Synopsis
on
Emotion Detection

Submitted by

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INTRODUCTION

- Our Emotion recognition software, powered by computer vision technology, will works by detecting a face within a live video stream or an image.

- Once a face has been detected, the software analyzes the position and movement of the facial muscles in order to determine the individuals sentiment.

- The technology will then output a confidence score for every detected emotion together with a time stamp, making it easy to match the responses to content that has been showed.

- An emotion recognition system can detect the emotion condition of a person from his image information. In this scope, an visual emotion recognition system requires to evaluate the emotion of a person from his image information.

- This Software will be used to detect people's emotions. It can be used in several areas like to measure customer satisfaction in a marketing platform, helping advertisers to sell products more effectively , online teaching platform etc.

The three main components of Emotion Detection are as follows:

1. Image Processing
2. Feature Extraction
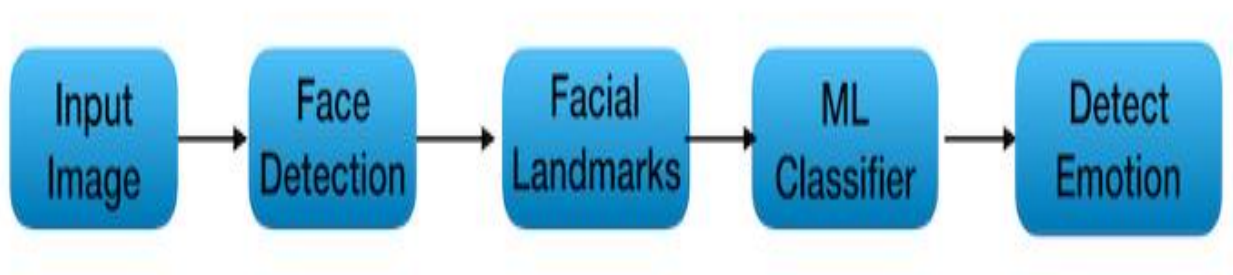3. Feature Classification

PROCESS OF DETECTING TH EMOTION:

Fig.1.1[Internet source]

Face detection:

Facial detection is an important step in emotion detection. It removes the parts of the image that aren't relevant.

Facial landmarks:

Facial landmarks are a set of key points on human face images. The points are defined by their (x,y) coordinates on the image. These points are used to locate and represent salient regions of the face, such as eyes, eyebrows, nose, mouth and jawline. One way to differentiate between two emotions is to see whether the persons mouth and eyes are open or not. We can find the euclidian distance between the points specifically on the mouth, if a person is surprised, the distance would be more than it would be if they're not.
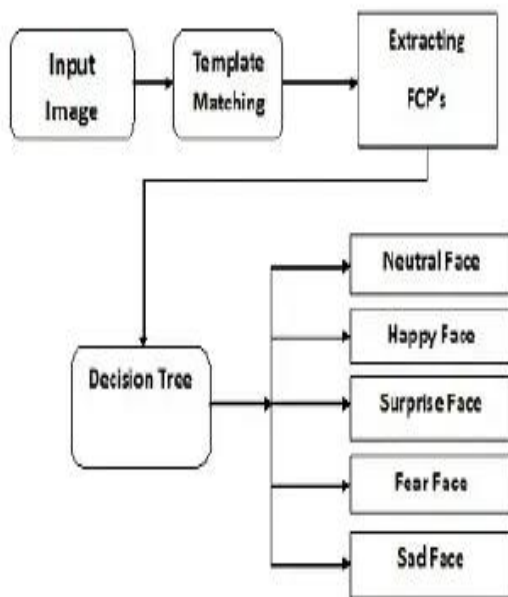
Fig 1.2 [Internet Source]

1.Software Requirements –

- Python 3 or above

- Library – open
  cv,keras,dlib.

- Development and compatible tools
  used - Pycharm, Anaconda

2.Hardware requirement -

• Central Processing Unit (CPU) - Intel Core i5 6th gen or AMD processor equivalent.

• RAM - 8 GB minimum, 16 GB or higher is recommended.

• Graphics Processing Unit (GPU) - NVIDIA GeForce GTX960 or higher

• Inbuilt Camera or Webcam Support

• Operating System (OS) - Ubuntu or Microsoft Windows 10

• Storage - 20 GB

2.Modules Description -

   This module consists of the data that we have used in the formation of this project or the system i.e., Mood Recognition System. The data set that we have used is the Keras data set. Data set consist of various emotions with each picture consisting of specified emotion. Using all this data collecting from the data set available in the Keras Data set, we have used in our Code as by implementing libraries to recognize the emotion of a person. 19 Different modules that we have used in this Recognition system are: -

1. Active Module

2. Detecting Module

3. Emotions Module

4. Exit Module

Active Module: -
This module is used for stating the Recognition System window where a person is supposed to keep the face with required brightness and face.

Detecting Module: -
This module is used for detecting the face in the Recognition System window where a person is supposed to keep the face with required brightness and face.

Emotions Module:
This module is used for detecting the face in the Recognition System window where a person is supposed to keep the face with required brightness and face. After recognizing the face, it will present the emotions of the person, if he is happy, sad, angry, feared, confused, surprised etc.

Exit Module: -
This module is used for closing the window of the Recognition System, where a person was detecting his/her emotions.

Counclusion-

- Our project "Emotion Detection" is a Web Application .
- It will be developed by using different technologies Like Python and Machine Learning and it will be able to read images via camera access and show results after analysis.
- It will work in different sectors like healthcare, education etc.

How to serve the society:

1. For online admissions and interviews.
2. Emotion recognition for A/B campaign testing.
3. Emotion Analysis for online education.
4. Emotion recognition in health care.
5. Emotion analysis in video game testing.