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main

[IBM-Project-52221-1660991478](https://github.com/IBM-EPBL/IBM-Project-52221-1660991478) / [Project Development Phase](https://github.com/IBM-EPBL/IBM-Project-52221-1660991478/tree/main/Project%20Development%20Phase) / [Sprint2](https://github.com/IBM-EPBL/IBM-Project-52221-1660991478/tree/main/Project%20Development%20Phase/Sprint2) /

Model\_Building\_and\_Fitting\_the\_Model.ipynb



[Kaniv387](https://github.com/Kaniv387) [Create Model\_Building\_and\_Fitting\_the\_Model.ipynb](https://github.com/IBM-EPBL/IBM-Project-52221-1660991478/commit/74ea68f14b79a839b175fc4422da57d3553c66ed)

[History](https://github.com/IBM-EPBL/IBM-Project-52221-1660991478/commits/main/Project%20Development%20Phase/Sprint2/Model_Building_and_Fitting_the_Model.ipynb)

1 contributor

211 lines (211 sloc) 6.71 KB

In [1]:

**import** tensorflow **as** tf

**import** numpy **as** np

**from** tensorflow **import** keras

**import** os

**import** cv2

**from** tensorflow.keras.preprocessing.image **import** ImageDataGenerator

**from** tensorflow.keras.preprocessing **import** image

**import** matplotlib.pyplot **as** plt

# Making Separate Dataset for Training and Testing

In [2]:

train **=** ImageDataGenerator(rescale**=**1**/**255) test **=** ImageDataGenerator(rescale**=**1**/**255)

train\_dataset **=** train**.**flow\_from\_directory("/content/drive/MyDrive/Dataset/tra

target\_size**=**(150,150), batch\_size **=** 32,

class\_mode **=** 'binary')

test\_dataset **=** test**.**flow\_from\_directory("/content/drive/MyDrive/Dataset/test\_

target\_size**=**(150,150), batch\_size **=**32,

class\_mode **=** 'binary')

In [3]:

test\_dataset**.**class\_indices

Found 436 images belonging to 2 classes. Found 121 images belonging to 2 classes.

Out[3]:

In [6]:

model **=** keras**.**Sequential()

model**.**add(keras**.**layers**.**Conv2D(32,(3,3),activation**=**'relu',input\_shape**=**(150,150 model**.**add(keras**.**layers**.**MaxPool2D(2,2))

model**.**add(keras**.**layers**.**Conv2D(64,(3,3),activation**=**'relu')) model**.**add(keras**.**layers**.**MaxPool2D(2,2))

model**.**add(keras**.**layers**.**Conv2D(128,(3,3),activation**=**'relu'))

model**.**add(keras**.**layers**.**MaxPool2D(2,2))

model**.**add(keras**.**layers**.**Conv2D(128,(3,3),activation**=**'relu')) model**.**add(keras**.**layers**.**MaxPool2D(2,2))

model**.**add(keras**.**layers**.**Flatten())

model**.**add(keras**.**layers**.**Dense(512,activation**=**'relu')) model**.**add(keras**.**layers**.**Dense(1,activation**=**'sigmoid'))

{'forest': 0, 'with fire': 1}

# Model Building

Compiling the model

In [7]:

model**.**compile(optimizer**=**'adam',loss**=**'binary\_crossentropy',metrics**=**['accuracy'



# Fitting the Model



In [8]:

r **=** model**.**fit(train\_dataset,

epochs **=** 10,

validation\_data **=** test\_dataset)

|  |  |  |
| --- | --- | --- |
| Epoch 1/10 |  | |
| 14/14 [==============================] - 150s 11s/step  acy: 0.7339 - val\_loss: 0.2174 - val\_accuracy: 0.8843 Epoch 2/10 | - loss: 0.4300 | - accur |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 14/14 [==============================] - 23s | 2s/step | - loss: | 0.1994 | - accurac |
| y: 0.9037 - val\_loss: 0.0567 - val\_accuracy: Epoch 3/10  14/14 [==============================] - 23s | 0.9835  2s/step | - loss: | 0.2111 | - accurac |
| y: 0.9014 - val\_loss: 0.0940 - val\_accuracy: | 0.9835 |  |  |  |
| Epoch 4/10  14/14 [==============================] - 23s | 2s/step | - loss: | 0.1536 | - accurac |
| y: 0.9335 - val\_loss: 0.0322 - val\_accuracy:  Epoch 5/10 | 1.0000 |  |  |  |
| 14/14 [==============================] - 23s  y: 0.9564 - val\_loss: 0.0130 - val\_accuracy: Epoch 6/10  14/14 [==============================] - 23s | 2s/step 1.0000  2s/step | * loss: * loss: | 0.1192  0.1265 | * accurac * accurac |
| y: 0.9564 - val\_loss: 0.0633 - val\_accuracy: Epoch 7/10  14/14 [==============================] - 23s | 0.9917  2s/step | - loss: | 0.0969 | - accurac |
| y: 0.9725 - val\_loss: 0.0238 - val\_accuracy: | 0.9917 |  |  |  |