Assignment 6.3

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class: DSC650

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. Include the images in dsc650/assignments/assignment06/images/. Save the predictions dsc650/assignments/assignment06/results/predictions/resnet50 directory. If you are using JupyterHub, you can include those plots in your Jupyter notebook.

```
# Import packages
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
import os, cv2
```

```
bunny.jpg
dog.jpg
images.jpg
Lion.jpg
panda.jpg
Tiger.jpg
```

```
# Create Model
model = ResNet50(weights='imagenet')

# Get the file path for the images
img_path = 'images'
images = os.listdir(img_path)

# Get the file name for each image
for i,name in enumerate(images):
    print(name)
```

```
# Write Predictions into a file
for i,name in enumerate(images):

    if name != '.ipynb_checkpoints':
        img = cv2.imread(img_path + '/' + name)
        img = cv2.resize(img, (224,224))
        x = image.img_to_array(img)
        x = np.expand_dims(x, axis=0)
        x = preprocess_input(x)

        preds = model.predict(x)

        decpr = name, decode_predictions(preds, top=3)[0]

        print(decpr)
```

```
        with open('results/predictions/resnet50/6.3_predictions.txt', 'w') as f:
            f.write(decpr[0])
    else:
        pass
```

```
('bunny.jpg', [('n02326432', 'hare', 0.92289615), ('n02325366', 'wood_rabbit', 0.056178607), ('n02328150'
('dog.jpg', [('n02111500', 'Great_Pyrenees', 0.2051789), ('n02104029', 'kuvasz', 0.20089018), ('n02099601
('images.jpg', [('n02510455', 'giant_panda', 0.99974054), ('n02509815', 'lesser_panda', 0.0002197099), ('
('Lion.jpg', [('n02129165', 'lion', 0.90873545), ('n02128757', 'snow_leopard', 0.00996087), ('n02487347',
('panda.jpg', [('n02129604', 'tiger', 0.84935147), ('n02123159', 'tiger_cat', 0.09248336), ('n02391049',
('Tiger.jpg', [('n02129604', 'tiger', 0.9211617), ('n02123159', 'tiger_cat', 0.073571414), ('n02951358',
```