

## Sprint-1

### Image Preprocessig

Date	02 November 2022
Team ID	PNT2022TMID37845
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/1jzDjV7jYclzllieagaJdubMJ3YeLsry1/view?usp=share\\_link](https://drive.google.com/file/d/1jzDjV7jYclzllieagaJdubMJ3YeLsry1/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,horizontal\_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'

inflating:
Dataset/TRAIN_SET/WATERMELON/r_288_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_289_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_28_100.jp
g inflating:
Dataset/TRAIN_SET/WATERMELON/r_290_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_291_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_292_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_293_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_294_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_295_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_296_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_297_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_298_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_299_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_29_100.jp
g inflating:
Dataset/TRAIN_SET/WATERMELON/r_2_100.jpg
inflating:
Dataset/TRAIN_SET/WATERMELON/r_300_100.j
pg
inflating:
Dataset/TRAIN_SET/WATERMELON/r_301_100.j
pg
inflating:
Dataset/TRAIN_SET/WATERMELON/r_302_100.j
pg
inflating:
Dataset/TRAIN_SET/WATERMELON/r_303_100.j
pg
inflating:
```

Dataset/TRAIN\_SET/WATERMELON/r\_304\_100.j  
pg inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_305\_100.j  
pg inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_306\_100.j  
pg inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_307\_100.j  
pg inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_308\_100.j  
pg  
inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_309\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_30\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_310\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_311\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_312\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_313\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_314\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_315\_100.j  
pginflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_31\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_32\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_33\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_34\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_35\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_36\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_37\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_38\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_39\_100.jp  
g inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_3\_100.jpg  
inflating:  
Dataset/TRAIN\_SET/WATERMELON/r\_40\_100.j  
pg inflating:

```
Dataset/TRAIN_SET/WATERMELON/r_41_100.j
pg          inflating:
Dataset/TRAIN_SET/WATERMELON/r_42_100.j
pg          inflating:
Dataset/TRAIN_SET/WATERMELON/r_43_100.j
pg          inflating:
Dataset/TRAIN_SET/WATERMELON/r_44_100.j
pg          inflating:
Dataset/TRAIN_SET/WATERMELON/r_45_100.j
pg
```

```
inflating:
Dataset/TRAIN_SET/WATERMELON/r_46_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_4_100.jp
g inflating:
Dataset/TRAIN_SET/WATERMELON/r_50_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_57_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_5_100.jp
g inflating:
Dataset/TRAIN_SET/WATERMELON/r_6_100.jp
g inflating:
Dataset/TRAIN_SET/WATERMELON/r_7_100.jp
g inflating:
Dataset/TRAIN_SET/WATERMELON/r_81_100.j
pginflating:
Dataset/TRAIN_SET/WATERMELON/r_8_100.jp
g 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,horizontal
test_datagen=ImageDataGenerator(rescale=1./255)

```

## Applying Image DataGenerator Functionality To TrainsetAnd 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_directory(
    r'/content/Dataset/TEST_SET',
    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.class
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 cc(x_train  
.labels)
```

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

● [Colab](#) HYPERLINK

"https://colab.research.google.com/signup?utm\_source=footer&utm\_medium=link&utm\_campaign=footer\_links" HYPERLINK

"https://colab.research.google.com/signup?utm\_source=footer&utm\_medium=link&utm\_campaign=footer\_links" paid  
HYPERLINK

"https://colab.research.google.com/signup?utm\_source=footer&utm\_medium=link&utm\_campaign=footer\_links" HYPERLINK

"https://colab.research.google.com/signup?utm\_source=footer&u

tm\_medium=link&utm\_campaign=footer\_links" [products](#) -  
[Cancel](#) HYPERLINK  
"https://colab.research.google.com/cancel-subscription" \_ HYPERLINK  
"https://colab.research.google.com/cancel-subscription" [contracts](#)  
HYPERLINK  
"https://colab.research.google.com/cancel-subscription" \_ HYPERLINK  
"https://colab.research.google.com/cancel-subscription" [here](#)