Image Preprocessing

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| Date | 29 October 2022 |
| Team ID | PNT2022TMID40800 |
| 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](https://drive.google.com/file/d/1jzDjV7jYcIzlIieagaJdubMJ3YeLsry1/view)

# Unzipping the dataset

!unzip '/content/Dataset.zip'

inflating: Dataset/TRAIN\_SET/WATERMELON/r\_288\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_289\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_28\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_290\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_291\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_292\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_293\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_294\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_295\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_296\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_297\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_298\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_299\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_29\_100.jpg inflating: Dataset/TRAIN\_SET/WATERMELON/r\_2\_100.jpg



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# 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\_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\_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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