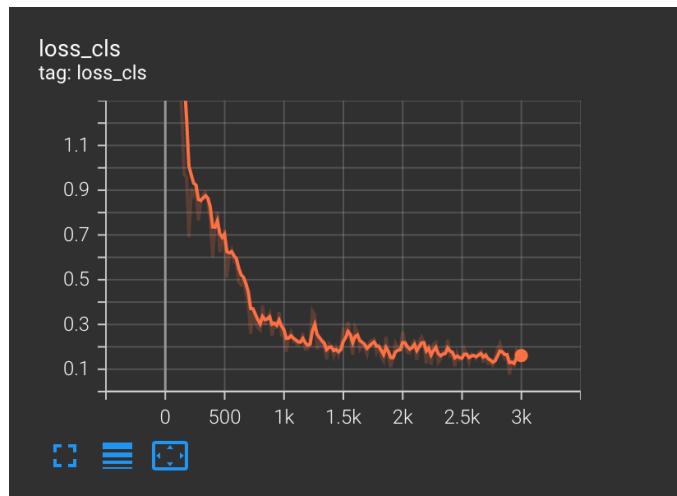
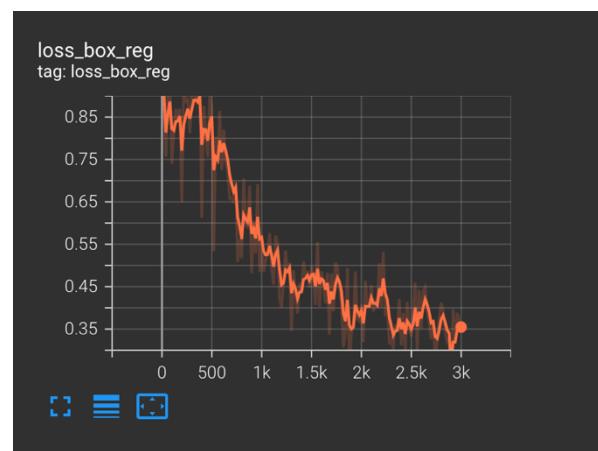
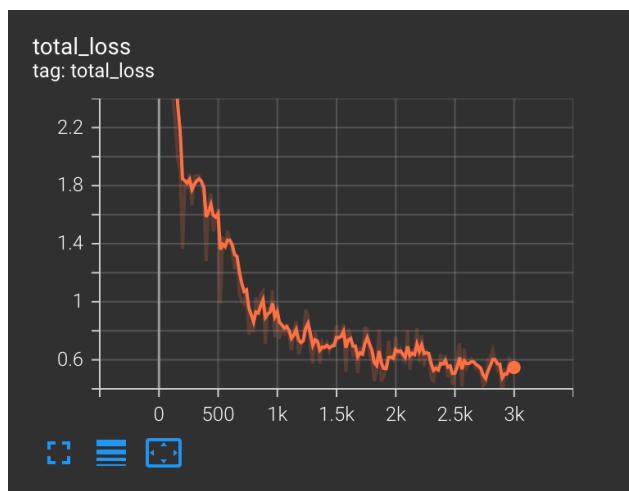


**SUBMISSION:**

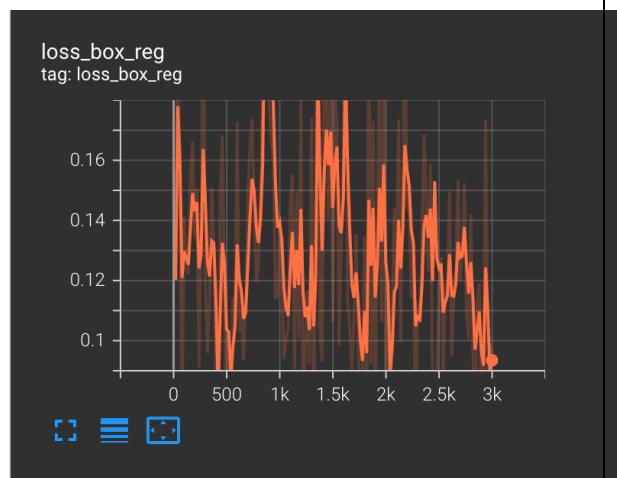
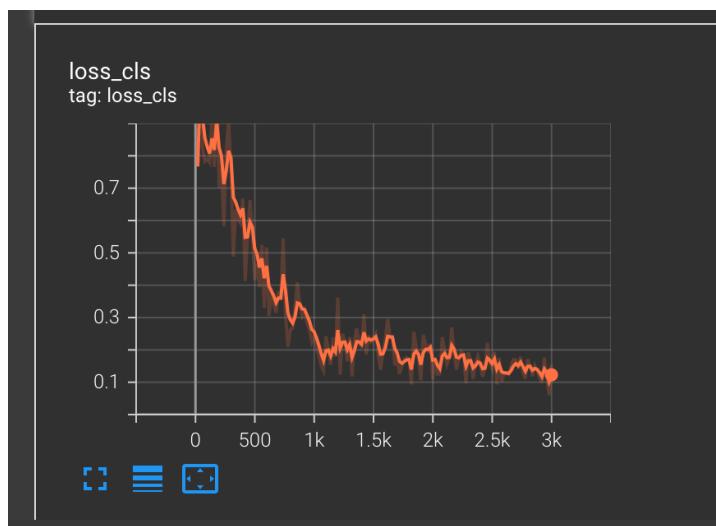
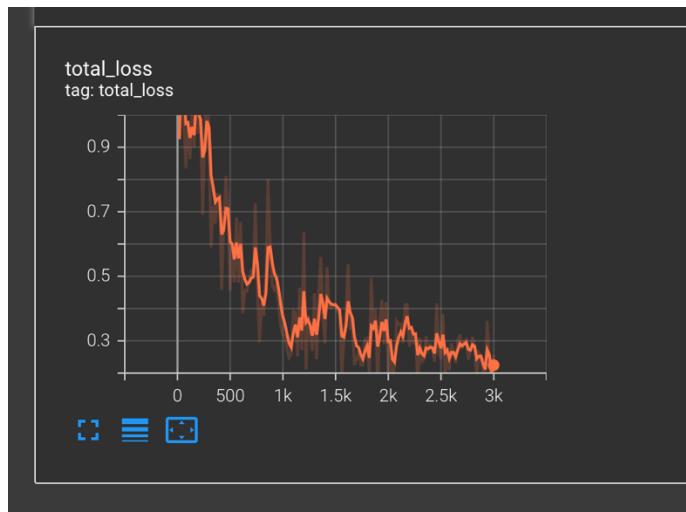
Your submission file should contain the following:

1. The code you have written (in report PDF, .py file or .ipynb file, first is preferred for grading), including brief descriptions/comments of each function/training block.
2. Show qualitative and quantitative results of the two models and provide a comparison between the two. Include training curves for the two methods.

