

# REAL-TIME POTHOLE DETECTION USING DEEPLearning

## Results:

main\_resnet50.ipynb

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RAM Disk Colab AI

Files

Pot Hole Detect... Colab Note... Pot Hole... Pot Ho... dat... n... p... t... m... res... P0... Unt... abs... req... Colab Noteb... model1.h5

Disk 80.48 GB available

+ Code + Text Copy to Drive

[25] `def assign_label(img,label):  
 return label`

38s x [ ] z[:] IMG\_SIZE=256 Plain='/content/drive/MyDrive/Pot Hole Detection on the roads using Transfer Learning (Resnet 50)/Pot Hole Detection on the roads using Transfer Learning (Resnet 50)/Pot Hole Detection on the roads using Transfer Learning (Resnet 50)/Pot Hole Detection on the roads using Transfer Learning (Resnet 50)/Pot Hole Detection on the roads using Transfer Learning (Resnet 50)/Pot Hole Detection on the roads using Transfer Learning (Resnet 50)/make\_train\_data('Plain','Plain') make\_train\_data('Pothole','Pothole')

100% 352/352 [00:19<00:00, 18.33it/s]  
100% 329/329 [00:18<00:00, 17.49it/s]

Displaying the training data with labels

[ ] `fig,ax=plt.subplots(2,5)  
plt.subplots_adjust(bottom=0.3, top=0.7, hspace=0)  
fig.set_size_inches(10,10)  
  
for i in range(2):  
 for j in range (5):  
 l=rn.randint(0,len(z))  
 ax[i,j].imshow(x[l][:])  
 ax[i,j].set_title(z[l])  
 ax[i,j].set_aspect('equal')`

0 Pothole 0 Pothole

37s completed at 3:48 PM

Upcoming Earnings Search ENG IN 3:50 PM 4/15/2024

main\_resnet50.ipynb

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[8] `fig,ax=plt.subplots(2,5)  
plt.subplots_adjust(bottom=0.3, top=0.7, hspace=0)  
fig.set_size_inches(10,10)  
  
for i in range(2):  
 for j in range (5):  
 l=rn.randint(0,len(z))  
 ax[i,j].imshow(x[l][:])  
 ax[i,j].set_title(z[l])  
 ax[i,j].set_aspect('equal')`

0 Pothole 0 Pothole 0 Pothole 0 Plain 0 Plain  
0 100 200 0 100 200 0 100 200 0 100 200 0 100 200  
100 200 100 200 100 200 100 200 100 200 100 200  
200 0 200 0 200 0 200 0 200 0 200 0 200  
Plain Pothole Plain Pothole Plain Pothole Plain Pothole Plain Pothole

8s completed at 3:51 PM

**main\_resnet50.ipynb**

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RAM Disk Colab AI

Files

[x] Pot Hole Detection

Colab Notebooks

Pot Hole Detection

dat...

m...

res...

PO...

Unt...

abs...

req...

Colab Notebooks

model1.h5

6s [30]

