EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

MODEL BUILDING
Configuring the Learning Process

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##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'C:\archive\Dataset\Dataset\train_set',
target_size=(128,128),batch_size=32,class_mode='binary')
```

###Applying ImageDataGenerator Functionality to testset

```
x_test=test_datagen.flow_from_directory(r'C:\archive\Dataset\Dataset\test_set',target_size=(128,128),batch_size=32,class_mode='binary')
```

```
##Import model building libraries

#To Define linear initialization import Sequential

from keras.models import Sequential

#To add layers import Dense

from keras.layers import Dense

#To create Convolution kernel import Convolution 2D

from keras.layers import Convolution2D

#import maxpooling layers

from keras.layers import MaxPooling2D

#import flatten Layer

from keras.layers import Flatten

import warnings

warnings.filterwarnings('ignore')

#Initializing the Model
model=Sequential()

##adding CNN layers
model.add(Convolution2D(32,(3,3),input_shape=(128,128,3),activation='relu'))

##adding maxpooling layer
model.add(MaxPooling2D(pool_size=(2,2)))

##adding flatten Layer
model.add(Flatten())
```

##add hidden layer

```
model.add(Dense(150,activation='relu'))
```

##add output layer

```
model.add(Dense(1,activation='sigmoid'))
```

#Configure the Learning Process

```
model.compile(loss="binary_crossentropy",optimizer="adam",metrics=['accurancy'])
```