

```
# we use rcnn since it is a model with good documentation online and  
can be used with mobilenet, mobilenet is an efficient model that  
# can run decently on cpu while still having a decent acc.
```

```
!git clone https://github.com/sovit-123/fastercnn-pytorch-training-  
pipeline.git
```

```
Cloning into 'fastercnn-pytorch-training-pipeline'...
```

```
remote: Enumerating objects: 1319, done.ote: Counting objects: 100%  
(415/415), done.ote: Compressing objects: 100% (148/148), done.ote:  
Total 1319 (delta 307), reused 305 (delta 267), pack-reused 904
```

```
%cd fastercnn-pytorch-training-pipeline/
```

```
/content/fastercnn-pytorch-training-pipeline
```

```
# install reqs.
```

```
!pip install -r requirements.txt
```

```
Requirement already satisfied: albumentations>=1.1.0 in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 2)) (1.3.1)
```

```
Requirement already satisfied: ipython in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 3)) (7.34.0)
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Collecting jupyter (from -r requirements.txt (line 4))  
  Downloading jupyter-1.0.0-py2.py3-none-any.whl (2.7 kB)
```

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Requirement already satisfied: matplotlib in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 5)) (3.7.1)
```

```
Requirement already satisfied: opencv-python>=4.1.1.26 in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 6)) (4.8.0.76)
```

```
Requirement already satisfied: Pillow in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 8)) (9.4.0)
```

```
Requirement already satisfied: PyYAML in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 9)) (6.0.1)
```

```
Requirement already satisfied: scikit-image in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 10)) (0.19.3)
```

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Requirement already satisfied: scikit-learn in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 11)) (1.2.2)
```

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Requirement already satisfied: scipy in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 12)) (1.11.3)
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Requirement already satisfied: torch>=1.12.0 in  
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt  
(line 13)) (2.1.0+cu118)
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Requirement already satisfied: torchvision>=0.13.0 in
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt
(line 14)) (0.16.0+cu118)
Requirement already satisfied: numpy in
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt
(line 15)) (1.23.5)
Collecting protobuf<=3.20.1 (from -r requirements.txt (line 16))
  Downloading protobuf-3.20.1-cp310-cp310-
manylinux_2_12_x86_64.manylinux2010_x86_64.whl (1.1 MB)
----- 1.1/1.1 MB 15.8 MB/s eta
0:00:00
Requirement already satisfied: pandas in /usr/local/lib/python3.10/dist-
packages (from -r requirements.txt (line 17)) (1.5.3)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-
packages (from -r requirements.txt (line 18)) (4.66.1)
Collecting deep-sort-realtime (from -r requirements.txt (line 19))
  Downloading deep_sort_realtime-1.3.2-py3-none-any.whl (8.4 MB)
----- 8.4/8.4 MB 37.2 MB/s eta
0:00:00
-r requirements.txt (line 22))
  Downloading wandb-0.16.0-py3-none-any.whl (2.1 MB)
----- 2.1/2.1 MB 80.0 MB/s eta
0:00:00
Requirement already satisfied: tensorboard in /usr/local/lib/python3.10/dist-
packages (from -r requirements.txt (line 23)) (2.14.1)
Collecting torchinfo (from -r requirements.txt (line 26))
  Downloading torchinfo-1.8.0-py3-none-any.whl (23 kB)
Requirement already satisfied: pycocotools>=2.0.2 in
/usr/local/lib/python3.10/dist-packages (from -r requirements.txt
(line 29)) (2.0.7)
Collecting setuptools==59.5.0 (from -r requirements.txt (line 30))
  Downloading setuptools-59.5.0-py3-none-any.whl (952 kB)
----- 952.4/952.4 kB 59.5 MB/s eta
0:00:00
Metrics (from -r requirements.txt (line 31))
  Downloading torchmetrics-1.2.0-py3-none-any.whl (805 kB)
----- 805.2/805.2 kB 56.3 MB/s eta
0:00:00
ers (from -r requirements.txt (line 34))
  Downloading vision_transformers-0.1.1.0.tar.gz (38 kB)
  Preparing metadata (setup.py) ... Requirement already satisfied:
qudida>=0.0.4 in /usr/local/lib/python3.10/dist-packages (from
albumentions>=1.1.0->-r requirements.txt (line 2)) (0.0.4)
Requirement already satisfied: opencv-python-headless>=4.1.1 in
/usr/local/lib/python3.10/dist-packages (from albumentions>=1.1.0->-
r requirements.txt (line 2)) (4.8.1.78)
Collecting jedi>=0.16 (from ipython->-r requirements.txt (line 3))
  Downloading jedi-0.19.1-py2.py3-none-any.whl (1.6 MB)
----- 1.6/1.6 MB 70.6 MB/s eta

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0:00:00
ent already satisfied: decorator in /usr/local/lib/python3.10/dist-
packages (from ipython->-r requirements.txt (line 3)) (4.4.2)
Requirement already satisfied: pickleshare in
/usr/local/lib/python3.10/dist-packages (from ipython->-r
requirements.txt (line 3)) (0.7.5)
Requirement already satisfied: traitlets>=4.2 in
/usr/local/lib/python3.10/dist-packages (from ipython->-r
requirements.txt (line 3)) (5.7.1)
Requirement already satisfied: prompt-toolkit!=3.0.0,!
=3.0.1,<3.1.0,>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from
ipython->-r requirements.txt (line 3)) (3.0.41)
Requirement already satisfied: pygments in
/usr/local/lib/python3.10/dist-packages (from ipython->-r
requirements.txt (line 3)) (2.16.1)
Requirement already satisfied: backcall in
/usr/local/lib/python3.10/dist-packages (from ipython->-r
requirements.txt (line 3)) (0.2.0)
Requirement already satisfied: matplotlib-inline in
/usr/local/lib/python3.10/dist-packages (from ipython->-r
requirements.txt (line 3)) (0.1.6)
Requirement already satisfied: pexpect>4.3 in
/usr/local/lib/python3.10/dist-packages (from ipython->-r
requirements.txt (line 3)) (4.8.0)
Requirement already satisfied: notebook in
/usr/local/lib/python3.10/dist-packages (from jupyter->-r
requirements.txt (line 4)) (6.5.5)
Collecting qtconsole (from jupyter->-r requirements.txt (line 4))
  Downloading qtconsole-5.5.1-py3-none-any.whl (123 kB)
    123.4/123.4 kB 10.9 MB/s eta
```

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0:00:00
ent already satisfied: jupyter-console in
/usr/local/lib/python3.10/dist-packages (from jupyter->-r
requirements.txt (line 4)) (6.1.0)
Requirement already satisfied: nbconvert in
/usr/local/lib/python3.10/dist-packages (from jupyter->-r
requirements.txt (line 4)) (6.5.4)
Requirement already satisfied: ipykernel in
/usr/local/lib/python3.10/dist-packages (from jupyter->-r
requirements.txt (line 4)) (5.5.6)
Requirement already satisfied: ipywidgets in
/usr/local/lib/python3.10/dist-packages (from jupyter->-r
requirements.txt (line 4)) (7.7.1)
Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (1.2.0)
Requirement already satisfied: cycler>=0.10 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (0.12.1)
```

Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (4.44.3)

Requirement already satisfied: kiwisolver>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (1.4.5)

Requirement already satisfied: packaging>=20.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (23.2)

Requirement already satisfied: pyparsing>=2.3.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (3.1.1)

Requirement already satisfied: python-dateutil>=2.7 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->-r
requirements.txt (line 5)) (2.8.2)

Requirement already satisfied: networkx>=2.2 in
/usr/local/lib/python3.10/dist-packages (from scikit-image->-r
requirements.txt (line 10)) (3.2.1)

Requirement already satisfied: imageio>=2.4.1 in
/usr/local/lib/python3.10/dist-packages (from scikit-image->-r
requirements.txt (line 10)) (2.31.6)

Requirement already satisfied: tifffile>=2019.7.26 in
/usr/local/lib/python3.10/dist-packages (from scikit-image->-r
requirements.txt (line 10)) (2023.9.26)

Requirement already satisfied: PyWavelets>=1.1.1 in
/usr/local/lib/python3.10/dist-packages (from scikit-image->-r
requirements.txt (line 10)) (1.4.1)

Requirement already satisfied: joblib>=1.1.1 in
/usr/local/lib/python3.10/dist-packages (from scikit-learn->-r
requirements.txt (line 11)) (1.3.2)

Requirement already satisfied: threadpoolctl>=2.0.0 in
/usr/local/lib/python3.10/dist-packages (from scikit-learn->-r
requirements.txt (line 11)) (3.2.0)

Requirement already satisfied: filelock in
/usr/local/lib/python3.10/dist-packages (from torch>=1.12.0->-r
requirements.txt (line 13)) (3.13.1)

Requirement already satisfied: typing-extensions in
/usr/local/lib/python3.10/dist-packages (from torch>=1.12.0->-r
requirements.txt (line 13)) (4.5.0)

Requirement already satisfied: sympy in
/usr/local/lib/python3.10/dist-packages (from torch>=1.12.0->-r
requirements.txt (line 13)) (1.12)

Requirement already satisfied: jinja2 in
/usr/local/lib/python3.10/dist-packages (from torch>=1.12.0->-r
requirements.txt (line 13)) (3.1.2)

Requirement already satisfied: fsspec in
/usr/local/lib/python3.10/dist-packages (from torch>=1.12.0->-r
requirements.txt (line 13)) (2023.6.0)

Requirement already satisfied: triton==2.1.0 in

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/usr/local/lib/python3.10/dist-packages (from torch>=1.12.0->-r
requirements.txt (line 13)) (2.1.0)
Requirement already satisfied: requests in
/usr/local/lib/python3.10/dist-packages (from torchvision>=0.13.0->-r
requirements.txt (line 14)) (2.31.0)
Requirement already satisfied: pytz>=2020.1 in
/usr/local/lib/python3.10/dist-packages (from pandas->-r
requirements.txt (line 17)) (2023.3.post1)
Requirement already satisfied: Click!=8.0.0,>=7.1 in
/usr/local/lib/python3.10/dist-packages (from wandb->-r
requirements.txt (line 22)) (8.1.7)
Collecting GitPython!=3.1.29,>=1.0.0 (from wandb->-r requirements.txt
(line 22))
  Downloading GitPython-3.1.40-py3-none-any.whl (190 kB)
    _____ 190.6/190.6 kB 22.2 MB/s eta
0:00:00
Requirement already satisfied: psutil>=5.0.0 in
/usr/local/lib/python3.10/dist-packages (from wandb->-r
requirements.txt (line 22)) (5.9.5)
Collecting sentry-sdk>=1.0.0 (from wandb->-r requirements.txt (line
22))
  Downloading sentry_sdk-1.36.0-py2.py3-none-any.whl (249 kB)
    _____ 249.2/249.2 kB 26.0 MB/s eta
0:00:00
wandb->-r requirements.txt (line 22))
  Downloading docker_pycreds-0.4.0-py2.py3-none-any.whl (9.0 kB)
Collecting setproctitle (from wandb->-r requirements.txt (line 22))
  Downloading setproctitle-1.3.3-cp310-cp310-
manylinux_2_5_x86_64.manylinux1_x86_64.manylinux_2_17_x86_64.manylinux
2014_x86_64.whl (30 kB)
Requirement already satisfied: appdirs>=1.4.3 in
/usr/local/lib/python3.10/dist-packages (from wandb->-r
requirements.txt (line 22)) (1.4.4)
Requirement already satisfied: absl-py>=0.4 in
/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (1.4.0)
Requirement already satisfied: grpcio>=1.48.2 in
/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (1.59.2)
Requirement already satisfied: google-auth<3,>=1.6.3 in
/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (2.17.3)
Requirement already satisfied: google-auth-oauthlib<1.1,>=0.5 in
/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (1.0.0)
Requirement already satisfied: markdown>=2.6.8 in
/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (3.5.1)
Requirement already satisfied: six>1.9 in

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/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (1.16.0)
Requirement already satisfied: tensorboard-data-server<0.8.0,>=0.7.0
in /usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (0.7.2)
Requirement already satisfied: werkzeug>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from tensorboard->-r
requirements.txt (line 23)) (3.0.1)
Collecting lightning-utilities>=0.8.0 (from torchmetrics->-r
requirements.txt (line 31))
  Downloading lightning_utilities-0.10.0-py3-none-any.whl (24 kB)
Collecting gitdb<5,>=4.0.1 (from GitPython!=3.1.29,>=1.0.0->wandb->-r
requirements.txt (line 22))
  Downloading gitdb-4.0.11-py3-none-any.whl (62 kB)
----- 62.7/62.7 kB 8.6 MB/s eta
0:00:00
Requirement already satisfied: cachetools<6.0,>=2.0.0 in
/usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3-
>tensorboard->-r requirements.txt (line 23)) (5.3.2)
Requirement already satisfied: pyasn1-modules>=0.2.1 in
/usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3-
>tensorboard->-r requirements.txt (line 23)) (0.3.0)
Requirement already satisfied: rsa<5,>=3.1.4 in
/usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3-
>tensorboard->-r requirements.txt (line 23)) (4.9)
Requirement already satisfied: requests-oauthlib>=0.7.0 in
/usr/local/lib/python3.10/dist-packages (from google-auth-
oauthlib<1.1,>=0.5->tensorboard->-r requirements.txt (line 23))
(1.3.1)
Requirement already satisfied: parso<0.9.0,>=0.8.3 in
/usr/local/lib/python3.10/dist-packages (from jedi>=0.16->ipython->-r
requirements.txt (line 3)) (0.8.3)
Requirement already satisfied: ptyprocess>=0.5 in
/usr/local/lib/python3.10/dist-packages (from pexpect>4.3->ipython->-r
requirements.txt (line 3)) (0.7.0)
Requirement already satisfied: wcwidth in
/usr/local/lib/python3.10/dist-packages (from prompt-toolkit!=3.0.0,!
=3.0.1,<3.1.0,>=2.0.0->ipython->-r requirements.txt (line 3)) (0.2.10)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from requests-
>torchvision>=0.13.0->-r requirements.txt (line 14)) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in
/usr/local/lib/python3.10/dist-packages (from requests-
>torchvision>=0.13.0->-r requirements.txt (line 14)) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/dist-packages (from requests-
>torchvision>=0.13.0->-r requirements.txt (line 14)) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.10/dist-packages (from requests-

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>torchvision>=0.13.0->-r requirements.txt (line 14)) (2023.7.22)
Requirement already satisfied: MarkupSafe>=2.1.1 in
/usr/local/lib/python3.10/dist-packages (from werkzeug>=1.0.1-
>tensorboard->-r requirements.txt (line 23)) (2.1.3)
Requirement already satisfied: ipython-genutils in
/usr/local/lib/python3.10/dist-packages (from ipykernel->jupyter->-r
requirements.txt (line 4)) (0.2.0)
Requirement already satisfied: jupyter-client in
/usr/local/lib/python3.10/dist-packages (from ipykernel->jupyter->-r
requirements.txt (line 4)) (6.1.12)
Requirement already satisfied: tornado>=4.2 in
/usr/local/lib/python3.10/dist-packages (from ipykernel->jupyter->-r
requirements.txt (line 4)) (6.3.2)
Requirement already satisfied: widgetsnbextension~=3.6.0 in
/usr/local/lib/python3.10/dist-packages (from ipywidgets->jupyter->-r
requirements.txt (line 4)) (3.6.6)
Requirement already satisfied: jupyterlab-widgets>=1.0.0 in
/usr/local/lib/python3.10/dist-packages (from ipywidgets->jupyter->-r
requirements.txt (line 4)) (3.0.9)
Requirement already satisfied: lxml in /usr/local/lib/python3.10/dist-
packages (from nbconvert->jupyter->-r requirements.txt (line 4))
(4.9.3)
Requirement already satisfied: beautifulsoup4 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (4.11.2)
Requirement already satisfied: bleach in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (6.1.0)
Requirement already satisfied: defusedxml in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (0.7.1)
Requirement already satisfied: entrypoints>=0.2.2 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (0.4)
Requirement already satisfied: jupyter-core>=4.7 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (5.5.0)
Requirement already satisfied: jupyterlab-pygments in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (0.2.2)
Requirement already satisfied: mistune<2,>=0.8.1 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (0.8.4)
Requirement already satisfied: nbclient>=0.5.0 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (0.9.0)
Requirement already satisfied: nbformat>=5.1 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (5.9.2)
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Requirement already satisfied: pandocfilters>=1.4.1 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (1.5.0)
Requirement already satisfied: tinycss2 in
/usr/local/lib/python3.10/dist-packages (from nbconvert->jupyter->-r
requirements.txt (line 4)) (1.2.1)
Requirement already satisfied: pyzmq<25,>=17 in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (23.2.1)
Requirement already satisfied: argon2-cffi in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (23.1.0)
Requirement already satisfied: nest-asyncio>=1.5 in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (1.5.8)
Requirement already satisfied: Send2Trash>=1.8.0 in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (1.8.2)
Requirement already satisfied: terminado>=0.8.3 in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (0.18.0)
Requirement already satisfied: prometheus-client in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (0.18.0)
Requirement already satisfied: nbclassic>=0.4.7 in
/usr/local/lib/python3.10/dist-packages (from notebook->jupyter->-r
requirements.txt (line 4)) (1.0.0)
Collecting qtpy>=2.4.0 (from qtconsole->jupyter->-r requirements.txt
(line 4))
  Downloading QtPy-2.4.1-py3-none-any.whl (93 kB)
    _____ 93.5/93.5 kB 13.1 MB/s eta
0:00:00
Requirement already satisfied: mpmath>=0.19 in /usr/local/lib/python3.10/dist-
packages (from sympy->torch>=1.12.0->-r requirements.txt (line 13))
(1.3.0)
Collecting smmap<6,>=3.0.1 (from gitdb<5,>=4.0.1->GitPython!
=3.1.29,>=1.0.0->wandb->-r requirements.txt (line 22))
  Downloading smmap-5.0.1-py3-none-any.whl (24 kB)
Requirement already satisfied: platformdirs>=2.5 in
/usr/local/lib/python3.10/dist-packages (from jupyter-core>=4.7-
>nbconvert->jupyter->-r requirements.txt (line 4)) (4.0.0)
Requirement already satisfied: jupyter-server>=1.8 in
/usr/local/lib/python3.10/dist-packages (from nbclassic>=0.4.7-
>notebook->jupyter->-r requirements.txt (line 4)) (1.24.0)
Requirement already satisfied: notebook-shim>=0.2.3 in
/usr/local/lib/python3.10/dist-packages (from nbclassic>=0.4.7-
>notebook->jupyter->-r requirements.txt (line 4)) (0.2.3)
Requirement already satisfied: fastjsonschema in
/usr/local/lib/python3.10/dist-packages (from nbformat>=5.1-

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>nbconvert->jupyter->-r requirements.txt (line 4)) (2.19.0)
Requirement already satisfied: jsonschema>=2.6 in
/usr/local/lib/python3.10/dist-packages (from nbformat>=5.1-
>nbconvert->jupyter->-r requirements.txt (line 4)) (4.19.2)
Requirement already satisfied: pyasn1<0.6.0,>=0.4.6 in
/usr/local/lib/python3.10/dist-packages (from pyasn1-modules>=0.2.1-
>google-auth<3,>=1.6.3->tensorboard->-r requirements.txt (line 23))
(0.5.0)
Requirement already satisfied: oauthlib>=3.0.0 in
/usr/local/lib/python3.10/dist-packages (from requests-
oauthlib>=0.7.0->google-auth-oauthlib<1.1,>=0.5->tensorboard->-r
requirements.txt (line 23)) (3.2.2)
Requirement already satisfied: argon2-cffi-bindings in
/usr/local/lib/python3.10/dist-packages (from argon2-cffi->notebook-
>jupyter->-r requirements.txt (line 4)) (21.2.0)
Requirement already satisfied: soupsieve>1.2 in
/usr/local/lib/python3.10/dist-packages (from beautifulsoup4-
>nbconvert->jupyter->-r requirements.txt (line 4)) (2.5)
Requirement already satisfied: webencodings in
/usr/local/lib/python3.10/dist-packages (from bleach->nbconvert-
>jupyter->-r requirements.txt (line 4)) (0.5.1)
Requirement already satisfied: attrs>=22.2.0 in
/usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6-
>nbformat>=5.1->nbconvert->jupyter->-r requirements.txt (line 4))
(23.1.0)
Requirement already satisfied: jsonschema-specifications>=2023.03.6 in
/usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6-
>nbformat>=5.1->nbconvert->jupyter->-r requirements.txt (line 4))
(2023.11.1)
Requirement already satisfied: referencing>=0.28.4 in
/usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6-
>nbformat>=5.1->nbconvert->jupyter->-r requirements.txt (line 4))
(0.31.0)
Requirement already satisfied: rpds-py>=0.7.1 in
/usr/local/lib/python3.10/dist-packages (from jsonschema>=2.6-
>nbformat>=5.1->nbconvert->jupyter->-r requirements.txt (line 4))
(0.12.0)
Requirement already satisfied: anyio<4,>=3.1.0 in
/usr/local/lib/python3.10/dist-packages (from jupyter-server>=1.8-
>nbclassic>=0.4.7->notebook->jupyter->-r requirements.txt (line 4))
(3.7.1)
Requirement already satisfied: websocket-client in
/usr/local/lib/python3.10/dist-packages (from jupyter-server>=1.8-
>nbclassic>=0.4.7->notebook->jupyter->-r requirements.txt (line 4))
(1.6.4)
Requirement already satisfied: cffi>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from argon2-cffi-bindings-
>argon2-cffi->notebook->jupyter->-r requirements.txt (line 4))
(1.16.0)
```

```

Requirement already satisfied: sniffio>=1.1 in
/usr/local/lib/python3.10/dist-packages (from anyio<4,>=3.1.0-
>jupyter-server>=1.8->nbclassic>=0.4.7->notebook->jupyter->-r
requirements.txt (line 4)) (1.3.0)
Requirement already satisfied: exceptiongroup in
/usr/local/lib/python3.10/dist-packages (from anyio<4,>=3.1.0-
>jupyter-server>=1.8->nbclassic>=0.4.7->notebook->jupyter->-r
requirements.txt (line 4)) (1.1.3)
Requirement already satisfied: pycparser in
/usr/local/lib/python3.10/dist-packages (from cffi>=1.0.1->argon2-
cffi-bindings->argon2-cffi->notebook->jupyter->-r requirements.txt
(line 4)) (2.21)
Building wheels for collected packages: vision_transformers
  Building wheel for vision_transformers (setup.py) ... ers:
filename=vision_transformers-0.1.1.0-py3-none-any.whl size=48412
sha256=e6540527a61c808e4286cad497c3bb8df28140fdf2c13656e57e40735aa219e
c
  Stored in directory:
/root/.cache/pip/wheels/02/f4/94/0a5c8d2a4fcb6aa4c590906ffd3d52dc8edbe
94262ecaa7dae
Successfully built vision_transformers
Installing collected packages: torchinfo, smmap, setuptools,
setproctitle, sentry-sdk, qtpy, protobuf, jedi, docker-pycreds,
lightning-utilities, gitdb, deep-sort-realtime, torchmetrics,
GitPython, wandb, vision_transformers, qtconsole, jupyter
  Attempting uninstall: setuptools
    Found existing installation: setuptools 67.7.2
    Uninstalling setuptools-67.7.2:
      Successfully uninstalled setuptools-67.7.2
  Attempting uninstall: protobuf
    Found existing installation: protobuf 3.20.3
    Uninstalling protobuf-3.20.3:
      Successfully uninstalled protobuf-3.20.3
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.
lida 0.0.10 requires fastapi, which is not installed.
lida 0.0.10 requires kaleido, which is not installed.
lida 0.0.10 requires python-multipart, which is not installed.
lida 0.0.10 requires uvicorn, which is not installed.
arviz 0.15.1 requires setuptools>=60.0.0, but you have setuptools
59.5.0 which is incompatible.
cvxpy 1.3.2 requires setuptools>65.5.1, but you have setuptools 59.5.0
which is incompatible.
google-api-core 2.11.1 requires protobuf!=3.20.0,!3.20.1,!4.21.0,!
=4.21.1,!4.21.2,!4.21.3,!4.21.4,!4.21.5,<5.0.0.dev0,>=3.19.5, but
you have protobuf 3.20.1 which is incompatible.
google-cloud-bigquery 3.12.0 requires protobuf!=3.20.0,!3.20.1,!
=4.21.0,!4.21.1,!4.21.2,!4.21.3,!4.21.4,!

```

=4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-bigquery-connection 1.12.1 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-bigquery-storage 2.22.0 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-datastore 2.15.2 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-firestore 2.11.1 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-functions 1.13.3 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-iam 2.12.2 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-language 2.9.1 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-resource-manager 1.10.4 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
google-cloud-translate 3.11.3 requires protobuf!=3.20.0,! =3.20.1,! =4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
googleapis-common-protos 1.61.0 requires protobuf!=3.20.0,! =3.20.1,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev0,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
grpc-google-iam-v1 0.12.7 requires protobuf!=3.20.0,! =3.20.1,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.19.5, but you have protobuf 3.20.1 which is incompatible.
tensorflow 2.14.0 requires protobuf!=4.21.0,! =4.21.1,! =4.21.2,! =4.21.3,! =4.21.4,! =4.21.5,<5.0.0dev,>=3.20.3, but you have protobuf 3.20.1 which is incompatible.
tensorflow-metadata 1.14.0 requires protobuf<4.21,>=3.20.3, but you have protobuf 3.20.1 which is incompatible.
Successfully installed GitPython-3.1.40 deep-sort-realtime-1.3.2
docker-pycreds-0.4.0 gitdb-4.0.11 jedi-0.19.1 jupyter-1.0.0 lightning-

```
utilities-0.10.0 protobuf-3.20.1 qtconsole-5.5.1 qtpy-2.4.1 sentry-  
sdk-1.36.0 setproctitle-1.3.3 setuptools-59.5.0 smmap-5.0.1 torchinfo-  
1.8.0 torchmetrics-1.2.0 vision_transformers-0.1.1.0 wandb-0.16.0
```

```
{"pip_warning":{"packages":  
["_distutils_hack","google","pkg_resources","setuptools"]}}
```

```
# get the dataset which is already preprocess, labeled and divided  
into subfolders
```

```
# preprocess was defined by me, for personal preprocess fork original  
dataset on roboflow
```

```
!pip install roboflow
```

```
%cd /content
```

```
from roboflow import Roboflow
```

```
rf = Roboflow(api_key="2VarJS1goNC0CEKVqkcv")
```

```
project = rf.workspace("project-wnjhr").project("american-sign-  
language-letters-y3jjy")
```

```
dataset = project.version(7).download("voc")
```

```
Collecting roboflow
```

```
  Downloading roboflow-1.1.9-py3-none-any.whl (63 kB)
```

```
0:00:00 0.0/63.3 kB ? eta -:-:--  
63.3/63.3 kB 1.8 MB/s eta
```

```
0:00:00
```

```
Requirement already satisfied: certifi==2023.7.22 in
```

```
/usr/local/lib/python3.10/dist-packages (from roboflow) (2023.7.22)
```

```
Collecting chardet==4.0.0 (from roboflow)
```

```
  Downloading chardet-4.0.0-py2.py3-none-any.whl (178 kB)
```

```
0:00:00 178.7/178.7 kB 9.5 MB/s eta
```

```
0:00:00
```

```
roboflow)
```

```
  Downloading cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)
```

```
Collecting idna==2.10 (from roboflow)
```

```
  Downloading idna-2.10-py2.py3-none-any.whl (58 kB)
```

```
0:00:00 58.8/58.8 kB 8.1 MB/s eta
```

```
0:00:00
```

```
Requirement already satisfied: kiwisolver>=1.3.1 in
```

```
/usr/local/lib/python3.10/dist-packages (from roboflow) (1.4.5)
```

```
Requirement already satisfied: matplotlib in
```

```
/usr/local/lib/python3.10/dist-packages (from roboflow) (3.7.1)
```

```
Requirement already satisfied: numpy>=1.18.5 in
```

```
/usr/local/lib/python3.10/dist-packages (from roboflow) (1.23.5)
```

```
Collecting opencv-python-headless==4.8.0.74 (from roboflow)
```

```
  Downloading opencv_python_headless-4.8.0.74-cp37-abi3-  
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (49.1 MB)
```

```
0:00:00 49.1/49.1 MB 12.3 MB/s eta
```

```
0:00:00
```

```
ent already satisfied: Pillow>=7.1.2 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (9.4.0)
Collecting pyparsing==2.4.7 (from roboflow)
  Downloading pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)
_____ 67.8/67.8 kB 9.3 MB/s eta
```

0:00:00

```
ent already satisfied: python-dateutil in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2.8.2)
Collecting python-dotenv (from roboflow)
  Downloading python_dotenv-1.0.0-py3-none-any.whl (19 kB)
Requirement already satisfied: requests in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2.31.0)
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-
packages (from roboflow) (1.16.0)
Collecting supervision (from roboflow)
  Downloading supervision-0.16.0-py3-none-any.whl (72 kB)
_____ 72.2/72.2 kB 9.5 MB/s eta
```

0:00:00

```
ent already satisfied: urllib3>=1.26.6 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2.0.7)
Requirement already satisfied: tqdm>=4.41.0 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (4.66.1)
Requirement already satisfied: PyYAML>=5.3.1 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (6.0.1)
Collecting requests-toolbelt (from roboflow)
  Downloading requests_toolbelt-1.0.0-py2.py3-none-any.whl (54 kB)
_____ 54.5/54.5 kB 7.3 MB/s eta
```

0:00:00

```
agic (from roboflow)
  Downloading python_magic-0.4.27-py2.py3-none-any.whl (13 kB)
Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->roboflow)
(1.2.0)
Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->roboflow)
(4.44.3)
Requirement already satisfied: packaging>=20.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->roboflow)
(23.2)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from requests->roboflow)
(3.3.2)
Requirement already satisfied: scipy<2.0.0,>=1.9.0 in
/usr/local/lib/python3.10/dist-packages (from supervision->roboflow)
(1.11.3)
Installing collected packages: python-magic, python-dotenv, pyparsing,
opencv-python-headless, idna, cycler, chardet, supervision, requests-
toolbelt, roboflow
  Attempting uninstall: pyparsing
```

```

Found existing installation: pyparsing 3.1.1
Uninstalling pyparsing-3.1.1:
  Successfully uninstalled pyparsing-3.1.1
Attempting uninstall: opencv-python-headless
Found existing installation: opencv-python-headless 4.8.1.78
Uninstalling opencv-python-headless-4.8.1.78:
  Successfully uninstalled opencv-python-headless-4.8.1.78
Attempting uninstall: idna
Found existing installation: idna 3.4
Uninstalling idna-3.4:
  Successfully uninstalled idna-3.4
Attempting uninstall: cyclr
Found existing installation: cyclr 0.12.1
Uninstalling cyclr-0.12.1:
  Successfully uninstalled cyclr-0.12.1
Attempting uninstall: chardet
Found existing installation: chardet 5.2.0
Uninstalling chardet-5.2.0:
  Successfully uninstalled chardet-5.2.0
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 2.14.0 requires protobuf!=4.21.0,!=4.21.1,!=4.21.2,!
=4.21.3,!=4.21.4,!=4.21.5,<5.0.0dev,>=3.20.3, but you have protobuf
3.20.1 which is incompatible.
Successfully installed chardet-4.0.0 cyclr-0.10.0 idna-2.10 opencv-
python-headless-4.8.0.74 pyparsing-2.4.7 python-dotenv-1.0.0 python-
magic-0.4.27 requests-toolbelt-1.0.0 roboflow-1.1.9 supervision-0.16.0

{"pip_warning":{"packages":["cyclr","pyparsing"]}}

/content
loading Roboflow workspace...
loading Roboflow project...

Downloading Dataset Version Zip in American-Sign-Language-Letters-7 to
voc:: 100%|██████████| 846560/846560 [00:52<00:00, 16075.96it/s]

Extracting Dataset Version Zip to American-Sign-Language-Letters-7 in
voc:: 100%|██████████| 3460/3460 [00:03<00:00, 1097.70it/s]

# preparation for fine tuning
file_content = """
TRAIN_DIR_IMAGES: '/content/American-Sign-Language-Letters-7/train'
TRAIN_DIR_LABELS: '/content/American-Sign-Language-Letters-7/train'
VALID_DIR_IMAGES: '/content/American-Sign-Language-Letters-7/valid'
VALID_DIR_LABELS: '/content/American-Sign-Language-Letters-7/valid'

```

```

# Class names.
CLASSES:
['A','B','C','D','E','F','G','H','I','J','K','L','M','N','O','P','Q','R','S','T','U','V','W','X','Y','Z']

# Number of classes (object classes + 1 for background class in Faster RCNN).
NC: 26

# Whether to save the predictions of the validation set while training.
SAVE_VALID_PREDICTION_IMAGES: True
"""

file_path =
'/content/fastercnn-pytorch-training-pipeline/data_configs/custom_data.yaml'

with open(file_path, 'w') as file:
    file.write(file_content)

# train the model using the provided methods, pass the important arguments...
%cd /content/fastercnn-pytorch-training-pipeline
!python train.py --data data_configs/custom_data.yaml --epochs 90 --model fasterrcnn_mobilenetv3_large_fpn --name custom_training --batch 8 --workers 2 --imgsz 500 --mosaic 0.5

/content/fastercnn-pytorch-training-pipeline
2023-11-21 13:02:23.571204: E
tensorflow/compiler/xla/stream_executor/cuda/cuda_dnn.cc:9342] Unable
to register cuDNN factory: Attempting to register factory for plugin
cuDNN when one has already been registered
2023-11-21 13:02:23.571289: E
tensorflow/compiler/xla/stream_executor/cuda/cuda_fft.cc:609] Unable
to register cuFFT factory: Attempting to register factory for plugin
cuFFT when one has already been registered
2023-11-21 13:02:23.571336: E
tensorflow/compiler/xla/stream_executor/cuda/cuda_blas.cc:1518] Unable
to register cuBLAS factory: Attempting to register factory for plugin
cuBLAS when one has already been registered
2023-11-21 13:02:24.812337: W
tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning:
Could not find TensorRT
Not using distributed mode
wandb: (1) Create a W&B account
wandb: (2) Use an existing W&B account
wandb: (3) Don't visualize my results
wandb: Enter your choice: 3
wandb: You chose "Don't visualize my results"

```


40, 64, 64]	[8, 80, 32, 32]	30,960	
	└─InvertedResidual (8)		[8,
80, 32, 32]	[8, 80, 32, 32]	33,800	
	└─InvertedResidual (9)		[8,
80, 32, 32]	[8, 80, 32, 32]	31,096	
	└─InvertedResidual (10)		[8,
80, 32, 32]	[8, 80, 32, 32]	31,096	
	└─InvertedResidual (11)		[8,
80, 32, 32]	[8, 112, 32, 32]	212,280	
	└─InvertedResidual (12)		[8,
112, 32, 32]	[8, 112, 32, 32]	383,208	
	└─InvertedResidual (13)		[8,
112, 32, 32]	[8, 160, 16, 16]	426,216	
	└─InvertedResidual (14)		[8,
160, 16, 16]	[8, 160, 16, 16]	793,200	
	└─InvertedResidual (15)		[8,
160, 16, 16]	[8, 160, 16, 16]	793,200	
	└─Conv2dNormActivation (16)		[8,
160, 16, 16]	[8, 960, 16, 16]	153,600	
	└─FeaturePyramidNetwork (fpn)		[8,
160, 16, 16]	[8, 256, 8, 8]	--	
	└─ModuleList (inner_blocks)	--	
--	(recursive)		
	└─ModuleList (layer_blocks)	--	
--	(recursive)		
	└─ModuleList (inner_blocks)	--	
--	(recursive)		
	└─ModuleList (layer_blocks)	--	
--	(recursive)		
	└─LastLevelMaxPool (extra_blocks)		[8,
256, 16, 16]	[8, 256, 16, 16]	--	
	└─RegionProposalNetwork (rpn)		[8,
3, 512, 512]	[0, 4]	--	
	└─RPNHead (head)		[8,
256, 16, 16]	[8, 15, 16, 16]	--	
	└─Sequential (conv)		[8,
256, 16, 16]	[8, 256, 16, 16]	590,080	
	└─Conv2d (cls_logits)		[8,
256, 16, 16]	[8, 15, 16, 16]	3,855	
	└─Conv2d (bbox_pred)		[8,
256, 16, 16]	[8, 60, 16, 16]	15,420	
	└─Sequential (conv)		[8,
256, 16, 16]	[8, 256, 16, 16]	(recursive)	
	└─Conv2d (cls_logits)		[8,
256, 16, 16]	[8, 15, 16, 16]	(recursive)	
	└─Conv2d (bbox_pred)		[8,
256, 16, 16]	[8, 60, 16, 16]	(recursive)	
	└─Sequential (conv)		[8,
256, 8, 8]	[8, 256, 8, 8]	(recursive)	

		└─Conv2d (cls_logits)	[8,
256,	8, 8]	[8, 15, 8, 8]	(recursive)
		└─Conv2d (bbox_pred)	[8,
256,	8, 8]	[8, 60, 8, 8]	(recursive)
		└─AnchorGenerator (anchor_generator)	[8,
3,	512, 512]	[8640, 4]	--
		└─RoIHeads (roi_heads)	[8,
256,	16, 16]	[0, 4]	--
		└─MultiScaleRoIAlign (box_roi_pool)	[8,
256,	16, 16]	[0, 256, 7, 7]	--
		└─TwoMLPHead (box_head)	[0,
256,	7, 7]	[0, 1024]	--
		└─Linear (fc6)	[0,
12544]		[0, 1024]	12,846,080
		└─Linear (fc7)	[0,
1024]		[0, 1024]	1,049,600
		└─FastRCNNPredictor (box_predictor)	[0,
1024]		[0, 26]	--
		└─Linear (cls_score)	[0,
1024]		[0, 26]	26,650
		└─Linear (bbox_pred)	[0,
1024]		[0, 104]	106,600

```

=====
Total params: 19,053,229
Trainable params: 18,994,333
Non-trainable params: 58,896
Total mult-adds (G): 14.71
=====

```

```

=====
Input size (MB): 24.00
Forward/backward pass size (MB): 1500.46
Params size (MB): 76.21
Estimated Total Size (MB): 1600.67
=====

```

```

=====
19,053,229 total parameters.
18,994,333 training parameters.
Epoch: [0] [ 0/189] eta: 0:13:05 lr: 0.000006 loss: 3.6202
(3.6202) loss_classifier: 3.1087 (3.1087) loss_box_reg: 0.4519
(0.4519) loss_objectness: 0.0505 (0.0505) loss_rpn_box_reg: 0.0091
(0.0091) time: 4.1557 data: 2.5335 max mem: 1187
Epoch: [0] [100/189] eta: 0:01:49 lr: 0.000538 loss: 1.3885
(1.7411) loss_classifier: 0.7706 (1.2051) loss_box_reg: 0.5367
(0.4727) loss_objectness: 0.0270 (0.0521) loss_rpn_box_reg: 0.0086
(0.0111) time: 1.2336 data: 0.9252 max mem: 1511
Epoch: [0] [188/189] eta: 0:00:01 lr: 0.001000 loss: 2.1265
(1.8277) loss_classifier: 1.2071 (1.1481) loss_box_reg: 0.9227
(0.6319) loss_objectness: 0.0169 (0.0381) loss_rpn_box_reg: 0.0066

```

```
(0.0096) time: 1.0562 data: 0.8157 max mem: 1511
Epoch: [0] Total time: 0:03:43 (1.1836 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1545 (0.1545)
evaluator_time: 0.0333 (0.0333) time: 1.0413 data: 0.6852 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1228 (0.1166)
evaluator_time: 0.0145 (0.0175) time: 0.3501 data: 0.1965 max mem:
1511
Test: Total time: 0:00:06 (0.3522 s / it)
Averaged stats: model_time: 0.1228 (0.1166) evaluator_time: 0.0145
(0.0175)
Accumulating evaluation results...
DONE (t=0.11s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.046
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.088
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.046
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.046
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.098
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.098
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.098
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.098
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
BEST VALIDATION mAP: 0.04587113634123165
```

SAVING BEST MODEL FOR EPOCH: 1

Epoch: [1] [0/189] eta: 0:10:47 lr: 0.001000 loss: 2.3740
(2.3740) loss_classifier: 1.3253 (1.3253) loss_box_reg: 1.0371
(1.0371) loss_objectness: 0.0069 (0.0069) loss_rpn_box_reg: 0.0048
(0.0048) time: 3.4276 data: 3.0308 max mem: 1511

Epoch: [1] [100/189] eta: 0:01:44 lr: 0.001000 loss: 2.2171
(2.4330) loss_classifier: 1.4254 (1.4495) loss_box_reg: 0.8870
(0.9652) loss_objectness: 0.0073 (0.0110) loss_rpn_box_reg: 0.0057
(0.0073) time: 1.1176 data: 0.8817 max mem: 1511

Epoch: [1] [188/189] eta: 0:00:01 lr: 0.001000 loss: 1.9501
(2.2832) loss_classifier: 1.1728 (1.3597) loss_box_reg: 0.7769
(0.9065) loss_objectness: 0.0067 (0.0099) loss_rpn_box_reg: 0.0054
(0.0071) time: 1.1101 data: 0.8629 max mem: 1511

Epoch: [1] Total time: 0:03:33 (1.1314 s / it)

creating index...

index created!

Test: [0/18] eta: 0:00:18 model_time: 0.1210 (0.1210)
evaluator_time: 0.0208 (0.0208) time: 1.0065 data: 0.7643 max mem:
1511

Test: [17/18] eta: 0:00:00 model_time: 0.1113 (0.1097)
evaluator_time: 0.0205 (0.0582) time: 0.3783 data: 0.1948 max mem:
1511

Test: Total time: 0:00:06 (0.3821 s / it)

Averaged stats: model_time: 0.1113 (0.1097) evaluator_time: 0.0205
(0.0582)

Accumulating evaluation results...

DONE (t=0.29s).

IoU metric: bbox

Average Precision (AP) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.390

Average Precision (AP) @[IoU=0.50 | area= all |
maxDets=100] = 0.625

Average Precision (AP) @[IoU=0.75 | area= all |
maxDets=100] = 0.421

Average Precision (AP) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.390

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
1] = 0.595

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
10] = 0.600

Average Recall (AR) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.600

Average Recall (AR) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.600

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.3899214440063718

SAVING BEST MODEL FOR EPOCH: 2

Epoch: [2] [0/189] eta: 0:09:23 lr: 0.001000 loss: 1.8147
(1.8147) loss_classifier: 1.0235 (1.0235) loss_box_reg: 0.7839
(0.7839) loss_objectness: 0.0028 (0.0028) loss_rpn_box_reg: 0.0046
(0.0046) time: 2.9834 data: 2.6807 max mem: 1511

Epoch: [2] [100/189] eta: 0:01:37 lr: 0.001000 loss: 1.5559
(1.7593) loss_classifier: 0.8279 (0.9965) loss_box_reg: 0.7330
(0.7506) loss_objectness: 0.0055 (0.0064) loss_rpn_box_reg: 0.0050
(0.0058) time: 0.9125 data: 0.6832 max mem: 1511

Epoch: [2] [188/189] eta: 0:00:01 lr: 0.001000 loss: 1.3499
(1.6744) loss_classifier: 0.6962 (0.9215) loss_box_reg: 0.6399
(0.7411) loss_objectness: 0.0050 (0.0061) loss_rpn_box_reg: 0.0050
(0.0056) time: 1.0563 data: 0.8225 max mem: 1511

Epoch: [2] Total time: 0:03:28 (1.1051 s / it)

creating index...

index created!

Test: [0/18] eta: 0:00:18 model_time: 0.1242 (0.1242)
evaluator_time: 0.0239 (0.0239) time: 1.0068 data: 0.7642 max mem:
1511

Test: [17/18] eta: 0:00:00 model_time: 0.1067 (0.1098)
evaluator_time: 0.0197 (0.0222) time: 0.3661 data: 0.2207 max mem:
1511

Test: Total time: 0:00:06 (0.3681 s / it)

Averaged stats: model_time: 0.1067 (0.1098) evaluator_time: 0.0197
(0.0222)

Accumulating evaluation results...

DONE (t=0.14s).

IoU metric: bbox

Average Precision (AP) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.520

Average Precision (AP) @[IoU=0.50 | area= all |
maxDets=100] = 0.779

Average Precision (AP) @[IoU=0.75 | area= all |
maxDets=100] = 0.656

Average Precision (AP) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

```
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.521
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.641
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.644
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.644
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.644
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
```

BEST VALIDATION mAP: 0.5195883903801689

SAVING BEST MODEL FOR EPOCH: 3

```
Epoch: [3] [ 0/189] eta: 0:12:46 lr: 0.001000 loss: 1.2641
(1.2641) loss_classifier: 0.6261 (0.6261) loss_box_reg: 0.6294
(0.6294) loss_objectness: 0.0042 (0.0042) loss_rpn_box_reg: 0.0044
(0.0044) time: 4.0547 data: 3.7135 max mem: 1511
Epoch: [3] [100/189] eta: 0:01:40 lr: 0.001000 loss: 1.3144
(1.3133) loss_classifier: 0.6439 (0.6530) loss_box_reg: 0.6470
(0.6496) loss_objectness: 0.0037 (0.0056) loss_rpn_box_reg: 0.0040
(0.0051) time: 1.0352 data: 0.8009 max mem: 1511
Epoch: [3] [188/189] eta: 0:00:01 lr: 0.001000 loss: 1.1926
(1.2692) loss_classifier: 0.5180 (0.6164) loss_box_reg: 0.6545
(0.6426) loss_objectness: 0.0043 (0.0055) loss_rpn_box_reg: 0.0038
(0.0047) time: 1.0184 data: 0.7998 max mem: 1511
Epoch: [3] Total time: 0:03:30 (1.1163 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1601 (0.1601)
evaluator_time: 0.0387 (0.0387) time: 1.0914 data: 0.7359 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1086 (0.1136)
evaluator_time: 0.0169 (0.0200) time: 0.3587 data: 0.2051 max mem:
1511
Test: Total time: 0:00:06 (0.3613 s / it)
Averaged stats: model_time: 0.1086 (0.1136) evaluator_time: 0.0169
```

```

(0.0200)
Accumulating evaluation results...
DONE (t=0.25s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.618
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.872
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.693
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.618
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.693
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.693
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.693
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.693
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.6176717126302158

SAVING BEST MODEL FOR EPOCH: 4

Epoch: [4] [ 0/189] eta: 0:09:23 lr: 0.001000 loss: 1.1450
(1.1450) loss_classifier: 0.4033 (0.4033) loss_box_reg: 0.7339
(0.7339) loss_objectness: 0.0022 (0.0022) loss_rpn_box_reg: 0.0056
(0.0056) time: 2.9815 data: 2.6820 max mem: 1511
Epoch: [4] [100/189] eta: 0:01:39 lr: 0.001000 loss: 1.0305
(1.1160) loss_classifier: 0.4735 (0.4960) loss_box_reg: 0.5512
(0.6108) loss_objectness: 0.0037 (0.0050) loss_rpn_box_reg: 0.0039
(0.0043) time: 1.0699 data: 0.8220 max mem: 1511
Epoch: [4] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.9077
(1.0773) loss_classifier: 0.3975 (0.4749) loss_box_reg: 0.5228
(0.5930) loss_objectness: 0.0039 (0.0049) loss_rpn_box_reg: 0.0044

```

```
(0.0045) time: 1.0934 data: 0.8542 max mem: 1511
Epoch: [4] Total time: 0:03:32 (1.1244 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:17 model_time: 0.1048 (0.1048)
evaluator_time: 0.0154 (0.0154) time: 0.9713 data: 0.7439 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1052 (0.1121)
evaluator_time: 0.0144 (0.0168) time: 0.3639 data: 0.2190 max mem:
1511
Test: Total time: 0:00:06 (0.3664 s / it)
Averaged stats: model_time: 0.1052 (0.1121) evaluator_time: 0.0144
(0.0168)
Accumulating evaluation results...
DONE (t=0.19s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.655
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.874
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.818
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.655
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.729
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.729
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.729
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.729
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
BEST VALIDATION mAP: 0.6545571452749671
```


SAVING BEST MODEL FOR EPOCH: 5

Epoch: [5] [0/189] eta: 0:10:09 lr: 0.001000 loss: 1.1395
(1.1395) loss_classifier: 0.4765 (0.4765) loss_box_reg: 0.6485
(0.6485) loss_objectness: 0.0064 (0.0064) loss_rpn_box_reg: 0.0081
(0.0081) time: 3.2247 data: 2.9063 max mem: 1511

Epoch: [5] [100/189] eta: 0:01:41 lr: 0.001000 loss: 0.8940
(0.9161) loss_classifier: 0.3870 (0.3820) loss_box_reg: 0.5082
(0.5258) loss_objectness: 0.0041 (0.0042) loss_rpn_box_reg: 0.0042
(0.0042) time: 1.0985 data: 0.8611 max mem: 1511

Epoch: [5] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.8942
(0.9094) loss_classifier: 0.3647 (0.3715) loss_box_reg: 0.5368
(0.5295) loss_objectness: 0.0040 (0.0044) loss_rpn_box_reg: 0.0040
(0.0041) time: 1.0836 data: 0.8484 max mem: 1511

Epoch: [5] Total time: 0:03:32 (1.1224 s / it)

creating index...

index created!

Test: [0/18] eta: 0:00:18 model_time: 0.1450 (0.1450)
evaluator_time: 0.0241 (0.0241) time: 1.0181 data: 0.7524 max mem:
1511

Test: [17/18] eta: 0:00:00 model_time: 0.1063 (0.1114)
evaluator_time: 0.0199 (0.0213) time: 0.3914 data: 0.2423 max mem:
1511

Test: Total time: 0:00:07 (0.3948 s / it)

Averaged stats: model_time: 0.1063 (0.1114) evaluator_time: 0.0199
(0.0213)

Accumulating evaluation results...

DONE (t=0.24s).

IoU metric: bbox

Average Precision (AP) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.679

Average Precision (AP) @[IoU=0.50 | area= all |
maxDets=100] = 0.888

Average Precision (AP) @[IoU=0.75 | area= all |
maxDets=100] = 0.839

Average Precision (AP) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.679

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
1] = 0.737

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
10] = 0.737

Average Recall (AR) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.737

Average Recall (AR) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area=medium |

```

maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.737
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.6790871326951701

SAVING BEST MODEL FOR EPOCH: 6

Epoch: [6] [ 0/189] eta: 0:08:12 lr: 0.001000 loss: 0.9536
(0.9536) loss_classifier: 0.3799 (0.3799) loss_box_reg: 0.5684
(0.5684) loss_objectness: 0.0024 (0.0024) loss_rpn_box_reg: 0.0030
(0.0030) time: 2.6036 data: 2.3022 max mem: 1511
Epoch: [6] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.8111
(0.8581) loss_classifier: 0.2868 (0.3235) loss_box_reg: 0.4764
(0.5267) loss_objectness: 0.0038 (0.0040) loss_rpn_box_reg: 0.0029
(0.0038) time: 1.1606 data: 0.9433 max mem: 1511
Epoch: [6] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.7691
(0.8345) loss_classifier: 0.2744 (0.3113) loss_box_reg: 0.4916
(0.5158) loss_objectness: 0.0023 (0.0037) loss_rpn_box_reg: 0.0029
(0.0037) time: 0.9877 data: 0.7720 max mem: 1511
Epoch: [6] Total time: 0:03:35 (1.1413 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1534 (0.1534)
evaluator_time: 0.0281 (0.0281) time: 1.0701 data: 0.7802 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1355 (0.1318)
evaluator_time: 0.0264 (0.0275) time: 0.4979 data: 0.3202 max mem:
1511
Test: Total time: 0:00:09 (0.5012 s / it)
Averaged stats: model_time: 0.1355 (0.1318) evaluator_time: 0.0264
(0.0275)
Accumulating evaluation results...
DONE (t=0.25s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.689
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.897
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.849
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |

```

```
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.689
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.746
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.746
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.746
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.746
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
```

BEST VALIDATION mAP: 0.688963429309964

SAVING BEST MODEL FOR EPOCH: 7

```
Epoch: [7] [ 0/189] eta: 0:05:56 lr: 0.001000 loss: 0.7296
(0.7296) loss_classifier: 0.2326 (0.2326) loss_box_reg: 0.4687
(0.4687) loss_objectness: 0.0208 (0.0208) loss_rpn_box_reg: 0.0074
(0.0074) time: 1.8853 data: 1.6363 max mem: 1511
Epoch: [7] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.7963
(0.7790) loss_classifier: 0.2764 (0.2825) loss_box_reg: 0.5048
(0.4894) loss_objectness: 0.0024 (0.0035) loss_rpn_box_reg: 0.0035
(0.0037) time: 1.1200 data: 0.8583 max mem: 1511
Epoch: [7] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.7739
(0.7794) loss_classifier: 0.2578 (0.2778) loss_box_reg: 0.5056
(0.4945) loss_objectness: 0.0026 (0.0035) loss_rpn_box_reg: 0.0032
(0.0036) time: 1.1166 data: 0.8789 max mem: 1511
Epoch: [7] Total time: 0:03:26 (1.0924 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1389 (0.1389)
evaluator_time: 0.0264 (0.0264) time: 1.0300 data: 0.7399 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1156 (0.1204)
evaluator_time: 0.0184 (0.0208) time: 0.4455 data: 0.2851 max mem:
1511
Test: Total time: 0:00:08 (0.4493 s / it)
Averaged stats: model_time: 0.1156 (0.1204) evaluator_time: 0.0184
(0.0208)
```

Accumulating evaluation results...

DONE (t=0.25s).

IoU metric: bbox

Average Precision (AP) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.706

Average Precision (AP) @[IoU=0.50 | area= all |
maxDets=100] = 0.911

Average Precision (AP) @[IoU=0.75 | area= all |
maxDets=100] = 0.864

Average Precision (AP) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.706

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
1] = 0.750

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
10] = 0.750

Average Recall (AR) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.750

Average Recall (AR) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.750

SAVING PLOTS COMPLETE...

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SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.7058249396368208

SAVING BEST MODEL FOR EPOCH: 8

Epoch: [8] [0/189] eta: 0:06:27 lr: 0.001000 loss: 0.6769
(0.6769) loss_classifier: 0.1934 (0.1934) loss_box_reg: 0.4789
(0.4789) loss_objectness: 0.0008 (0.0008) loss_rpn_box_reg: 0.0038
(0.0038) time: 2.0518 data: 1.8085 max mem: 1511

Epoch: [8] [100/189] eta: 0:01:42 lr: 0.001000 loss: 0.7764
(0.7587) loss_classifier: 0.2500 (0.2649) loss_box_reg: 0.4885
(0.4873) loss_objectness: 0.0022 (0.0030) loss_rpn_box_reg: 0.0032
(0.0035) time: 1.0796 data: 0.8564 max mem: 1511

Epoch: [8] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.6700
(0.7541) loss_classifier: 0.2422 (0.2687) loss_box_reg: 0.4182
(0.4786) loss_objectness: 0.0021 (0.0033) loss_rpn_box_reg: 0.0030
(0.0034) time: 1.2134 data: 0.9746 max mem: 1511

```
Epoch: [8] Total time: 0:03:37 (1.1482 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1478 (0.1478)
evaluator_time: 0.0398 (0.0398) time: 1.0645 data: 0.7677 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1269 (0.1312)
evaluator_time: 0.0173 (0.0215) time: 0.4526 data: 0.2810 max mem:
1511
Test: Total time: 0:00:08 (0.4552 s / it)
Averaged stats: model_time: 0.1269 (0.1312) evaluator_time: 0.0173
(0.0215)
Accumulating evaluation results...
DONE (t=0.22s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.721
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.909
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.864
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.721
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.762
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.762
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.762
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.762
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
BEST VALIDATION mAP: 0.7206627503409682
SAVING BEST MODEL FOR EPOCH: 9
```

```
Epoch: [9] [ 0/189] eta: 0:06:50 lr: 0.001000 loss: 0.8863
(0.8863) loss_classifier: 0.3156 (0.3156) loss_box_reg: 0.5668
(0.5668) loss_objectness: 0.0015 (0.0015) loss_rpn_box_reg: 0.0025
(0.0025) time: 2.1724 data: 1.9482 max mem: 1511
Epoch: [9] [100/189] eta: 0:01:38 lr: 0.001000 loss: 0.7215
(0.7045) loss_classifier: 0.2405 (0.2462) loss_box_reg: 0.4707
(0.4516) loss_objectness: 0.0026 (0.0035) loss_rpn_box_reg: 0.0030
(0.0032) time: 0.9205 data: 0.6899 max mem: 1511
Epoch: [9] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.6946
(0.6958) loss_classifier: 0.2257 (0.2414) loss_box_reg: 0.4718
(0.4480) loss_objectness: 0.0024 (0.0031) loss_rpn_box_reg: 0.0031
(0.0032) time: 1.1135 data: 0.8956 max mem: 1511
Epoch: [9] Total time: 0:03:28 (1.1032 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1379 (0.1379)
evaluator_time: 0.0304 (0.0304) time: 1.1291 data: 0.7787 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1265 (0.1196)
evaluator_time: 0.0157 (0.0190) time: 0.3726 data: 0.2123 max mem:
1511
Test: Total time: 0:00:06 (0.3755 s / it)
Averaged stats: model_time: 0.1265 (0.1196) evaluator_time: 0.0157
(0.0190)
Accumulating evaluation results...
DONE (t=0.25s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.713
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.897
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.834
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.713
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.765
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.765
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.765
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
```

```

Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.765
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [10] [ 0/189] eta: 0:05:39 lr: 0.001000 loss: 0.5073
(0.5073) loss_classifier: 0.1696 (0.1696) loss_box_reg: 0.3321
(0.3321) loss_objectness: 0.0019 (0.0019) loss_rpn_box_reg: 0.0036
(0.0036) time: 1.7978 data: 1.4636 max mem: 1511
Epoch: [10] [100/189] eta: 0:01:42 lr: 0.001000 loss: 0.6478
(0.6628) loss_classifier: 0.2179 (0.2231) loss_box_reg: 0.4228
(0.4335) loss_objectness: 0.0023 (0.0032) loss_rpn_box_reg: 0.0026
(0.0030) time: 1.0307 data: 0.8035 max mem: 1511
Epoch: [10] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.6403
(0.6504) loss_classifier: 0.1999 (0.2184) loss_box_reg: 0.4118
(0.4258) loss_objectness: 0.0021 (0.0032) loss_rpn_box_reg: 0.0025
(0.0030) time: 1.0569 data: 0.8391 max mem: 1511
Epoch: [10] Total time: 0:03:33 (1.1287 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1481 (0.1481)
evaluator_time: 0.0283 (0.0283) time: 1.1041 data: 0.7441 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.0987 (0.1033)
evaluator_time: 0.0119 (0.0156) time: 0.3570 data: 0.2179 max mem:
1511
Test: Total time: 0:00:06 (0.3590 s / it)
Averaged stats: model_time: 0.0987 (0.1033) evaluator_time: 0.0119
(0.0156)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.730
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.915
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.860
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.730
Average Recall      (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.766

```

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=10] = 0.766

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=100] = 0.766

Average Recall (AR) @[IoU=0.50:0.95 | area= small | maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area=medium | maxDets=100] = -1.000

Average Recall (AR) @[IoU=0.50:0.95 | area= large | maxDets=100] = 0.766

SAVING PLOTS COMPLETE...

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SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.7297244912572408

SAVING BEST MODEL FOR EPOCH: 11

Epoch: [11] [0/189] eta: 0:10:48 lr: 0.001000 loss: 0.6247
(0.6247) loss_classifier: 0.2078 (0.2078) loss_box_reg: 0.4129
(0.4129) loss_objectness: 0.0017 (0.0017) loss_rpn_box_reg: 0.0023
(0.0023) time: 3.4297 data: 3.1356 max mem: 1511

Epoch: [11] [100/189] eta: 0:01:41 lr: 0.001000 loss: 0.6529
(0.6245) loss_classifier: 0.1961 (0.2011) loss_box_reg: 0.4263
(0.4174) loss_objectness: 0.0028 (0.0030) loss_rpn_box_reg: 0.0026
(0.0030) time: 1.2402 data: 1.0012 max mem: 1511

Epoch: [11] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.6476
(0.6189) loss_classifier: 0.2020 (0.2021) loss_box_reg: 0.4206
(0.4107) loss_objectness: 0.0023 (0.0030) loss_rpn_box_reg: 0.0026
(0.0030) time: 1.0778 data: 0.8375 max mem: 1511

Epoch: [11] Total time: 0:03:32 (1.1237 s / it)

creating index...

index created!

Test: [0/18] eta: 0:00:20 model_time: 0.1452 (0.1452)
evaluator_time: 0.0270 (0.0270) time: 1.1305 data: 0.7766 max mem:
1511

Test: [17/18] eta: 0:00:00 model_time: 0.1015 (0.1087)
evaluator_time: 0.0153 (0.0151) time: 0.3540 data: 0.2088 max mem:
1511

Test: Total time: 0:00:06 (0.3560 s / it)

Averaged stats: model_time: 0.1015 (0.1087) evaluator_time: 0.0153
(0.0151)

Accumulating evaluation results...

DONE (t=0.13s).

IoU metric: bbox

Average Precision (AP) @[IoU=0.50:0.95 | area= all | maxDets=100] = 0.738


```
Average Precision (AP) @[ IoU=0.50      | area=   all |
maxDets=100 ] = 0.919
Average Precision (AP) @[ IoU=0.75      | area=   all |
maxDets=100 ] = 0.867
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.738
Average Recall      (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=
1 ] = 0.779
Average Recall      (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=
10 ] = 0.779
Average Recall      (AR) @[ IoU=0.50:0.95 | area=   all |
maxDets=100 ] = 0.779
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.779
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
```

BEST VALIDATION mAP: 0.7378807468658953

SAVING BEST MODEL FOR EPOCH: 12

```
Epoch: [12] [ 0/189] eta: 0:12:01  lr: 0.001000  loss: 0.7893
(0.7893)  loss_classifier: 0.3633 (0.3633)  loss_box_reg: 0.4145
(0.4145)  loss_objectness: 0.0075 (0.0075)  loss_rpn_box_reg: 0.0040
(0.0040)  time: 3.8156  data: 3.5568  max mem: 1511
Epoch: [12] [100/189] eta: 0:01:42  lr: 0.001000  loss: 0.5425
(0.6033)  loss_classifier: 0.1759 (0.1998)  loss_box_reg: 0.3702
(0.3976)  loss_objectness: 0.0020 (0.0029)  loss_rpn_box_reg: 0.0024
(0.0030)  time: 1.0829  data: 0.8452  max mem: 1511
Epoch: [12] [188/189] eta: 0:00:01  lr: 0.001000  loss: 0.5779
(0.5972)  loss_classifier: 0.1827 (0.1940)  loss_box_reg: 0.3876
(0.3976)  loss_objectness: 0.0017 (0.0028)  loss_rpn_box_reg: 0.0024
(0.0029)  time: 1.0454  data: 0.8178  max mem: 1511
Epoch: [12] Total time: 0:03:31 (1.1175 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:27  model_time: 0.1602 (0.1602)
evaluator_time: 0.0189 (0.0189)  time: 1.5431  data: 1.1944  max mem:
```

```

1511
Test: [17/18] eta: 0:00:00 model_time: 0.1260 (0.1221)
evaluator_time: 0.0153 (0.0146) time: 0.3837 data: 0.2263 max mem:
1511
Test: Total time: 0:00:06 (0.3860 s / it)
Averaged stats: model_time: 0.1260 (0.1221) evaluator_time: 0.0153
(0.0146)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.750
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.921
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.894
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.750
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.787
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.787
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.787
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.787
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
BEST VALIDATION mAP: 0.7498955802173624
SAVING BEST MODEL FOR EPOCH: 13
Epoch: [13] [ 0/189] eta: 0:11:05 lr: 0.001000 loss: 0.6188
(0.6188) loss_classifier: 0.1663 (0.1663) loss_box_reg: 0.4462
(0.4462) loss_objectness: 0.0028 (0.0028) loss_rpn_box_reg: 0.0035
(0.0035) time: 3.5228 data: 3.1478 max mem: 1511
Epoch: [13] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.5704

```

```
(0.5817) loss_classifier: 0.1894 (0.1953) loss_box_reg: 0.3746
(0.3812) loss_objectness: 0.0023 (0.0025) loss_rpn_box_reg: 0.0023
(0.0027) time: 1.0551 data: 0.8264 max mem: 1511
Epoch: [13] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.5446
(0.5809) loss_classifier: 0.1692 (0.1936) loss_box_reg: 0.3807
(0.3821) loss_objectness: 0.0018 (0.0025) loss_rpn_box_reg: 0.0023
(0.0028) time: 1.0323 data: 0.8036 max mem: 1511
Epoch: [13] Total time: 0:03:29 (1.1100 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:32 model_time: 0.1474 (0.1474)
evaluator_time: 0.0281 (0.0281) time: 1.7870 data: 1.3055 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1331 (0.1250)
evaluator_time: 0.0138 (0.0200) time: 0.5113 data: 0.3358 max mem:
1511
Test: Total time: 0:00:09 (0.5152 s / it)
Averaged stats: model_time: 0.1331 (0.1250) evaluator_time: 0.0138
(0.0200)
Accumulating evaluation results...
DONE (t=0.25s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.755
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.923
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.881
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.755
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.794
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.794
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.794
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.794
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
```

SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.7549934265404562

SAVING BEST MODEL FOR EPOCH: 14

Epoch: [14] [0/189] eta: 0:09:35 lr: 0.001000 loss: 0.5728
(0.5728) loss_classifier: 0.1876 (0.1876) loss_box_reg: 0.3820
(0.3820) loss_objectness: 0.0016 (0.0016) loss_rpn_box_reg: 0.0016
(0.0016) time: 3.0428 data: 2.8225 max mem: 1511

Epoch: [14] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.5500
(0.5599) loss_classifier: 0.1485 (0.1782) loss_box_reg: 0.3886
(0.3766) loss_objectness: 0.0017 (0.0024) loss_rpn_box_reg: 0.0023
(0.0027) time: 1.1590 data: 0.9391 max mem: 1511

Epoch: [14] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.5573
(0.5660) loss_classifier: 0.1558 (0.1782) loss_box_reg: 0.3839
(0.3827) loss_objectness: 0.0021 (0.0024) loss_rpn_box_reg: 0.0020
(0.0026) time: 1.1543 data: 0.9253 max mem: 1511

Epoch: [14] Total time: 0:03:35 (1.1387 s / it)

creating index...

index created!

Test: [0/18] eta: 0:00:17 model_time: 0.1409 (0.1409)
evaluator_time: 0.0119 (0.0119) time: 0.9740 data: 0.7173 max mem:
1511

Test: [17/18] eta: 0:00:00 model_time: 0.1007 (0.1097)
evaluator_time: 0.0109 (0.0144) time: 0.3735 data: 0.2327 max mem:
1511

Test: Total time: 0:00:06 (0.3764 s / it)

Averaged stats: model_time: 0.1007 (0.1097) evaluator_time: 0.0109
(0.0144)

Accumulating evaluation results...

DONE (t=0.26s).

IoU metric: bbox

Average Precision (AP) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.773

Average Precision (AP) @[IoU=0.50 | area= all |
maxDets=100] = 0.930

Average Precision (AP) @[IoU=0.75 | area= all |
maxDets=100] = 0.886

Average Precision (AP) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000

Average Precision (AP) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.774

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
1] = 0.806

Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=

```
10 ] = 0.806
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.806
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.806
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
```

BEST VALIDATION mAP: 0.7733803902368259

SAVING BEST MODEL FOR EPOCH: 15

```
Epoch: [15] [ 0/189] eta: 0:10:38 lr: 0.001000 loss: 0.6078
(0.6078) loss_classifier: 0.1617 (0.1617) loss_box_reg: 0.4400
(0.4400) loss_objectness: 0.0041 (0.0041) loss_rpn_box_reg: 0.0020
(0.0020) time: 3.3792 data: 3.0567 max mem: 1511
Epoch: [15] [100/189] eta: 0:01:43 lr: 0.001000 loss: 0.5376
(0.5663) loss_classifier: 0.1661 (0.1788) loss_box_reg: 0.3749
(0.3822) loss_objectness: 0.0018 (0.0026) loss_rpn_box_reg: 0.0023
(0.0027) time: 1.2484 data: 0.9773 max mem: 1511
Epoch: [15] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.5217
(0.5545) loss_classifier: 0.1545 (0.1760) loss_box_reg: 0.3540
(0.3734) loss_objectness: 0.0018 (0.0025) loss_rpn_box_reg: 0.0022
(0.0026) time: 1.2078 data: 0.9424 max mem: 1511
Epoch: [15] Total time: 0:03:39 (1.1620 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1308 (0.1308)
evaluator_time: 0.0154 (0.0154) time: 1.0210 data: 0.7804 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1320 (0.1344)
evaluator_time: 0.0218 (0.0264) time: 0.4809 data: 0.3016 max mem:
1511
Test: Total time: 0:00:08 (0.4847 s / it)
Averaged stats: model_time: 0.1320 (0.1344) evaluator_time: 0.0218
(0.0264)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision  (AP) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.752
Average Precision  (AP) @[ IoU=0.50          | area=  all |
```

```

maxDets=100 ] = 0.931
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.894
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.752
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.791
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.791
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.791
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.791
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [16] [ 0/189] eta: 0:07:24 lr: 0.001000 loss: 0.5813
(0.5813) loss_classifier: 0.1517 (0.1517) loss_box_reg: 0.4263
(0.4263) loss_objectness: 0.0014 (0.0014) loss_rpn_box_reg: 0.0019
(0.0019) time: 2.3536 data: 2.1053 max mem: 1511
Epoch: [16] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.4725
(0.5259) loss_classifier: 0.1343 (0.1612) loss_box_reg: 0.3369
(0.3601) loss_objectness: 0.0014 (0.0021) loss_rpn_box_reg: 0.0020
(0.0024) time: 1.0552 data: 0.8250 max mem: 1511
Epoch: [16] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4974
(0.5261) loss_classifier: 0.1360 (0.1624) loss_box_reg: 0.3447
(0.3591) loss_objectness: 0.0020 (0.0021) loss_rpn_box_reg: 0.0021
(0.0025) time: 1.1036 data: 0.8835 max mem: 1511
Epoch: [16] Total time: 0:03:31 (1.1189 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1360 (0.1360)
evaluator_time: 0.0295 (0.0295) time: 1.1098 data: 0.7540 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1286 (0.1264)
evaluator_time: 0.0177 (0.0194) time: 0.4442 data: 0.2755 max mem:
1511
Test: Total time: 0:00:08 (0.4473 s / it)

```

```

Averaged stats: model_time: 0.1286 (0.1264) evaluator_time: 0.0177
(0.0194)
Accumulating evaluation results...
DONE (t=0.26s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.743
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.906
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.867
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.743
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.798
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.798
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.798
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.798
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [17] [ 0/189] eta: 0:05:07 lr: 0.001000 loss: 0.6296
(0.6296) loss_classifier: 0.2400 (0.2400) loss_box_reg: 0.3866
(0.3866) loss_objectness: 0.0012 (0.0012) loss_rpn_box_reg: 0.0018
(0.0018) time: 1.6252 data: 1.3462 max mem: 1511
Epoch: [17] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.4731
(0.5346) loss_classifier: 0.1403 (0.1615) loss_box_reg: 0.3454
(0.3685) loss_objectness: 0.0019 (0.0023) loss_rpn_box_reg: 0.0021
(0.0023) time: 1.0123 data: 0.7838 max mem: 1511
Epoch: [17] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4881
(0.5251) loss_classifier: 0.1511 (0.1605) loss_box_reg: 0.3414
(0.3600) loss_objectness: 0.0021 (0.0022) loss_rpn_box_reg: 0.0022
(0.0024) time: 1.0202 data: 0.7985 max mem: 1511
Epoch: [17] Total time: 0:03:34 (1.1336 s / it)
creating index...

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```
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1431 (0.1431)
evaluator_time: 0.0213 (0.0213) time: 1.0334 data: 0.7372 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.0856 (0.0955)
evaluator_time: 0.0121 (0.0141) time: 0.3640 data: 0.2384 max mem:
1511
Test: Total time: 0:00:06 (0.3669 s / it)
Averaged stats: model_time: 0.0856 (0.0955) evaluator_time: 0.0121
(0.0141)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.773
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.926
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.886
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.773
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.809
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [18] [ 0/189] eta: 0:09:14 lr: 0.001000 loss: 0.5335
(0.5335) loss_classifier: 0.1746 (0.1746) loss_box_reg: 0.3547
(0.3547) loss_objectness: 0.0021 (0.0021) loss_rpn_box_reg: 0.0021
(0.0021) time: 2.9317 data: 2.6980 max mem: 1511
Epoch: [18] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.5120
(0.5104) loss_classifier: 0.1488 (0.1584) loss_box_reg: 0.3291
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(0.3475) loss_objectness: 0.0016 (0.0021) loss_rpn_box_reg: 0.0019
(0.0023) time: 1.0446 data: 0.8035 max mem: 1511
Epoch: [18] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4741
(0.5011) loss_classifier: 0.1418 (0.1522) loss_box_reg: 0.3175
(0.3442) loss_objectness: 0.0020 (0.0022) loss_rpn_box_reg: 0.0024
(0.0024) time: 1.1259 data: 0.8765 max mem: 1511
Epoch: [18] Total time: 0:03:32 (1.1224 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1650 (0.1650)
evaluator_time: 0.0183 (0.0183) time: 1.1191 data: 0.7341 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1264 (0.1290)
evaluator_time: 0.0160 (0.0188) time: 0.4359 data: 0.2626 max mem:
1511
Test: Total time: 0:00:07 (0.4394 s / it)
Averaged stats: model_time: 0.1264 (0.1290) evaluator_time: 0.0160
(0.0188)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.768
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.921
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.877
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.768
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.805
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.805
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.805
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.805
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [19] [ 0/189] eta: 0:08:07 lr: 0.001000 loss: 0.4688
(0.4688) loss_classifier: 0.1411 (0.1411) loss_box_reg: 0.3218
(0.3218) loss_objectness: 0.0037 (0.0037) loss_rpn_box_reg: 0.0022
(0.0022) time: 2.5816 data: 2.3534 max mem: 1511
Epoch: [19] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.4572
(0.4904) loss_classifier: 0.1396 (0.1555) loss_box_reg: 0.3210
(0.3302) loss_objectness: 0.0019 (0.0022) loss_rpn_box_reg: 0.0024
(0.0024) time: 1.1702 data: 0.9504 max mem: 1511
Epoch: [19] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4692
(0.4863) loss_classifier: 0.1306 (0.1505) loss_box_reg: 0.3285
(0.3312) loss_objectness: 0.0015 (0.0023) loss_rpn_box_reg: 0.0022
(0.0024) time: 1.1606 data: 0.9028 max mem: 1511
Epoch: [19] Total time: 0:03:34 (1.1345 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1046 (0.1046)
evaluator_time: 0.0130 (0.0130) time: 1.0452 data: 0.7678 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1353 (0.1343)
evaluator_time: 0.0165 (0.0183) time: 0.4939 data: 0.3180 max mem:
1511
Test: Total time: 0:00:08 (0.4980 s / it)
Averaged stats: model_time: 0.1353 (0.1343) evaluator_time: 0.0165
(0.0183)
Accumulating evaluation results...
DONE (t=0.25s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.768
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.918
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.886
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.768
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.795
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.795
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.795
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
```

```

Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.795
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [20] [ 0/189] eta: 0:06:57  lr: 0.001000  loss: 0.4507
(0.4507)  loss_classifier: 0.1613 (0.1613)  loss_box_reg: 0.2856
(0.2856)  loss_objectness: 0.0012 (0.0012)  loss_rpn_box_reg: 0.0027
(0.0027)  time: 2.2084  data: 1.8799  max mem: 1511
Epoch: [20] [100/189] eta: 0:01:41  lr: 0.001000  loss: 0.4791
(0.4807)  loss_classifier: 0.1432 (0.1485)  loss_box_reg: 0.3375
(0.3277)  loss_objectness: 0.0013 (0.0022)  loss_rpn_box_reg: 0.0021
(0.0023)  time: 1.1048  data: 0.8821  max mem: 1511
Epoch: [20] [188/189] eta: 0:00:01  lr: 0.001000  loss: 0.4829
(0.4806)  loss_classifier: 0.1412 (0.1481)  loss_box_reg: 0.3358
(0.3281)  loss_objectness: 0.0018 (0.0022)  loss_rpn_box_reg: 0.0018
(0.0023)  time: 1.1682  data: 0.9164  max mem: 1511
Epoch: [20] Total time: 0:03:31 (1.1167 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19  model_time: 0.1511 (0.1511)
evaluator_time: 0.0365 (0.0365)  time: 1.0916  data: 0.7416  max mem:
1511
Test: [17/18] eta: 0:00:00  model_time: 0.1156 (0.1150)
evaluator_time: 0.0154 (0.0169)  time: 0.3809  data: 0.2284  max mem:
1511
Test: Total time: 0:00:06 (0.3846 s / it)
Averaged stats: model_time: 0.1156 (0.1150)  evaluator_time: 0.0154
(0.0169)
Accumulating evaluation results...
DONE (t=0.26s).
IoU metric: bbox
Average Precision  (AP) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.767
Average Precision  (AP) @[ IoU=0.50      | area=  all |
maxDets=100 ] = 0.914
Average Precision  (AP) @[ IoU=0.75      | area=  all |
maxDets=100 ] = 0.860
Average Precision  (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision  (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision  (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.767

```

```
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
1 ] = 0.800
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
10 ] = 0.800
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.800
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.800
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [21] [ 0/189] eta: 0:06:45  lr: 0.001000  loss: 0.4347
(0.4347)  loss_classifier: 0.1138 (0.1138)  loss_box_reg: 0.3190
(0.3190)  loss_objectness: 0.0004 (0.0004)  loss_rpn_box_reg: 0.0014
(0.0014)  time: 2.1471  data: 1.9189  max mem: 1511
Epoch: [21] [100/189] eta: 0:01:41  lr: 0.001000  loss: 0.4635
(0.4686)  loss_classifier: 0.1384 (0.1455)  loss_box_reg: 0.3272
(0.3191)  loss_objectness: 0.0016 (0.0018)  loss_rpn_box_reg: 0.0022
(0.0021)  time: 1.2286  data: 0.9762  max mem: 1511
Epoch: [21] [188/189] eta: 0:00:01  lr: 0.001000  loss: 0.4229
(0.4582)  loss_classifier: 0.1283 (0.1382)  loss_box_reg: 0.2928
(0.3160)  loss_objectness: 0.0015 (0.0018)  loss_rpn_box_reg: 0.0020
(0.0022)  time: 1.1079  data: 0.8764  max mem: 1511
Epoch: [21] Total time: 0:03:36 (1.1474 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:21  model_time: 0.1479 (0.1479)
evaluator_time: 0.0260 (0.0260)  time: 1.2079  data: 0.8722  max mem:
1511
Test: [17/18] eta: 0:00:00  model_time: 0.0987 (0.0997)
evaluator_time: 0.0118 (0.0147)  time: 0.3765  data: 0.2437  max mem:
1511
Test: Total time: 0:00:06 (0.3794 s / it)
Averaged stats: model_time: 0.0987 (0.0997)  evaluator_time: 0.0118
(0.0147)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision  (AP) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.772
Average Precision  (AP) @[ IoU=0.50      | area=  all |
maxDets=100 ] = 0.901
```

```

Average Precision (AP) @[ IoU=0.75      | area=  all |
maxDets=100 ] = 0.886
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.773
Average Recall (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
1 ] = 0.800
Average Recall (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
10 ] = 0.800
Average Recall (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.800
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.800
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [22] [ 0/189] eta: 0:10:09 lr: 0.001000 loss: 0.3647
(0.3647) loss_classifier: 0.0767 (0.0767) loss_box_reg: 0.2822
(0.2822) loss_objectness: 0.0036 (0.0036) loss_rpn_box_reg: 0.0022
(0.0022) time: 3.2248 data: 2.9238 max mem: 1511
Epoch: [22] [100/189] eta: 0:01:42 lr: 0.001000 loss: 0.4297
(0.4561) loss_classifier: 0.1352 (0.1397) loss_box_reg: 0.3038
(0.3120) loss_objectness: 0.0017 (0.0022) loss_rpn_box_reg: 0.0022
(0.0022) time: 1.1297 data: 0.8978 max mem: 1511
Epoch: [22] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4314
(0.4638) loss_classifier: 0.1147 (0.1416) loss_box_reg: 0.3110
(0.3179) loss_objectness: 0.0017 (0.0021) loss_rpn_box_reg: 0.0020
(0.0022) time: 1.1360 data: 0.8714 max mem: 1511
Epoch: [22] Total time: 0:03:38 (1.1571 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1383 (0.1383)
evaluator_time: 0.0222 (0.0222) time: 1.1452 data: 0.8015 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1361 (0.1333)
evaluator_time: 0.0184 (0.0204) time: 0.5027 data: 0.3249 max mem:
1511
Test: Total time: 0:00:09 (0.5054 s / it)
Averaged stats: model_time: 0.1361 (0.1333) evaluator_time: 0.0184

```

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(0.0204)
Accumulating evaluation results...
DONE (t=0.25s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.767
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.923
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.886
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.767
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.806
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.806
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.806
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.806
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [23] [ 0/189] eta: 0:05:07 lr: 0.001000 loss: 0.4533
(0.4533) loss_classifier: 0.1407 (0.1407) loss_box_reg: 0.3096
(0.3096) loss_objectness: 0.0012 (0.0012) loss_rpn_box_reg: 0.0018
(0.0018) time: 1.6259 data: 1.3944 max mem: 1511
Epoch: [23] [100/189] eta: 0:01:38 lr: 0.001000 loss: 0.4516
(0.4542) loss_classifier: 0.1182 (0.1382) loss_box_reg: 0.3247
(0.3120) loss_objectness: 0.0017 (0.0019) loss_rpn_box_reg: 0.0019
(0.0021) time: 1.0948 data: 0.8502 max mem: 1511
Epoch: [23] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4180
(0.4478) loss_classifier: 0.1125 (0.1340) loss_box_reg: 0.2949
(0.3098) loss_objectness: 0.0015 (0.0019) loss_rpn_box_reg: 0.0018
(0.0021) time: 1.0681 data: 0.8482 max mem: 1511
Epoch: [23] Total time: 0:03:38 (1.1563 s / it)
creating index...
index created!

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Test: [ 0/18] eta: 0:00:26 model_time: 0.1941 (0.1941)
evaluator_time: 0.0386 (0.0386) time: 1.4602 data: 1.0285 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1401 (0.1400)
evaluator_time: 0.0176 (0.0194) time: 0.5095 data: 0.3221 max mem:
1511
Test: Total time: 0:00:09 (0.5118 s / it)
Averaged stats: model_time: 0.1401 (0.1400) evaluator_time: 0.0176
(0.0194)
Accumulating evaluation results...
DONE (t=0.16s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.770
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.922
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.874
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.770
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.809
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [24] [ 0/189] eta: 0:08:51 lr: 0.001000 loss: 0.4941
(0.4941) loss_classifier: 0.1241 (0.1241) loss_box_reg: 0.3666
(0.3666) loss_objectness: 0.0015 (0.0015) loss_rpn_box_reg: 0.0019
(0.0019) time: 2.8121 data: 2.5290 max mem: 1511
Epoch: [24] [100/189] eta: 0:01:43 lr: 0.001000 loss: 0.4417
(0.4505) loss_classifier: 0.1238 (0.1370) loss_box_reg: 0.3090
(0.3096) loss_objectness: 0.0016 (0.0019) loss_rpn_box_reg: 0.0018
(0.0021) time: 1.1348 data: 0.8899 max mem: 1511

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Epoch: [24] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4250
(0.4516) loss_classifier: 0.1246 (0.1363) loss_box_reg: 0.2956
(0.3112) loss_objectness: 0.0014 (0.0019) loss_rpn_box_reg: 0.0020
(0.0021) time: 1.0566 data: 0.8317 max mem: 1511
Epoch: [24] Total time: 0:03:35 (1.1378 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:31 model_time: 0.1975 (0.1975)
evaluator_time: 0.0311 (0.0311) time: 1.7317 data: 1.2161 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1321 (0.1298)
evaluator_time: 0.0153 (0.0171) time: 0.4878 data: 0.3130 max mem:
1511
Test: Total time: 0:00:08 (0.4903 s / it)
Averaged stats: model_time: 0.1321 (0.1298) evaluator_time: 0.0153
(0.0171)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.772
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.903
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.878
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.772
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.802
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.802
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.802
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.802
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
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Epoch: [25] [ 0/189] eta: 0:05:44 lr: 0.001000 loss: 0.4227
(0.4227) loss_classifier: 0.1170 (0.1170) loss_box_reg: 0.3009
(0.3009) loss_objectness: 0.0027 (0.0027) loss_rpn_box_reg: 0.0021
(0.0021) time: 1.8222 data: 1.5772 max mem: 1511
Epoch: [25] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.4061
(0.4443) loss_classifier: 0.1034 (0.1268) loss_box_reg: 0.2960
(0.3135) loss_objectness: 0.0015 (0.0019) loss_rpn_box_reg: 0.0019
(0.0021) time: 1.0906 data: 0.8528 max mem: 1511
Epoch: [25] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4014
(0.4367) loss_classifier: 0.1225 (0.1292) loss_box_reg: 0.2766
(0.3036) loss_objectness: 0.0012 (0.0019) loss_rpn_box_reg: 0.0019
(0.0021) time: 1.0529 data: 0.8431 max mem: 1511
Epoch: [25] Total time: 0:03:37 (1.1482 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:32 model_time: 0.2446 (0.2446)
evaluator_time: 0.0311 (0.0311) time: 1.7982 data: 1.2796 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.0985 (0.1077)
evaluator_time: 0.0104 (0.0147) time: 0.4075 data: 0.2598 max mem:
1511
Test: Total time: 0:00:07 (0.4098 s / it)
Averaged stats: model_time: 0.0985 (0.1077) evaluator_time: 0.0104
(0.0147)
Accumulating evaluation results...
DONE (t=0.14s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.773
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.910
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.898
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.773
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.812
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.812
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.812
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000

```

```

Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.812
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [26] [ 0/189] eta: 0:12:03 lr: 0.001000 loss: 0.4876
(0.4876) loss_classifier: 0.1402 (0.1402) loss_box_reg: 0.3401
(0.3401) loss_objectness: 0.0053 (0.0053) loss_rpn_box_reg: 0.0020
(0.0020) time: 3.8302 data: 3.4551 max mem: 1511
Epoch: [26] [100/189] eta: 0:01:36 lr: 0.001000 loss: 0.3950
(0.4223) loss_classifier: 0.1057 (0.1228) loss_box_reg: 0.2891
(0.2958) loss_objectness: 0.0015 (0.0017) loss_rpn_box_reg: 0.0018
(0.0020) time: 0.9977 data: 0.7716 max mem: 1511
Epoch: [26] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4177
(0.4334) loss_classifier: 0.1148 (0.1270) loss_box_reg: 0.2959
(0.3023) loss_objectness: 0.0016 (0.0020) loss_rpn_box_reg: 0.0022
(0.0021) time: 1.0977 data: 0.8568 max mem: 1511
Epoch: [26] Total time: 0:03:29 (1.1078 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1550 (0.1550)
evaluator_time: 0.0146 (0.0146) time: 1.0363 data: 0.7639 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1484 (0.1426)
evaluator_time: 0.0193 (0.0210) time: 0.5374 data: 0.3513 max mem:
1511
Test: Total time: 0:00:09 (0.5393 s / it)
Averaged stats: model_time: 0.1484 (0.1426) evaluator_time: 0.0193
(0.0210)
Accumulating evaluation results...
DONE (t=0.12s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.761
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.896
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.873
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.761
Average Recall      (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.809

```

```

Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
10 ] = 0.809
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.809
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.809
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [27] [ 0/189] eta: 0:05:52  lr: 0.001000  loss: 0.4317
(0.4317)  loss_classifier: 0.1237 (0.1237)  loss_box_reg: 0.3050
(0.3050)  loss_objectness: 0.0017 (0.0017)  loss_rpn_box_reg: 0.0013
(0.0013)  time: 1.8643  data: 1.6213  max mem: 1511
Epoch: [27] [100/189] eta: 0:01:41  lr: 0.001000  loss: 0.4333
(0.4303)  loss_classifier: 0.1364 (0.1343)  loss_box_reg: 0.2882
(0.2919)  loss_objectness: 0.0018 (0.0020)  loss_rpn_box_reg: 0.0020
(0.0021)  time: 1.0911  data: 0.8595  max mem: 1511
Epoch: [27] [188/189] eta: 0:00:01  lr: 0.001000  loss: 0.4159
(0.4309)  loss_classifier: 0.1127 (0.1301)  loss_box_reg: 0.2816
(0.2969)  loss_objectness: 0.0011 (0.0019)  loss_rpn_box_reg: 0.0020
(0.0020)  time: 1.0444  data: 0.8033  max mem: 1511
Epoch: [27] Total time: 0:03:39 (1.1596 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:32  model_time: 0.1998 (0.1998)
evaluator_time: 0.0302 (0.0302)  time: 1.7787  data: 1.3115  max mem:
1511
Test: [17/18] eta: 0:00:00  model_time: 0.1346 (0.1352)
evaluator_time: 0.0182 (0.0209)  time: 0.5153  data: 0.3319  max mem:
1511
Test: Total time: 0:00:09 (0.5176 s / it)
Averaged stats: model_time: 0.1346 (0.1352)  evaluator_time: 0.0182
(0.0209)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision  (AP) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.782
Average Precision  (AP) @[ IoU=0.50          | area=  all |
maxDets=100 ] = 0.928
Average Precision  (AP) @[ IoU=0.75          | area=  all |
maxDets=100 ] = 0.889

```

Average Precision (AP) @[IoU=0.50:0.95 | area= small | maxDets=100] = -1.000
Average Precision (AP) @[IoU=0.50:0.95 | area=medium | maxDets=100] = -1.000
Average Precision (AP) @[IoU=0.50:0.95 | area= large | maxDets=100] = 0.782
Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=1] = 0.824
Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=10] = 0.824
Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=100] = 0.824
Average Recall (AR) @[IoU=0.50:0.95 | area= small | maxDets=100] = -1.000
Average Recall (AR) @[IoU=0.50:0.95 | area=medium | maxDets=100] = -1.000
Average Recall (AR) @[IoU=0.50:0.95 | area= large | maxDets=100] = 0.824
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...

BEST VALIDATION mAP: 0.7818605871576169

SAVING BEST MODEL FOR EPOCH: 28

Epoch: [28] [0/189] eta: 0:07:15 lr: 0.001000 loss: 0.4349
(0.4349) loss_classifier: 0.1080 (0.1080) loss_box_reg: 0.3090
(0.3090) loss_objectness: 0.0133 (0.0133) loss_rpn_box_reg: 0.0045
(0.0045) time: 2.3024 data: 2.0902 max mem: 1511
Epoch: [28] [100/189] eta: 0:01:43 lr: 0.001000 loss: 0.3936
(0.4116) loss_classifier: 0.1077 (0.1234) loss_box_reg: 0.2813
(0.2842) loss_objectness: 0.0011 (0.0020) loss_rpn_box_reg: 0.0016
(0.0020) time: 1.2927 data: 1.0521 max mem: 1511
Epoch: [28] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4195
(0.4104) loss_classifier: 0.1050 (0.1237) loss_box_reg: 0.2854
(0.2829) loss_objectness: 0.0011 (0.0020) loss_rpn_box_reg: 0.0017
(0.0019) time: 0.9802 data: 0.7548 max mem: 1511
Epoch: [28] Total time: 0:03:34 (1.1334 s / it)
creating index...
index created!
Test: [0/18] eta: 0:00:29 model_time: 0.1510 (0.1510)
evaluator_time: 0.0307 (0.0307) time: 1.6570 data: 1.2505 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1204 (0.1204)
evaluator_time: 0.0102 (0.0154) time: 0.4159 data: 0.2558 max mem:
1511

```

Test: Total time: 0:00:07 (0.4181 s / it)
Averaged stats: model_time: 0.1204 (0.1204) evaluator_time: 0.0102
(0.0154)
Accumulating evaluation results...
DONE (t=0.12s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.779
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.919
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.877
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.780
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.812
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.812
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.812
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.812
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [29] [ 0/189] eta: 0:08:31 lr: 0.001000 loss: 0.4545
(0.4545) loss_classifier: 0.1513 (0.1513) loss_box_reg: 0.3005
(0.3005) loss_objectness: 0.0008 (0.0008) loss_rpn_box_reg: 0.0019
(0.0019) time: 2.7044 data: 2.3888 max mem: 1511
Epoch: [29] [100/189] eta: 0:01:42 lr: 0.001000 loss: 0.3953
(0.4123) loss_classifier: 0.1057 (0.1312) loss_box_reg: 0.2847
(0.2772) loss_objectness: 0.0018 (0.0018) loss_rpn_box_reg: 0.0019
(0.0020) time: 1.3049 data: 1.0434 max mem: 1511
Epoch: [29] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4158
(0.4126) loss_classifier: 0.1217 (0.1291) loss_box_reg: 0.2755
(0.2798) loss_objectness: 0.0015 (0.0018) loss_rpn_box_reg: 0.0019
(0.0019) time: 1.2721 data: 1.0072 max mem: 1511
Epoch: [29] Total time: 0:03:38 (1.1583 s / it)

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```
creating index...
index created!
Test: [ 0/18] eta: 0:00:17 model_time: 0.1226 (0.1226)
evaluator_time: 0.0111 (0.0111) time: 0.9572 data: 0.7321 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1226 (0.1137)
evaluator_time: 0.0143 (0.0147) time: 0.3673 data: 0.2231 max mem:
1511
Test: Total time: 0:00:06 (0.3703 s / it)
Averaged stats: model_time: 0.1226 (0.1137) evaluator_time: 0.0143
(0.0147)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.773
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.913
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.873
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.774
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.807
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.807
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.807
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.807
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [30] [ 0/189] eta: 0:10:01 lr: 0.001000 loss: 0.4466
(0.4466) loss_classifier: 0.0975 (0.0975) loss_box_reg: 0.3448
(0.3448) loss_objectness: 0.0022 (0.0022) loss_rpn_box_reg: 0.0021
(0.0021) time: 3.1829 data: 2.8657 max mem: 1511
Epoch: [30] [100/189] eta: 0:01:51 lr: 0.001000 loss: 0.4186
```

```

(0.4148) loss_classifier: 0.1446 (0.1231) loss_box_reg: 0.2940
(0.2877) loss_objectness: 0.0015 (0.0020) loss_rpn_box_reg: 0.0020
(0.0020) time: 1.3671 data: 1.1027 max mem: 1511
Epoch: [30] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3853
(0.4096) loss_classifier: 0.0969 (0.1210) loss_box_reg: 0.2665
(0.2847) loss_objectness: 0.0011 (0.0020) loss_rpn_box_reg: 0.0016
(0.0020) time: 1.0189 data: 0.7817 max mem: 1511
Epoch: [30] Total time: 0:03:44 (1.1884 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1435 (0.1435)
evaluator_time: 0.0275 (0.0275) time: 1.0803 data: 0.7524 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1097 (0.1059)
evaluator_time: 0.0137 (0.0143) time: 0.3474 data: 0.2069 max mem:
1511
Test: Total time: 0:00:06 (0.3499 s / it)
Averaged stats: model_time: 0.1097 (0.1059) evaluator_time: 0.0137
(0.0143)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.780
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.917
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.874
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.781
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.809
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.809
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...

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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [31] [ 0/189] eta: 0:12:13 lr: 0.001000 loss: 0.3963
(0.3963) loss_classifier: 0.1204 (0.1204) loss_box_reg: 0.2718
(0.2718) loss_objectness: 0.0021 (0.0021) loss_rpn_box_reg: 0.0020
(0.0020) time: 3.8828 data: 3.5699 max mem: 1511
Epoch: [31] [100/189] eta: 0:01:46 lr: 0.001000 loss: 0.3827
(0.4003) loss_classifier: 0.0932 (0.1161) loss_box_reg: 0.2666
(0.2807) loss_objectness: 0.0010 (0.0016) loss_rpn_box_reg: 0.0017
(0.0019) time: 1.2599 data: 0.9648 max mem: 1511
Epoch: [31] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3905
(0.3969) loss_classifier: 0.1003 (0.1150) loss_box_reg: 0.2859
(0.2784) loss_objectness: 0.0015 (0.0017) loss_rpn_box_reg: 0.0020
(0.0019) time: 1.3144 data: 1.0598 max mem: 1511
Epoch: [31] Total time: 0:03:44 (1.1897 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1254 (0.1254)
evaluator_time: 0.0121 (0.0121) time: 1.1261 data: 0.8674 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1029 (0.1489)
evaluator_time: 0.0103 (0.0131) time: 0.3832 data: 0.2036 max mem:
1511
Test: Total time: 0:00:06 (0.3877 s / it)
Averaged stats: model_time: 0.1029 (0.1489) evaluator_time: 0.0103
(0.0131)
Accumulating evaluation results...
DONE (t=0.23s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.779
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.918
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.881
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.779
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.819
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.819
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.819
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |

```



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maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.819
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [32] [ 0/189] eta: 0:09:30 lr: 0.001000 loss: 0.3335
(0.3335) loss_classifier: 0.0963 (0.0963) loss_box_reg: 0.2340
(0.2340) loss_objectness: 0.0016 (0.0016) loss_rpn_box_reg: 0.0015
(0.0015) time: 3.0204 data: 2.7437 max mem: 1511
Epoch: [32] [100/189] eta: 0:01:41 lr: 0.001000 loss: 0.4113
(0.4065) loss_classifier: 0.0958 (0.1245) loss_box_reg: 0.2766
(0.2782) loss_objectness: 0.0011 (0.0019) loss_rpn_box_reg: 0.0016
(0.0019) time: 1.0441 data: 0.8039 max mem: 1511
Epoch: [32] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.4085
(0.3992) loss_classifier: 0.1262 (0.1197) loss_box_reg: 0.2735
(0.2757) loss_objectness: 0.0016 (0.0019) loss_rpn_box_reg: 0.0020
(0.0019) time: 1.1934 data: 0.9459 max mem: 1511
Epoch: [32] Total time: 0:03:34 (1.1332 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1496 (0.1496)
evaluator_time: 0.0275 (0.0275) time: 1.0931 data: 0.7542 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1027 (0.1116)
evaluator_time: 0.0116 (0.0175) time: 0.4237 data: 0.2745 max mem:
1511
Test: Total time: 0:00:07 (0.4276 s / it)
Averaged stats: model_time: 0.1027 (0.1116) evaluator_time: 0.0116
(0.0175)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.779
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.920
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.871
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |

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```

maxDets=100 ] = 0.779
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.807
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.807
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.807
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.807
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [33] [ 0/189] eta: 0:05:47 lr: 0.001000 loss: 0.4063
(0.4063) loss_classifier: 0.0944 (0.0944) loss_box_reg: 0.3093
(0.3093) loss_objectness: 0.0014 (0.0014) loss_rpn_box_reg: 0.0012
(0.0012) time: 1.8392 data: 1.5467 max mem: 1511
Epoch: [33] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.3434
(0.3956) loss_classifier: 0.0878 (0.1193) loss_box_reg: 0.2365
(0.2728) loss_objectness: 0.0010 (0.0018) loss_rpn_box_reg: 0.0017
(0.0018) time: 1.0143 data: 0.7771 max mem: 1511
Epoch: [33] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3807
(0.3842) loss_classifier: 0.1103 (0.1136) loss_box_reg: 0.2710
(0.2670) loss_objectness: 0.0014 (0.0018) loss_rpn_box_reg: 0.0018
(0.0018) time: 1.1105 data: 0.8872 max mem: 1511
Epoch: [33] Total time: 0:03:31 (1.1168 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:17 model_time: 0.1191 (0.1191)
evaluator_time: 0.0132 (0.0132) time: 0.9803 data: 0.7358 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1165 (0.1150)
evaluator_time: 0.0122 (0.0131) time: 0.3534 data: 0.2065 max mem:
1511
Test: Total time: 0:00:06 (0.3556 s / it)
Averaged stats: model_time: 0.1165 (0.1150) evaluator_time: 0.0122
(0.0131)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.799
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.928

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```
Average Precision (AP) @[ IoU=0.75      | area=  all |
maxDets=100 ] = 0.891
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.799
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
1 ] = 0.826
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
10 ] = 0.826
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.826
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.826
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
```

BEST VALIDATION mAP: 0.7985673787158937

SAVING BEST MODEL FOR EPOCH: 34

```
Epoch: [34] [ 0/189] eta: 0:10:22 lr: 0.001000 loss: 0.5800
(0.5800) loss_classifier: 0.2657 (0.2657) loss_box_reg: 0.3101
(0.3101) loss_objectness: 0.0019 (0.0019) loss_rpn_box_reg: 0.0023
(0.0023) time: 3.2962 data: 2.9066 max mem: 1511
Epoch: [34] [100/189] eta: 0:01:48 lr: 0.001000 loss: 0.3841
(0.3941) loss_classifier: 0.1110 (0.1216) loss_box_reg: 0.2567
(0.2687) loss_objectness: 0.0014 (0.0019) loss_rpn_box_reg: 0.0017
(0.0019) time: 1.1588 data: 0.8994 max mem: 1511
Epoch: [34] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3374
(0.3795) loss_classifier: 0.0922 (0.1141) loss_box_reg: 0.2440
(0.2618) loss_objectness: 0.0009 (0.0017) loss_rpn_box_reg: 0.0016
(0.0018) time: 1.0727 data: 0.8250 max mem: 1511
Epoch: [34] Total time: 0:03:43 (1.1806 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1383 (0.1383)
evaluator_time: 0.0190 (0.0190) time: 1.1296 data: 0.7815 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1225 (0.1170)
```

```

evaluator_time: 0.0143 (0.0139)  time: 0.3684  data: 0.2146  max mem:
1511
Test: Total time: 0:00:06 (0.3705 s / it)
Averaged stats: model_time: 0.1225 (0.1170)  evaluator_time: 0.0143
(0.0139)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision  (AP) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.794
Average Precision  (AP) @[ IoU=0.50      | area=  all |
maxDets=100 ] = 0.921
Average Precision  (AP) @[ IoU=0.75      | area=  all |
maxDets=100 ] = 0.877
Average Precision  (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision  (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision  (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.795
Average Recall     (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
1 ] = 0.822
Average Recall     (AR) @[ IoU=0.50:0.95 | area=  all | maxDets=
10 ] = 0.822
Average Recall     (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.822
Average Recall     (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall     (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall     (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.822
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [35] [ 0/189]  eta: 0:12:09  lr: 0.001000  loss: 0.4814
(0.4814)  loss_classifier: 0.1651 (0.1651)  loss_box_reg: 0.3127
(0.3127)  loss_objectness: 0.0021 (0.0021)  loss_rpn_box_reg: 0.0016
(0.0016)  time: 3.8614  data: 3.5179  max mem: 1511
Epoch: [35] [100/189] eta: 0:01:46  lr: 0.001000  loss: 0.3584
(0.3730)  loss_classifier: 0.0935 (0.1069)  loss_box_reg: 0.2653
(0.2622)  loss_objectness: 0.0010 (0.0019)  loss_rpn_box_reg: 0.0016
(0.0020)  time: 1.1887  data: 0.9233  max mem: 1511
Epoch: [35] [188/189] eta: 0:00:01  lr: 0.001000  loss: 0.3488
(0.3700)  loss_classifier: 0.0900 (0.1066)  loss_box_reg: 0.2560
(0.2597)  loss_objectness: 0.0013 (0.0018)  loss_rpn_box_reg: 0.0016

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(0.0019) time: 0.9989 data: 0.7860 max mem: 1511
Epoch: [35] Total time: 0:03:37 (1.1523 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1413 (0.1413)
evaluator_time: 0.0393 (0.0393) time: 1.1310 data: 0.7516 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.0872 (0.0957)
evaluator_time: 0.0105 (0.0144) time: 0.3586 data: 0.2276 max mem:
1511
Test: Total time: 0:00:06 (0.3613 s / it)
Averaged stats: model_time: 0.0872 (0.0957) evaluator_time: 0.0105
(0.0144)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.788
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.925
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.886
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.788
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.825
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [36] [ 0/189] eta: 0:06:19 lr: 0.001000 loss: 0.2551
(0.2551) loss_classifier: 0.0797 (0.0797) loss_box_reg: 0.1728
(0.1728) loss_objectness: 0.0008 (0.0008) loss_rpn_box_reg: 0.0017
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(0.0017) time: 2.0078 data: 1.5997 max mem: 1511
Epoch: [36] [100/189] eta: 0:01:45 lr: 0.001000 loss: 0.3894
(0.3623) loss_classifier: 0.1078 (0.1048) loss_box_reg: 0.2540
(0.2537) loss_objectness: 0.0014 (0.0019) loss_rpn_box_reg: 0.0019
(0.0019) time: 1.1069 data: 0.8593 max mem: 1511
Epoch: [36] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3847
(0.3657) loss_classifier: 0.1130 (0.1067) loss_box_reg: 0.2583
(0.2552) loss_objectness: 0.0012 (0.0019) loss_rpn_box_reg: 0.0017
(0.0019) time: 0.9214 data: 0.6989 max mem: 1511
Epoch: [36] Total time: 0:03:34 (1.1371 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1562 (0.1562)
evaluator_time: 0.0353 (0.0353) time: 1.1115 data: 0.7642 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1168 (0.1087)
evaluator_time: 0.0114 (0.0138) time: 0.3453 data: 0.2028 max mem:
1511
Test: Total time: 0:00:06 (0.3474 s / it)
Averaged stats: model_time: 0.1168 (0.1087) evaluator_time: 0.0114
(0.0138)
Accumulating evaluation results...
DONE (t=0.12s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.775
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.905
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.859
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.775
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.806
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.806
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.806
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.806
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [37] [ 0/189] eta: 0:11:49 lr: 0.001000 loss: 0.5546
(0.5546) loss_classifier: 0.2069 (0.2069) loss_box_reg: 0.3437
(0.3437) loss_objectness: 0.0011 (0.0011) loss_rpn_box_reg: 0.0029
(0.0029) time: 3.7544 data: 3.4431 max mem: 1511
Epoch: [37] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.3327
(0.3834) loss_classifier: 0.0920 (0.1176) loss_box_reg: 0.2340
(0.2624) loss_objectness: 0.0013 (0.0017) loss_rpn_box_reg: 0.0014
(0.0017) time: 1.0339 data: 0.7744 max mem: 1511
Epoch: [37] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3376
(0.3689) loss_classifier: 0.0943 (0.1105) loss_box_reg: 0.2343
(0.2551) loss_objectness: 0.0012 (0.0016) loss_rpn_box_reg: 0.0018
(0.0017) time: 1.0495 data: 0.8138 max mem: 1511
Epoch: [37] Total time: 0:03:27 (1.0977 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:31 model_time: 0.1693 (0.1693)
evaluator_time: 0.0441 (0.0441) time: 1.7291 data: 1.2601 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1078 (0.1078)
evaluator_time: 0.0113 (0.0170) time: 0.4153 data: 0.2652 max mem:
1511
Test: Total time: 0:00:07 (0.4176 s / it)
Averaged stats: model_time: 0.1078 (0.1078) evaluator_time: 0.0113
(0.0170)
Accumulating evaluation results...
DONE (t=0.12s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.778
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.917
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.877
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.778
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.804
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.804
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |

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maxDets=100 ] = 0.804
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.804
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [38] [ 0/189] eta: 0:07:45 lr: 0.001000 loss: 0.3470
(0.3470) loss_classifier: 0.0854 (0.0854) loss_box_reg: 0.2574
(0.2574) loss_objectness: 0.0018 (0.0018) loss_rpn_box_reg: 0.0024
(0.0024) time: 2.4638 data: 2.2288 max mem: 1511
Epoch: [38] [100/189] eta: 0:01:45 lr: 0.001000 loss: 0.3372
(0.3523) loss_classifier: 0.0817 (0.0998) loss_box_reg: 0.2374
(0.2495) loss_objectness: 0.0011 (0.0015) loss_rpn_box_reg: 0.0016
(0.0016) time: 1.1121 data: 0.8736 max mem: 1511
Epoch: [38] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3410
(0.3561) loss_classifier: 0.1031 (0.1019) loss_box_reg: 0.2474
(0.2510) loss_objectness: 0.0012 (0.0015) loss_rpn_box_reg: 0.0017
(0.0017) time: 0.9719 data: 0.7524 max mem: 1511
Epoch: [38] Total time: 0:03:33 (1.1297 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:29 model_time: 0.2235 (0.2235)
evaluator_time: 0.0460 (0.0460) time: 1.6437 data: 1.0957 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1368 (0.1300)
evaluator_time: 0.0147 (0.0198) time: 0.4904 data: 0.3116 max mem:
1511
Test: Total time: 0:00:08 (0.4928 s / it)
Averaged stats: model_time: 0.1368 (0.1300) evaluator_time: 0.0147
(0.0198)
Accumulating evaluation results...
DONE (t=0.14s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.783
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.921
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.888
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |

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maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.783
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.814
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.814
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.814
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.814
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [39] [ 0/189] eta: 0:05:06 lr: 0.001000 loss: 0.3622
(0.3622) loss_classifier: 0.0970 (0.0970) loss_box_reg: 0.2630
(0.2630) loss_objectness: 0.0005 (0.0005) loss_rpn_box_reg: 0.0017
(0.0017) time: 1.6219 data: 1.3774 max mem: 1511
Epoch: [39] [100/189] eta: 0:01:37 lr: 0.001000 loss: 0.3003
(0.3468) loss_classifier: 0.0826 (0.0982) loss_box_reg: 0.2218
(0.2455) loss_objectness: 0.0011 (0.0014) loss_rpn_box_reg: 0.0016
(0.0017) time: 1.1373 data: 0.9019 max mem: 1511
Epoch: [39] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3264
(0.3446) loss_classifier: 0.0916 (0.0976) loss_box_reg: 0.2229
(0.2439) loss_objectness: 0.0012 (0.0014) loss_rpn_box_reg: 0.0015
(0.0017) time: 1.0486 data: 0.8194 max mem: 1511
Epoch: [39] Total time: 0:03:25 (1.0847 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:19 model_time: 0.1603 (0.1603)
evaluator_time: 0.0193 (0.0193) time: 1.0963 data: 0.7918 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1141 (0.1154)
evaluator_time: 0.0158 (0.0162) time: 0.3755 data: 0.2244 max mem:
1511
Test: Total time: 0:00:06 (0.3792 s / it)
Averaged stats: model_time: 0.1141 (0.1154) evaluator_time: 0.0158
(0.0162)
Accumulating evaluation results...
DONE (t=0.24s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |

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maxDets=100 ] = 0.781
Average Precision (AP) @[ IoU=0.50      | area=   all |
maxDets=100 ] = 0.911
Average Precision (AP) @[ IoU=0.75      | area=   all |
maxDets=100 ] = 0.872
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.782
Average Recall      (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=
1 ] = 0.823
Average Recall      (AR) @[ IoU=0.50:0.95 | area=   all | maxDets=
10 ] = 0.823
Average Recall      (AR) @[ IoU=0.50:0.95 | area=   all |
maxDets=100 ] = 0.823
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.823
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [40] [ 0/189] eta: 0:10:44 lr: 0.001000 loss: 0.3077
(0.3077) loss_classifier: 0.0611 (0.0611) loss_box_reg: 0.2435
(0.2435) loss_objectness: 0.0016 (0.0016) loss_rpn_box_reg: 0.0016
(0.0016) time: 3.4114 data: 3.1750 max mem: 1511
Epoch: [40] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.3072
(0.3548) loss_classifier: 0.0771 (0.1019) loss_box_reg: 0.2305
(0.2492) loss_objectness: 0.0013 (0.0019) loss_rpn_box_reg: 0.0018
(0.0018) time: 1.2688 data: 0.9966 max mem: 1511
Epoch: [40] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3964
(0.3619) loss_classifier: 0.1235 (0.1041) loss_box_reg: 0.2679
(0.2541) loss_objectness: 0.0015 (0.0018) loss_rpn_box_reg: 0.0018
(0.0018) time: 1.0298 data: 0.8031 max mem: 1511
Epoch: [40] Total time: 0:03:31 (1.1185 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:20 model_time: 0.1476 (0.1476)
evaluator_time: 0.0344 (0.0344) time: 1.1612 data: 0.7846 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1117 (0.1159)
evaluator_time: 0.0092 (0.0133) time: 0.3512 data: 0.2000 max mem:

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1511
Test: Total time: 0:00:06 (0.3533 s / it)
Averaged stats: model_time: 0.1117 (0.1159) evaluator_time: 0.0092
(0.0133)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.794
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.911
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.887
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.795
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.827
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.827
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.827
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.827
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [41] [ 0/189] eta: 0:10:38 lr: 0.001000 loss: 0.2595
(0.2595) loss_classifier: 0.0771 (0.0771) loss_box_reg: 0.1802
(0.1802) loss_objectness: 0.0012 (0.0012) loss_rpn_box_reg: 0.0010
(0.0010) time: 3.3759 data: 3.0157 max mem: 1511
Epoch: [41] [100/189] eta: 0:01:40 lr: 0.001000 loss: 0.3192
(0.3371) loss_classifier: 0.0833 (0.0987) loss_box_reg: 0.2161
(0.2352) loss_objectness: 0.0012 (0.0015) loss_rpn_box_reg: 0.0016
(0.0016) time: 1.2321 data: 0.9891 max mem: 1511
Epoch: [41] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3156
(0.3396) loss_classifier: 0.0913 (0.0987) loss_box_reg: 0.2066
(0.2379) loss_objectness: 0.0010 (0.0014) loss_rpn_box_reg: 0.0012
(0.0017) time: 0.9903 data: 0.7754 max mem: 1511
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Epoch: [41] Total time: 0:03:32 (1.1265 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:17 model_time: 0.1152 (0.1152)
evaluator_time: 0.0134 (0.0134) time: 0.9509 data: 0.7352 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1123 (0.1058)
evaluator_time: 0.0097 (0.0125) time: 0.3461 data: 0.2121 max mem:
1511
Test: Total time: 0:00:06 (0.3483 s / it)
Averaged stats: model_time: 0.1123 (0.1058) evaluator_time: 0.0097
(0.0125)
Accumulating evaluation results...
DONE (t=0.13s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.792
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.930
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.888
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.793
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.825
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.825
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
Epoch: [42] [ 0/189] eta: 0:11:02 lr: 0.001000 loss: 0.2751
(0.2751) loss_classifier: 0.0733 (0.0733) loss_box_reg: 0.1993
(0.1993) loss_objectness: 0.0004 (0.0004) loss_rpn_box_reg: 0.0020
(0.0020) time: 3.5041 data: 3.1409 max mem: 1511

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Epoch: [42] [100/189] eta: 0:01:36 lr: 0.001000 loss: 0.3137
(0.3430) loss_classifier: 0.0801 (0.0986) loss_box_reg: 0.2153
(0.2416) loss_objectness: 0.0012 (0.0013) loss_rpn_box_reg: 0.0015
(0.0016) time: 1.1668 data: 0.9165 max mem: 1511
Epoch: [42] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3206
(0.3477) loss_classifier: 0.0879 (0.1007) loss_box_reg: 0.2341
(0.2438) loss_objectness: 0.0013 (0.0014) loss_rpn_box_reg: 0.0017
(0.0017) time: 1.3194 data: 1.0625 max mem: 1511
Epoch: [42] Total time: 0:03:36 (1.1441 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:18 model_time: 0.1375 (0.1375)
evaluator_time: 0.0413 (0.0413) time: 1.0527 data: 0.7464 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1253 (0.1233)
evaluator_time: 0.0140 (0.0166) time: 0.4114 data: 0.2513 max mem:
1511
Test: Total time: 0:00:07 (0.4148 s / it)
Averaged stats: model_time: 0.1253 (0.1233) evaluator_time: 0.0140
(0.0166)
Accumulating evaluation results...
DONE (t=0.27s).
IoU metric: bbox
Average Precision (AP) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.805
Average Precision (AP) @[ IoU=0.50 | area= all |
maxDets=100 ] = 0.918
Average Precision (AP) @[ IoU=0.75 | area= all |
maxDets=100 ] = 0.885
Average Precision (AP) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.805
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.837
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.837
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.837
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.837
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BEST VALIDATION mAP: 0.8050832487094862

SAVING BEST MODEL FOR EPOCH: 43

Epoch: [43] [0/189] eta: 0:07:19 lr: 0.001000 loss: 0.3396
(0.3396) loss_classifier: 0.1017 (0.1017) loss_box_reg: 0.2361
(0.2361) loss_objectness: 0.0006 (0.0006) loss_rpn_box_reg: 0.0012
(0.0012) time: 2.3259 data: 2.0767 max mem: 1511
Epoch: [43] [100/189] eta: 0:01:38 lr: 0.001000 loss: 0.3321
(0.3275) loss_classifier: 0.0902 (0.0944) loss_box_reg: 0.2188
(0.2300) loss_objectness: 0.0014 (0.0015) loss_rpn_box_reg: 0.0014
(0.0016) time: 1.0871 data: 0.8422 max mem: 1511
Epoch: [43] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.2902
(0.3394) loss_classifier: 0.0744 (0.0985) loss_box_reg: 0.2158
(0.2377) loss_objectness: 0.0015 (0.0015) loss_rpn_box_reg: 0.0015
(0.0016) time: 1.0460 data: 0.7833 max mem: 1511
Epoch: [43] Total time: 0:03:26 (1.0944 s / it)
creating index...
index created!
Test: [0/18] eta: 0:00:18 model_time: 0.1363 (0.1363)
evaluator_time: 0.0276 (0.0276) time: 1.0018 data: 0.7422 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1150 (0.1105)
evaluator_time: 0.0111 (0.0136) time: 0.3553 data: 0.2133 max mem:
1511
Test: Total time: 0:00:06 (0.3575 s / it)
Averaged stats: model_time: 0.1150 (0.1105) evaluator_time: 0.0111
(0.0136)
Accumulating evaluation results...
DONE (t=0.12s).
IoU metric: bbox
Average Precision (AP) @[IoU=0.50:0.95 | area= all |
maxDets=100] = 0.789
Average Precision (AP) @[IoU=0.50 | area= all |
maxDets=100] = 0.925
Average Precision (AP) @[IoU=0.75 | area= all |
maxDets=100] = 0.889
Average Precision (AP) @[IoU=0.50:0.95 | area= small |
maxDets=100] = -1.000
Average Precision (AP) @[IoU=0.50:0.95 | area=medium |
maxDets=100] = -1.000
Average Precision (AP) @[IoU=0.50:0.95 | area= large |
maxDets=100] = 0.789
Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=
1] = 0.818
Average Recall (AR) @[IoU=0.50:0.95 | area= all | maxDets=

```

10 ] = 0.818
Average Recall      (AR) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.818
Average Recall      (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall      (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.818
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [44] [ 0/189] eta: 0:09:14 lr: 0.001000 loss: 0.2959
(0.2959) loss_classifier: 0.0686 (0.0686) loss_box_reg: 0.2246
(0.2246) loss_objectness: 0.0014 (0.0014) loss_rpn_box_reg: 0.0013
(0.0013) time: 2.9328 data: 2.6037 max mem: 1511
Epoch: [44] [100/189] eta: 0:01:37 lr: 0.001000 loss: 0.2920
(0.3200) loss_classifier: 0.0795 (0.0882) loss_box_reg: 0.2258
(0.2290) loss_objectness: 0.0008 (0.0013) loss_rpn_box_reg: 0.0014
(0.0015) time: 1.0520 data: 0.8313 max mem: 1511
Epoch: [44] [188/189] eta: 0:00:01 lr: 0.001000 loss: 0.3086
(0.3221) loss_classifier: 0.0784 (0.0889) loss_box_reg: 0.2188
(0.2301) loss_objectness: 0.0009 (0.0014) loss_rpn_box_reg: 0.0014
(0.0016) time: 1.2248 data: 0.9686 max mem: 1511
Epoch: [44] Total time: 0:03:26 (1.0949 s / it)
creating index...
index created!
Test: [ 0/18] eta: 0:00:28 model_time: 0.1546 (0.1546)
evaluator_time: 0.0388 (0.0388) time: 1.5630 data: 1.1532 max mem:
1511
Test: [17/18] eta: 0:00:00 model_time: 0.1235 (0.1246)
evaluator_time: 0.0130 (0.0158) time: 0.4170 data: 0.2532 max mem:
1511
Test: Total time: 0:00:07 (0.4194 s / it)
Averaged stats: model_time: 0.1235 (0.1246) evaluator_time: 0.0130
(0.0158)
Accumulating evaluation results...
DONE (t=0.14s).
IoU metric: bbox
Average Precision  (AP) @[ IoU=0.50:0.95 | area=  all |
maxDets=100 ] = 0.786
Average Precision  (AP) @[ IoU=0.50      | area=  all |
maxDets=100 ] = 0.920
Average Precision  (AP) @[ IoU=0.75      | area=  all |
maxDets=100 ] = 0.888
Average Precision  (AP) @[ IoU=0.50:0.95 | area= small |

```

```

maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Precision (AP) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.786
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
1 ] = 0.828
Average Recall (AR) @[ IoU=0.50:0.95 | area= all | maxDets=
10 ] = 0.828
Average Recall (AR) @[ IoU=0.50:0.95 | area= all |
maxDets=100 ] = 0.828
Average Recall (AR) @[ IoU=0.50:0.95 | area= small |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area=medium |
maxDets=100 ] = -1.000
Average Recall (AR) @[ IoU=0.50:0.95 | area= large |
maxDets=100 ] = 0.828
SAVING PLOTS COMPLETE...
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SAVING PLOTS COMPLETE...
SAVING PLOTS COMPLETE...
Epoch: [45] [ 0/189] eta: 0:08:01 lr: 0.001000 loss: 0.5138
(0.5138) loss_classifier: 0.1986 (0.1986) loss_box_reg: 0.3102
(0.3102) loss_objectness: 0.0033 (0.0033) loss_rpn_box_reg: 0.0017
(0.0017) time: 2.5460 data: 2.2854 max mem: 1511
Epoch: [45] [100/189] eta: 0:01:39 lr: 0.001000 loss: 0.3125
(0.3116) loss_classifier: 0.0738 (0.0867) loss_box_reg: 0.2247
(0.2216) loss_objectness: 0.0011 (0.0016) loss_rpn_box_reg: 0.0015
(0.0017) time: 1.0792 data: 0.8392 max mem: 1511

```

evaluation

eval the model

we can also output some older school graphs if the tensor board isn't working for whatever reason...

from utils.plots import plot_results # plot results.txt as results.png

Image(filename='/content/fastercnn-pytorch-training-pipeline/outputs/training/custom_training/map.png', width=1000) # view results.png

Image(filename='/content/fastercnn-pytorch-training-pipeline/outputs/training/custom_training/train_loss_cls.png', width=1000) # view results.png

Downloading:

"https://download.pytorch.org/models/fasterrcnn_mobilenet_v3_large_fpn


```
-fb6a3cc7.pth" to C:\Users\user/.cache\torch\hub\checkpoints\  
fasterrcnn_mobilenet_v3_large_fpn-fb6a3cc7.pth  
100%|██████████| 74.2M/74.2M [00:18<00:00, 4.32MB/s]
```

```
rcnn points +1  
rcnn points +1
```