iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 8 **Issue:** V **Month of publication:** May 2020

DOI: http://doi.org/10.22214/ijraset.2020.5023

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 8 Issue V May 2020- Available at www.ijraset.com

Emotion Detection Music Player

Kamlesh Kumari[1], Sejal Kabra[2], Preeti Ingle[3], Sunidhi Patidar[4], Uday Singh Kushwaha[5]
[1, 2, 3, 4]*B.Tech Student,* [5]*Assistant Professor, Deptt. of Computer Science & Engineering, Indore Institute of Science & Technology*

Abstract: ***The human face is an important organ of the human body and plays a major role in transmitting the individual's emotional and emotional state. Extremely isolating a song list and producing an appropriate playlist based on individual spiritual qualities is a very tiring, time-consuming, hard-working, and energetic activity. Various algorithms have been proposed and developed to facilitate the playlist implementation process. However the proposed algorithms available for implementation are slow, extremely precise and sometimes require the use of additional equipment such as EEG or sensors. This proposed model based on a facelifted model will generate playlists automatically thereby reducing the effort and time involved in handing over the process. Thus the proposed system tends to reduce the amount of time involved in obtaining the results and the total cost of the system, thereby increasing the accuracy of the entire program. System tests are performed on both user (dynamic) and independent (solid) data. Face expressions are captured using a built-in camera. The accuracy of the detection algorithm used in the real-time image system is around 85-90%, while for static images it is around 98- 100% .The proposed algorithm on a calculated scale takes about 0.95-1.05 sec to produce a based playlist emotional. Therefore, it produces better accuracy in terms of performance and computational time and reduces design costs, compared to the algorithms used in the literature survey.***
Keywords: Audio Recognition, Music Data Recovery, Face Release, Artificial Neural Networks Viola and Jones Face Recognization.

I. INTRODUCTION

The main idea of this project is to play songs automatically depending on the user's mood. Using traditional music players, the user had to look beyond his playlists and choose songs that would give his soul and spiritual experience. In today's world, with the ever-increasing development in the field of multimedia and technology, various music players are produced with features such as fast forward, reverberation, variable playing speed (not even press time), local playback, multicast playback streams and includes volume transitions, type separation etc. Although these features satisfy the basic needs of the user, still the user has to deal with the task of manually browsing the song list and selecting songs based on his current behavior. What a person needs, the user suffers from time to time with the need and desire to browse through the playlist, according to his or her feelings and emotions. The app uses the Viola-Jones algorithm used for face detection and facial feature extraction. Facial expressions are a good indicator of a person's mental state. It's really a natural way of expressing emotions through facial expressions. People often link music to their feelings. The designed algorithm requires more memory capacity, reduced processing time and performance, reducing the cost of any EEG hardware or sensors [1]. The playlist of the song is just that, sometimes too large to be resolved automatically. It would be helpful if the music player was "smart enough" to sort the music according to the current mood of the hearer. The project aims to apply various techniques of the sensory system, analyzing the effects of the various techniques used. Emotion Detection Music Player is a novel method that enables the user to automatically play songs based on the user's mood. It recognizes the user's facial expressions and plays the songs according to their mood. Facial expressions are monitored using a Vector Machine (SVM) algorithm. The human face is an important part of the human body and plays a major role in removing human behavior and mood. The webcam captures the user's image and captures the features of the user's face in the captured images. The face is divided into a smile, not a smile or a neutral one. According to emotion, music will be played from pre-defined directions. User can change song details such as category and interest level at any time in the app. The system also notifies users of songs that are played incorrectly so that they can switch songs or remove songs if they do not fit into the category.

II. LITERATURE SURVEY

A. The Origin of the Mind

Various strategies and methods have been developed to improve people's behavior. The proposed methods focus only on some basic emotions. Nikhil Zaware et al [2] pointed out that it takes a lot of time and is difficult to create and manage large playlists and to select songs from this playlist. The paper states how to automatically detect user emotions and generate a playlist of songs that are appropriate for the current situation. The geometric base method only looks at the make-up or highlights of important facial features such as mouth and eyes. In a scheme suggested by Changbo et. al [3], approximately a total of 58 major points are considered in forming ASM. The element of extraction such as texture, is also considered in various areas of work and development.

