

Emotion based music system



CONTENTS

- ABSTRACT
- PROBLEM STATEMENT
- INTRODUCTION
- LITERATURE SURVEY
- REQUIREMENTS
- EXISTING SYSTEM
- PROPOSED SYSTEM
- BLOCK DIAGRAM
- DESIGN
- FUTURE SCOPE
- REFERENCES



ABSTRACT

Every individual human has completely different faces, however their expression tells us the same story and it notably plays a significant role in extraction of an individual's emotion and behavior.

music is the purest form of art and medium of expression, which is known to have a greater connection with a person's emotion.

Emotion based music system is a modern approach that provides the user a automatically generated playlist based on users mood and behavior.

This system itself selects songs according to the current mood of the user. This system has noble ability to lift one's mood.

The proposed model will extract facial expressions of user to determine the current emotion by web cam Once emotion is detected, playlist of songs suitable to mood of the user will be presented to him.

The system involves the image processing, facial detection processing, mood classification and data base collection.

Problem statement

- To build an application which detects the user emotion and play the songs based on the user mood

Introduction

In today 's world, with the increasing advancements in the field of multimedia and technology, various music players have been developed with features like fast forward, reverse, variable playback speed, genre classification, streaming playback with multicast streams and including volume modulation, etc. These features might satisfy the user 's basic requirements, but the user has got to face the task of manually browsing the playlist of songs and choose songs supported their current mood and behaviour.

Emotion based music player is approach that helps the user to automatically play songs according to the emotions of the user. It recognizes the facial emotions of the user and plays the songs according to their emotion.

The webcam captures the image of the user. It then extracts the facial features of the user from the captured image. Facial expression categorized into happy, sad, neutral, surprised etc... The foremost concept of this project is to automatically play songs based on the emotions of the user. It aims to provide user-preferred music with respect to the emotions detected.



Literature survey

There are several applications that provides facilities and services for music playlist generation or play a particular song and in this process all manual work is involved. Now to provide there are various techniques and approaches have been proposed and developed to classify human emotional state of behavior. The proposed approaches have only focused on only some of the basic emotions using complex techniques.

Usually, the user has got to face the task of manually browsing through the playlist of songs to pick . Here we are proposing an efficient and accurate model, that might generate a playlist supported current spirit and behavior of the user. Existing methods for automating the playlist generation process are computationally slow, less accurate and sometimes even require use of additional hardware like EEG or sensors.

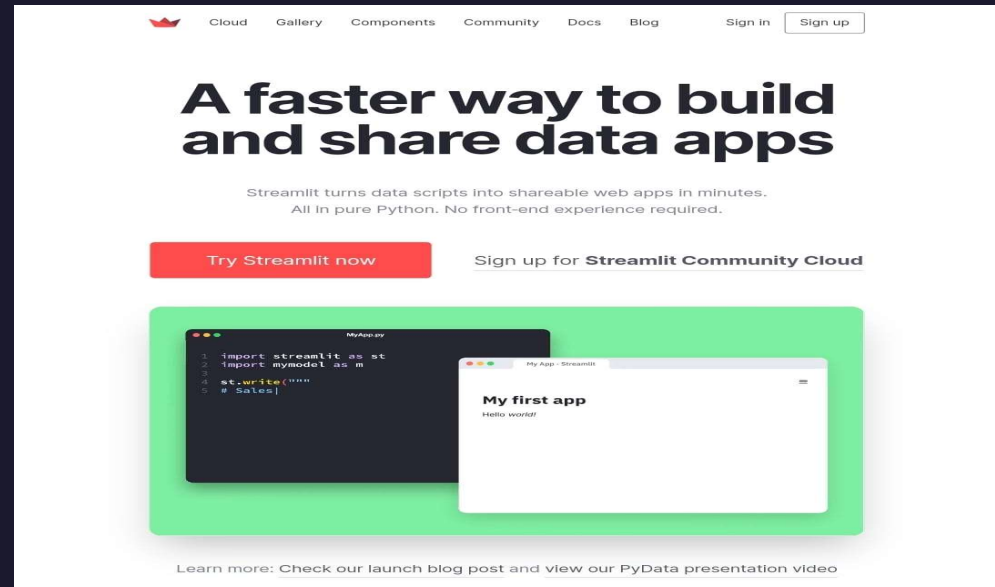
This system supported real-time extraction of facial expressions also as extracting audio features from songs to classify into a selected emotion which will generate a playlist automatically such the computation cost is comparatively low.

