

```
1 from keras.models import load_model # pip install
   tensorflow
2 from keras.layers import DepthwiseConv2D # pip
   install tensorflow
3 import cv2 # pip install opencv-python
4 import numpy as np # pip install numpy
5 import os
6
7 # Disable scientific notation for clarity
8 np.set_printoptions(suppress=True)
9
10 # Define a custom DepthwiseConv2D class without the
    groups parameter
11 class CustomDepthwiseConv2D(DepthwiseConv2D):
12     def __init__(self, **kwargs):
13         # Remove the 'groups' parameter if it
        exists
14         if 'groups' in kwargs:
15             del kwargs['groups'] # Remove the
        groups parameter
16         super().__init__(**kwargs)
17
18 # Create a dictionary of custom objects to pass to
    the load_model function
19 custom_objects = {
20     'DepthwiseConv2D': CustomDepthwiseConv2D,
21 }
22
23
24 # Load the model
25 model = load_model("data/converted_keras/
    keras_model.h5", custom_objects=custom_objects,
    compile=False)
26
27 # Load the labels
28 class_names = open("data/converted_keras/labels.txt
    ", "r").readlines()
29
30 def stillimages(pathname):
31     imagenames = os.listdir(pathname)
32     images = []
33     for name in imagenames:
```

```

34         _, extension = os.path.splitext(name)
35         if (extension == ".jpg" or extension == ".
png"):
36             images.append(cv2.imread(pathname + '/'
+ name))
37
38     return images, imagenames
39
40
41 def predict_still(image_to_predict, imagename):
42
43     # Resize the raw image into (224-height,224
-width) pixels
44     image = cv2.resize(image_to_predict, (224,
224), interpolation=cv2.INTER_AREA)
45     image = np.asarray(image, dtype=np.float32
).reshape(1, 224, 224, 3)
46
47     # Normalize the image array
48     image = (image / 127.5) - 1
49
50     # Predicts the model
51     prediction = model.predict(image)
52     index = np.argmax(prediction)
53     class_name = class_names[index]
54     confidence_score = prediction[0][index]
55
56     # Print prediction and confidence score
57     print("Class:", class_name[2:], end="")
58     print("Filename:", imagename)
59     print("Confidence Score:", str(np.round(
confidence_score * 100))[:-2], "%")
60
61
62 # Get all the files in the folder and predict for
each of them.
63 images, imagenames = stillimages('data/fruits_test'
)
64 i = 0
65 for image in images:
66     predict_still(image, imagenames[i])
67     i = i+1

```