Exercise 2-5 Feature Overview

Jirayu Petchhan, D10907801

Editing code part

if \_\_name\_\_=='\_\_main\_\_':

# get class

c = {}

with open("imagenet1000\_clsidx\_to\_labels.txt") as f:

for line in f:

(key, val) = line.split(":")

c[int(key)] = val.split(",")[0]

# Define image path and select the layer

myClass=FeatureVisualization('./Front\_Boat.jpg',2)

Compare=FeatureVisualization('./Rear\_Truck.jpg',2)

print(myClass.pretrained\_model2)

myClass.save\_feature\_to\_img()

print("The first picture classification predict:")

myClass\_vector = myClass.predict()

print("The second picture classification predict:")

Compare\_vector = Compare.predict()

#Define cosine similarity

cos= nn.CosineSimilarity(dim=1)

#Define Euclidean distance

euclidean\_dist = torch.dist(myClass\_vector,Compare\_vector,p=2)

cosine\_dist = cos(myClass\_vector,Compare\_vector)

print("Verification:")

if cosine\_dist > 0.4:

print("They are the same!")

print("Their cosine\_similarity:{}".format(cosine\_dist))

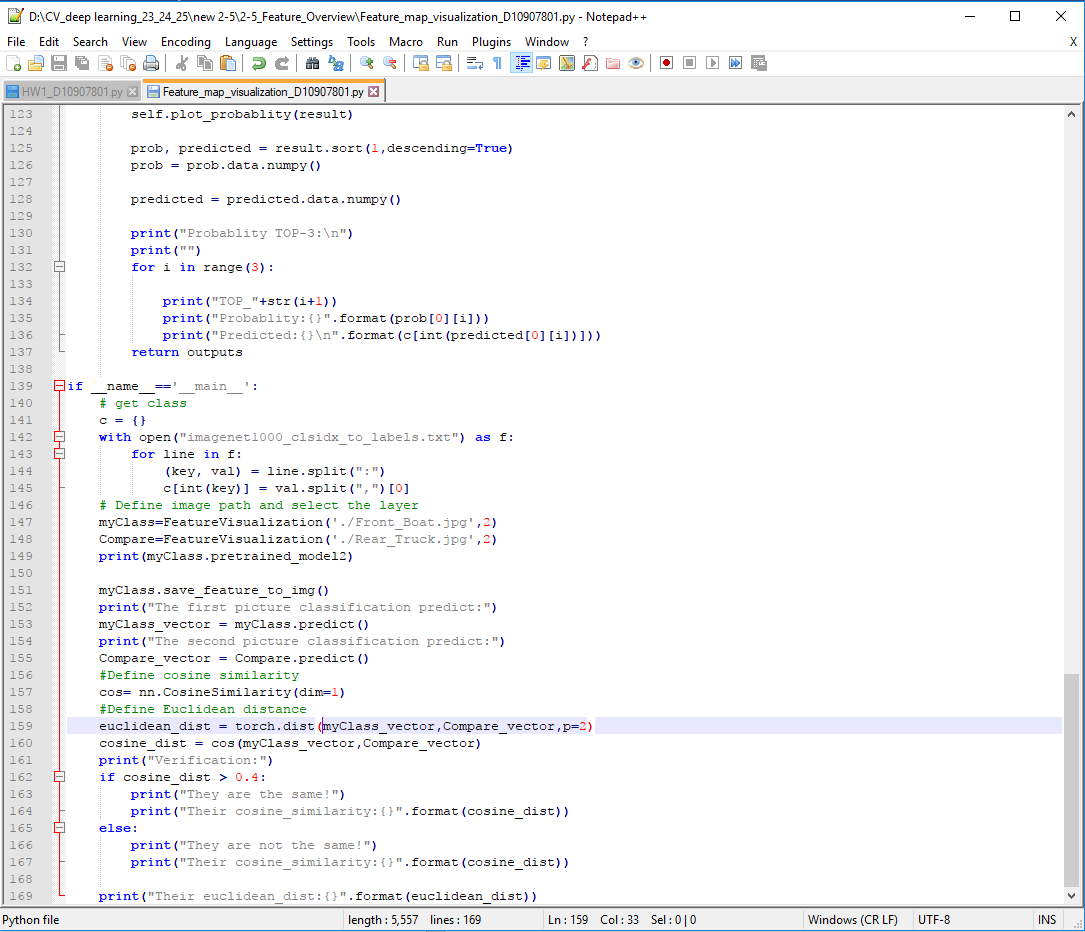
else:

print("They are not the same!")

