

EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

MODEL BUILDING

ADDING CNN 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/Colab  
Notebooks/Dataset/train_set',
```

```
target_size=(128,128),batch_size=32, class_mode='binary')  
Found 117 images belonging to 2 classes.
```

Applying ImageDataGenerator functionality to testset

```
x_test=test_datagen.flow_from_directory(r'/content/drive/MyDrive/Colab  
Notebooks/Dataset/test_set', target_size=(128,128),batch_size=32,  
class_mode='binary') Found 117 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())
```