Splitting the data into Training and Validation data

```
le=LabelEncoder()
y=le.fit_transform(Y)
y=y.to_categorical(y,2)
print(y)
X=np.array(X)

x_train,x_test,y_train,y_test=train_test_split(X,Y,test_size=0.25,random_state=1337)

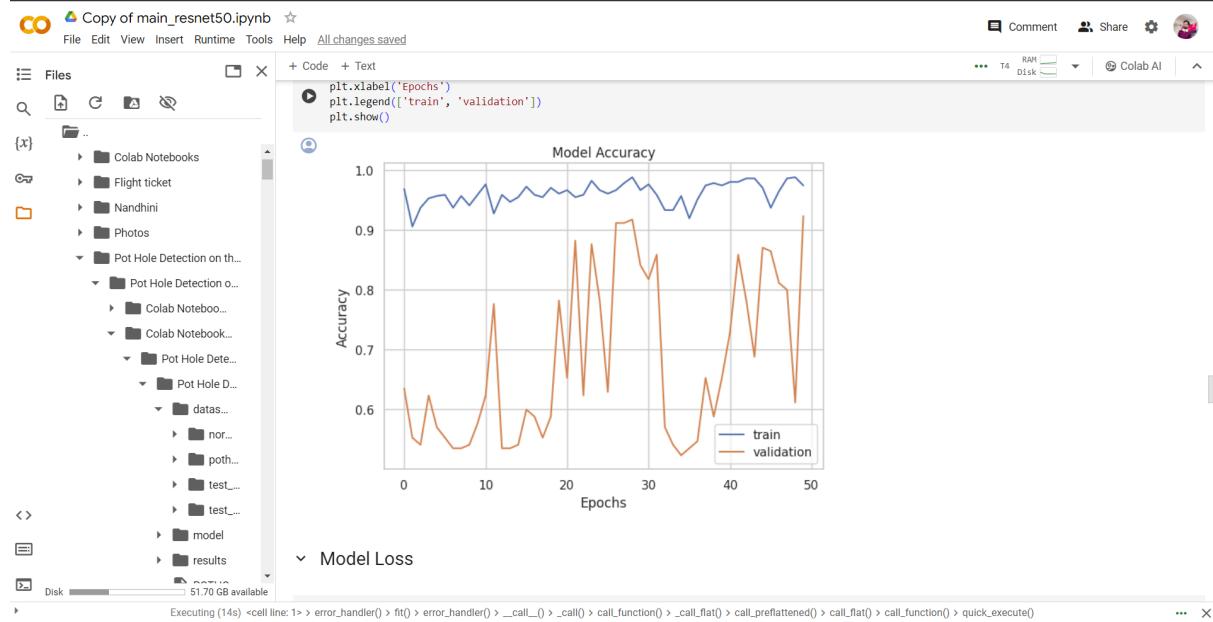
np.random.seed(42)
rn.seed(42)
```

[[1. 0.]
 [1. 0.]
 [1. 0.]
 ...
 [0. 1.]
 [0. 1.]
 [0. 1.]]

Building the CNN model using RESNET (pretrained model)

```
base_model=ResNet50(include_top=False, weights='imagenet',input_shape=(256,256,3), pooling='max')
base_model.summary()
```