A paper written by Henal Shah et al [4] conveys a proposed musical instrument that analyzes using analytical or sensory input. Emotions are a fundamental part of human nature. They play an important role throughout life. People's feelings are made to understand and to share feelings. Anukriti Dureha [5] suggested hand-made playlists and song annotations, depending on the user's current mood, as the most demanding task and staff time. Multiple algorithms have been proposed to implement this process.

B. Method

An effective method for encoding and optimizing the extraction of facial features by the combination and multimodal classification of Gabor filters was proposed by Michael Lyons [6] et. al. This paper primarily aims at and focuses on resolving the issues involved in the existing system by building a fully automated music player for the generation of customized playlists based on computers mounted on facial features and thus avoiding the hiring of any additional hardware. MIR Toolbox is a Matab toolbox dedicated to the music feature [7]. Algorithms are grouped into categories, such that the user can perform a specific task. Functions are provided with simple and flexible syntax. MIR Toolbox relies on the Matlab environment and consequently benefits from existing toolboxes and built-in viewing capabilities, but suffers from memory management limitations. K.McKay et. al was designed for xpod-man-made and music-aware music player [8]. The sensors employed in the program to collect information related to the mood and function and functions of musical compliments. The program was based on client / server architecture. Michael lyons [9] et. al proposed a way to combine face-to-face multi-faceted and Gabor multorolution modeling, which was ordered face-to-face and directed approximately, with the face. The level of coordination obtained was very high, but the total complexity of the bond increased significantly. Facial features, for the purpose of feature recognition, have been distinguished by Zheng et. al [10] under two broad categories. Optical features and geometric features. Geometric features were derived from the shape or highlights of some of the important facial features such as mouth and eyes.

C. Music Player Features

The music score tags and AV values from 20 total subjects were evaluated and analyzed in the work of Jung Hyun Kim [11], and based on the results obtained from the analysis, the AV plane was divided into 8 regions (squares), indicating the mining status of the data. k-denotes the performance of the clustering algorithm. Thayer [12] proposed a very useful 2-dimenesional model (Stress v / s energy) based on two emotion axes identified by a 2-dimensional co-ordination system, lying on 2 axes or quadrants. -4 is made up of 2- conspiracy. The app uses the Viola-Jones algorithm used for face detection and facial feature extraction. The designed algorithm requires more memory capacity, reduced time for money and labor, reducing the cost of any additional hardware such as EEG or sensors [13]. An accurate and efficient mathematical-based method for analyzing facial expressions was proposed by Renuka R. Londhe et al. [14]. The paper focused mainly on the study of transformed images on the face and hands of image-related pixels. Artificial Neural Networks (ANN) were used to categorize items extracted from 6 universal emotions such as anger, disgust, fear, excitement, sadness and surprise. Other existing programs often use the use of human speech or in some cases or use additional hardware for automating playlists, thus increasing the cost involved. After the training information has been collected, you move on to the next stage of machine learning: Data preparation, where the data is uploaded to the appropriate location and prepared for use in machine learning training. Here, the data is first compiled and the order is randomly generated as the data order does not affect the read. For the purpose of feature recognition, facial features are divided into two major categories such as the feature extraction used for appearance and the Geometric feature extraction by Zheng et. al [15]. This paper primarily aims at and focuses on resolving the issues involved in the existing system by building a fully automated music player for the generation of customized playlists based on computers mounted on facial features and thus avoiding the hiring of any additional hardware. It includes a random function and appetizer that converts a playlist made of ancestor to another similar level of randomly generated mood playback over a period of time.

III. METHODOLOGY

The algorithm proposed in this case includes a sensory music recommendation system that provides the generation of customized playlists depending on the user's mood. The proposed method involves following modules

1) *Installation Image:* According to the design of the construction photography it is the first work to be done. We will take a photo of the user through the webcam. There are certain conditions when capturing a user-like image should be close to the camera in the case of multiple users and the face should not be moved.
2) *Training Images:* The training image is provided with image data.
3) *Face Detection:* Only faces are detected without the entire image by performing certain algorithms. We use the Viola-Jones algorithm to find faces.

