Assignment 6_3

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Week 6

4/17/23

0.1 Assignment 6.3

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[ ]:
```
import os
import numpy as np
import keras.utils as image
from keras.applications.resnet import preprocess_input, decode_predictions
from keras.applications.resnet import ResNet50
```

[ ]:
```
model = ResNet50(weights='imagenet')

file_path = 'images'
output = []
for file in os.listdir(file_path):
    img_file = os.path.join(file_path, file)
    img = image.load_img(img_file, target_size=(224, 224))
    x = image.img_to_array(img)
    x = np.expand_dims(x, axis=0)
    x = preprocess_input(x)

    preds = model.predict(x)
    pred_name = str(img_file)
    pred_info = str('Predicted:' + str(decode_predictions(preds, top=3)[0]))
    print(pred_name)
    print(pred_info)
    output.append(pred_name)
    output.append(pred_info)
```

```
1/1 [==============================] - 1s 964ms/step
images\Image01 - barnabas-lartey-odoi-tetteh-5pGFc1XssnQ-unsplash.jpg
Predicted:[('n04418357', 'theater_curtain', 0.4265667), ('n10148035', 'groom',
0.15048657), ('n04296562', 'stage', 0.06629443)]
1/1 [==============================] - 0s 64ms/step
```

```
images\Image02 - carson-arias-7Z03R1wOdmI-unsplash.jpg
Predicted:[('n12144580', 'corn', 0.82925004), ('n03461385', 'grocery_store',
0.069001734), ('n13133613', 'ear', 0.047845177)]
1/1 [==============================] - 0s 69ms/step
images\Image03 - chris-murray-YGzEX5yLKeA-unsplash.jpg
Predicted:[('n03854065', 'organ', 0.4135437), ('n02804610', 'bassoon',
0.17994459), ('n04429376', 'throne', 0.08640079)]
1/1 [==============================] - 0s 67ms/step
images\Image04 - florian-klauer-mk7D-4UCfmg-unsplash.jpg
Predicted:[('n04505470', 'typewriter_keyboard', 0.786011), ('n04264628',
'space_bar', 0.21350463), ('n04179913', 'sewing_machine', 0.00041820377)]
1/1 [==============================] - 0s 66ms/step
images\Image05 - florian-klauer-nptLmg6jqDo-unsplash.jpg
Predicted:[('n04562935', 'water_tower', 0.38155386), ('n02782093', 'balloon',
0.15957569), ('n04099969', 'rocking_chair', 0.15699895)]
1/1 [==============================] - 0s 76ms/step
images\Image06 - ian-dooley-TLD6iCOlyb0-unsplash.jpg
Predicted:[('n07614500', 'ice_cream', 0.9862098), ('n07836838',
'chocolate_sauce', 0.0023317419), ('n01943899', 'conch', 0.0017338828)]
1/1 [==============================] - 0s 65ms/step
images\Image07 - kamran-abdullayev-SCoI5tdGJ_M-unsplash.jpg
Predicted:[('n09428293', 'seashore', 0.6766016), ('n04435653', 'tile_roof',
0.11591151), ('n03220513', 'dome', 0.03964423)]
1/1 [==============================] - 0s 69ms/step
images\Image08 - obi-pixel7propix-SCUPx5far-M-unsplash.jpg
Predicted:[('n03179701', 'desk', 0.31576914), ('n04118776', 'rule', 0.26920524),
('n04116512', 'rubber_eraser', 0.23627788)]
1/1 [==============================] - 0s 72ms/step
images\Image09 - sumit-sourav-eSRtxPd9q1c-unsplash.jpg
Predicted:[('n09428293', 'seashore', 0.93850696), ('n09421951', 'sandbar',
0.0129406415), ('n09332890', 'lakeside', 0.008623507)]
1/1 [==============================] - 0s 74ms/step
images\Image10 - warren-wong-bh4LQHcOcxE-unsplash.jpg
Predicted:[('n02807133', 'bathing_cap', 0.11702942), ('n03450230', 'gown',
0.085696526), ('n04507155', 'umbrella', 0.07690246)]
```

[ ]:
```
out_file = 'results/predictions/resnet50/predictions.txt'
os.makedirs(os.path.dirname(out_file), exist_ok=True)
with open(out_file, 'w') as f:
    for line in output:
        f.write("%s\n" % line)
```