. Therefore EEG will act as real indicator of the feeling pictured by the topic. We've used freelance part Analysis (ICA) and Machine Learning techniques like Support Vector Machine (SVM) and Linear Discriminate Analysis (LDA) to classify EEG signals into seven totally different emotions. The accuracy achieved with each the algorithms is computed and compared. we have a tendency to square measure able to acknowledge seven emotions victimisation the 2 algorithms, SVM and LDA with a median overall accuracy of seventy four.13% and 66.50% severally. This accuracy was achieved once acting a 4-fold cross-validation. Future applications of feeling detection includes neuro-marketing, market survey, EEG primarily based music medical aid and music player.

4. Paper Name: Emotion Based Music Player

Author Name: Nokhil Zaware, Tejas Rajgure

Facial expression provides current mind state of person. The foremost natural thanks to categorical emotions is victimization facial expressions. Human typically use nonverbal cues such as hand gestures, facial expressions, and tone of the voice to categorical feelings in social communications. It's terribly time intense and troublesome to make and manage massive playlists and to pick songs from these playlists. Thus, it'd be terribly useful if the music player itself selects a song in line with the present mood of the user. Thus, associate degree application is often developed to reduce these efforts of managing playlists. During this paper, we are going to study concerning the way to mechanically observe the mood of the user and gift him a list of songs that is appropriate for his current mood. The image is captured victimization digital camera which image is passed underneath completely different stages to observe the mood or feeling of the user. The applying is so developed in such some way that it will manage content accessed by user, analyze the image properties and verify the mood of the user. The applying additionally includes the power of sorting songs supported mp3 file

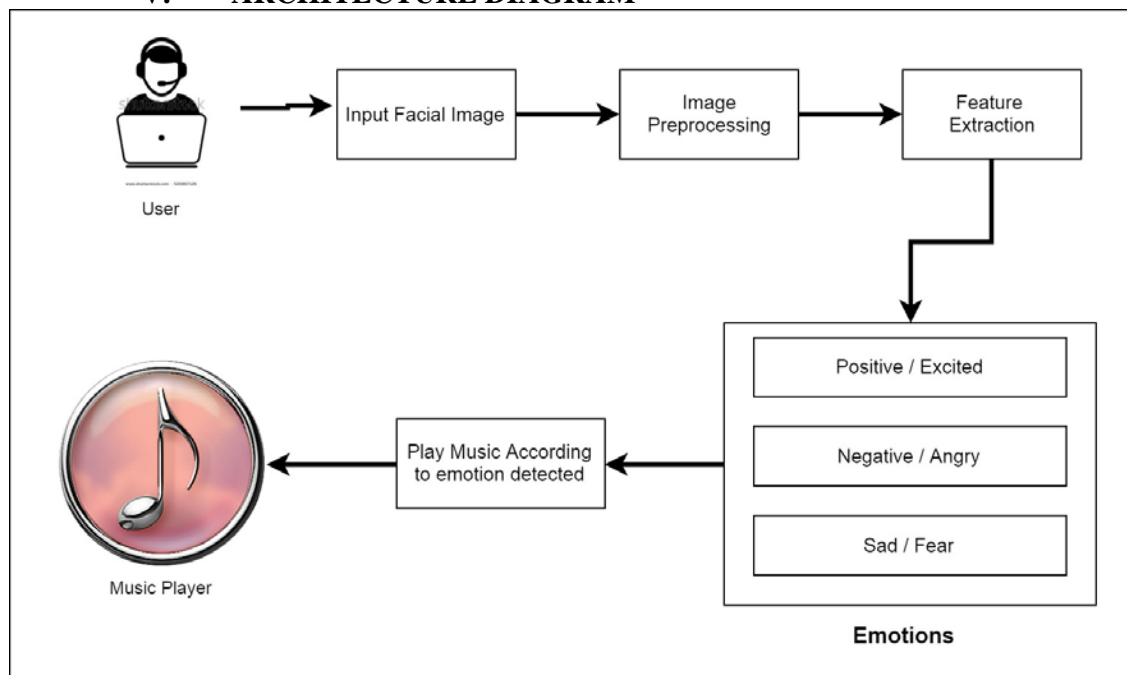
properties in order that they will be adscitious into applicable playlists in line with the mood.