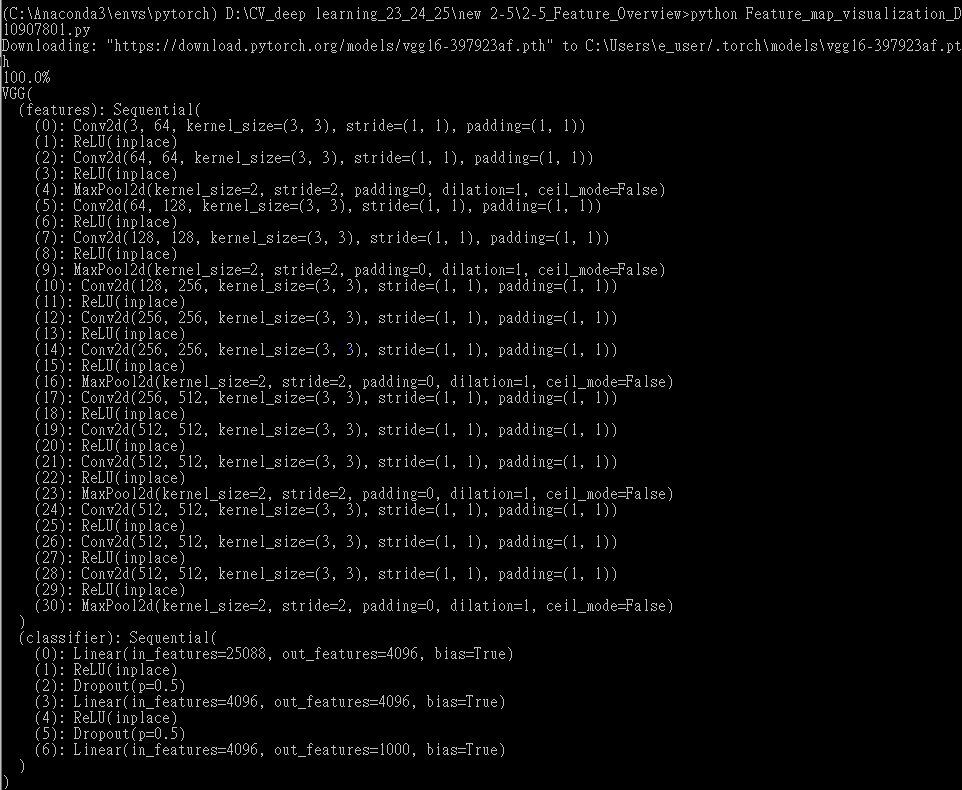
print("Their cosine\_similarity:{}".format(cosine\_dist))

print("Their euclidean\_dist:{}".format(euclidean\_dist))

Code Display



Training

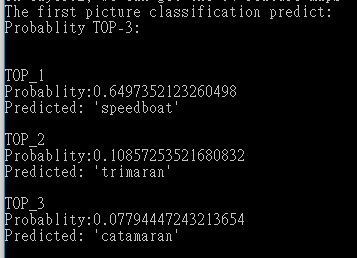


Result of Boat Pic (1st pic)



Real Image

Result of visualization



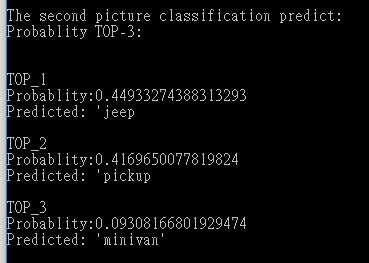
Speedboat is predicted by 64.9 % in the Top 1

Result of Truck Pic (2nd pic)



Real Image

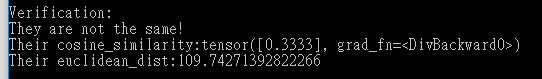
Result of visualization



Jeep is predicted by 44.9 % in the Top 1

Pickup is predicted by 41.70% in the Top 2

Verification



The result is shown that 2 pics are not the same.