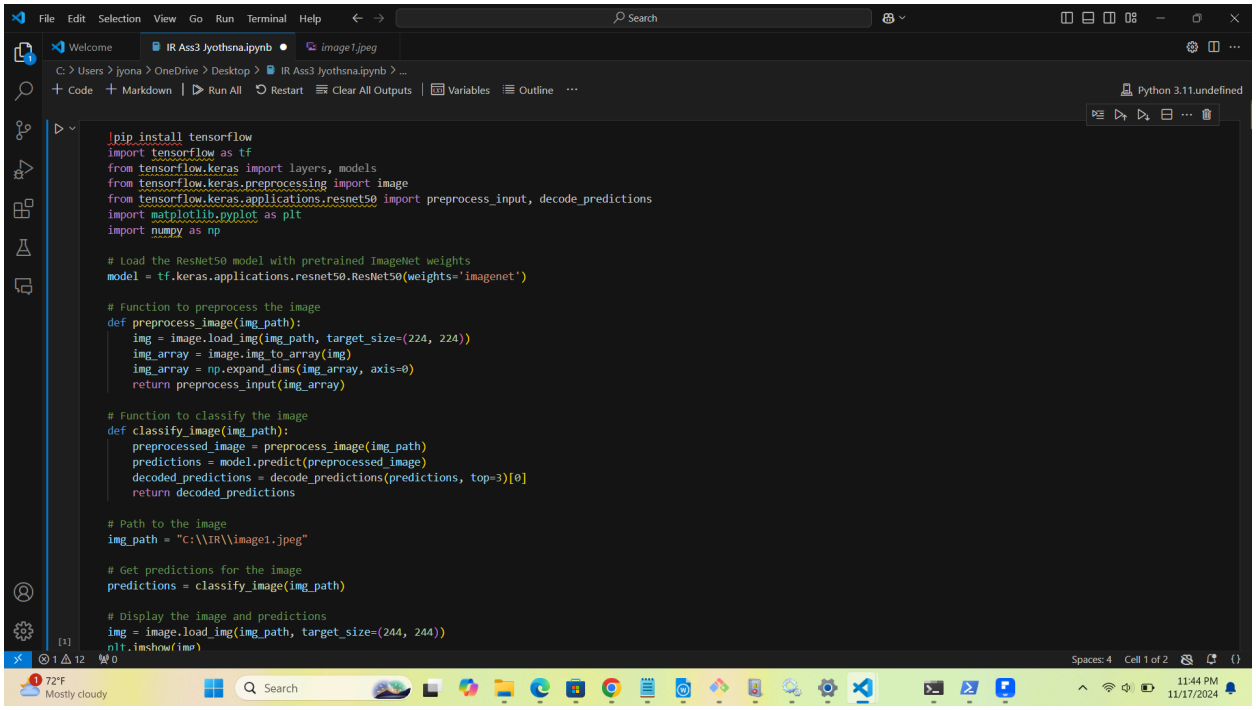
CAP 6776-001: Information Retrieval

Assignment 3 - Image Classification using Tensorflow Mobilenet

NAME - Jyothsna Nagella

Z Number- Z23736087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IR Ass3 Jyothsna.ipynb
image1.jpeg
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+ Code + Markdown | Run All Restart Clear All Outputs | Variables Outline ...
