Emotion Detection Conception Phase

First of all I want to clarify that I already have a working emotion detection script. I made the script in October when it was said to better not make any submissions at that time and I forgot about it.

I tried to develop a script that is as simple as possible using the minimum amount of code required. To achieve this, I decided to use three different libraries for this project. These libraries are:

Libraries

1. CV2
   This library is used to read the images; it also puts a grid over the image and I used the CV2 library to store the image as variable (which then gets used as a parameter)
2. DeepFace
   The DeepFace library is an open-source library and is used for face recognition and facial attribute analysis. In this project the library is solely used for face detection and emotion recognition. But the library can also be used for other use cases such as age detection, gender detection and even race detection.
3. Matplotlib.pyplot
   Matplotlib is a library which can be used to show plots. In this project the library is used to show the image which is then being analyzed and show the results of every single emotion in a bar chart.

The development process of this project is quite simple:

Process

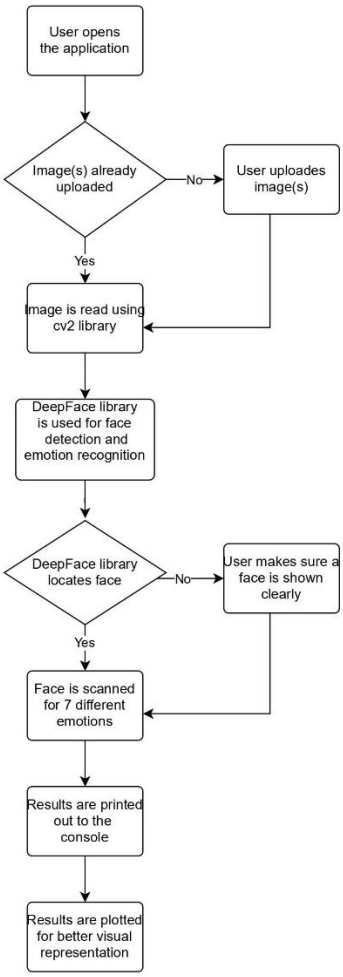
Firstly, all the above-mentioned libraries need to be downloaded and imported.

Secondly, the image(s) need to be uploaded (I used google colab for this project as it was way easier to quickly upload and view the images by using the convenient drag and drop feature). And then read by calling the .imread() function from the CV2 library. After that I used the .imshow() function from matplotlib.pyplot to print the image out on the console.

Thirdly, the above read image(s) are then analyzed using DeepFaces .analyze() function, which also makes sure that a face is being detected. The analyze functions parameters can for this project set to actions= ["emotion"] so the persons emotions are being analyzed.

Lastly, the results are stored in a dictionary, which I then converted into two different list using the list(.keys()) function to extract the dictionaries keys and the list(.values()) function to extract the dictionaries values. I then plotted these two lists using the .bar() function from the matplotlib library.

ER Diagram


User opens the application
Image(s) already uploaded
No
User uploades image(s)
Yes
Image is read using cv2 library
DeepFace library is used for face detection and emotion recognition
DeepFace library locates face
No
User makes sure a face is shown clearly
Yes
Face is scanned for 7 different emotions
Results are printed out to the console
Results are plotted for better visual representation