




Maharashtra Shikshan Samiti

Maharashtra Mahavidyalaya, Nilanga.

**CERTIFICATE**

This is to certify that the project Music Recommendation based on face Emotion has been carried out by Shaikh Yejaja Usman and Dhairya Rohan Madukar under my guided in partial fulfillment of the degree i.e. Bachelor of Computer Application of SRTMUN, Nanded during the academic year 2023-24

  
Name of the Guide

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## Declaration

We, the undersigned, hereby declare that this report entitled Music Recommendation based on face Emotion is a genuine work prepared by me under the guidance of Mr. Kiwde Sir

The empirical finding in the project are based on data collected by me. The matter presented in this project is not copy from any source. I understand authorization deems to fit. This work has not been for the award of any degree or diploma, either to SRTMU, Nanded or any other University.

This work is humbly submitted to SRTMU, Nanded University for the award of degree in Bachelor of Computer Application

Date:-

Shaikh Yejaja Usman

Place:

Dhairya Rohan Madukar

## Abstract

We propose a new approach for playing music automatically using facial emotion. Most of the existing approaches involve playing music manually, using wearable computing devices, or classifying based on audio features. Instead, we propose to change the manual sorting and playing. We have used a Convolutional Neural Network for emotion detection. For music recommendations, Pygame & Tkinter are used. Our proposed system tends to reduce the computational time involved in obtaining the results and the overall cost of the designed system, thereby increasing the system's overall accuracy. Testing of the system is done on the FER2013 dataset. Facial expressions are captured using an inbuilt camera. Feature extraction is performed on input face images to detect emotions such as happy, angry, sad, surprise, and neutral. Automatically music playlist is generated by identifying the current emotion of the user. It yields better performance in terms of computational time, as compared to the algorithm in the existing literature.

## Keywords

*Face Recognition, Feature extraction, Emotion detection, Convolutional Neural Network, Pygame, Tkinter, Music, Player, Camera.*

## Software Resources Required :-

- Python
- Open CV

## Area of Project :-

- Convolutional Neural Network (CNN)
- Open CV
- Deep Learning

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## 1. 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 music played a crucial role in relating arousal and mood. Two of the most important functions of music are its ability to help participants 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.

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The meter, timbre, rhythm, and pitch of music are managed in areas of the brain that affects emotions and mood [2]. Interaction between individuals may be a major aspect of lifestyle. It reveals perfect details and much of data among humans, whether they are in the form of body language, speech, facial expression, or emotions [3]. Nowadays, emotion detection is considered the most important technique used in many applications such as smart card applications, surveillance, image database investigation, criminal, video indexing, civilian applications, security, and adaptive human-computer interface with multimedia environments.

With the increase in technology for digital signal processing and other effective feature extraction algorithms, automated emotion detection in multimedia attributes like music or movies is growing rapidly and this system can play an important role in many potential applications like human-computer interaction systems and music entertainment. 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]. The proposed system detects the emotions of a person, if the person has a negative emotion, then a certain playlist will be shown that includes the most related types of music that will enhance his mood. 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].

The dataset we used for emotion detection is from Kaggle Facial Expression Recognition [5]. Dataset for the music player has been created from Bollywood Hindi songs. Implementation of facial emotion detection is performed using Convolutional Neural Network which gives approximately 95.14% of accuracy [2].