Python 3.11.undefined
!pip install tensorflow
import tensorflow as tf
from tensorflow.keras import layers, models
from tensorflow.keras.preprocessing import image
from tensorflow.keras.applications.resnet50 import preprocess_input, decode_predictions
import matplotlib.pyplot as plt
import numpy as np
# Load the ResNet50 model with pretrained ImageNet weights
model = tf.keras.applications.resnet50.ResNet50(weights='imagenet')
# Function to preprocess the image
def preprocess_image(img_path):
img = image.load_img(img_path, target_size=(224, 224))
img_array = image.img_to_array(img)
img_array = np.expand_dims(img_array, axis=0)
return preprocess_input(img_array)
# Function to classify the image
def classify_image(img_path):
preprocessed_image = preprocess_image(img_path)
predictions = model.predict(preprocessed_image)
decoded_predictions = decode_predictions(predictions, top=3)[0]
return decoded_predictions
# Path to the image
img_path = "C:\\IR\\image1.jpeg"
# Get predictions for the image
predictions = classify_image(img_path)
# Display the image and predictions
img = image.load_img(img_path, target_size=(244, 244))
[1]
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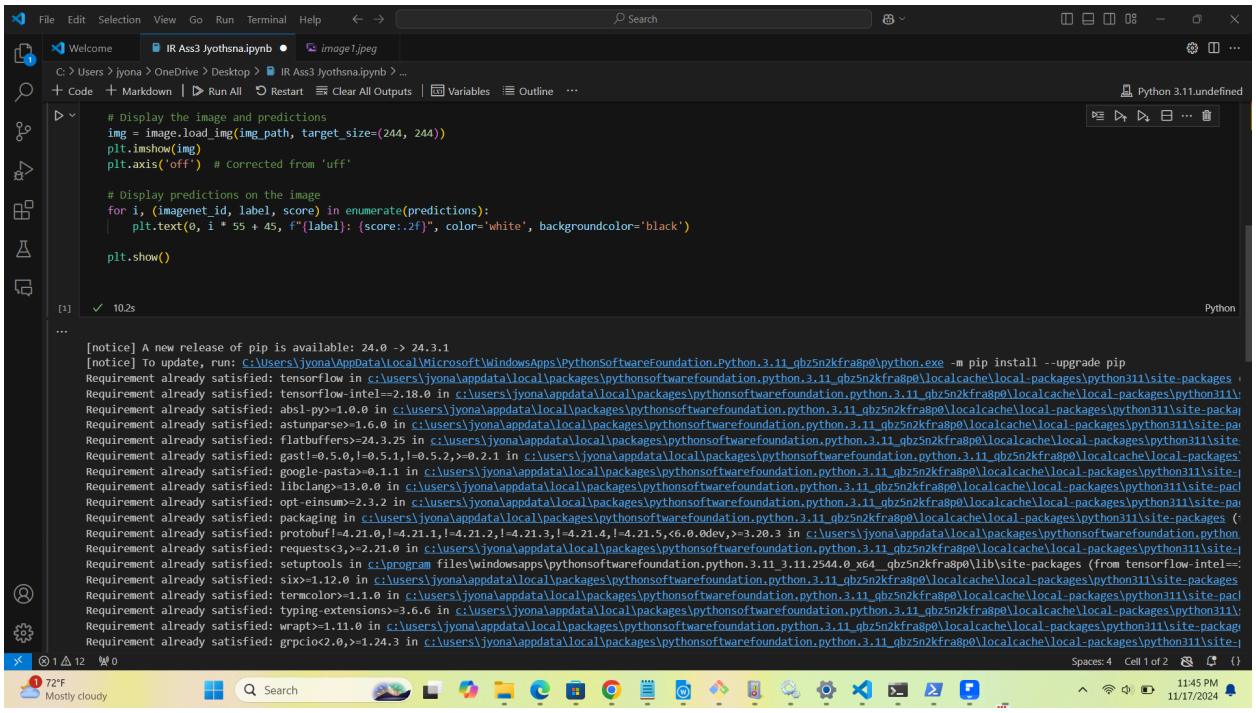
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Python 3.11.undefined
# Display the image and predictions
img = image.load_img(img_path, target_size=(244, 244))
plt.imshow(img)
plt.axis('off') # Corrected from 'uff'
# Display predictions on the image
for i, (imagenet_id, label, score) in enumerate(predictions):
plt.text(0, i * 55 + 45, f"{label}: {score:.2f}", color='white', backgroundcolor='black')
plt.show()
[1] 10.2s
Python
[notice] A new release of pip is available: 24.0 -> 24.3.1
[notice] To update, run: C:\Users\jyona\AppData\Local\Microsoft\WindowsApps\PythonSoftwareFoundation.Python.3.11_qbz5n2kfra8p0\python.exe -m pip install --upgrade pip