## Faster RCNN losses

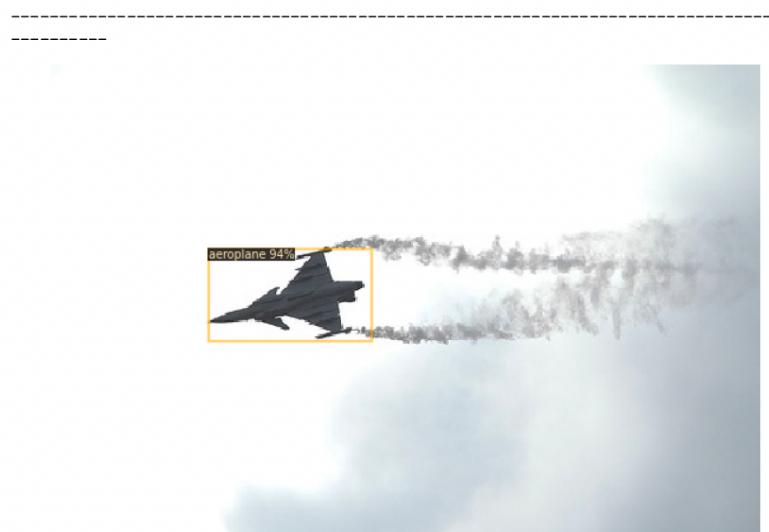
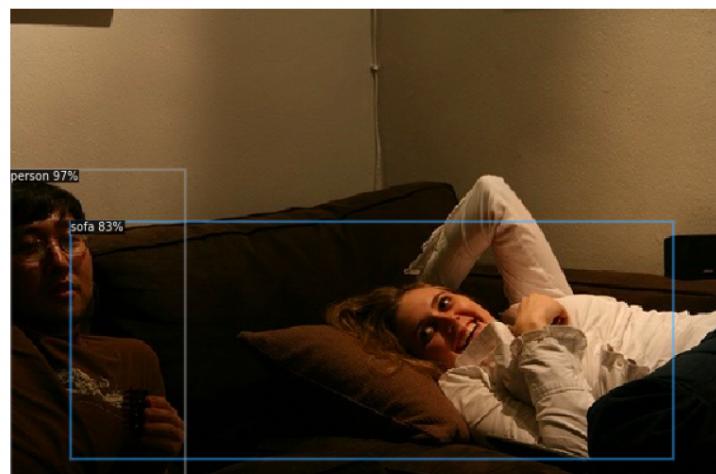


