Computer version code

import os

import cv2

import numpy as np

import matplotlib.pyplot as plt

# Import Warnings

import warnings

warnings.filterwarnings('ignore')

import pandas as pd

from sklearn.utils import shuffle

from sklearn.model\_selection import train\_test\_split

#from sklearn.cross\_validation import train\_test\_split

# Import tensorflow as the backend for Keras

from keras import backend as K

K.set\_image\_dim\_ordering('tf')

from keras.utils import np\_utils

from keras.models import Sequential

from keras.layers.core import Dense, Dropout, Activation, Flatten

from keras.layers.convolutional import Convolution2D, MaxPooling2D

from keras.optimizers import SGD,RMSprop,adam

from keras.callbacks import TensorBoard

# Import required libraries for cnfusion matrix

from sklearn.metrics import classification\_report,confusion\_matrix

import itertools

PATH = os.getcwd()

# Define data path

data\_path = '../input/data/data'

data\_dir\_list = os.listdir(data\_path)

data\_dir\_list

img\_rows=128

img\_cols=128

num\_channel=1

num\_epoch=100

# Define the number of classes

num\_classes = 7

img\_data\_list=[]

for dataset in data\_dir\_list:

img\_list=os.listdir(data\_path+'/'+ dataset)

print ('Loaded the images of dataset-'+'{}\n'.format(dataset))

for img in img\_list:

input\_img=cv2.imread(data\_path + '/'+ dataset + '/'+ img )

input\_img=cv2.cvtColor(input\_img, cv2.COLOR\_BGR2GRAY)

input\_img\_resize=cv2.resize(input\_img,(128,128))

img\_data\_list.append(input\_img\_resize)

img\_data = np.array(img\_data\_list)

img\_data = img\_data.astype('float32')

img\_data /= 255

print (img\_data.shape)

if num\_channel==1:

if K.image\_dim\_ordering()=='th':

img\_data= np.expand\_dims(img\_data, axis=1)

print (img\_data.shape)

else:

img\_data= np.expand\_dims(img\_data, axis=4)

print (img\_data.shape)

else:

if K.image\_dim\_ordering()=='th':

img\_data=np.rollaxis(img\_data,3,1)

print (img\_data.shape)

num\_classes = 7

num\_of\_samples = img\_data.shape[0]

labels = np.ones((num\_of\_samples,),dtype='int64')

labels[0:365]=0

labels[365:567]=1

labels[567:987]=2

labels[987:1189]=3

labels[1189:1399]=4

labels[1399:1601]=5

labels[1601:1803]=6

names = ['bike', 'cars', 'cats', 'dogs', 'flowers', 'horses', 'human']

Y = np\_utils.to\_categorical(labels, num\_classes)

x,y = shuffle(img\_data,Y, random\_state=2)

X\_train, X\_test, y\_train, y\_test = train\_test\_split(x, y, test\_size=0.2, random\_state=2)

print("X\_train shape = {}".format(X\_train.shape))

print("X\_test shape = {}".format(X\_test.shape))

End code