

Emerging Methods for Early Detection of Forest Fires

MODEL BUILDING

ADD DENSE LAYERS

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Project Name	Emerging Methods for Early Detection of Forest Fires

Importing The ImageDataGenerator Library

```
import keras
from keras.preprocessing.image import ImageDataGenerator
```

Define the parameters/arguments for ImageDataGenerator class

```
train_datagen=ImageDataGenerator(rescale=1./255,shear_range=0.2,
rotation_range=180,zoom_range=0.2, horizontal_flip=True)
test_datagen=ImageDataGenerator(rescale=1./255)
```

Applying ImageDataGenerator functionality to trainset

```
x_train=train_datagen.flow_from_directory(r'/content/drive/MyDrive/Da
taset/Training', target_size=(128,128),batch_size=32,
class_mode='binary')
```

Found 436 images belonging to 2 classes.

Applying ImageDataGenerator functionality to testset

```
x_test=test_datagen.flow_from_directory(r'/content/drive/MyDrive/Data
set/Testing', target_size=(128,128),batch_size=32, class_mode='binary')
```

Found 121 images belonging to 2 classes.

Import model building libraries

#To define Linear initialisation import Sequential

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

#To add layers import Dense

```
from keras.layers import Dense
```

```
#To create Convolution kernel import Convolution2D  
from keras.layers import Convolution2D  
#import Maxpooling layer  
from keras.layers import MaxPooling2D  
#import flatten layer  
from keras.layers import Flatten import warnings  
warnings.filterwarnings('ignore')
```

Initializing the model

```
model=Sequential()
```

Add CNN Layer

```
model.add(Convolution2D(32,  
(3,3),input_shape=(128,128,3),activation='relu'))  
#add maxpooling layer  
model.add(MaxPooling2D(pool_size=(2,2)))  
#add flatten layer  
model.add(Flatten())
```

Add Dense Layer

```
#add hidden layer  
model.add(Dense(150,activation='relu'))  
#add output layer  
model.add(Dense(1,activation='sigmoid'))
```