## RETINANET LOSS



## Qualitative Results

### FASTER RCNN

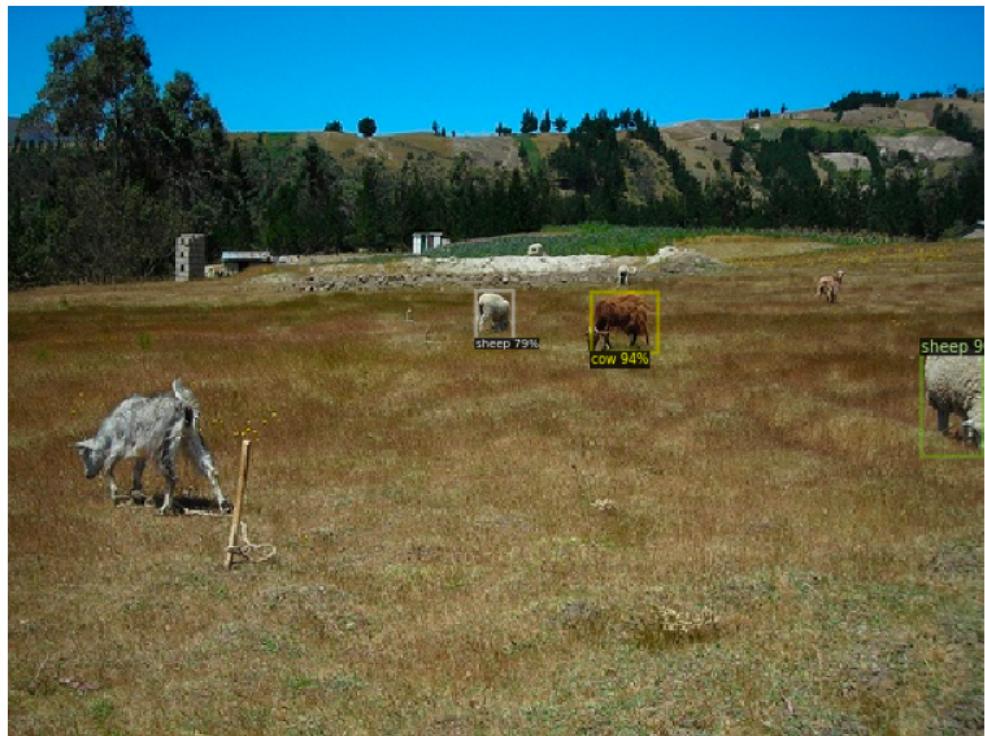




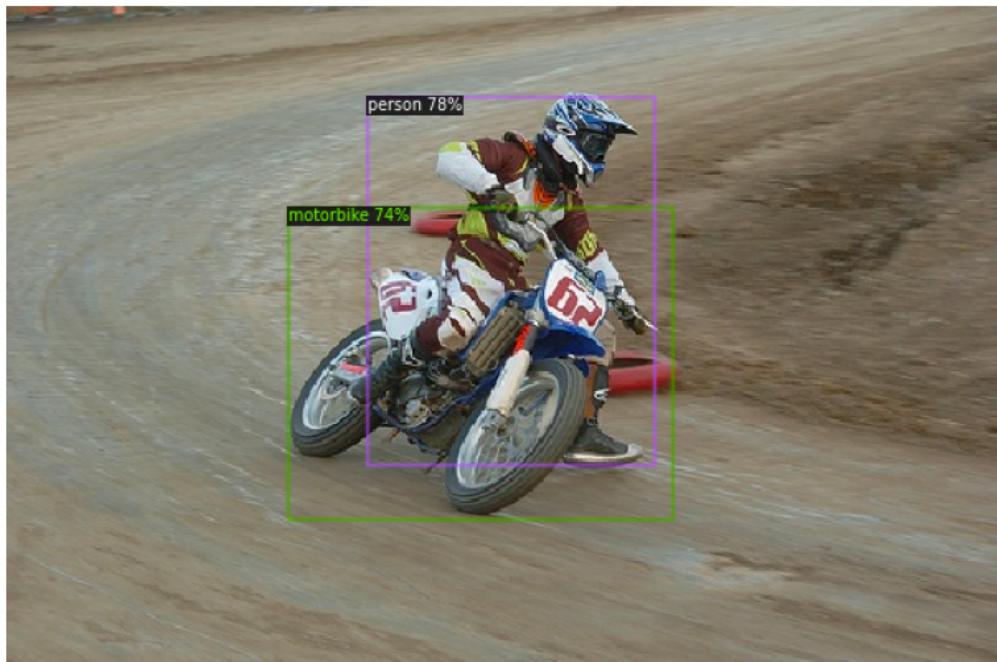


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RETINANET



---

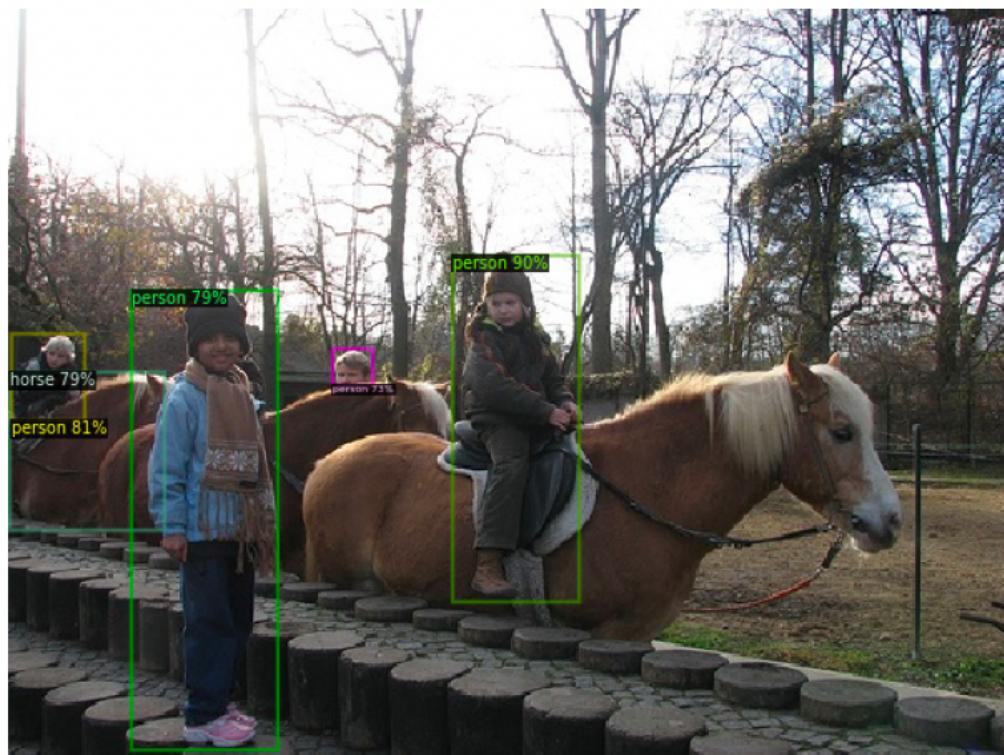
---



---

---





---

## QUALITATIVE RESULTS

### FASTER-RCNN

```
[11/22 23:14:49 d2.evaluation.evaluator]: Inference done 2430/2510. Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0
[11/22 23:14:54 d2.evaluation.evaluator]: Inference done 2446/2510. Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0
[11/22 23:15:00 d2.evaluation.evaluator]: Inference done 2462/2510. Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0
[11/22 23:15:05 d2.evaluation.evaluator]: Inference done 2477/2510. Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0
[11/22 23:15:10 d2.evaluation.evaluator]: Inference done 2492/2510. Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0
[11/22 23:15:15 d2.evaluation.evaluator]: Inference done 2507/2510. Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0
[11/22 23:15:16 d2.evaluation.evaluator]: Total inference time: 0:14:04.868870 (0.337273 s / iter per device, on 1 devices)
[11/22 23:15:16 d2.evaluation.evaluator]: Total inference pure compute time: 0:13:56 (0.333999 s / iter per device, on 1 devices)
[11/22 23:15:16 d2.evaluation.pascal_voc_evaluation]: Evaluating voc_2007_val using 2007 metric. Note that results do not use the
67.82648480352114
```

## RETINANET

```
[11/23 22:53:27 d2.evaluation.evaluator]: Inference done 2427/2510. Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0
[11/23 22:53:32 d2.evaluation.evaluator]: Inference done 2442/2510. Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0
[11/23 22:53:37 d2.evaluation.evaluator]: Inference done 2457/2510. Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0
[11/23 22:53:43 d2.evaluation.evaluator]: Inference done 2472/2510. Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0
[11/23 22:53:48 d2.evaluation.evaluator]: Inference done 2487/2510. Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0
[11/23 22:53:53 d2.evaluation.evaluator]: Inference done 2502/2510. Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0
[11/23 22:53:56 d2.evaluation.evaluator]: Total inference time: 0:14:41.317127 (0.351823 s / iter per device, on 1 devices)
[11/23 22:53:56 d2.evaluation.evaluator]: Total inference pure compute time: 0:14:33 (0.348809 s / iter per device, on 1 devices)
[11/23 22:53:56 d2.evaluation.pascal_voc_evaluation]: Evaluating voc_2007_val using 2007 metric. Note that results do not use the
58.14725484082461
```

## Model Comparison :

The Faster-RCNN performed better than the retina net in both qualitative and quantitative analysis.

Quantitative results Analysis: The retinanet AP50 value is 58.147  
Which is lesser than the faster-rcnn AP50 value is 67.82

Qualitative results Analysis: The retinanet model fails to identify an aeroplane which is the primary object in the image , and incorrectly identifies garbage bag as a person. The confidence with which it predicts the objects are lower comparatively ~70%

The Faster-CNN model on the other hand predicts more number of objects with more confidence ~90%. However still misses some of the animals and misses the person sitting on the sofa while detecting the sofa.