Requirement already satisfied: tensorflow in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python.3.11_qbz5n2kfra8p0\localcache\local-packages\python311\site-packages
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Requirement already satisfied: protobuf!=4.21.0,!=4.21.1,!=4.21.2,!=4.21.3,!=4.21.4,!=4.21.5,<6.0.0dev,>=3.20.3 in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python
Requirement already satisfied: requests<3,>=2.21.0 in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python.3.11_qbz5n2kfra8p0\localcache\local-packages\python311\site-
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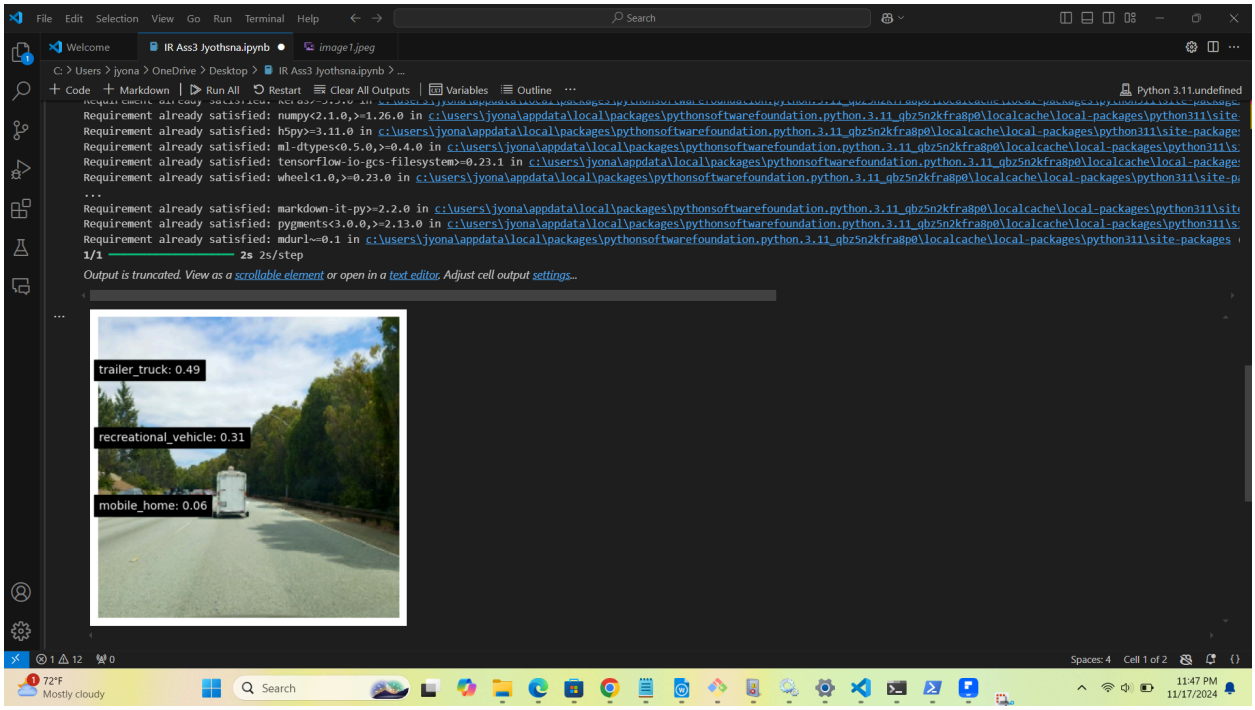
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Code Markdown Run All Restart Clear All Outputs Variables Outline
Python 3.11.undefined
Requirement already satisfied: numpy<2.1.0,>=1.26.0 in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python.3.11_qbz5n2kfra8p0\localcache\local-packages\python311\site
Requirement already satisfied: h5py>=3.11.0 in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python.3.11_qbz5n2kfra8p0\localcache\local-packages\python311\site-packages
Requirement already satisfied: ml-dtypes<0.5.0,>=0.4.0 in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python.3.11_qbz5n2kfra8p0\localcache\local-packages\python311\s
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Requirement already satisfied: wheel<1.0,>=0.23.0 in c:\users\jyona\appdata\local\packages\pythonsoftwarefoundation.python.3.11_qbz5n2kfra8p0\localcache\local-packages\python311\site-p
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trailer_truck: 0.49
recreational_vehicle: 0.31
mobile_home: 0.06
Spaces: 4 Cell 1 of 2
72°F Mostly cloudy
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