4) *Landmark Point Extraction:* In this module 68 Landmark point is available and provided with SVM for training and testing.
5) *Training Data:* The SVM training data is stored on file and associated labels are also stored. The training details consist of 68 points that are recognized in the JAFFE detail images.
6) *SVM Training and Educated SVM:* In this case SVM training information is collected and provided for SVM training. Labels are also provided manually by SVM for self-training. With this data and label the SVM is trained.
7) *Music Player:* This is a real music player where all songs organized based on user emotions are shown to the user and the user can choose the song at their own risk

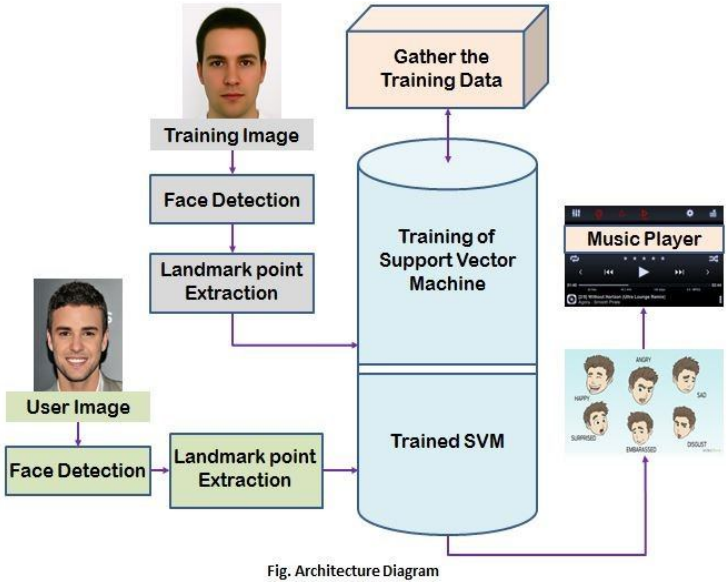


Fig.1 Methodology

IV. RESULTS AND OPERATIONS

A. User login Screen and Registration Screen

When a user first accesses the application, they need to sign up for the request as shown in Fig. 2. The user must provide a valid email address, name and password. If the user forgets his password an email reset password is sent to the registered email address. All information is working and creating accounts is complete. Users cannot create multiple accounts with the same email.

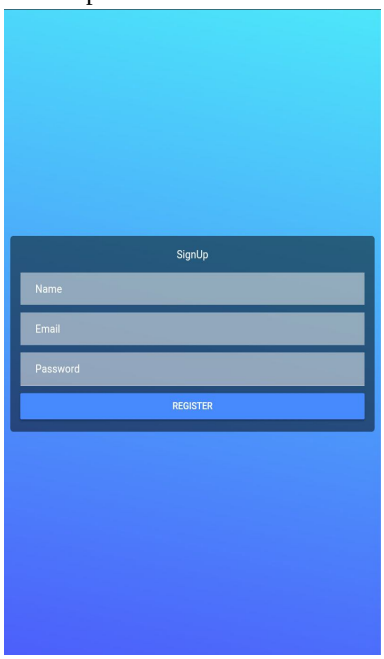


Fig 2. Signup

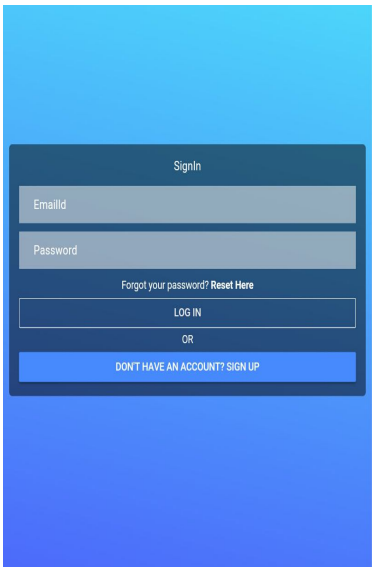


Fig. 3. Login

Fig. 3 shows the user login screen. The user must provide the registry email address and the associated password for the application login and the information will be stored in the cloud. The app stores the user credential information as default. The user can opt out of the app at any time.

B. Emotion Detector Category

When the SDK is loaded, an investigator screen appears and the device's camera is activated to capture the senses. If the app is running for the first time, the app is requesting media and camera access permissions.

