**LANGUAGE : MATLAB**

We have used transfer learning for the competition using MATLAB

Running of this code requires installation of some packages in MATLAB

The CNN used is GoogleNet, which is one of the best algo,earlier we used

alexnet , which gave a less accuracy.

**Please note** : I will be attaching a livescript file of code , which can be

run in sections directly, all the code listed will be copied to that live

script and used. We can run the file in given sequence also, but better way

in matlab is to run by live script

The steps are as follows-

*1. Extracting the data :*

Given the CSV file of 5000 images , we extracted the images files into

a folder corresponding to it's label using a code given .

note that this code was initially run only, once the images are into their

corresponding folder , we don't need to run it again.

run the code of file "extract data.m" first

2. *Load googlenet into a variable say net.*

3.Modify the end-2 & end layer of the net as per our requirements of OF 6

classes output only. Layers are : 'loss3-classifier' and 'output'

4. freeze the first 10 layers weights(generally this value of freeze is

between 1/3 to 2/3 of the total layers)

5.Load the data into a imagedatastore.

6.do image augmentation

7.do data augmentation. GoogleNet requires input images of[224 224 3]

(pixels).

8.train the network for you augmented data . Store this trained network

into some variable , I used trained\_net.

9. NOW MAKE SURE THAT THE IMAGES GO IN ASCENDING ORDER OF FILENAME,

USED A CODE TO ENSURE IT THAT THE OUTPUT IS ALSO IN THE FORM

OF A ARRAY WHICH CORRESPONDS ARRAY(i) = LABEL OF ith IMAGE NAME.

10. Load the data to be predict into A imagedatastore.

11. data augment this imagestore.

12.perform prediction on this augmented imagedatastore.

13. write the data into a CSV file :

although i have not used any defined function to write the data into

csv file, I have copy pasted my predictions into a CSV file manually,

as my matlab was showing issue with the defined code.

FINISHED.

9.