Requirements



modules

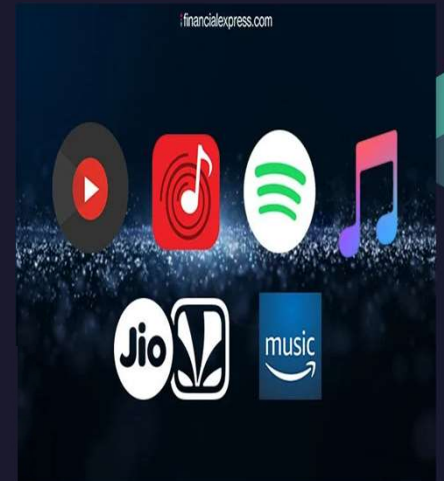
```
import streamlit as st
from streamlit_webrtc import webrtc_streamer
import av
import cv2
import numpy as np
import mediapipe as mp
from keras.models import load_model
import webbrowser
```



Streamlit is an open source app framework in Python language. It **helps us create web apps for data science** Streamlit is an open source app framework in Python language. It **helps us create web apps for data science and machine learning in a short time**. It is compatible with major Python libraries such as scikit-learn, Keras ,PyTorch,NumPy, pandas, Matplotlib etc.

Existing system

- Currently, there are many existing music player applications. Some of the interesting applications among them are:
- • Saavan and Spotify - These application gives good user accessibility features to play songs and recommends user with other songs of similar genre.
- • Moodfuse - In this application user should manually enter mood and genre that wants to be heard and moodfuse recommends the songs-list.