# HW6\_CV\_submission

November 23, 2021

```
[1]: import torch
import os, json, cv2, random
from google.colab.patches import cv2_imshow
```

```
[2]: torch.__version__
```

```
[2]: '1.10.0+cu111'
```

```
[3]: ! nvcc --version
```

```
nvcc: NVIDIA (R) Cuda compiler driver
Copyright (c) 2005-2020 NVIDIA Corporation
Built on Mon_Oct_12_20:09:46_PDT_2020
Cuda compilation tools, release 11.1, V11.1.105
Build cuda_11.1.TC455_06.29190527_0
```

```
[4]: ! pip install detectron2 -f https://dl.fbaipublicfiles.com/detectron2/wheels/cu111/torch1.10/index.html
```

```
Looking in links:
```

```
https://dl.fbaipublicfiles.com/detectron2/wheels/cu111/torch1.10/index.html
```

```
Collecting detectron2
```

```
  Downloading https://dl.fbaipublicfiles.com/detectron2/wheels/cu111/torch1.10/detectron2-0.6%2Bcu111-cp37-cp37m-linux\_x86\_64.whl (7.0 MB)
    | 7.0 MB 27.3 MB/s
```

```
Collecting omegaconf>=2.1
```

```
  Downloading omegaconf-2.1.1-py3-none-any.whl (74 kB)
    | 74 kB 3.0 MB/s
```

```
Requirement already satisfied: termcolor>=1.1 in
```

```
/usr/local/lib/python3.7/dist-packages (from detectron2) (1.1.0)
```

```
Collecting yacs>=0.1.8
```

```
  Downloading yacs-0.1.8-py3-none-any.whl (14 kB)
```

```
Requirement already satisfied: tqdm>4.29.0 in /usr/local/lib/python3.7/dist-packages (from detectron2) (4.62.3)
```

```
Requirement already satisfied:云pickle in /usr/local/lib/python3.7/dist-packages (from detectron2) (1.3.0)
```

```
Requirement already satisfied: tabulate in /usr/local/lib/python3.7/dist-packages (from detectron2) (0.8.9)
```

```
Requirement already satisfied: future in /usr/local/lib/python3.7/dist-packages
```

```
(from detectron2) (0.16.0)
Collecting hydra-core>=1.1
    Downloading hydra_core-1.1.1-py3-none-any.whl (145 kB)
        | 145 kB 24.7 MB/s
Collecting iopath<0.1.10,>=0.1.7
    Downloading iopath-0.1.9-py3-none-any.whl (27 kB)
Requirement already satisfied: Pillow>=7.1 in /usr/local/lib/python3.7/dist-
packages (from detectron2) (7.1.2)
Requirement already satisfied: pydot in /usr/local/lib/python3.7/dist-packages
(from detectron2) (1.3.0)
Requirement already satisfied: tensorboard in /usr/local/lib/python3.7/dist-
packages (from detectron2) (2.7.0)
Requirement already satisfied: pycocotools>=2.0.2 in
/usr/local/lib/python3.7/dist-packages (from detectron2) (2.0.2)
Collecting fvcore<0.1.6,>=0.1.5
    Downloading fvcore-0.1.5.post20211023.tar.gz (49 kB)
        | 49 kB 6.1 MB/s
Collecting black==21.4b2
    Downloading black-21.4b2-py3-none-any.whl (130 kB)
        | 130 kB 48.5 MB/s
Requirement already satisfied: matplotlib in
/usr/local/lib/python3.7/dist-packages (from detectron2) (3.2.2)
Collecting pathspec<1,>=0.8.1
    Downloading pathspec-0.9.0-py2.py3-none-any.whl (31 kB)
Requirement already satisfied: toml>=0.10.1 in /usr/local/lib/python3.7/dist-
packages (from black==21.4b2->detectron2) (0.10.2)
Collecting regex>=2020.1.8
    Downloading
regex-2021.11.10-cp37-cp37m-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (749
kB)
        | 749 kB 52.3 MB/s
Collecting mypy-extensions>=0.4.3
    Downloading mypy_extensions-0.4.3-py2.py3-none-any.whl (4.5 kB)
Requirement already satisfied: click>=7.1.2 in /usr/local/lib/python3.7/dist-
packages (from black==21.4b2->detectron2) (7.1.2)
Requirement already satisfied: appdirs in /usr/local/lib/python3.7/dist-packages
(from black==21.4b2->detectron2) (1.4.4)
Requirement already satisfied: typing-extensions>=3.7.4 in
/usr/local/lib/python3.7/dist-packages (from black==21.4b2->detectron2)
(3.10.0.2)
Collecting typed-ast>=1.4.2
    Downloading typed_ast-1.5.0-cp37-cp37m-manylinux_2_5_x86_64.manylinux1_x86_64.
manylinux_2_12_x86_64.manylinux2010_x86_64.whl (843 kB)
        | 843 kB 35.5 MB/s
Requirement already satisfied: numpy in /usr/local/lib/python3.7/dist-
packages (from fvcore<0.1.6,>=0.1.5->detectron2) (1.19.5)
Collecting pyyaml>=5.1
    Downloading PyYAML-6.0-cp37-cp37m-manylinux_2_5_x86_64.manylinux1_x86_64.manyl
```

```
inux_2_12_x86_64.manylinux2010_x86_64.whl (596 kB)
| 596 kB 52.3 MB/s
Requirement already satisfied: importlib-resources in
/usr/local/lib/python3.7/dist-packages (from hydra-core>=1.1->detectron2)
(5.4.0)
Collecting antlr4-python3-runtime==4.8
  Downloading antlr4-python3-runtime-4.8.tar.gz (112 kB)
| 112 kB 51.9 MB/s
Collecting portalocker
  Downloading portalocker-2.3.2-py2.py3-none-any.whl (15 kB)
Requirement already satisfied: setuptools>=18.0 in
/usr/local/lib/python3.7/dist-packages (from pycocotools>=2.0.2->detectron2)
(57.4.0)
Requirement already satisfied: cython>=0.27.3 in /usr/local/lib/python3.7/dist-
packages (from pycocotools>=2.0.2->detectron2) (0.29.24)
Requirement already satisfied: kiwisolver>=1.0.1 in
/usr/local/lib/python3.7/dist-packages (from matplotlib->detectron2) (1.3.2)
Requirement already satisfied: python-dateutil>=2.1 in
/usr/local/lib/python3.7/dist-packages (from matplotlib->detectron2) (2.8.2)
Requirement already satisfied: pyparsing!=2.0.4,!>=2.1.2,!>=2.1.6,>=2.0.1 in
/usr/local/lib/python3.7/dist-packages (from matplotlib->detectron2) (3.0.6)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.7/dist-
packages (from matplotlib->detectron2) (0.11.0)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-
packages (from python-dateutil>=2.1->matplotlib->detectron2) (1.15.0)
Requirement already satisfied: zipp>=3.1.0 in /usr/local/lib/python3.7/dist-
packages (from importlib-resources->hydra-core>=1.1->detectron2) (3.6.0)
Requirement already satisfied: absl-py>=0.4 in /usr/local/lib/python3.7/dist-
packages (from tensorboard->detectron2) (0.12.0)
Requirement already satisfied: tensorboard-data-server<0.7.0,>=0.6.0 in
/usr/local/lib/python3.7/dist-packages (from tensorboard->detectron2) (0.6.1)
Requirement already satisfied: markdown>=2.6.8 in /usr/local/lib/python3.7/dist-
packages (from tensorboard->detectron2) (3.3.6)
Requirement already satisfied: google-auth-oauthlib<0.5,>=0.4.1 in
/usr/local/lib/python3.7/dist-packages (from tensorboard->detectron2) (0.4.6)
Requirement already satisfied: werkzeug>=0.11.15 in
/usr/local/lib/python3.7/dist-packages (from tensorboard->detectron2) (1.0.1)
Requirement already satisfied: requests<3,>=2.21.0 in
/usr/local/lib/python3.7/dist-packages (from tensorboard->detectron2) (2.23.0)
Requirement already satisfied: wheel>=0.26 in /usr/local/lib/python3.7/dist-
packages (from tensorboard->detectron2) (0.37.0)
Requirement already satisfied: grpcio>=1.24.3 in /usr/local/lib/python3.7/dist-
packages (from tensorboard->detectron2) (1.42.0)
Requirement already satisfied: protobuf>=3.6.0 in /usr/local/lib/python3.7/dist-
packages (from tensorboard->detectron2) (3.17.3)
Requirement already satisfied: tensorboard-plugin-wit>=1.6.0 in
/usr/local/lib/python3.7/dist-packages (from tensorboard->detectron2) (1.8.0)
Requirement already satisfied: google-auth<3,>=1.6.3 in
```

```
/usr/local/lib/python3.7/dist-packages (from tensorboard->detectron2) (1.35.0)
Requirement already satisfied: rsa<5,>=3.1.4 in /usr/local/lib/python3.7/dist-
packages (from google-auth<3,>=1.6.3->tensorboard->detectron2) (4.7.2)
Requirement already satisfied: cachetools<5.0,>=2.0.0 in
/usr/local/lib/python3.7/dist-packages (from google-
auth<3,>=1.6.3->tensorboard->detectron2) (4.2.4)
Requirement already satisfied: pyasn1-modules>=0.2.1 in
/usr/local/lib/python3.7/dist-packages (from google-
auth<3,>=1.6.3->tensorboard->detectron2) (0.2.8)
Requirement already satisfied: requests-oauthlib>=0.7.0 in
/usr/local/lib/python3.7/dist-packages (from google-auth-
oauthlib<0.5,>=0.4.1->tensorboard->detectron2) (1.3.0)
Requirement already satisfied: importlib-metadata>=4.4 in
/usr/local/lib/python3.7/dist-packages (from
markdown>=2.6.8->tensorboard->detectron2) (4.8.2)
Requirement already satisfied: pyasn1<0.5.0,>=0.4.6 in
/usr/local/lib/python3.7/dist-packages (from pyasn1-modules>=0.2.1->google-
auth<3,>=1.6.3->tensorboard->detectron2) (0.4.8)
Requirement already satisfied: chardet<4,>=3.0.2 in
/usr/local/lib/python3.7/dist-packages (from
requests<3,>=2.21.0->tensorboard->detectron2) (3.0.4)
Requirement already satisfied: urllib3!=1.25.0,!>=1.25.1,<1.26,>=1.21.1 in
/usr/local/lib/python3.7/dist-packages (from
requests<3,>=2.21.0->tensorboard->detectron2) (1.24.3)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.7/dist-packages (from
requests<3,>=2.21.0->tensorboard->detectron2) (2021.10.8)
Requirement already satisfied: idna<3,>=2.5 in /usr/local/lib/python3.7/dist-
packages (from requests<3,>=2.21.0->tensorboard->detectron2) (2.10)
Requirement already satisfied: oauthlib>=3.0.0 in /usr/local/lib/python3.7/dist-
packages (from requests-oauthlib>=0.7.0->google-auth-
oauthlib<0.5,>=0.4.1->tensorboard->detectron2) (3.1.1)
Building wheels for collected packages: fvcore, antlr4-python3-runtime
  Building wheel for fvcore (setup.py) ... done
    Created wheel for fvcore: filename=fvcore-0.1.5.post20211023-py3-none-any.whl
size=60947
sha256=ae368d2ee69ffeeda3b6844820b7e278701579ccdde5de53aa72a54dbccdb34ef
  Stored in directory: /root/.cache/pip/wheels/16/98/fc/252d62cab6263c719120e06b
28f3378af59b52ce7a20e81852
  Building wheel for antlr4-python3-runtime (setup.py) ... done
    Created wheel for antlr4-python3-runtime:
filename=antlr4_python3_runtime-4.8-py3-none-any.whl size=141230
sha256=9a232c8fda73cf8bae8924f512f4cb718a845473b2ca3472fc68984cb4395c20
  Stored in directory: /root/.cache/pip/wheels/ca/33/b7/336836125fc9bb4ceaa4376d
8abca10ca8bc84ddc824baea6c
Successfully built fvcore antlr4-python3-runtime
Installing collected packages: pyyaml, portalocker, antlr4-python3-runtime,
yacs, typed-ast, regex, pathspec, omegaconf, mypy-extensions, iopath, hydra-
```

```
core, fvcore, black, detectron2
Attempting uninstall: pyyaml
  Found existing installation: PyYAML 3.13
  Uninstalling PyYAML-3.13:
    Successfully uninstalled PyYAML-3.13
Attempting uninstall: regex
  Found existing installation: regex 2019.12.20
  Uninstalling regex-2019.12.20:
    Successfully uninstalled regex-2019.12.20
Successfully installed antlr4-python3-runtime-4.8 black-21.4b2
detectron2-0.6+cu111 fvcore-0.1.5.post20211023 hydra-core-1.1.1 iopath-0.1.9
mypy-extensions-0.4.3 omegaconf-2.1.1 pathspec-0.9.0 portalocker-2.3.2
pyyaml-6.0 regex-2021.11.10 typed-ast-1.5.0 yacs-0.1.8
```

```
[8]: from detectron2.engine import DefaultTrainer
from detectron2 import model_zoo
from detectron2.engine import DefaultPredictor
from detectron2.config import get_cfg
import os
from detectron2.utils.visualizer import Visualizer
from detectron2.data import MetadataCatalog, DatasetCatalog
```