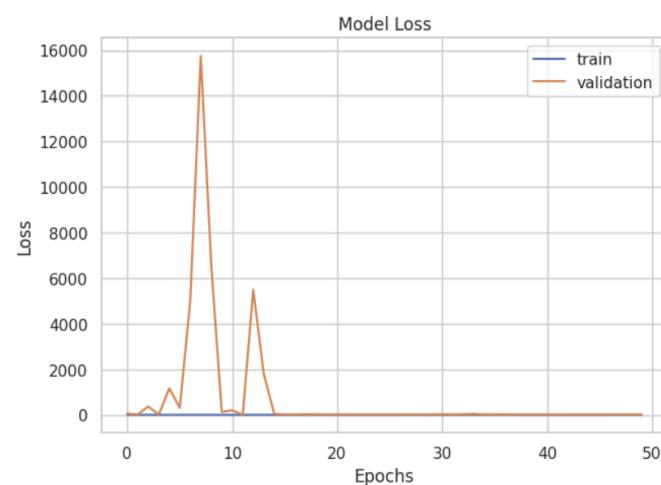
6s completed at 3:51PM



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```
plt.plot(History.history['loss'])
plt.plot(History.history['val_loss'])
plt.title('Model Loss')
plt.ylabel('Loss')
plt.xlabel('Epochs')
plt.legend(['train', 'validation'])
plt.show()
```

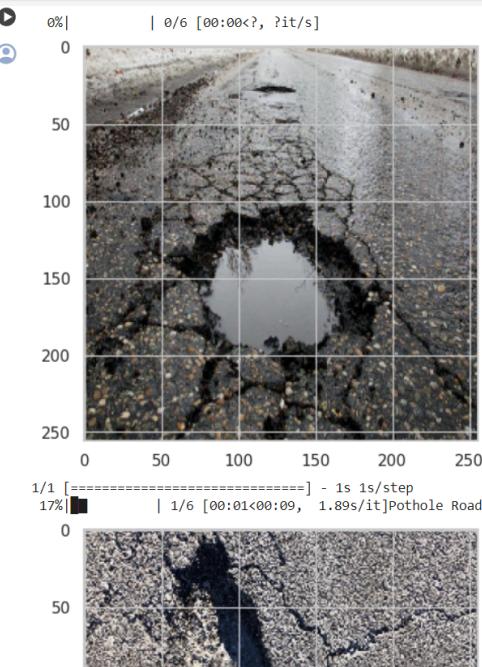


.. > \_call\_batch... > \_call\_batch... > \_call\_batch\_h... > on\_train\_b... > \_batch\_updat... > sync\_to\_numpy\_or... > map\_st... > map\_st... > \_tf\_core\_map... > <list... > \_to\_single\_numpy\_... > nu... > \_nu... ... X

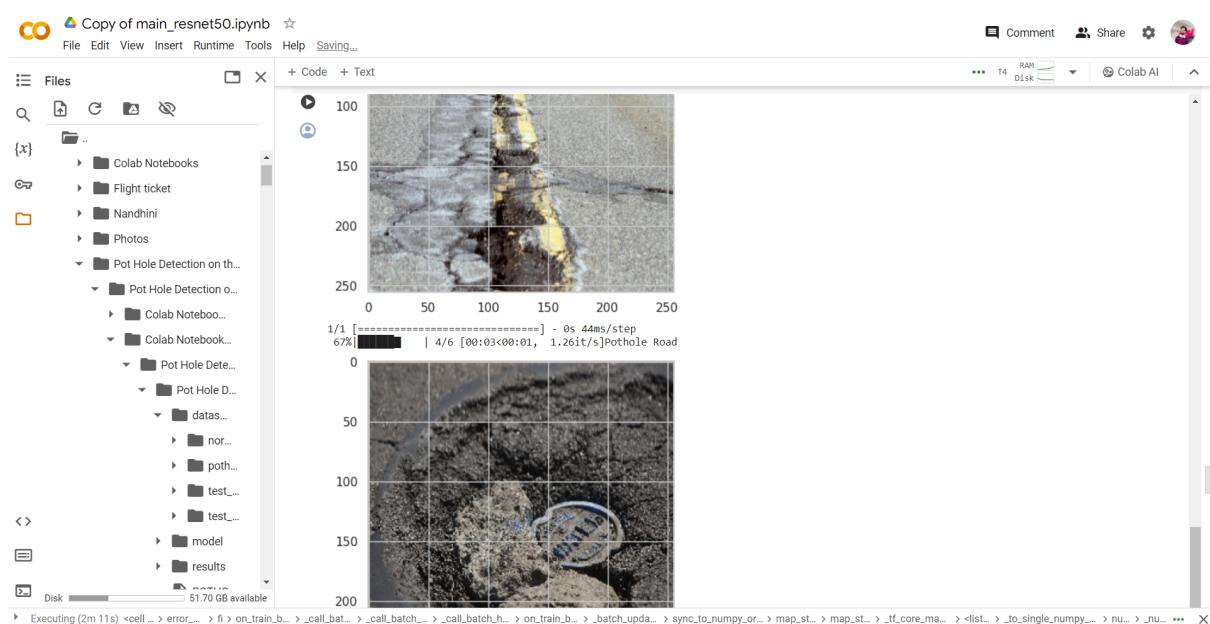
## INPUTS:

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line: 1> error\_handler()> fit()> error\_handler()> \_\_call\_\_()> \_\_call\_\_> call\_function()> \_\_call\_flat()> call\_prel flattened()> call\_flat()> call\_function()> quick\_execute()



## OUTPUTS:

