

Openvino.ipynb

Fichier Modifier Affichage Insérer Exécution Outils Aide Dernier enregistrement effectué à 17:28

Commentaire Partager

+ Code + Texte

```
[ ] !pip install openvino-colab
Requirement already satisfied: openvino-colab in /usr/local/lib/python3.7/dist-packages (3.1.4)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead.
[ ] import openvino_colab
from openvino_colab import server
[ ] openvino_colab
  module 'openvino_colab' from '/usr/local/lib/python3.7/dist-packages/openvino_colab/__init__.py'
[ ] pwd
'/content/openvino-colab/demo_files'
[ ] !git clone "https://github.com/alihussainia/openvino-colab.git"
Cloning into 'openvino-colab'...
remote: Enumerating objects: 383, done.
remote: Counting objects: 100% (58/58), done.
remote: Compressing objects: 100% (58/58), done.
remote: Total 383 (delta 24), reused 0 (delta 0), pack-reused 325
Receiving objects: 100% (383/383), 73.03 MiB | 5.20 MiB/s, done.
Resolving deltas: 100% (155/155), done.
[ ] install_dir = "/opt/intel/openvino_2021/"
model_optimizer = "/opt/intel/openvino_2021/deployment_tools/model_optimizer/"
deployment_tools = "/opt/intel/openvino_2021/deployment_tools/"
model_zoo = "/opt/intel/openvino_2021/deployment_tools/open_model_zoo/"
[ ] cd /content/openvino-colab/demo_files/
[content/openvino-colab/demo_files]
[ ] !python $model_zoo/tools/downloader/'downloader.py --name vehicle-attributes-recognition-barrier-0039 --precisions FP32 -o /content/openvino-colab/demo_files/models
#####
| Downloading vehicle-attributes-recognition-barrier-0039 ||#####
===== Downloading /content/openvino-colab/demo_files/models/intel/vehicle-attributes-recognition-barrier-0039/FP32/vehicle-attributes-recognition-barrier-0039.xml
... 100%, 37 KB, 2450 KB/s, 0 seconds passed
===== Downloading /content/openvino-colab/demo_files/models/intel/vehicle-attributes-recognition-barrier-0039/FP32/vehicle-attributes-recognition-barrier-0039.bin
... 100%, 2445 KB, 21279 KB/s, 0 seconds passed
[ ] !source /opt/intel/openvino_2021/bin/setupvars.sh && python app.py -i "images/blue-car.jpg" -t "CAR_META" -m "/content/openvino-colab/demo_files/models/intel/vehicle-attributes-recognition-barrier-0039"
[setupvars.sh] OpenVINO environment initialized
[content/openvino-colab/demo_files/inference.py:41: DeprecationWarning: Reading network using constructor is deprecated. Please, use IECore.read_network() method instead
network = IENetwork(model=model_xml, weights=model_bin)
[content/openvino-colab/demo_files/inference.py:47: DeprecationWarning: 'inputs' property of IENetwork class is deprecated. To access DataPtrs user need to use 'input_data' property of :
self.input_blob = next(iter(network.inputs))
[content/openvino-colab/demo_files/inference.py:65: DeprecationWarning: 'outputs' property of InferRequest is deprecated. Please instead use 'output_blobs' property.
return self.exec_network.requests[0].outputs
Success
[ ] cd /content/openvino-colab/demo_files/outputs/
[content/openvino-colab/demo_files/outputs]
[ ] !curl -o car.png
from google.colab.patches import cv2_imshow
import cv2

img = cv2.imread("CAR_META-output.png", cv2.IMREAD_UNCHANGED)
cv2_imshow(img)
```



Color: blue, Type: car

```
[ ] !cd /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites/ && ./install_prerequisites.sh tf2
Hit:1 http://ppa.launchpad.net/c2d4u.team/c2d4u_0/ubuntu bionic InRelease
Get:2 http://archive.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Hit:3 http://ppa.launchpad.net/c2d4u_0/ubuntu bionic InRelease
Hit:4 https://cloud.r-project.org/bin/linux/ubuntu bionic _cran49 InRelease
Hit:5 http://ppa.launchpad.net/leadsnakes/ppa/ubuntu bionic InRelease
Hit:6 http://ppa.launchpad.net/graphics-drivers/ppa/ubuntu bionic InRelease
Hit:7 http://archive.ubuntu.com/ubuntu bionic InRelease
Ign:8 https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x86_64 InRelease
Get:9 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Ign:10 https://developer.download.nvidia.com/compute/machine-learning/repos/ubuntu1804/x86_64 InRelease
Hit:11 https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x86_64 Release
Get:12 https://developer.download.nvidia.com/compute/machine-learning/repos/ubuntu1804/x86_64 Release
Get:13 https://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Fetched 252 kB in 1s (220 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
47 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3-pip is already the newest version (9.0.1-2.3-ubuntul.18.04.5).
python3-pip is already the newest version (3.0.7-1+ubuntu).
0 upgraded, 0 newly installed, 0 to remove and 47 not upgraded.
Requirement already satisfied: pip in /usr/local/lib/python3.7/dist-packages (22.0.4)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead.
Collecting tensorflow<2.2
  Downloading tensorflow-2.8.0-cp37-cp37m-manylinux2010_x86_64.whl (497.5 MB)
        497.5/497.5 MB 2.2 MB/s eta 0:00:00
Requirement already satisfied: networkx>=1.11 in /usr/local/lib/python3.7/dist-packages (from -r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites/requirements.txt)
```

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requirement already satisfied: numpy<=1.18.0 in /usr/local/lib/python3.8/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: test-generator<=0.1.1 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: defusedxml<=0.5.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: requests<=2.20.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: six in /usr/local/lib/python3.7/dist-packages (from test-generator<=0.1.1->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: gast<=0.2.1 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Collecting numpy<1.14.0
Downloaded numpy-1.21.6-cp37-cp37m-manylinux_2_12_x86_64.manylinux2010_x86_64.whl (15.7 MB)
  15.7/15.7 kB/s eta 0:00:06
Requirement already satisfied: grpc<0.20.0->1.24.3 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: typing-extensions<=3.6.6 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: protobuf<=3.9.2 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Collecting tensorboard<2.9,>2.8
Downloaded tensorboard-2.8.0-py3-none-any.whl (5.8 MB)
  5.8/5.8 kB/s 74.4 MB/s eta 0:00:00
Requirement already satisfied: libclang<=9.0.1 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: keras<2.9,>2.8.0rc0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: tensorflow<2.2.0->1.1.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: astor<0.8.1,>0.7.1 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: absl-py<0.4.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: opt-einsmu<=3.2.2 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: keras-preprocessing<1.1.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: tensorflow-io-gcs-filesystem<=0.23.1 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: flatbuffers<1.12 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: setuptools in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)
Requirement already satisfied: h5py<=2.9.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow<2.2.0->~r /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites..)

```

```
[1] import logging
log = logging.getLogger("openvino")
```

```
[2]
wget https://apt.repos.intel.com/openvino/2021/GPG-PUB-KEY-INTEL-OPENVINO-2021
lsudo apt-key add GPG-PUB-KEY-INTEL-OPENVINO-2021
echo "deb https://apt.repos.intel.com/openvino/2021 all main" | sudo tee /etc/apt/sources.list.d/intel-openvino-2021.list
lsudo apt update > /dev/null $2>&1
lsudo apt install intel-openvino-dev-ubuntu20-2021.3.394 -y > /dev/null $2>&1
lbash /opt/intel/openvino_2021/bin/setupvars.sh
```

```
-- 2022-04-24 16:18:06 - https://apt.repos.intel.com/openvino/2021/GPG-PUB-KEY-INTEL-OPENVINO-2021
Resolving apt.repos.intel.com (apt.repos.intel.com)... 23.192.87.240, 2600:1402:3800:12ab:14b23, 2600:1402:3800:2aa:14b23
Connecting to apt.repos.intel.com (apt.repos.intel.com)|23.192.87.240|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 939 [binary/octet-stream]
Saving to: 'GPG-PUB-KEY-INTEL-OPENVINO-2021'

GPG-PUB-KEY-INTEL-0 100%[=====] 939 -->-- KB/s in 0s
```

```
2022-04-24 16:18:06 (38.5 MB/s) - 'GPG-PUB-KEY-INTEL-OPENVINO-2021' saved [939/939]
```

```
OK
deb https://apt.repos.intel.com/openvino/2021 all main
[setupvars.sh] OpenVINO environment initialized
```