Fig.4. Face Detection Phase

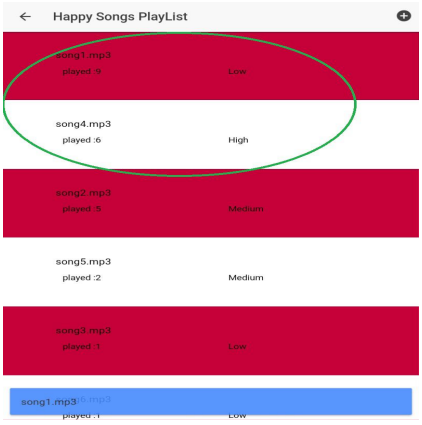


Fig.5. Generating Playlist

V. CONCLUSION

This project has been developed to give us great advances in the field of machine learning technology. The EDMP player fully complements the music processing based on the user's feelings such as happy or sad. Therefore, our work is entirely intended to develop a user-based player and help refresh when there is free time or leisure time if we want to hear music based on our current situation.

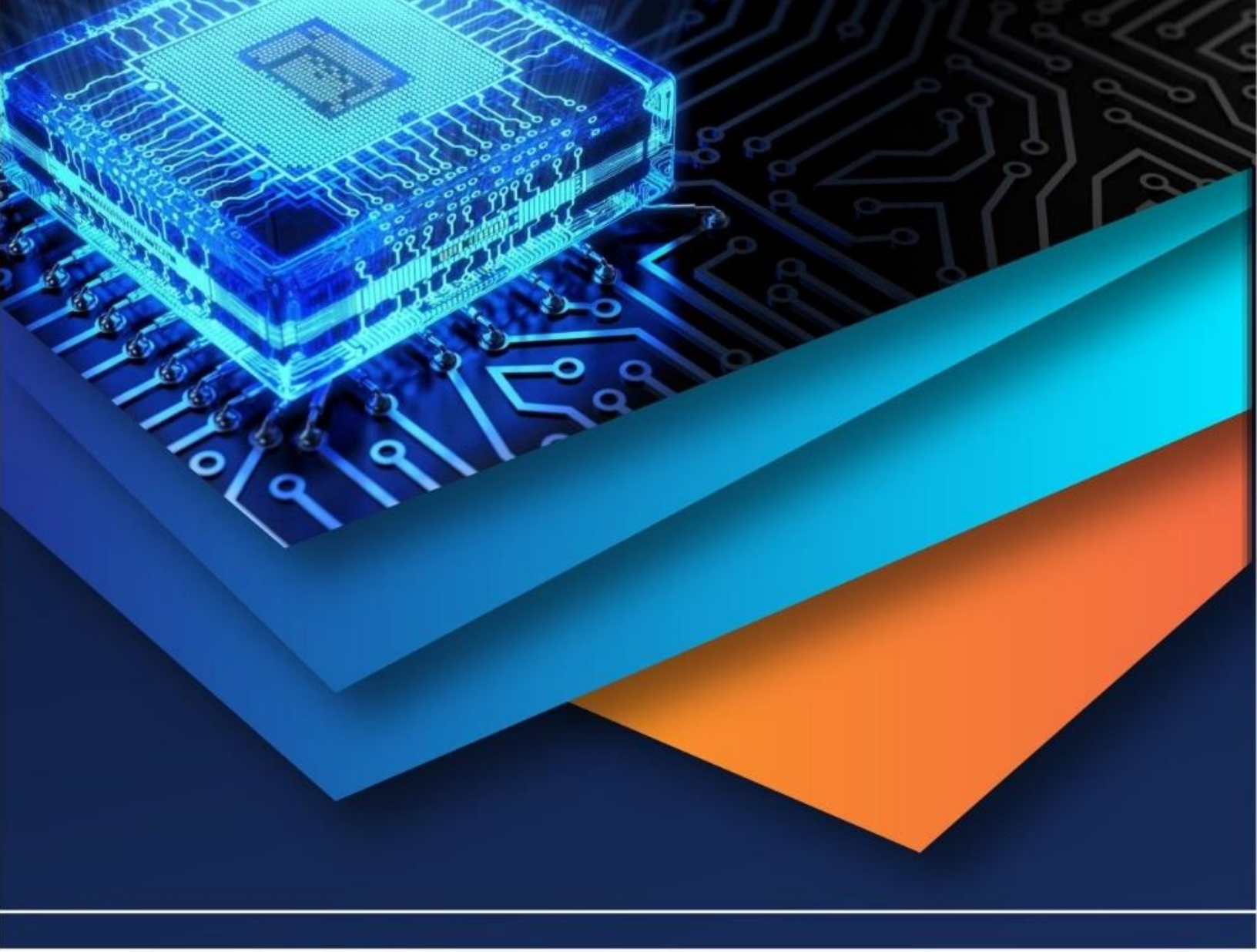
Audio Player Audio is used to rotate and provide a better user experience for the end user. The app solves the basic needs of music listeners without bothering them as existing programs do: it uses technology to expand the program's interaction with the user in many ways. It reduces the end user's functionality by capturing the camera using a camera, determines their mood, and raises personalized playlists with an improved and more efficient system. The user will also be notified of songs to play, to help them free up storage space.

