

```
from tensorflow.keras.preprocessing.image import ImageDataGenerator
train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,
zoom_range=0.2,horizontal_flip=True)
test_datagen=ImageDataGenerator(rescale=1./255)
```

## ▼ Image Augmentation

```
x_train = train_datagen.flow_from_directory('/content/drive/MyDrive/Flowers-Dataset/flowers',
target_size=(64,64),
class_mode='categorical',
batch_size=100)
```



-----  
**FileNotFoundError** Traceback (most recent call last)

```
<ipython-input-3-99cfe3b35c2b> in <module>
      2 target_size=(64,64),
      3 class_mode='categorical',
----> 4 batch_size=100)
```

1 frames

```
/usr/local/lib/python3.7/dist-packages/keras/preprocessing/image.py in
__init__(self, directory, image_data_generator, target_size, color_mode, classes,
class_mode, batch_size, shuffle, seed, data_format, save_to_dir, save_prefix,
save_format, follow_links, subset, interpolation, keep_aspect_ratio, dtype)
    505     if not classes:
    506         classes = []
--> 507     for subdir in sorted(os.listdir(directory)):
    508         if os.path.isdir(os.path.join(directory, subdir)):
    509             classes.append(subdir)
```

**FileNotFoundError**: [Errno 2] No such file or directory:  
'/content/drive/MyDrive/Flowers-Dataset/flowers'

```
x_test=test_datagen.flow_from_directory('/content/drive/MyDrive/Flowers-Dataset/flowers',
target_size=(64,64),
class_mode='categorical',
batch_size=100)
```

```
from google.colab import drive
drive.mount('/content/drive')
```

Mounted at /content/drive

```
x_train.class_indices
```

```
from tensorflow.keras.models import Sequential
```

```
from tensorflow.keras.layers import Convolution2D, MaxPooling2D, Dense, Flatten
from keras.callbacks import EarlyStopping, ReduceLROnPlateau
```

## ▼ INITIALISING AND CREATING MODEL

```
model = Sequential()
model.add(Convolution2D(32,(3,3),activation='relu',input_shape=(64,64,3)))
model.add(MaxPooling2D((2,2)))
model.add(Flatten())
model.add(Dense(300,activation='relu'))
model.add(Dense(150,activation='relu'))
model.add(Dense(5,activation='softmax'))

model.summary()

model.compile(optimizer='adam',loss='categorical_crossentropy',metrics=['accuracy'])

model.fit_generator(x_train,steps_per_epoch=len(x_train), validation_data=x_test, validation_
```

## ▼ SAVE THE MODEL

```
model.save('flowers.h5')
```

## ▼ Test the model

```
import numpy as np
from tensorflow.keras.models import load_model
from tensorflow.keras.preprocessing import image

model=load_model('flowers.h5')

val = list(x_train.class_indices.keys())
val

img=image.load_img("/content/drive/MyDrive/Flowers-Dataset/flowers/rose/12240303_80d87f77a3_n
x=image.img_to_array(img)
```

```
x=np.expand_dims(x,axis=0)  
index=['daisy','dandelion','rose','sunflower','tulip']  
index[y[0]]
```

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