```
[3] !python3 -m pip install openvino-dev
```

```
Collecting openvino-dev
  Downloading openvino_dev-2022.1.0-7019-py3-none-any.whl (5.8 MB)
    5.8/5.8 kB/s 5.8 MB 4.9 MB/s
Collecting tokenizers<=0.10.1
  Downloading tokenizers-0.10.3-cp37-cp37m-manylinux_2_5_x86_64_manylinux1_x86_64_manylinux2010_x86_64.whl (3.3 MB)
    3.3 MB 41.4 MB/s
Requirement already satisfied: tqdm<=4.54.1 in /usr/local/lib/python3.7/dist-packages (from openvino-dev) (4.64.0)
Collecting jupyterlab<=0.0.2
  Downloading jupyterlab-0.0.2.tar.gz (2.0 kB)
Requirement already satisfied: networkx<=2.6 in /usr/local/lib/python3.7/dist-packages (from openvino-dev) (2.6.3)
Collecting pycparser<1.2.1
  Downloading pycparser-1.2.0.post2-cp37-cp37m-manylinux_2_5_x86_64_manylinux1_x86_64.whl (603 kB)
    603 kB 53.8 MB/s
Requirement already satisfied: scikit-image<=0.17.2 in /usr/local/lib/python3.7/dist-packages (from openvino-dev) (0.18.3)
Collecting py-cpuinfo<7.0.0
  Downloading py-cpuinfo-8.0.0.tar.gz (99 kB)
    99 kB 7.5 MB/s
Collecting openvnc-python<=4.5.5
  Downloading openvnc_python-4.5.5.64-cp36-ab13-manylinux_2_17_x86_64_manylinux2014_x86_64.whl (60.5 MB)
    60.5 MB 1.2 MB/s
Collecting addict<2.4.0
  Downloading addict-2.4.0-py3-none-any.whl (3.8 kB)
Requirement already satisfied: shapeley<=1.7.1 in /usr/local/lib/python3.7/dist-packages (from openvino-dev) (1.8.1.post1)
Collecting pydicom<=2.1.2
  Downloading pydicom-2.1.3-py3-none-any.whl (2.0 MB)
    2.0 MB 43.8 MB/s
Collecting texttable<=1.6.3
  Downloading texttable-1.6.4-py2.py3-none-any.whl (19 kB)
Collecting imagecodecs<=2021.11.20
  Downloading imagecodecs-2021.11.20-cp37-cp37m-manylinux_2_17_x86_64_manylinux2014_x86_64.whl (31.0 MB)
    31.0 MB 73.3 MB/s
Collecting fast-ttc-decode<0.2.5
  Downloading fast_ttc_decode-0.3.2-cp37-cp37m-manylinux_2_5_x86_64_manylinux1_x86_64_manylinux2010_x86_64.whl (517 kB)
    517 kB 67.4 MB/s
Collecting nltk<3.5
  Downloading nltk-3.7-py3-none-any.whl (1.5 MB)
    1.5 MB 53.6 MB/s
Collecting nibabel<3.2.1
  Downloading nibabel-3.2.2-py3-none-any.whl (3.3 MB)
    3.3 MB 41.9 MB/s
Collecting openvino=<2022.1.0
  Downloading openvino-2022.1.0-7019-cp37-cp37m-manylinux_2_27_x86_64.whl (26.1 MB)
    26.1 MB 1.8 MB/s
Collecting numpy<1.21,>1.16.6
  Downloading numpy-1.21.0-cp37-cp37m-manylinux_2_12_x86_64_manylinux2010_x86_64.whl (15.7 MB)
    15.7 MB 41.9 MB/s
Collecting scikit-learn<0.24.1
  Downloading scikit_learn-0.24.2-cp37-cp37m-manylinux2010_x86_64.whl (22.3 MB)
    22.3 MB 1.5 MB/s
Collecting rawpy<=0.16.0
  Downloading rawpy-0.17.1-cp37-cp37m-manylinux_2_17_x86_64_manylinux2014_x86_64.whl (1.9 MB)
    1.9 MB 39.7 MB/s
Collecting parساال<1.2.4
  Downloading parساال-1.2.4-py2.py3-none-manylinux2010_x86_64.whl (14.1 MB)
    14.1 MB 18.5 MB/s
Collecting progress<=1.5
  Downloading progress-1.6.tar.gz (7.8 kB)
```

```
[ ] !pip install imgaug==0.2.5
```

```
Collecting imgaug==0.2.5
  Downloading imgaug-0.2.5.tar.gz (562 kB)
    562 kB 4.4 MB/s
Requirement already satisfied: scipy in /usr/local/lib/python3.7/dist-packages (from imgaug==0.2.5) (1.5.4)
Requirement already satisfied: scikit-image<=0.11.0 in /usr/local/lib/python3.7/dist-packages (from imgaug==0.2.5) (0.18.3)
Requirement already satisfied: numpy<=1.7.1 in /usr/local/lib/python3.7/dist-packages (from imgaug==0.2.5) (1.19.5)
Requirement already satisfied: six in /usr/local/lib/python3.7/dist-packages (from imgaug==0.2.5) (1.15.0)
Requirement already satisfied: pillow<7.1.0,!7.1.1,>4.3.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image<=0.11.0->imgaug==0.2.5) (9.1.0)
Requirement already satisfied: matplotlib<3.0.0,>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image<=0.11.0->imgaug==0.2.5) (3.2.2)
Requirement already satisfied: networkx<2.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image<=0.11.0->imgaug==0.2.5) (2.6.3)
Requirement already satisfied: satpy<2.2.2,>=2.1.0 in /usr/local/lib/python3.7/dist-packages (from scikit-image<=0.11.0->imgaug==0.2.5) (2.2.3)
Requirement already satisfied: tifffile<2019.7.26 in /usr/local/lib/python3.7/dist-packages (from scikit-image<=0.11.0->imgaug==0.2.5) (2021.1.2)
Requirement already satisfied: pyyaml<=1.1.1 in /usr/local/lib/python3.7/dist-packages (from scikit-image<=0.11.0->imgaug==0.2.5) (2021.2.2)
Requirement already satisfied: cython<0.10 in /usr/local/lib/python3.7/dist-packages (from matplotlib<3.0.0,>=2.0.0->scikit-image<=0.11.0->imgaug==0.2.5) (0.11.0)
Requirement already satisfied: python-dateutil<2.1 in /usr/local/lib/python3.7/dist-packages (from matplotlib<3.0.0,>=2.0.0->scikit-image<=0.11.0->imgaug==0.2.5) (2.8.2)
Requirement already satisfied: kiwisolver<=1.0.1 in /usr/local/lib/python3.7/dist-packages (from matplotlib<3.0.0,>=2.0.0->scikit-image<=0.11.0->imgaug==0.2.5) (1.4.2)
Requirement already satisfied: typing-extensions in /usr/local/lib/python3.7/dist-packages (from kiwisolver<=1.0.1->matplotlib<3.0.0,>=2.0.0->scikit-image<=0.11.0->imgaug==0.2.5) (4.1.4)
Building wheels for collected packages: imgaug
Building wheel for imgaug (setup.py) ... done
  Creating wheel for imgaug: filename=imgaug-0.2.5-py3-none-any.whl size=561438 sha256=e479212c839b46fa490a745cc65945342c29df67ca616dfba0d4855231a34
  Stored in directory: /root/.cache/pip/wheels/60/0d/38/cd1c2bd6a66dc0249261004990bcbbf27985c74ba26e49
Successfully built imgaug
Successfully built collected packages: imgaug
Attempting uninstall: imgaug
  Found existing installation: imgaug 0.2.9
  Uninstalling imgaug-0.2.9...
    Successfully uninstalled imgaug-0.2.9
Successfully installed imgaug-0.2.5
```

```
[ ] pip install folium==0.2.1
Collecting folium==0.2.1
  Downloading folium-0.2.1.tar.gz (69 kB)
Requirement already satisfied: Jinja2 in /usr/local/lib/python3.7/dist-packages (from folium==0.2.1) (2.11.3)
Requirement already satisfied: MarkupSafe<0.23 in /usr/local/lib/python3.7/dist-packages (from Jinja2->folium==0.2.1) (0.2.1)
Building wheels for collected packages: folium
  Building wheel for folium (setup.py) ... done
    Created wheel for folium: filename=folium-0.2.1-py3-none-any.whl size=79808 sha256=e1b34625d85bf54beaad438e71f380e506ab4bcd7f72e0300ef0f44131159
    Stored in directory: /root/.cache/pip/wheels/f0/3a/3f9a691aff5affaf50cabad6c9fd565283283c97f0b0dcf
Successfully built folium
Installing collected packages: folium
  Attempting uninstall: folium
    Found existing installation: folium 0.8.3
      Uninstalling folium-0.8.3:
        Successfully uninstalled folium-0.8.3
Successfully installed folium-0.2.1

[ ] pip install tf-estimator-nightly==2.8.0.dev2021122109
Collecting tf-estimator-nightly==2.8.0.dev2021122109
  Downloading tf_estimator_nightly-2.8.0.dev2021122109-py3.py3-none-any.whl (462 kB)
    462 kB 4.2 MB/s
Installing collected packages: tf-estimator-nightly
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
tensorflow 2.8.0 requires numpy<1.20, but you have numpy 1.19.5 which is incompatible.
Successfully installed tf-estimator-nightly-2.8.0.dev2021122109

[ ] pip install scikit-learn==1.0.0
Collecting scikit-learn==1.0.0
  Downloading scikit_learn-1.0-cp37-cp37m-manylinux_2_12_x86_64_manylinux2010_x86_64.whl (23.1 MB)
    23.1 MB 2.5 MB/s
Requirement already satisfied: joblib>=0.1 in /usr/local/lib/python3.7/dist-packages (from scikit-learn==1.0.0) (1.1.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from scikit-learn==1.0.0) (3.1.0)
Requirement already satisfied: scipy>=1.1.0 in /usr/local/lib/python3.7/dist-packages (from scikit-learn==1.0.0) (1.5.4)
Requirement already satisfied: numpy<1.14.6 in /usr/local/lib/python3.7/dist-packages (from scikit-learn==1.0.0) (1.19.5)
Installing collected packages: scikit-learn
  Attempting uninstall: scikit-learn
    Found existing installation: scikit-learn 0.24.2
    Uninstalling scikit-learn-0.24.2:
      Successfully uninstalled scikit-learn-0.24.2
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
openvino-dev 2022.1.0 requires scikit-learn<0.24.1, but you have scikit-learn 1.0 which is incompatible.
Successfully installed scikit-learn-1.0

[ ] pip install requests==2.23.0
Collecting requests==2.23.0
  Downloading requests-2.23.0-py2.py3-none-any.whl (58 kB)
    58 kB 2.5 MB/s
Requirement already satisfied: chardet<4,>=3.0.2 in /usr/local/lib/python3.7/dist-packages (from requests==2.23.0) (3.0.4)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests==2.23.0) (2.10)
Requirement already satisfied: urllib3<1.26,>=1.21.1 in /usr/local/lib/python3.7/dist-packages (from requests==2.23.0) (2021.10.8)
Requirement already satisfied: urllib3!=1.25.0,>=1.25.1 in /usr/local/lib/python3.7/dist-packages (from requests==2.23.0) (1.24.3)
Installing collected packages: requests
  Attempting uninstall: requests
    Found existing installation: requests 2.27.1
    Uninstalling requests-2.27.1:
      Successfully uninstalled requests-2.27.1
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
openvino-dev 2022.1.0 requires requests>=2.23.0, but you have requests 2.27.1 which is incompatible.
openvino-dev 2022.1.0 requires scikit-learn<0.24.1, but you have scikit-learn 1.0 which is incompatible.
dataScience 0.10.6 requires folium==0.2.1, but you have folium 0.8.3 which is incompatible.
Successfully installed requests-2.23.0

[4] import tensorflow as tf
model = tf.keras.models.load_model("content/lane_navigation.h5")
tf.saved_model.save(model, "model")

INFO:tensorflow:Assets written to: model/assets
```

```
[5] model.summary()
print(model.layers[0].name, model.layers[0].get_input_shape_at(0))
print(model.layers[-1].name, model.layers[-1].get_output_shape_at(0).name)

Model: "Nvidia_Model"
+-----+
Layer (Type)          Output Shape       Param #
+-----+
conv2d_1 (Conv2D)     (None, 31, 98, 24) 1824
conv2d_2 (Conv2D)     (None, 14, 47, 36)  21636
conv2d_3 (Conv2D)     (None, 5, 22, 48)   43248
conv2d_4 (Conv2D)     (None, 3, 20, 64)   27712
dropout_1 (Dropout)   (None, 3, 20, 64)   0
conv2d_5 (Conv2D)     (None, 1, 18, 64)   36928
flatten_1 (Flatten)   (None, 1152)        0
dropout_2 (Dropout)   (None, 1152)        0
dense_1 (Dense)      (None, 100)         115300
dense_2 (Dense)      (None, 50)          5050
dense_3 (Dense)      (None, 10)          510
dense_4 (Dense)      (None, 1)           11
+-----+
Total params: 252,219
Trainable params: 252,219
Non-trainable params: 0
conv2d_1 (None, 66, 200, 3)
dense_4/dense_4/BiasAdd:0
```

```
[ ] cd /opt/intel/openvino_2021/deployment_tools/model_optimizer
/opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer
```

```
[ ] cd /opt/intel/openvino_2021/deployment_tools/model_optimizer/install_prerequisites
/opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer/install_prerequisites
```

```
[ ] import os
os.environ.get('PYTHONPATH', '').split(os.pathsep)
['"/opt/intel/openvino_2021.3.394/python/python3.7"']
```

```
[ ] pip install numpy==1.19.5
Requirement already satisfied: numpy==1.19.5 in /usr/local/lib/python3.7/dist-packages (1.19.5)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead.
<-->
```

```
[6] import openvino
```

```
[7] from openvino import inference_engine
```

```
[ ] pwd
/content
```

```
[1] echo PYTHONPATH
set
Xenv PYTHONPATH="/opt/intel/openvino_2021.3.394/python/python3.7"
XPYTHONPATH
echo PYTHONPATH = %PYTHONPATH%
```

PYTHONPATH
env: PYTHONPATH="/opt/intel/openvino_2021.3.394/python/python3.7"
UsageError: line magic function "%PYTHONPATH" not found.

```
[2] echo PYTHONPATH
PYTHONPATH
```

```
[3] cd /content
/content
```

```
[4] git clone https://github.com/openvinotoolkit/openvino
Cloning into 'openvino'...
remote: Enumerating objects: 241040, done.
remote: Total 241040 (delta 0), reused 0 (delta 0), pack-reused 241040
Receiving objects: 100% (241040/241040), 180.21 MiB | 16.87 MiB/s, done.
Resolving deltas: 100% (183045/183045), done.
Checking out files: 100% (15032/15032), done.
```

```
[5] python3 /opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer/mo_tf.py --saved_model_dir model/ --input_shape=[1,28,28]
Model Optimizer arguments:
Common parameters:
- Path to the Input Model: None
- Path for generated IR: /content/
- IR output name: saved_model
- Log level: ERROR
- Batch: Not specified, inherited from the model
- Input layers: Not specified, inherited from the model
- Output layers: Not specified, inherited from the model
- Input shapes: [1,28,28]
- Mean values: Not specified
- Scale values: Not specified
- Scale factor: Not specified
- Precision of IR: FP32
- Enable fusing: True
- Enable grouped convolutions fusing: True
- Move mean values to preprocess section: None
- Reverse input channels: False
TensorFlow specific parameters:
- Input model in text protobuf format: False
- Path to model dump for TensorBoard: None
- List of shared libraries with Tensorflow custom layers implementation: None
- Update the configuration file with input/output node names: None
- Use configuration file used to generate the model with Object Detection API: None
- Use the config file: None
[WARNING] Failed to import Inference Engine Python API in: PYTHONPATH
[WARNING] Cannot import name 'ApplyModelTransformations' from 'openvino.offline_transformations' (/usr/local/lib/python3.7/dist-packages/openvino/offline_transformations/_init__.py)
[WARNING] Failed to import Inference Engine Python API in: /opt/intel/openvino_2021.3.394/python/python3.7
[WARNING] libinference_engine.so: cannot open shared object file: No such file or directory
[WARNING] libinference_engine_ie_api.so: cannot open shared object file: No such file or directory
[WARNING] libinference_engine_ie_api.so: version 'GLIBCXX 3.4.26' not found (required by /opt/intel/openvino_2021.3.394/python/python3.7)
[WARNING] /usr/lib/x86_64-linux-gnu/libstdc++-so.6: version 'GLIBCXX 3.4.26' not found (required by /opt/intel/openvino_2021.3.394/python/python3.7)
[WARNING] Could not find the Inference Engine Python API. At this moment, the Inference Engine dependency is not required, but will be required in future releases.
[WARNING] Consider building the Inference Engine Python API from sources or try to install OpenVINO™ Toolkit using "install_prerequisites.sh"
Model Optimizer version: 2021.3.0-2787-60059f2c755-releases/2021/3
[WARNING]
Detected not satisfied dependencies:
test-generator: not installed, required: == 0.1.1
Please install required versions of components or use install_prerequisites script
/opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer/install_prerequisites/install_prerequisites_tf2.sh
Note that install_prerequisites scripts may install additional components.
[ERROR] Cannot infer shapes or values for node "AdditionalPartitionedCall/Nvidia_Model/conv2d_1/Conv2D".
[ERROR] index 3 is out of bounds for axis 0 with size 3
[ERROR]
[ERROR] It can happen due to bug in custom shape infer function <function Convolution.infer at 0x7f2446eb8e0>.
[ERROR] Or because the node inputs have incorrect values/shapes.
[ERROR] Or because input shapes are incorrect (embedded to the model or passed via --input_shape).
[ERROR] Run Model Optimizer with --log_level=DEBUG for more information.
[ERROR] Exception occurred during running replacer "REPLACEMENT_ID" (<class 'extensions.middle.PartialInfer.PartialInfer'>): Stopped shape/value propagation at "StatefulPartitionedCall/Nvidia_Model/conv2d_1/Conv2D". For more information please refer to Model Optimizer FAQ, question #38. (https://docs.openvino\_toolkit.org/latest/openvino\_docs\_MO\_DG\_prepare\_model\_Model\_Optimizer\_FAQ.html?question=38)
```

```
[6] pip install --upgrade pip
pip install openvino
Requirement already satisfied: pip in /usr/local/lib/python3.7/dist-packages (22.0.4)
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead.
Requirement already satisfied: openvino in /usr/local/lib/python3.7/dist-packages (2022.1.0)
Collecting numpy<1.20,>=1.16.6
  Using cached numpy-1.19.5-cp37-cp37m-manylinux2010_x86_64.whl (14.8 MB)
  Integrity check passed, packages are up-to-date.
Attempting uninstal: numpy
  Found existing installation: numpy 1.21.6
  Uninstalling numpy-1.21.6:
    Successfully uninstalled numpy-1.21.6
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
yellowbrick 1.4 requires scikit-learn>=0.18.0, but you have scikit-learn 0.24.2 which is incompatible.
tensorflow 2.8.0 requires numpy<1.20, but you have numpy 1.19.5 which is incompatible.
google-colab 1.0.0 requires requests<=2.23.0, but you have requests 2.27.1 which is incompatible.
datascience 0.10.6 requires folium<=0.2.1, but you have folium 0.8.3 which is incompatible.
albumentations 0.12 requires imgaug<0.2.7,>=0.2.5, but you have imgaug 0.2.9 which is incompatible.
Successfully installed numpy-1.19.5
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead.
```

```
[7] cd /opt/intel/openvino_2021.3.394/deployment_tools/inference_engine/lib/intel64
/opt/intel/openvino_2021.3.394/deployment_tools/inference_engine/lib/intel64
```

```
[8] from openvino.inference_engine import IECore, IENetwork
```

```
[9] ie = IECore()
```

```
[10] model_xml = '/content/lane_navigation_final.xml'
model_bin = '/content/lane_navigation_final.bin'
```

```
[11] net = ie.read_network(model=model_xml, weights=model_bin)
```

```
[12] !source /opt/intel/openvino_2021.3.394/bin/setupvars.sh &&
!/opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer/install_prerequisites/install_prerequisites.sh tf2
Requirement already satisfied: tensorflow-io-gcs-filesystem<0.23.1,>=0.23.0 in /usr/local/lib/python3.7/dist-packages (from tensorflow>=2.2->r /opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer)
Requirement already satisfied: charset-normalizer<2.0.0,>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from requests>=2.20.0,>=r /opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /usr/local/lib/python3.7/dist-packages (from requests>=2.20.0,>=r /opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer)
Requirement already satisfied: certifi<=2017.4.17 in /usr/local/lib/python3.7/dist-packages (from requests>=2.20.0,>=r /opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer)
Requirement already satisfied: idna<3.2,>=2.5 in /usr/local/lib/python3.7/dist-packages (from requests>=2.20.0,>=r /opt/intel/openvino_2021.3.394/deployment_tools/model_optimizer)
Requirement already satisfied: wheel<1.0,>=0.23.0 in /usr/local/lib/python3.7/dist-packages (from astunparse>=1.6.0->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: cached-property in /usr/local/lib/python3.7/dist-packages (from h5py>2.9.0->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tools/model_o)
Requirement already satisfied: markdown<2.6.8,>=2.6.8 in /usr/local/lib/python3.7/dist-packages (from tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: tensorflow-board-plugin-wit<1.0,>=1.0 in /usr/local/lib/python3.7/dist-packages (from tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: werkzeug<0.11.1,>=0.10.5 in /usr/local/lib/python3.7/dist-packages (from tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: google-auth<2.18.0,>=2.17.1 in /usr/local/lib/python3.7/dist-packages (from tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: tensorflow-data-server<0.7.0,>=0.6.0 in /usr/local/lib/python3.7/dist-packages (from tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: pyasn1-modules<0.2.1,>=0.2.0 in /usr/local/lib/python3.7/dist-packages (from google-auth<2.18.0,>=2.17.1->tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: pyasn1<3.1.4,>=3.1.4 in /usr/local/lib/python3.7/dist-packages (from google-auth<2.18.0,>=2.17.1->tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: cachetools<5.0,>=2.0.0 in /usr/local/lib/python3.7/dist-packages (from google-auth<2.18.0,>=2.17.1->tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: rsa<5.3.1,>=3.1.4 in /usr/local/lib/python3.7/dist-packages (from google-auth<2.18.0,>=2.17.1->tensorflowboard>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: requests-oauthlib<0.5.0,>=0.4.6 in /usr/local/lib/python3.7/dist-packages (from pyasn1-modules<0.2.1,>=0.2.0->google-auth<3.16.3->tensorflow>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: zipp<0.6,>=0.5 in /usr/local/lib/python3.7/dist-packages (from importlib-metadata<4.4,>=4.3->markdown>2.6.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: pyasn1<0.5.0,>=0.4.6 in /usr/local/lib/python3.7/dist-packages (from pyasn1-modules<0.2.1,>=0.2.0->google-auth<3.16.3->tensorflow>2.9,>=2.8->tensorflow>2.2->r /opt/intel/openvino_2021.3.394/deployment_tool)
Requirement already satisfied: oauthlib<3.0.0,>=0.3.0 in /usr/local/lib/python3.7/dist-packages (from requests-oauthlib<0.5.0,>=0.4.1->tensorflow>2.9,>=2.8->tenso
```

```

Attempting uninstall: numpy
  Found existing installation: numpy 1.19.5
  Uninstalling numpy-1.19.5:
    Successfully uninstalled numpy-1.19.5
ERROR: pip's dependency resolver does not currently take into account all the packages that are installed. This behaviour is the source of the following dependency conflicts.
yolov3.0.0 requires numpy<1.20,>=1.19.5, but you have numpy 1.21.6 which is incompatible.
openvino_2022.1.0 requires numpy<1.20,>=1.19.5, but you have numpy 1.21.6 which is incompatible.
openvino-dev_2022.1.0 requires numpy<1.20,>=1.19.6, but you have numpy 1.21.6 which is incompatible.
openvino-dev_2022.1.0 requires numpy<1.21,>=1.19.6: python_version > "3.6", but you have numpy 1.21.6 which is incompatible.
google-colab_0.10.0 requires requests<2.23.0, but you have requests 2.27.1 which is incompatible.
datascience_0.10.6 requires folium==0.2.1, but you have folium 0.8.3 which is incompatible.
albumentations_0.1.12 requires imgaug<0.2.7,>=0.2.5, but you have imgaug 0.2.9 which is incompatible.
Successfully installed numpy-1.21.6 test-generator-0.1.1 tf-estimator-nightly-2.8.0.dev2021122109
WARNING: Running pip as the 'root' user can result in broken permissions and conflicting behaviour with the system package manager. It is recommended to use a virtual environment instead.
[ WARNING ] Failed to import Inference Engine Python API in: PYTHONPATH
[ WARNING ] /opt/intel/openvino_2021.3.394/python/python3.7/openvino/inference_engine/ie_api.py
[ WARNING ] Failed to import Inference Engine Python API in: /opt/intel/openvino_2021.3.394/python/python3.7/openvino/inference_engine/ie_api.py
[ WARNING ] /usr/lib/x86_64-linux-gnu/libstdc++.so.6: version 'GLIBCXX_3.4.26' not found (required by /opt/intel/openvino_2021.3.394/python/python3.7/openvino/inference_engine/ie_api.py)
[ WARNING ] Failed to import Inference Engine Python API in: /opt/intel/openvino_2021.3.394/python/python3.7/openvino/inference_engine/ie_api.py
[ WARNING ] /usr/lib/x86_64-linux-gnu/libstdc++.so.6: version 'GLIBCXX_3.4.26' not found (required by /opt/intel/openvino_2021.3.394/python/python3.7/openvino/inference_engine/ie_api.py)

Name: openvino
Version: 2022.1.0
Summary: OpenVINO(TM) Runtime
Home-page: https://docs.openvino.ai/latest/index.html
Author: Intel Corporation
Author-email: openvino_pushbot@intel.com
License: Apache Software License
Location: /usr/local/lib/python3.7/dist-packages
Requires: numpy
Required-by: openvino-dev
[ WARNING ] OpenVINO(TM) Toolkit version installed in pip is incompatible with the Model Optimizer.
[ WARNING ] For the release version of the Model Optimizer, which is 2021.3, install the OpenVINO(TM) toolkit using "pip install openvino==2021.3" or build the Inference Engine Python API from source.
[ WARNING ] All Model Optimizer dependencies are installed globally.
[ WARNING ] If you want to keep Model Optimizer in separate sandbox
[ WARNING ] run install_prerequisites.sh "(caffe|tf|tf2|mnet|mkl)[onnx]" venv

```

```
[ 12] exec_net = ie.load_network(network=net, device_name='MYRIAD')
```

```
RuntimeError: Traceback (most recent call last)
<ipython-input-12-daf202290e5> in <module>()
----> 1 exec_net = ie.load_network(network=net, device_name='MYRIAD')

ie_api.pyx in openvino.inference_engine.ie_api.IECore.load_network()

ie_api.pyx in openvino.inference_engine.ie_api.IECore.load_network()

RuntimeError: Cannot load library 'libopenvino_intel_myriad_plugin.so': libopenvino_intel_myriad_plugin.so: cannot open shared object file: No such file or directory
```

SEARCH STACK OVERFLOW

```
[ 1] files = [find . -name libopenvino_intel_myriad_plugin.so
print(files)
```

```
[]
```

```
[ ]
```

```
[ ] cd /content
```

```
/content
```

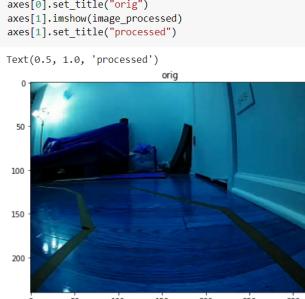
```
[ ] pwd
```

```
'/content'
```

```
[ ] import cv2
import matplotlib.pyplot as plt
# %matplotlib inline
```

```
image1 = cv2.imread('video01_000_085.png')
assert not isinstance(image1,type(None)), 'image not found'
```

```
[ ] def img_preprocess(image):
    height, _ = image.shape
    image = image[int(height/2):,:,:] # remove top half of the image, as it is not relevant for lane following
    image = cv2.cvtColor(image, cv2.COLOR_RGB2YUV) # Nvidia model said it is best to use YUV color space
    image = cv2.GaussianBlur(image, (3,3), 0)
    image = cv2.resize(image, (200,66)) # input image size (200,66) Nvidia model
    image = image / 255 # normalizing, the processed image becomes black for some reason. do we need this?
    return image
```



```
[ ] input_blob = next(iter(net.inputs))
out_blob = next(iter(net.outputs))
```

```
AttributeError: Traceback (most recent call last)
<ipython-input-27-f18bc90602c5> in <module>()
----> 1 input_blob = next(iter(net.inputs))
      2 out_blob = next(iter(net.outputs))

AttributeError: 'openvino.inference_engine.ie_api.IENetwork' object has no attribute 'inputs'
```

SEARCH STACK OVERFLOW

```
[ ] res = exec_net.infer(inputs=(input_blob: image_processed))
res[out_blob].reshape(1,10)
```

```
NameError: Traceback (most recent call last)
<ipython-input-26-e13395ed99a> in <module>()
----> 1 res = exec_net.infer(inputs=(input_blob: image_processed))
      2 res[out_blob].reshape(1,10)
```

NameError: name 'input_blob' is not defined

SEARCH STACK OVERFLOW

```
[ ]
```

