MODEL BUILDING

Configuring The Learning Process

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Project Name	Emerging Methods for Early Detection of Forest Fires

```
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'C:\Users\dhine\Downloads\archive\Dataset/t
rain
_set'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'C:\Users\dhine\Downloads\archive\Dataset\t
est_s et'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('ignor
e') #initializing the model
model=Sequential( )
#add convolution 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 hidden layer
model.add(Dense(150,activation='relu'
)) #add output layer
model.add(Dense(1,activation='sigmoi
d'))
#configure the learning process
model.compile(loss='binary_crossentropy',optimizer="adam",metrics=["accuracy"])
```