5. Paper Name: Facial Expression Recognition Using Eigenspaces
Author Name: Debasmita Chakrabartia, Debtanu Duttab

A lot of knowledge is sent by kinsmen within the type of countenance with the exception of simply what's spoken. Correct recognition of such expression has therefore become necessary for any trendy human pc interface. We have a tendency to gift here a technique of countenance recognition supported Eigen faces. It's a changed

technique from the initial Eigen faces approach and starts out with the human vision as a typical indicator – by creating use of the quality JAFFE info and computes the expression contained by the image of a check face. it's a novel approach that directly classifies attest image as happiness to at least one of the six customary expressions - anger, disgust, fear, happy, unhappy or surprise with nice accuracy. During this paper, we have a tendency to gift with experimental proof the accuracy of such a method with analysis and discussion on additional ways that to enhance upon it.

V. ARCHITECTURE DIAGRAM



VI. CONCLUSION

Recognizing musical mood remains a difficult downside. Within the past five years, the performance of machine-controlled systems for music feeling recognition employing a wide selection has advanced considerably. Most of the media player gives list of songs in user's music library and choice to choose or search the song however it becomes progressively tough task .Our system can give higher enjoyment to the music listeners by providing the foremost appropriate or acceptable song to the user according to his current mood. During this paper, we have a tendency to gift a planned system associate degreed an approach for the automated creation of mood based mostly play list. The planned system can cut back the efforts of user

in making and managing play list it'll not solely help user however additionally the songs square measure consistently sorted.

VII. REFERENCE

- [1] Debasmita Chakrabartia and Debtanu Duttab, "Facial Expression Recognition using Eigenspaces," in Int. Conf. on Computational Intell.: Modelling Techniques and Applicat., 2013, pp. 755-761.
- [2] Müge ÇarÖkçÖ and Figen Özen, "A Face Recognition System based on Eigenfaces method," INSODE, 2011, pp. 118-123.
- [3] Hafeez Kabani, Sharik Khan, Omar Khan and Shabana Tadvi, "Emotion based Music Player," Int. J. of Eng. Research and General Sci., Vol. 3, Issue 1, pp. 750-756, January-February 2015.

- [4] Nikhil Zaware, Tejas Rajgure, Amey Bhadang and D. D. Sapkal, "Emotion based Music Player," *Int. J. Of Innovative Research & Develop.*, Vol. 3 , Issue 3, pp. 182-186, March 2014.
- [5] Kevin C. Tseng, Yu-Te Wang, Bor-Shing Lin and Ping Han Hsieh, "Brain Computer Interface-based Multimedia," in *8th Int. Conf. on Intelligent Inform. Hiding and Multimedia Signal Process.*, Piraeus, 2012, pp. 277 - 280.
- [6] Li Wern Chew, Kah Phooi Seng, Li-Minn Ang, Vish Ramakonar, and Amalan Gnanasegaran, "Audio-Emotion Recognition System using Parallel Classifiers and Audio Feature Analyzer," in *2011 3rd Int. Conf. on Computational Intell., Modelling & Simulation*, 2011, pp. 210-215.
- [7] Aayush Bhardwaj, Ankit Gupta, Pallav Jain, Asha Rani and Jyoti Yadav, "Classification of Human Emotions from EEG signals using SVM and LDA Classifiers," in *2015 2nd Int. Conf. on Signal Process. and Integrated Networks (SPIN)*, 2015, pp. 180-185.
- [8] Timothy Kevin Larkin, "Face Recognition using Kernel," New Jersey Institute of Technology, Newark, NJ, 2003.
- [9] S L Happy and Aurobinda Routray, "Automatic Facial Expression Recognition using Features of salient Facial Patches," in *IEEE Trans. On Affective Computing*, January-March 2015, pp. 1-12.
- [10] Aliaa A. A. Youssif and Wesam A. A. Asker, "Automatic Facial Expression Recognition System based on Geometric and Appearance Features," *Computer And Inform. Science*, Vol. 4, No. 2, pp. 115-124, March 2011.
- [11] M.Pantic and I.Patras, "Dynamics of Facial Expression: Recognition of Facial Actions and their Temporal Segments from face profile image sequences," *IEEE Trans.*