EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRE

MODEL BUILDING

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Project Name	Emerging Methods for Early Detection Of Forest Fire.

```
#MODEL BUILDING
```

```
from keras.models import Sequential
from keras.layers import Dense
from keras.layers import Convolution2D
from keras.layers import MaxPooling2D
from keras.layers import Flatten
import warnings
warnings.filterwarnings('ignore')
```

```
model = Sequential()
```

```
model.add(Convolution2D(32,(3,3),input_shape=(128,128,3),activation='relu'))
```

```
model.add(MaxPooling2D(pool_size=(2,2)))
```

```
model.add(Flatten())
```

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

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

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

```
model.fit(x_train, epochs=2, validation_data=x_test, batch_size=32)
```

```
Epoch 1/2
14/14 [==============================] - 25s 2s/step - loss: 3.4206 - accuracy: 0.5642 - val_loss: 0.4060 - val_accuracy: 0.801
7
Epoch 2/2
14/14 [==============================] - 18s 1s/step - loss: 0.3801 - accuracy: 0.8188 - val_loss: 0.1464 - val_accuracy: 0.933
9
```

```
model.save("forest1.h5")
```

```
import numpy as np
```

```
predictions = model.predict(x_test)
predictions = np.round(predictions)
```

```
4/4 [==============================] - 4s 968ms/step
```

```
predictions
```

```
array([[0.],
       [0.],
       [0.],
       [1.],
       [1.],
       [0.],
       [1.],
       [0.],
       [1.],
       [1.],
       [1.],
       [0.],
       [0.],
       [0.],
       [0.],
       [0.],
       [0.],
       [0.],
       [0.],
       [0.],
```

```
print(len(predictions))
```

```
121
```