

Smart Emotion Detection System and Mood Enhancement using Music Player and Books



^{#1}Arshin Sayyad, ^{#2}Pooja Doddamani, ^{#3}Prof. Aditi Das

¹arshin3105@gmail.com

²pooja.doddamani2805@gmail.com

^{#12}Department of Information Technology,
PCET'S NMVP NMIET Talegaon[dh],
Savitribai Phule Pune University Pune-410506, India

ABSTRACT

This project sets forth a technique to automatically analyze emotional duplexity and uncertain emotional experience using Linux based system. Coordinates, range and motion of tracked points were implemented to generate characteristics from visual input that catch users' expressions, head, face motions as well as face movement. Espeak and Pytsx and Face API was used for estimation of features. A merged property vector was created by feature level fusion along with Haar-cascade classifier used for detecting emotions. Real – time volunteers and actions are used to record concurrent uncertain emotional experience. As per estimated, result system will play songs and display books list, along video links.

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I. INTRODUCTION

Emotion detection has major applications with regard to the field of science, medicine, merchandise, protection as well as surveillance. Machines can amplify human-computer interaction by precisely estimating the human expressions and acknowledging those emotions. Current facts have mainly studied automatic detection of a single expression. But psychology as well as behavioural scientific study show that humans can concurrently experience while expressing mixed emotional sentiments. For example, an individual can feel happy as well as sad simultaneously. In this research, the six fundamental emotions (happiness, sorrow, shock, rage, fear, displeasure, normal) were combined and used. Main objective of this research is evolving features which capture data based on facial expression to understand multiple what the user is feeling. As per the single-label grouping problem, every interpreted feature-vector sample is only linked to one single class label. However, the multiple coincident emotion detection is a multi-label classification problem.

In a multi-label classification problem, each feature-vector sample is linked with several labels such as existence of at least one of the six primary emotional expressions. A

multi-label classification is receiving increased attention, while being applied to many domains such as text, music, images and video based systems, security and bioinformatics.

The human emotion plays a very important part during human interactions. They can disclose attentiveness, purpose, and the individual's intellectual condition. A person's facial appearance, according to a study, is proved to be the most "powerful", inherent, unspoken and instant way for humans to convey sentiments and reveal intentions. The facial expressions of a user out of the many characteristics, are only one that pertain to emotion, but they may be the most discernible. Due to the diversified neighbouring along with the aesthetic setting that a humans have, the amount of emotions individuals use cannot be rigorously defined.

Music, as a channel of expressions, has always been an approved choice to portray and recognize human emotion. Dependable emotion based classifying systems can go a long way in helping us grasp their meaning. However, study in the field of emotion-based music classification has not produced optimal results.

This paper examined recognition of concurrent emotional ambivalence and mixed feelings. Additionally, a study examined two concurrent emotions (duality) for the purpose of limiting the research scope based on availability of scenarios. This was done so that the experimental design would be realistic. Each volunteer could indicate dual emotions without difficulty and researchers could interpret the data without ambiguity. This research executed a multimodal emotion detection system with several check box input in order to enhance interpreting the concurrent emotions during user-interface software. Formerly uniform systems were used to start songs as a plain music player by manual selection of songs, and the user would decide to play songs according to his/her preference. According to the proposed system, the process of deciding what songs to play, will be done by the system itself by recognising real-time human emotion (happy, sad, angry, surprise and excitement).

II. LITERATURE SURVEY

[1] In S. Patwardhan, we inspect the result of transferring emotion-rich features from source to target networks on categorization accuracy along preparation time within a multimodal setting in order to achieve vision based emotion recognition.

[2] In M. Liu, Virtual agents expressing emotions widely enhance user interaction by utilizing more natural means of communication. However, as the effect of the existing technology, virtual assistants often only generate various facial expressions for conveying sentimental meaning.

[3] In RC. Ferrari, M. Mirza, This paper presents the initial system implementation of multimodal emotion recognition using mobile devices as well as creation of an affective database through a mobile application. The identifier works in a mobile tutorial application for identifying the various emotions of the user as they communicate with the device.

[4] In G. M. Knapp, The study of the effect of the motion of emotion-rich features from input to output matrix with classification precision as well as time for preparation within multimodal context to achieve visual based emotion recognition.

III. LITERATURE REVIEW

According to our proposed system, we validate the concept of an effective music player which is based on User's Emotions. As per this system we are going to play music stored on our phones according to the mood detected inside input image. We will be using face detection and Contour Detection algorithms to detect mood. Input image

will be given (e.g. selfie image) to the application and will be uploaded through the service to local server. Server will do analysis of image and after detecting mood from image it will reply to system with detected mood. Then our proposed system will automatically play music stored in particular mood category. The list of songs can also be updated by the user.

User: Use the application.

Server: Connection of User with database.

Database: Preserving data related to Facial attributes, music and books transmitted.

Our system has chiefly three modules : user module, emotion detection module and video recommendation module.

Various operations involved in these two modules are:

- User-Module:

User can use the application and store songs, books, and videos in the system.

- Emotion-detection-Module:

According to the facial expression, it will detect the mood of the user and show a list of songs or books, and it will also give video recommendations.

- Video-suggestion-Module:

As per the mood of the user, this module will give suggestions of various links of videos.

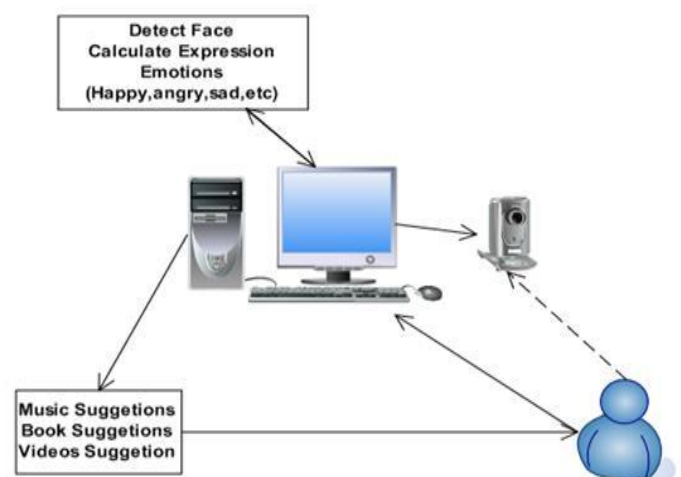


Fig 1. System architecture

Well as the technologies used to develop this application is also feasible and hence a very practical application.

Main motive of this application is automatically identifying users' mood and related music (Happy, Angry, Stressed, Normal) according to the mood, will play through Linux based system. Music represents the intrinsic emotional sentiment of a music clip. It helps to understand music, search and some music-related applications. Currently, users look forward to more semantic metadata to catalogue music, such as resemblance, style and mood.

IV. CONCLUSION

Thus we conclude that, music plays an important role in enhancing mood of the user in various daily situations. Proposed system has been made easily available to everyone which can be listened to almost anywhere. This system directly depends upon user's facial expressions, so it is very effective.

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