PROJECT SYNOPSIS

ON

"Music Recommendation System Based on User's Facial Emotion"

University of Pune

SUBMITTED TO SAVITRIBAI PHULE PUNE UNIVERSITY

SUBMITED BY

Name: Shubham Sanjay Sahane.

Roll No: 106

UNDER THE GUIDANCE OF

Sinhgad Institutes

Department of Masters of Computer Application
Sinhgad Technical Education Society's
Sinhgad Institute of Business Administration and Research Kondhwa (Bk.), Pune 411048 MCA II YEAR (Sem-III)

Synopsis

Name : **Shubham Sanjay Sahane.**

Roll No. : **106**

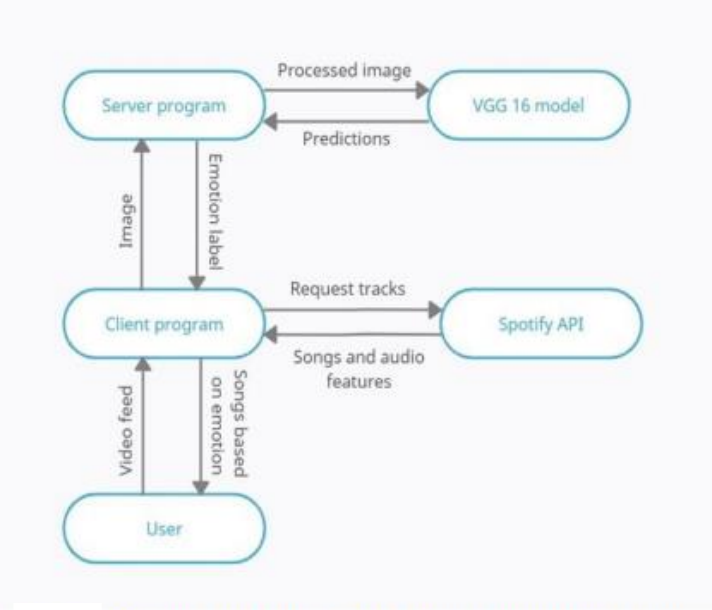
Project Topic: Music Recommendation System Based on User's Facial Emotion

Abstract:

Face detection and emotion selection is the one of the current topics in the security field which provides solution to various challenges. Beside traditional challenges in captured facial images under uncontrolled settings such as varying poses, different lighting and expressions for face recognition and different sound frequencies for emotion recognition. For the any face and emotion detection system database is the most important part for the comparison of the face features and sound Mel frequency components. Music is one of the most fruitful media as it can instill deep feelings and marsh listeners with subliminal messages. It skillfully plays with our emotions which in turn influence our mood. Books, movies and television show are a few other means but, in disparity to these, music convey its message in sheer moments. It can aid us when we are feeling low and entrust us. When we listen to sad songs, we tend to feel a downswing in mood. When we listen to happy songs, we feel happier. The sentiment analysis has been explored by several Internet services to endorse contents in line with human emotions, which are expressed through casual texts posted on social network. Music recommendation will mainly work on enhancing user's mood by providing song by detecting the facial expression of the end user and according to its expression it recommends the preferrable song. This paper extracts the human expression and suggest the song according to it and if the user accept that song then the song starts to play.

Introduction:

Song Recommendation System is used to recommend songs based on factors that have lyrics similarity between songs, lyrics features of songs, metadata of songs using Artificial Neural Network (ANN) and KNN Regression algorithm. Recommendations are also made formed on the same artist. 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 classify 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]. The process of recommending song which is commonly used among users and clustering of data (Spotify dataset) is shown the figure given below.



System Architecture of Music Recommendation System Using Emotion Recognition

Problem Statement:

Music has always been known to change people's moods. Capturing and recognizing a person's emotion and displaying appropriate songs matching the person's mood can gradually calm their mind and end up giving a pleasing effect.

People express their emotions primarily through their facial expressions. Our system aims to capture a person's emotion through facial expressions. The user's current emotion is used to generate an automatic music playlist. When compared to the algorithm in the existing literature, it performs better in terms of computational time.

Purpose of System:

The application aims to provide a simpler, additional hardware-free and reliable emotion-based music system to the operating system users. The Emotion-based music program would help people who are searching for music driven on the emotion and emotional behavior. It could help to reduce the search time for music and thus reduce the unnecessary computational time and thus increase the overall accuracy and efficiency of the system. The application solves the basic needs of music listeners without troubling them as existing applications do: it uses technology to increase the interaction of the system with the user in many ways. It eases the work of the end-user by capturing the image using a camera, determining their emotion, and suggesting a customized playlist from Spotify Premium account through a more advanced and interactive system.

Objectives:

- The application aims to provide a simpler, additional hardware-free and reliable emotion-based music system to the operating system users.
- The Emotion-based music program would help people who are searching for music driven on the emotion and emotional behavior.

Hardware requirement:

- Processor : Intel i3 2.16GHz and Higher
- Memory : 256 Ram
- Hard Disk : 40 GB

Software requirement:

- Technology used : HTML, CSS, JavaScript, Python(Django Framework).
- Database Server : MySQL
- Operating system : Windows 10
- Browser : Google Chrome, Mozilla Firefox

Scope:

This system does have scope for improvement in the future. There are various aspects of the application that can be modified to produce better results and a smoother overall experience for the user. Some of these that an alternative method, based on additional emotions which are excluded in our system as disgust and fear. This emotion included supporting the playing of music automatically. The future scope within the system would style a mechanism that might be helpful in music therapy treatment and help the music therapist to treat the patients suffering from mental stress, anxiety, acute depression, and trauma.

Reference:

- *https://www.researchgate.net/publication/344869977_Emotional_Detection_and_Music_Recommendation_System_based_on_User_Facial_Expression*
- *https://www.researchgate.net/publication/354855186_Music_Recommendation_Based_on_Face_Emotion_Recognition*
- *https://iopscience.iop.org/article/10.1088/1757-899X/912/6/062007/pdf*