

Project 2 - Emotion Recognition

Group 2

Output from Scripts :

Project2.sh

Train on 19282 samples, validate on 6361 samples

Epoch 1/25

32/19282 [.....] - ETA: 8:13 - loss: 0.7776 - acc: 0.2812

128/19282 [.....] - ETA: 2:10 - loss: 0.7197 - acc: 0.4375

224/19282 [.....] - ETA: 1:18 - loss: 0.7102 - acc: 0.4866

320/19282 [.....] - ETA: 57s - loss: 0.7017 - acc: 0.5188

...

Epoch 25/25

...

19282/19282 [=====] - 13s 672us/step - loss: 0.2705 - acc:

0.8953 - val_loss: 0.6236 - val_acc: 0.5748

Confusion Matrix:

[[872 503]

[597 2049]]

Classification Accuracy: 0.7264362098980354

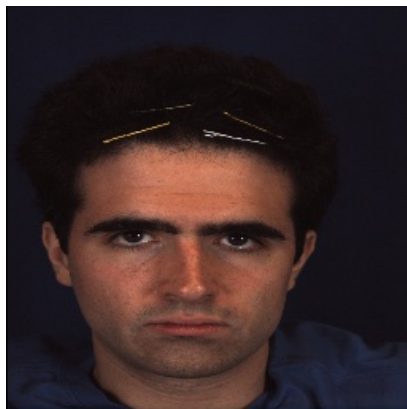
Precision: 0.8028996865203761

Recall: 0.7743764172335601

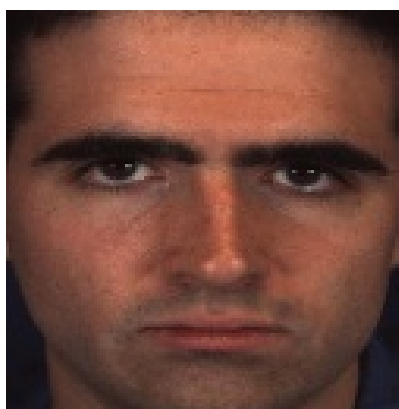
F1 Score: 0.7883801462100807

Cropping Example :

a) Original Image



b) Cropped Image



Extra Credit - Manual Data Augmentation :

We performed manual data augmentation using OpenCV, but did not train the model on the augmented data, as the non-augmented data gave better accuracy results. We used three different types of augmentations, a horizontal flip, a brightness and contrast shift, and a rotation. Each of these augmentations used a random number generator to randomly produce augmented images. Our augmented data set included all of the original images, and the training set included one augmented version of each original image in addition to the original image. Below are a few examples of augmented images that we generated. This data set had about 5% less accuracy than the data set with only cropping.



Contributions :

1. John Cullen -
 - a. Face cropping
 - b. Training the model
 - c. Group coding
 - d. Wrote report
2. Hetvi Mehta -
 - a. Face cropping
 - b. Training the model
 - c. Group coding
 - d. Wrote report
3. Subhrajyoti Pradhan -
 - a. Manual data augmentation
 - b. Group coding
 - c. Wrote report
4. Rahul Kant -
 - a. Manual data augmentation
 - b. Refactoring of the code
 - c. Group coding
5. Arya Seyfour -
 - a. Training the model
 - b. Refactoring of the code
 - c. Group coding