## 0.1 Download VOC tar

```
[3]: !wget http://host.robots.ox.ac.uk/pascal/VOC/voc2007/VOCTrainval_06-Nov-2007.tar
--2021-11-23 20:52:01--
http://host.robots.ox.ac.uk/pascal/VOC/voc2007/VOCTrainval_06-Nov-2007.tar
Resolving host.robots.ox.ac.uk (host.robots.ox.ac.uk)... 129.67.94.152
Connecting to host.robots.ox.ac.uk (host.robots.ox.ac.uk)|129.67.94.152|:80...
connected.
HTTP request sent, awaiting response... 200 OK
Length: 460032000 (439M) [application/x-tar]
Saving to: 'VOCTrainval_06-Nov-2007.tar'

VOCTrainval_06-Nov- 100%[=====] 438.72M  189MB/s   in 2.3s

2021-11-23 20:52:04 (189 MB/s) - 'VOCTrainval_06-Nov-2007.tar' saved
[460032000/460032000]
```

## 0.2 Extract the VOC data

```
[4]: %%capture
!tar -xvf VOCTrainval_06-Nov-2007.tar
```

### 0.3 Rename folder to datasets

```
[5]: !mv VOCdevkit datasets
```

### 0.4 Get Detectron's Config object

```
[9]: cfg_fastrcnn = get_cfg()
cfg_fastrcnn.merge_from_file(model_zoo.get_config_file("COCO-Detection/
    ↪faster_rcnn_R_50_FPN_3x.yaml"))
```

### 0.5 Set Hyper-Parameters

```
[10]: cfg_fastrcnn.OUTPUT_DIR = 'MyVOCTraining'
cfg_fastrcnn.DATASETS.TRAIN = ("voc_2007_train",)
cfg_fastrcnn.DATASETS.TEST = ()
cfg_fastrcnn.DATALOADER.NUM_WORKERS = 4
cfg_fastrcnn.MODEL.WEIGHTS = model_zoo.get_checkpoint_url("COCO-Detection/
    ↪faster_rcnn_R_50_FPN_3x.yaml") # Let training initialize from model zoo
cfg_fastrcnn.SOLVER.IMS_PER_BATCH = 1
cfg_fastrcnn.SOLVER.BASE_LR = 0.00025 # pick a good LR
cfg_fastrcnn.SOLVER.MAX_ITER = 3000
cfg_fastrcnn.MODEL.ROI_HEADS.BATCH_SIZE_PER_IMAGE = 128
cfg_fastrcnn.MODEL.ROI_HEADS.NUM_CLASSES = 20
```

### 0.6 Train the model

```
[11]: os.makedirs(cfg_fastrcnn.OUTPUT_DIR, exist_ok=True)
trainer = DefaultTrainer(cfg_fastrcnn)
trainer.resume_or_load(resume=False)
trainer.train()
```

```
[11/23 21:00:03 d2.engine.defaults]: Model:
GeneralizedRCNN(
    backbone): FPN(
        (fpn_lateral2): Conv2d(256, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output2): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (fpn_lateral3): Conv2d(512, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output3): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (fpn_lateral4): Conv2d(1024, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output4): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (fpn_lateral5): Conv2d(2048, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output5): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (top_block): LastLevelMaxPool()
        (bottom_up): ResNet(
```

```

(stem): BasicStem(
    (conv1): Conv2d(
        3, 64, kernel_size=(7, 7), stride=(2, 2), padding=(3, 3), bias=False
        (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
    )
)
(res2): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            64, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv1): Conv2d(
            64, 64, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
        )
        (conv2): Conv2d(
            64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
            bias=False
            (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
        )
        (conv3): Conv2d(
            64, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
    )
    (1): BottleneckBlock(
        (conv1): Conv2d(
            256, 64, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
        )
        (conv2): Conv2d(
            64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
            bias=False
            (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
        )
        (conv3): Conv2d(
            64, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
    )
    (2): BottleneckBlock(
        (conv1): Conv2d(
            256, 64, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
        )
        (conv2): Conv2d(
            64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),

```

```
bias=False
    (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
)
(conv3): Conv2d(
    64, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
)
)
(res3): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            256, 512, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv1): Conv2d(
            256, 128, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
        )
        (conv2): Conv2d(
            128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
        )
        (conv3): Conv2d(
            128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
    )
    (1): BottleneckBlock(
        (conv1): Conv2d(
            512, 128, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
        )
        (conv2): Conv2d(
            128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
        )
        (conv3): Conv2d(
            128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
    )
    (2): BottleneckBlock(
        (conv1): Conv2d(
            512, 128, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
```

```

        )
    (conv2): Conv2d(
        128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv3): Conv2d(
        128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
)
(3): BottleneckBlock(
    (conv1): Conv2d(
        512, 128, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv2): Conv2d(
        128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv3): Conv2d(
        128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
)
)
(res4): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            512, 1024, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
        )
        (conv1): Conv2d(
            512, 256, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv2): Conv2d(
            256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv3): Conv2d(
            256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
        )
    )
    (1): BottleneckBlock(