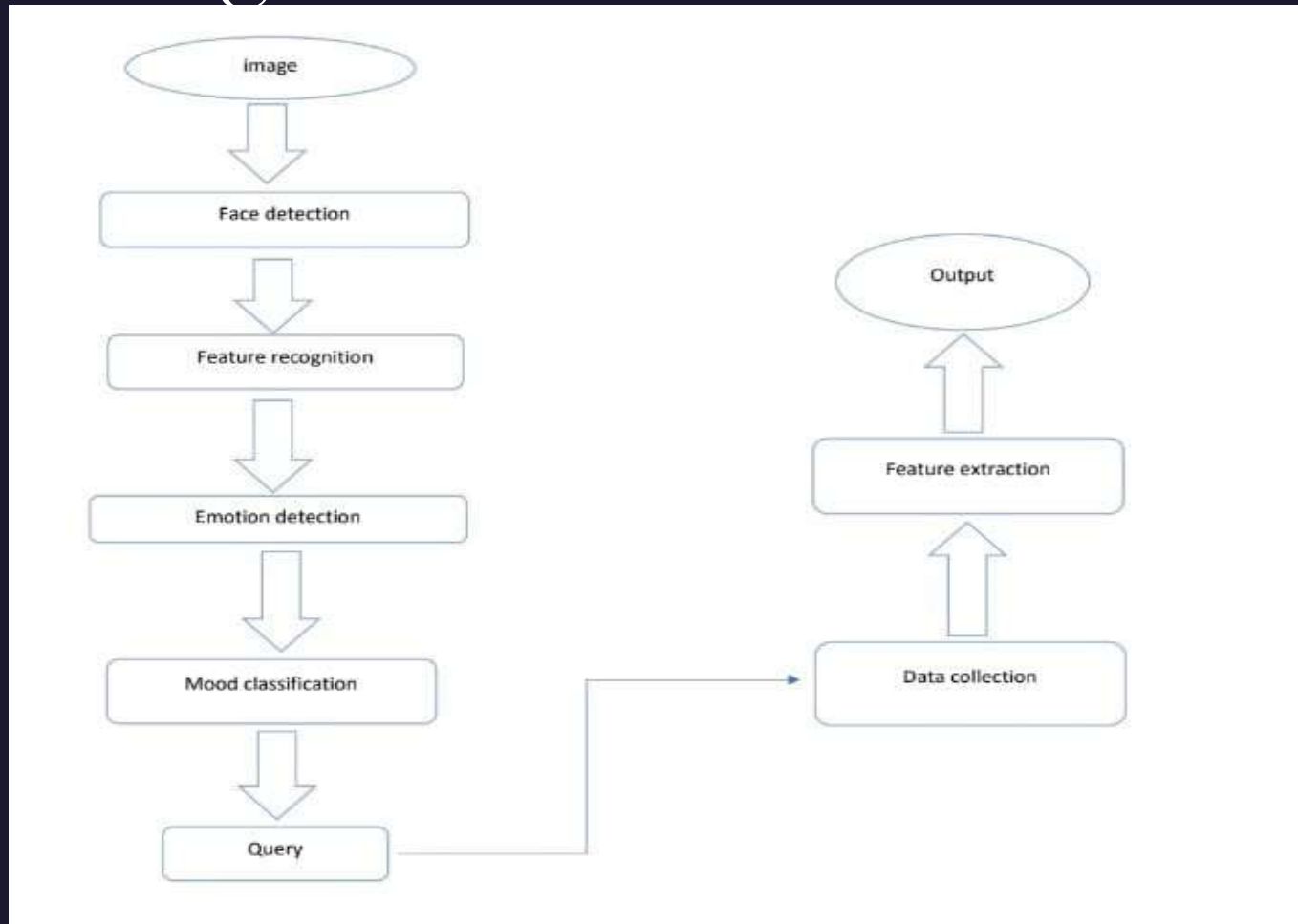


Proposed system

- The proposed system can detect the facial expressions of the user and based on his/her facial expressions extract the facial landmarks, which would then be classified to get a particular emotion of the user.
- Once the emotion has been classified the songs matching the user's emotions would be shown to the user.
- The system classifies emotion directory for playing song. We have chosen this 5 Emotions they are:



Block Diagram



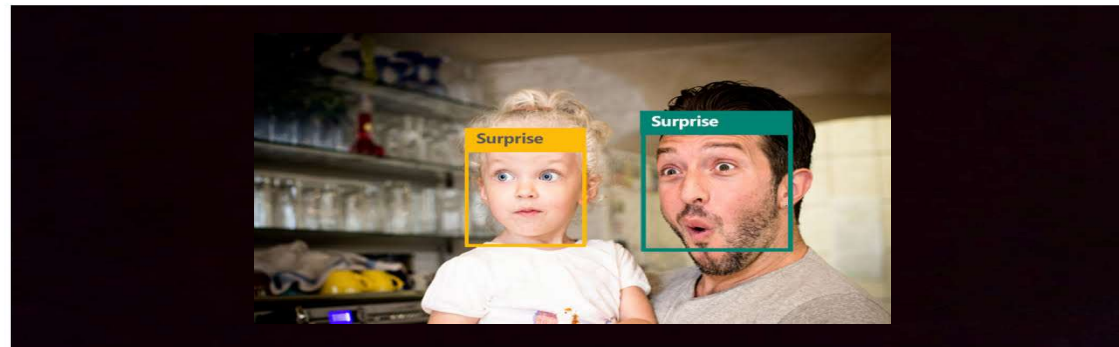
Design

Emotion Based Music Recommender

Language

singer

Recommend me songs



STOP

Recommend me songs

Future scope

- We would like to built an app for easy access of our application.
- Image capturing can be made more efficient in low light environment.
- More accurate playlist can be generated.

References

- H. Immanuel James, J. James Anto Arnold, J. Maria Masilla Ruban, M. Tamilarasan, R. Saranya” EMOTION BASED MUSIC RECOMMENDATION SYSTEM”
- Hafeez Kabani, Shaik Khan , Omar Khan , Shabana Tadvī ”Emotion Based Music Player” International Journal of Engineering Research and General Science Volume 3, Issue 1, January-February , 2015
- Shlok Gikla , Husain Zafar, Chuntan Soni, Kshitija ”SMART MUSIC INTEGRATING AND MUSIC MOOD RECOMMENDATION”2017 International Conference on Wireless Communications, Signal Processing and Networking
- T.-H. Wang and J.-J. Lien, “Facial Expression Recognition System Based on Rigid and Non-Rigid Motion Separation and 3D Pose Estimation” J. Pattern Recognition , vol. 42, no. 5, pp. 962-977, 2009
- Srushti Sawant, Shraddha Patil , ”EMOTION BASED MUSIC SYSTEM”, International Journal of Innovations & Advancement in Computer Science, IJIACS ISSN 2347-8616 volue 7, Issue 3 March 2018

Thank You

