Mood Detector Food Selector

By Machine Learning

Final Year Project Proposal
By

Names

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1. Introduction:

1.1 Purpose of Document:
In this work, user's emotion using its facial expressions will be detected. These expressions can be derived from the live feed via system's camera or any pre-existing image available in the memory. Emotions possessed by humans can be recognized and has a vast scope of study in the computer vision industry upon which several researches have already been done. The work has been implemented using Python. The scanned image (testing data set) is being compared to training data set and thus emotion is predicted.After the mood is predicted the food corresponding to the recognized mood will show the menu which food is suitable to his/her mood.And after or he/she can cook the food or order it from restaurant.The objective of this paper is to develop a system which can analyze the image and predict the expression of the person. The study proves that this procedure is workable and produces valid results.

1.2 Project Overview:
Project is solving real time of world that what to cook. This application will detect the mood of the person and tell the person what to eat.

1.3 Scope:
The project will be interesting, as it is helping people in know what to eat according to there taste and mood. Everyone's basic need and interest is food. Most of the people daily confuse themself, so by using this application they can get interesting suggestions. Suggest the food to people according to there mood and interest.

2. Functional Requirements:
- Firstly we build an algorithm for face detection.
- Then develop an algorithm for face recognition. There can be more than face in the image detect the main one.
- Then after this it will detect the mood of the person in the image.
- Select the food for the person according to the mood from the database.
- At the end display the food items.

3. Non-Functional Requirements

3.1 Performance Requirements:
Based on recognition system performs face detection, which prefers low-dimensional feature representation for cost-effectiveness. Application will automatically reduce the size of image by gray scaling. The system characteristics of this intelligent agent include the speed of outcome, capacity, reliability and precision of software.

3.2 Safety Requirements:
In our application the image you are adding can be choose from your gallery make sure image contain a face or your can use live image classifier which will tell you real time mood, for this make sure your camera is not blur, and is working right, because due to this system will can't recognize the face.

3.3 User Documentation:
The documentations that will be delivered along with the software, such as user manual, online help, and tutorials.

4. System Architecture

4.1:Related Work:

In order to get an enhanced image and to extract some useful information out of it, the method of Image Processing can be used. It is a very efficient way through which an image can be converted into its digital form subsequently performing various operations on it. This is a technique similar to signal processing, in which the input given is a 2D image, which is a collection of numbers ranging from 0 to 255 which denotes the corresponding pixel value.

The method involves converting an image into a 2D Matrix.

It consists of three basic steps:

1.) **Scanning the image**: A raw image is acquired which has to be processed. It can be expressed in form of pixels as stated above. The aim of this step is to extract information which is suitable for computing.

2.) **Processing and Enhancing it**: The image is converted into digital form by using a digitizer which samples and quantizes the input signals. The rate of sampling should be high for good resolution and high quantization level for human perception of different shades using different using gray-scale

3.) The obtained result describes the property of the image and further classifies the image.

4.) **Food Selection:** After the mood is predicted the food corresponding to the recognized mood will show the menu which food is suitable to his/her mood.And after or he/she can cook the food or order it from restaurant.The objective of this paper is to develop a system which can analyze the image and predict the expression of the person. The study proves that this procedure is workable and produces valid results.

Conversion of Color Image to Gray Scale

There are basically two methods to convert a color image to a gray scale image [8]:

A.) **Average Method**

In Average method, the mean is taken of the three colors i.e. Red, Blue & Green present in a color image. Thus, we get

Grayscale= (R+G+B)/3;

But what happens sometimes is instead of the grayscale image we get the black image. This is because we in the converted image we get 33% each of Red, Blue & Green.

B) **Weighted or Luminosity Method**

To solve the problem in Average Method, we use Luminosity method. In these method, we decrements the presence of Red Color and increment the color of Green Color and the blue color has the percentage in between these two colors.

Thus, by the equation [8],

Grayscale= ((0.3 * R) + (0.59 * G) + (0.11 * B)).

We use this because of the wavelength patterns of these colors. Blue has the least wavelength while Red has the maximum wavelength.

Mood Detection

After image scanned,artificial neural network will detect the mood of the person whether his/her mood is happy,sad,angry,neutral.Then according to his mood the artificial intelligence will help out that what will person have to eat.We prepared such intelligence which will detect and show the result.

4.2:Flowchart of Emotion Detection: