Sprint-1

Image Preprocessig

Date	06 November 2022
Team ID	PNT2022TMID25633
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	

Dataset:

- In our dataset we have collected images of the five variety of fruits.
- Apple
- Orange
- Pineapple
- Watermelon
- Banana

Drive link : https://drive.google.com/file/d/1jzDjV7jYcIzlIieagaJdubMJ3YeLsry1/view?usp=share_link

Image Preprocessing:

- **Importing The ImageDataGenerator Library** from keras.preprocessing.image import ImageDataGenerator

- **Configuring ImageDataGenerator Class** train_datagen = ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0.2,horizont al_flip=True) test_datagen=ImageDataGenerator(rescale=1./255)

- **Applying Image DataGenerator Functionality To Trainset And Testset** x_train = train_datagen.flow_from_directory(r'/content/Dataset/TRAIN_SET', target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse') x_test = test_datagen.flow_from_directory(r'/content/Dataset/TEST_SET', target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')

Data Collection

Download the dataset here

```
# Unzipping the dataset
!unzip '/content/Dataset.zip'
```

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       inflating:
       Dataset/TRAIN_SET/WATERMELON/r_288_100.j
       pg inflating:
       Dataset/TRAIN_SET/WATERMELON/r_289_100.j
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        inflating:
        Dataset/TRAIN_SET/WATERMELON/r_9_100.jp g
```

Image Preprocessing

```
#Importing The ImageDataGenerator Library
from keras.preprocessing.image import ImageDataGenerator
```

Image Data Augmentation

```
#Configure ImageDataGenerator Class
train_datagen =
ImageDataGenerator(rescale=1./255,shear_range=0.2,zoom_range=0.2,horizonta
test_datagen=ImageDataGenerator(rescale=1./255)
```

Applying Image DataGenerator Functionality To Trainset And Testset

```
#Applying Image DataGenerator Functionality To
Trainset And Testset x_train =
train_datagen.flow_from_directory(
r'/content/Dataset/TRAIN_SET', target_size=(64,
64),batch_size=5,color_mode='rgb',class_mode='sparse')
#Applying Image DataGenerator Functionality To
Testset x_test = test_datagen.flow_from_di rectory(
    r'/content/Dataset/TEST_S
    ET',
    target_size=(64, 64),batch_size=5,color_mode='rgb',class_mode='sparse')

     Found 4118 images belonging
     to 5 classes. Found 929
     images belonging to 5
     classes.


#checking the
number of classes
print(x_train.clas
s_indices)

     {'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}


#checking the
number of classes
print(x_test.class
_indices)

     {'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}


from collections import
```

```
Counter as c c(x_train
.labels)
```

```
Counter({0: 995, 1: 1354, 2: 1019, 3: 275, 4: 475})
```

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