

MODEL BUILDING

Adding CNN layers

Date	17 November 2022
Team ID	PNT2022TMID30054
Project Name	Emerging Methods for Early Detection of ForestFires

##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())
```