PROJECT UPDATE

FACIAL EMOTION DETECTION

Problem statement:

We are planning to implement our project to detect facial emotions from video which uses Open CV haarcascades algorithm on video for face detection, facial key features and input it to the Deep Learning model to detect the emotion from the video. We are planning to work on emotions like angry, disgust, happy, sad, surprise and neutral.

TIMELINES:

	Study	Coding	Result	Due
Dataset	Done	Done	Done	Oct-10
Extracting facial features	Done	Done	Done	Oct-15
Developing a Neural Network Model	Done	In Progress	-	Oct-23
Experimenting with already available DeepFace for emotion recognition and calculating percentage of emotion.	Done	Done	Done	Oct-20
Video input to the model and calculate percentage of emotions.	In Progress	In Progress	In Progress	Nov 1-Nov 7

Removal of noise from the input and inputting video for facial recognition				
Training and Plotting the accuracies, predictions and confusion matrix.	Done	In Progress	In Progress	Nov5-Nov10
Error check and final code evaluation	In Progress	In Progress	In Progress	By Nov-15

Results:

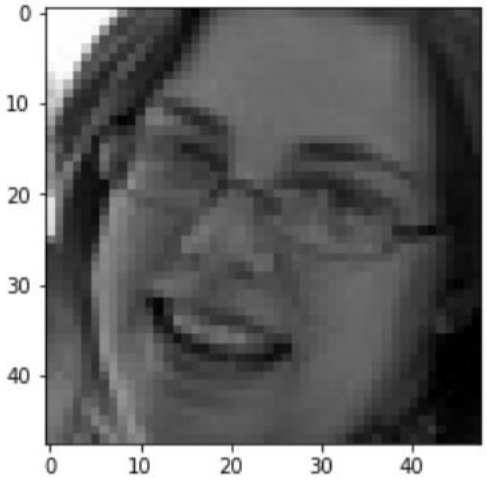
1. **DataSet:**

Sample training image imported

```
[156]: #Reading an image from train subfolder and a image from happy dir
image = cv2.imread("dataset/train/happy/Training_10019449.jpg")

#Plotting the image read
plt.imshow(image)
```

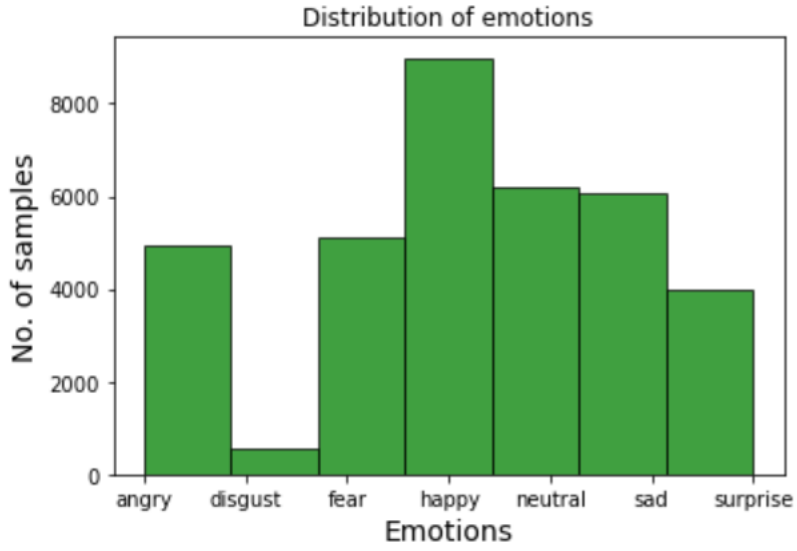
```
[156]: <matplotlib.image.AxesImage at 0x1d5199a4940>
```




```
[157]: #Getting the size of the Image
```

DataLabels Histogram Plot:

```
plt.show()
```



Exporting the data required to csv files:

```
[174]: df_train.to_csv('dataset/train.csv')

[175]: df_test.to_csv('dataset/test.csv')

[176]: df_encoded.to_csv('dataset/datasetFER_2013.csv')
```

2. Facial feature extraction:

   We used haarcascade algorithm to extract facial frontal-feature.

   Reading an image:

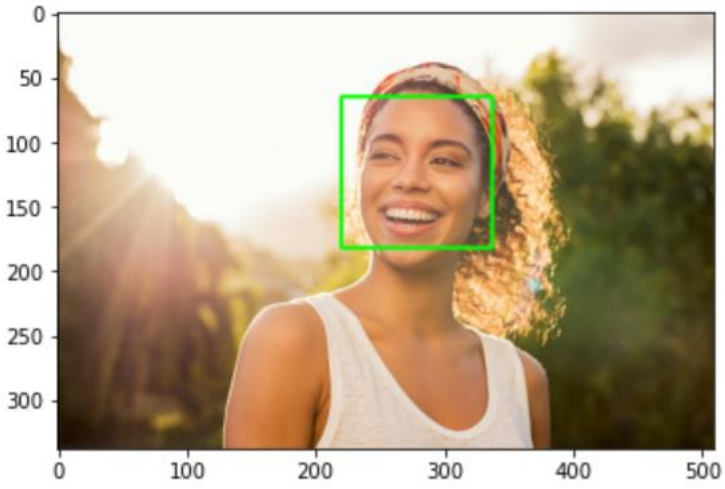
```
[6]: plt.imshow(cv2.cvtColor(image, cv2.COLOR_BGR2RGB))
```

```
[6]: <matplotlib.image.AxesImage at 0x188c3078c70>
```


```
[7]: plt.imshow(cv2.cvtColor(image, cv2.COLOR_RGB2GRAY),cmap='gray'
```

Detecting Face in the picture using haarcascade, and drawing a bounding box around the face.

```
|: <matplotlib.image.AxesImage at 0x188d03865b0>
```



Getting amount of emotions:

```
<matplotlib.image.AxesImage at 0x1890636ebe0>
```