VI. FUTURE ENHANCEMENT

The future level of the program will devise a potentially useful approach to the treatment of music therapy and provide the music counselor with the help needed to treat patients with mental disorders such as depression, anxiety, major depression and trauma. The proposed system also prevents future unintended consequences produced in extreme light conditions and poor camera resolution. The app can be improved by changing and adding less functionality.

REFERENCES

[1] Chun-Hung Lin and Ja-LingWu, “Automatic Facial Feature Extraction by Genetic Algorithms IEEE transactions on image processing”, vol. 8, no. 6, June 1999.
[2] Nikhil Zaware, Tejas Rajgure, Amey Bhadang, D.D. Sakpal “EMOTION BASED MUSIC PLAYER” International Journal of Innovative Research & Development, Volume 3, Issue 3, 2014.
[3] A. habibzad, ninavin, Mir kamal Mirnia, “A new algorithm to classify face emotions through eye and lip feature by using particle swarm optimization”.
[4] Henal Shah, Tejas Magar, Purav Shah and Kailas Devadkar “AN INTELLIGENT MUSIC PLAYER USING SENTIMENTAL ANALYSIS” International Journal of Innovative and Emerging Research in Engineering, Volume 2, Issue 4, 2015.
[5] Anukriti Dureha “AN ACCURATE ALGORITHM FOR GENERATING A MUSIC PLAYLIST BASED ON FACIAL EXPRESSIONS” International Journal of Computer Applications, Volume 100-No.9, 2014.
[6] Michael lyon and Shigeru Akamatsu, ― “Coding Facial expression with Gabor wavelets.”, IEEE conf. on Automatic face and gesture recognition, March 2000.
[7] O. Lartillot, and P. Toiviainen: “A MATLAB TOOLBOX FOR MUSICAL FEATURE EXTRACTION FROM AUDIO,” Proceedings of the International Conference on Digital Audio Effects (DAFx’07), 2007.
[8] S. Dornbush, K. Fisher, K. McKay, A. Prikhodko and Z. Segall “Xpod- A Human Activity and Emotion Aware Mobile Music Player”, UMBC Ebiquity, November 2005.
[9] Chang, C. Hu, R. Feris, and M. Turk, “Manifold based analysis of facial expression,” Image Vision Comput , IEEE Trans. Pattern Anal. Mach. Intell. vol. 24, pp. 05–614, June 2006.
[10] Z. Zeng, M. Pantic, G. I. Roisman, and T. S. Huang, “A survey of affect recognition methods: Audio, visual, and spontaneous expressions,” IEEE. Transaction Pattern Analysis, vol 31, January 2009.
[11] Jia-Jun Wong, Siu-Yeung Cho, “Facial emotion recognition by adaptive processing of tree structures”.
[12] Thayer “The biopsychology of mood & arousal”, Oxford University Press ,1989.
[13] Chun-Hung Lin and Ja-LingWu, Automatic Facial Feature Extraction by Genetic Algorithms IEEE transactions on image processing, vol. 8, no. 6, June 1999.
[14] Renuka R. Londhe, Dr. Vrushshen P. Pawar, ― “Analysis of Facial Expression and Recognition Based On Statistical Approach”, International Journal of Soft Computing and Engineering (IJSCE) Volume-2, May 2012.
[15] Z. Zeng ―A survey of affect recognition methods: Audio, visual, and spontaneous expressions, IEEE. Transaction Pattern Analysis, vol 31, January 2009.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY