assignment06-3_muley_tushar

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Assignment: Assignment 6-3

Date:January 9, 2022

Assignment 6.3

Load the ResNet50 model. Perform image classification on five to ten images of your choice. They can be personal images or publically available images.

[1]:
```
# load librariesabs

from tensorflow.keras.applications.resnet50 import ResNet50
from tensorflow.keras.preprocessing import image
from tensorflow.keras.applications.resnet50 import␣
 ↪preprocess_input,decode_predictions
import numpy as np
```

[2]:
```
model = ResNet50(weights='imagenet')
```

```
Downloading data from https://storage.googleapis.com/tensorflow/keras-
applications/resnet/resnet50_weights_tf_dim_ordering_tf_kernels.h5
102973440/102967424 [==============================] - 32s 0us/step
```

[3]:
```
# image 1 - Cat
img_path = 'images/cat.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[4]:
```
preds = model.predict(x)

# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Downloading data from https://storage.googleapis.com/download.tensorflow.org/dat
a/imagenet_class_index.json
40960/35363 [==================================] - 0s 1us/step
```

```
Predicted: [('n02123045', 'tabby', 0.34258923), ('n02127052', 'lynx',
0.28296286), ('n02124075', 'Egyptian_cat', 0.17924757)]
```

[5]:
```
# image 2 - Dog
img_path = 'images/dog.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[6]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n02085620', 'Chihuahua', 0.74188256), ('n02091032',
'Italian_greyhound', 0.119903475), ('n02087046', 'toy_terrier', 0.040911667)]
```

[7]:
```
# image 3 - Car
img_path = 'images/car.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[8]:
```
prepreds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n02085620', 'Chihuahua', 0.74188256), ('n02091032',
'Italian_greyhound', 0.119903475), ('n02087046', 'toy_terrier', 0.040911667)]
```

[9]:
```
# image 4 - Plane
img_path = 'images/plane.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[10]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n02690373', 'airliner', 0.4190179), ('n02692877', 'airship',
0.1941008), ('n04592741', 'wing', 0.09277537)]
```

[11]:
```
# image 5 - Tree
img_path = 'images/tree.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
```

```
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[12]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n09332890', 'lakeside', 0.45476627), ('n09468604', 'valley',
0.08258028), ('n02793495', 'barn', 0.0682712)]
```

[13]:
```
# image 6 - Clock
img_path = 'images/clock.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[14]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n02708093', 'analog_clock', 0.68151724), ('n04548280',
'wall_clock', 0.31837997), ('n04328186', 'stopwatch', 5.6163146e-05)]
```

[15]:
```
# image 7 - Elephant
img_path = 'images/elephant.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[16]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n01871265', 'tusker', 0.56959945), ('n02504458',
'African_elephant', 0.39313105), ('n02504013', 'Indian_elephant', 0.028914424)]
```

[17]:
```
# image 8 - hippo
img_path = 'images/hippo.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[19]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n02398521', 'hippopotamus', 0.9993253), ('n02504013',
'Indian_elephant', 0.00020761864), ('n02408429', 'water_buffalo',
0.000111352296)]
```

[20]:
```
# image 9 - Bird
img_path = 'images/bird.jpg'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[21]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n01843065', 'jacamar', 0.13380224), ('n01531178', 'goldfinch',
0.12710223), ('n01530575', 'brambling', 0.09049343)]
```

[23]:
```
# Image 10 - Dragon
img_path = 'images/dragon.png'
img = image.load_img(img_path, target_size=(224, 224))
x = image.img_to_array(img)
x = np.expand_dims(x, axis=0)
x = preprocess_input(x)
```

[24]:
```
preds = model.predict(x)
# print prediction
print('Predicted:', decode_predictions(preds, top=3)[0])
```

```
Predicted: [('n03485794', 'handkerchief', 0.22730742), ('n03814906', 'necklace',
0.21184915), ('n04275548', 'spider_web', 0.10659091)]
```