```

```

(conv1): Conv2d(
    1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
)
(conv2): Conv2d(
    256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
    (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
)
(conv3): Conv2d(
    256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
)
)
(2): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)
(3): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)
(4): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
)

```

```

        )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)
(5): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)
)
(res5): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            1024, 2048, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
        )
        (conv1): Conv2d(
            1024, 512, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv2): Conv2d(
            512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv3): Conv2d(
            512, 2048, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
        )
    )
    (1): BottleneckBlock(

```

```

(conv1): Conv2d(
    2048, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
)
(conv2): Conv2d(
    512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
    (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
)
(conv3): Conv2d(
    512, 2048, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
)
)
(2): BottleneckBlock(
    (conv1): Conv2d(
        2048, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
    (conv2): Conv2d(
        512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
    (conv3): Conv2d(
        512, 2048, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
    )
)
)
)
)
(proposal_generator): RPN(
    (rpn_head): StandardRPNHead(
        (conv): Conv2d(
            256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1)
            (activation): ReLU()
        )
        (objectness_logits): Conv2d(256, 3, kernel_size=(1, 1), stride=(1, 1))
        (anchor_deltas): Conv2d(256, 12, kernel_size=(1, 1), stride=(1, 1))
    )
    (anchor_generator): DefaultAnchorGenerator(
        (cell_anchors): BufferList()
    )
)
)
(roi_heads): StandardROIHeads(
    (box_pooler): ROIPooler(
        (level_poolers): ModuleList(

```

```

        (0): ROIAlign(output_size=(7, 7), spatial_scale=0.25, sampling_ratio=0,
aligned=True)
        (1): ROIAlign(output_size=(7, 7), spatial_scale=0.125, sampling_ratio=0,
aligned=True)
        (2): ROIAlign(output_size=(7, 7), spatial_scale=0.0625,
sampling_ratio=0, aligned=True)
        (3): ROIAlign(output_size=(7, 7), spatial_scale=0.03125,
sampling_ratio=0, aligned=True)
    )
)
(box_head): FastRCNNConvFCHead(
    (flatten): Flatten(start_dim=1, end_dim=-1)
    (fc1): Linear(in_features=12544, out_features=1024, bias=True)
    (fc_relu1): ReLU()
    (fc2): Linear(in_features=1024, out_features=1024, bias=True)
    (fc_relu2): ReLU()
)
(box_predictor): FastRCNNOutputLayers(
    (cls_score): Linear(in_features=1024, out_features=21, bias=True)
    (bbox_pred): Linear(in_features=1024, out_features=80, bias=True)
)
)
)
[11/23 21:00:03 d2.data.build]: Removed 0 images with no usable
annotations. 2501 images left.
[11/23 21:00:03 d2.data.build]: Distribution of instances among all 20
categories:

```

category	#instances	category	#instances	category	#instances
aeroplane	156	bicycle	202	bird	294
boat	208	bottle	338	bus	131
car	826	cat	191	chair	726
cow	185	diningtable	148	dog	271
horse	207	motorbike	193	person	2705
pottedplant	305	sheep	191	sofa	218
train	158	tvmonitor	191		
total	7844				

[11/23 21:00:03 d2.data.dataset\_mapper]: [DatasetMapper] Augmentations used in training: [ResizeShortestEdge(short\_edge\_length=(640, 672, 704, 736, 768, 800), max\_size=1333, sample\_style='choice'), RandomFlip()]

[11/23 21:00:03 d2.data.build]: Using training sampler TrainingSampler

[11/23 21:00:03 d2.data.common]: Serializing 2501 elements to byte tensors and concatenating them all ...

[11/23 21:00:03 d2.data.common]: Serialized dataset takes 1.14 MiB

**WARNING** [11/23 21:00:03 d2.solver.build]: SOLVER.STEPS

contains values larger than SOLVER.MAX\_ITER. These values will be ignored.

/usr/local/lib/python3.7/dist-packages/torch/utils/data/dataloader.py:481: UserWarning: This DataLoader will create 4 worker processes in total. Our suggested max number of worker in current system is 2, which is smaller than what this DataLoader is going to create. Please be aware that excessive worker creation might get DataLoader running slow or even freeze, lower the worker number to avoid potential slowness/freeze if necessary.

```
    cpuset_checked))
model_final_280758.pkl: 167MB [00:16, 10.3MB/s]
```

Skip loading parameter 'roi\_heads.box\_predictor.cls\_score.weight' to the model due to incompatible shapes: (81, 1024) in the checkpoint but (21, 1024) in the model! You might want to double check if this is expected.

Skip loading parameter 'roi\_heads.box\_predictor.cls\_score.bias' to the model due to incompatible shapes: (81,) in the checkpoint but (21,) in the model! You might want to double check if this is expected.

Skip loading parameter 'roi\_heads.box\_predictor.bbox\_pred.weight' to the model due to incompatible shapes: (320, 1024) in the checkpoint but (80, 1024) in the model! You might want to double check if this is expected.

Skip loading parameter 'roi\_heads.box\_predictor.bbox\_pred.bias' to the model due to incompatible shapes: (320,) in the checkpoint but (80,) in the model! You might want to double check if this is expected.

Some model parameters or buffers are not found in the checkpoint:

```
roi_heads.box_predictor.bbox_pred.{bias, weight}
roi_heads.box_predictor.cls_score.{bias, weight}
```

[11/23 21:00:25 d2.engine.train\_loop]: Starting training from iteration 0

/usr/local/lib/python3.7/dist-packages/torch/utils/data/dataloader.py:481: UserWarning: This DataLoader will create 4 worker processes in total. Our suggested max number of worker in current system is 2, which is smaller than what this DataLoader is going to create. Please be aware that excessive worker creation might get DataLoader running slow or even freeze, lower the worker number to avoid potential slowness/freeze if necessary.

```
cpuset_checked))
```

/usr/local/lib/python3.7/dist-packages/detectron2/structures/image\_list.py:88: UserWarning: \_\_floordiv\_\_ is deprecated, and its behavior will change in a future version of pytorch. It currently rounds toward 0 (like the 'trunc' function NOT 'floor'). This results in incorrect rounding for negative values. To keep the current behavior, use torch.div(a, b, rounding\_mode='trunc'), or for actual floor division, use torch.div(a, b, rounding\_mode='floor').

```
max_size = (max_size + (stride - 1)) // stride * stride
```

/usr/local/lib/python3.7/dist-packages/torch/functional.py:445: UserWarning: torch.meshgrid: in an upcoming release, it will be required to pass the indexing argument. (Triggered internally at

```
../aten/src/ATen/native/TensorShape.cpp:2157.)
```

```
return _VF.meshgrid(tensors, **kwargs) # type: ignore[attr-defined]
```

[11/23 21:00:38 d2.utils.events]: eta: 0:30:33 iter: 19 total\_loss: 3.905 loss\_cls: 2.976 loss\_box\_reg: 0.9077 loss\_rpn\_cls: 0.01703 loss\_rpn\_loc: 0.01344 time: 0.6050 data\_time: 0.0211 lr: 4.9953e-06 max\_mem: 1504M

[11/23 21:00:49 d2.utils.events]: eta: 0:28:39 iter: 39 total\_loss: 3.742 loss\_cls: 2.932 loss\_box\_reg: 0.7566 loss\_rpn\_cls: 0.004186 loss\_rpn\_loc: 0.008548 time: 0.5822 data\_time: 0.0034 lr: 9.9902e-06 max\_mem: 1526M

[11/23 21:01:01 d2.utils.events]: eta: 0:28:26 iter: 59 total\_loss: 3.64 loss\_cls: 2.713 loss\_box\_reg: 0.8973 loss\_rpn\_cls: 0.009824

```

loss_rpn_loc: 0.01692  time: 0.5805  data_time: 0.0042  lr: 1.4985e-05  max_mem:
1526M
[11/23 21:01:12 d2.utils.events]: eta: 0:28:10  iter: 79  total_loss:
3.458  loss_cls: 2.471  loss_box_reg: 0.9232  loss_rpn_cls: 0.01623
loss_rpn_loc: 0.009865  time: 0.5768  data_time: 0.0041  lr: 1.998e-05  max_mem:
1526M
[11/23 21:01:23 d2.utils.events]: eta: 0:27:58  iter: 99  total_loss:
2.74  loss_cls: 2.031  loss_box_reg: 0.7391  loss_rpn_cls: 0.005408
loss_rpn_loc: 0.007709  time: 0.5742  data_time: 0.0036  lr: 2.4975e-05
max_mem: 1526M
[11/23 21:01:35 d2.utils.events]: eta: 0:27:48  iter: 119  total_loss:
2.403  loss_cls: 1.484  loss_box_reg: 0.8127  loss_rpn_cls: 0.006222
loss_rpn_loc: 0.01114  time: 0.5745  data_time: 0.0036  lr: 2.997e-05  max_mem:
1526M
[11/23 21:01:47 d2.utils.events]: eta: 0:27:39  iter: 139  total_loss:
2.214  loss_cls: 1.241  loss_box_reg: 0.8694  loss_rpn_cls: 0.01196
loss_rpn_loc: 0.009779  time: 0.5782  data_time: 0.0037  lr: 3.4965e-05
max_mem: 1526M
[11/23 21:01:58 d2.utils.events]: eta: 0:27:23  iter: 159  total_loss:
1.978  loss_cls: 0.9699  loss_box_reg: 0.8423  loss_rpn_cls: 0.002476
loss_rpn_loc: 0.009025  time: 0.5773  data_time: 0.0048  lr: 3.996e-05  max_mem:
1526M
[11/23 21:02:10 d2.utils.events]: eta: 0:27:12  iter: 179  total_loss:
1.907  loss_cls: 0.959  loss_box_reg: 0.8704  loss_rpn_cls: 0.002493
loss_rpn_loc: 0.007259  time: 0.5770  data_time: 0.0044  lr: 4.4955e-05
max_mem: 1526M
[11/23 21:02:21 d2.utils.events]: eta: 0:27:02  iter: 199  total_loss:
1.365  loss_cls: 0.6902  loss_box_reg: 0.6485  loss_rpn_cls: 0.002063
loss_rpn_loc: 0.008626  time: 0.5777  data_time: 0.0039  lr: 4.995e-05  max_mem:
1526M
[11/23 21:02:33 d2.utils.events]: eta: 0:26:52  iter: 219  total_loss:
1.814  loss_cls: 0.9085  loss_box_reg: 0.9254  loss_rpn_cls: 0.001482
loss_rpn_loc: 0.006852  time: 0.5791  data_time: 0.0036  lr: 5.4945e-05
max_mem: 1526M
[11/23 21:02:45 d2.utils.events]: eta: 0:26:39  iter: 239  total_loss:
1.795  loss_cls: 0.8773  loss_box_reg: 0.883  loss_rpn_cls: 0.001407
loss_rpn_loc: 0.005667  time: 0.5788  data_time: 0.0039  lr: 5.994e-05  max_mem:
1568M
[11/23 21:02:56 d2.utils.events]: eta: 0:26:25  iter: 259  total_loss:
1.881  loss_cls: 0.9091  loss_box_reg: 0.895  loss_rpn_cls: 0.003554
loss_rpn_loc: 0.008964  time: 0.5774  data_time: 0.0041  lr: 6.4935e-05
max_mem: 1568M
[11/23 21:03:08 d2.utils.events]: eta: 0:26:19  iter: 279  total_loss:
1.667  loss_cls: 0.7632  loss_box_reg: 0.8118  loss_rpn_cls: 0.001564
loss_rpn_loc: 0.01121  time: 0.5797  data_time: 0.0041  lr: 6.993e-05  max_mem:
1568M
[11/23 21:03:20 d2.utils.events]: eta: 0:26:06  iter: 299  total_loss:
1.863  loss_cls: 0.8468  loss_box_reg: 0.8997  loss_rpn_cls: 0.004184

```

```

loss_rpn_loc: 0.01514  time: 0.5797  data_time: 0.0037  lr: 7.4925e-05  max_mem:
1568M
[11/23 21:03:31 d2.utils.events]: eta: 0:25:55  iter: 319  total_loss:
1.869  loss_cls: 0.8818  loss_box_reg: 0.9226  loss_rpn_cls: 0.001771
loss_rpn_loc: 0.01273  time: 0.5795  data_time: 0.0045  lr: 7.992e-05  max_mem:
1568M
[11/23 21:03:43 d2.utils.events]: eta: 0:25:44  iter: 339  total_loss:
1.868  loss_cls: 0.8899  loss_box_reg: 0.8912  loss_rpn_cls: 0.001644
loss_rpn_loc: 0.01386  time: 0.5797  data_time: 0.0038  lr: 8.4915e-05  max_mem:
1568M
[11/23 21:03:55 d2.utils.events]: eta: 0:25:33  iter: 359  total_loss:
1.803  loss_cls: 0.8468  loss_box_reg: 0.8788  loss_rpn_cls: 0.003406
loss_rpn_loc: 0.01019  time: 0.5813  data_time: 0.0038  lr: 8.991e-05  max_mem:
1568M
[11/23 21:04:07 d2.utils.events]: eta: 0:25:27  iter: 379  total_loss:
1.724  loss_cls: 0.7685  loss_box_reg: 0.9209  loss_rpn_cls: 0.002591
loss_rpn_loc: 0.01079  time: 0.5827  data_time: 0.0038  lr: 9.4905e-05  max_mem:
1568M
[11/23 21:04:19 d2.utils.events]: eta: 0:25:23  iter: 399  total_loss:
1.281  loss_cls: 0.6005  loss_box_reg: 0.612  loss_rpn_cls: 0.001819
loss_rpn_loc: 0.01518  time: 0.5832  data_time: 0.0040  lr: 9.99e-05  max_mem:
1568M
[11/23 21:04:31 d2.utils.events]: eta: 0:25:18  iter: 419  total_loss:
1.677  loss_cls: 0.7332  loss_box_reg: 0.8763  loss_rpn_cls: 0.006433
loss_rpn_loc: 0.009665  time: 0.5839  data_time: 0.0038  lr: 0.0001049  max_mem:
1568M
[11/23 21:04:42 d2.utils.events]: eta: 0:24:56  iter: 439  total_loss:
1.744  loss_cls: 0.8051  loss_box_reg: 0.8189  loss_rpn_cls: 0.005997
loss_rpn_loc: 0.01204  time: 0.5823  data_time: 0.0038  lr: 0.00010989  max_mem:
1568M
[11/23 21:04:54 d2.utils.events]: eta: 0:24:54  iter: 459  total_loss:
1.486  loss_cls: 0.6234  loss_box_reg: 0.7552  loss_rpn_cls: 0.003852
loss_rpn_loc: 0.01303  time: 0.5830  data_time: 0.0041  lr: 0.00011489  max_mem:
1568M
[11/23 21:05:07 d2.utils.events]: eta: 0:24:43  iter: 479  total_loss:
1.563  loss_cls: 0.662  loss_box_reg: 0.899  loss_rpn_cls: 0.004498
loss_rpn_loc: 0.01067  time: 0.5847  data_time: 0.0038  lr: 0.00011988  max_mem:
1568M
[11/23 21:05:19 d2.utils.events]: eta: 0:24:32  iter: 499  total_loss:
1.642  loss_cls: 0.7242  loss_box_reg: 0.8757  loss_rpn_cls: 0.003799
loss_rpn_loc: 0.0111  time: 0.5856  data_time: 0.0037  lr: 0.00012488  max_mem:
1568M
[11/23 21:05:31 d2.utils.events]: eta: 0:24:24  iter: 519  total_loss:
0.9901  loss_cls: 0.5087  loss_box_reg: 0.5336  loss_rpn_cls: 0.002337
loss_rpn_loc: 0.005582  time: 0.5863  data_time: 0.0037  lr: 0.00012987
max_mem: 1568M
[11/23 21:05:43 d2.utils.events]: eta: 0:24:13  iter: 539  total_loss:
1.45  loss_cls: 0.6117  loss_box_reg: 0.8035  loss_rpn_cls: 0.004388

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loss_rpn_loc: 0.01199  time: 0.5868  data_time: 0.0041  lr: 0.00013487  max_mem:
1568M
[11/23 21:05:55 d2.utils.events]: eta: 0:24:02  iter: 559  total_loss:
1.358  loss_cls: 0.6344  loss_box_reg: 0.7384  loss_rpn_cls: 0.0005332
loss_rpn_loc: 0.01141  time: 0.5873  data_time: 0.0048  lr: 0.00013986  max_mem:
1568M
[11/23 21:06:07 d2.utils.events]: eta: 0:23:53  iter: 579  total_loss:
1.491  loss_cls: 0.5797  loss_box_reg: 0.8647  loss_rpn_cls: 0.00615
loss_rpn_loc: 0.01636  time: 0.5881  data_time: 0.0037  lr: 0.00014486  max_mem:
1568M
[11/23 21:06:19 d2.utils.events]: eta: 0:23:46  iter: 599  total_loss:
1.423  loss_cls: 0.5738  loss_box_reg: 0.7252  loss_rpn_cls: 0.00119
loss_rpn_loc: 0.013  time: 0.5887  data_time: 0.0040  lr: 0.00014985  max_mem:
1568M
[11/23 21:06:31 d2.utils.events]: eta: 0:23:34  iter: 619  total_loss:
1.343  loss_cls: 0.4872  loss_box_reg: 0.8204  loss_rpn_cls: 0.001935
loss_rpn_loc: 0.01049  time: 0.5888  data_time: 0.0049  lr: 0.00015485  max_mem:
1568M
[11/23 21:06:43 d2.utils.events]: eta: 0:23:23  iter: 639  total_loss:
1.225  loss_cls: 0.4769  loss_box_reg: 0.7442  loss_rpn_cls: 0.007812
loss_rpn_loc: 0.01793  time: 0.5895  data_time: 0.0039  lr: 0.00015984  max_mem:
1568M
[11/23 21:06:55 d2.utils.events]: eta: 0:23:11  iter: 659  total_loss:
1.294  loss_cls: 0.4944  loss_box_reg: 0.7197  loss_rpn_cls: 0.006668
loss_rpn_loc: 0.02278  time: 0.5886  data_time: 0.0043  lr: 0.00016484  max_mem:
1568M
[11/23 21:07:07 d2.utils.events]: eta: 0:22:59  iter: 679  total_loss:
1.052  loss_cls: 0.4395  loss_box_reg: 0.6586  loss_rpn_cls: 0.001947
loss_rpn_loc: 0.0115  time: 0.5889  data_time: 0.0047  lr: 0.00016983  max_mem:
1584M
[11/23 21:07:19 d2.utils.events]: eta: 0:22:48  iter: 699  total_loss:
1.007  loss_cls: 0.3932  loss_box_reg: 0.6594  loss_rpn_cls: 0.00114
loss_rpn_loc: 0.01158  time: 0.5897  data_time: 0.0041  lr: 0.00017483  max_mem:
1584M
[11/23 21:07:31 d2.utils.events]: eta: 0:22:36  iter: 719  total_loss:
0.9845  loss_cls: 0.2581  loss_box_reg: 0.6473  loss_rpn_cls: 0.002762
loss_rpn_loc: 0.008111  time: 0.5899  data_time: 0.0039  lr: 0.00017982
max_mem: 1584M
[11/23 21:07:43 d2.utils.events]: eta: 0:22:24  iter: 739  total_loss:
1.096  loss_cls: 0.3688  loss_box_reg: 0.6982  loss_rpn_cls: 0.0005033
loss_rpn_loc: 0.0129  time: 0.5901  data_time: 0.0043  lr: 0.00018482  max_mem:
1584M
[11/23 21:07:56 d2.utils.events]: eta: 0:22:14  iter: 759  total_loss:
0.776  loss_cls: 0.3072  loss_box_reg: 0.5081  loss_rpn_cls: 0.001174
loss_rpn_loc: 0.02537  time: 0.5917  data_time: 0.0039  lr: 0.00018981  max_mem:
1584M
[11/23 21:08:08 d2.utils.events]: eta: 0:22:02  iter: 779  total_loss:
0.8377  loss_cls: 0.2864  loss_box_reg: 0.5617  loss_rpn_cls: 0.002771

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loss_rpn_loc: 0.01225  time: 0.5916  data_time: 0.0037  lr: 0.00019481  max_mem:  
1584M  
[11/23 21:08:20 d2.utils.events]: eta: 0:21:51  iter: 799  total_loss:  
0.7882  loss_cls: 0.2753  loss_box_reg: 0.5161  loss_rpn_cls: 0.006123  
loss_rpn_loc: 0.01281  time: 0.5916  data_time: 0.0043  lr: 0.0001998  max_mem:  
1584M  
[11/23 21:08:31 d2.utils.events]: eta: 0:21:37  iter: 819  total_loss:  
1.031  loss_cls: 0.3854  loss_box_reg: 0.7057  loss_rpn_cls: 0.0167  
loss_rpn_loc: 0.0187  time: 0.5908  data_time: 0.0035  lr: 0.0002048  max_mem:  
1584M  
[11/23 21:08:43 d2.utils.events]: eta: 0:21:25  iter: 839  total_loss:  
0.9113  loss_cls: 0.299  loss_box_reg: 0.5948  loss_rpn_cls: 0.007105  
loss_rpn_loc: 0.01304  time: 0.5907  data_time: 0.0039  lr: 0.00020979  max_mem:  
1584M  
[11/23 21:08:55 d2.utils.events]: eta: 0:21:13  iter: 859  total_loss:  
1.049  loss_cls: 0.3294  loss_box_reg: 0.5907  loss_rpn_cls: 0.008441  
loss_rpn_loc: 0.02423  time: 0.5911  data_time: 0.0043  lr: 0.00021479  max_mem:  
1584M  
[11/23 21:09:07 d2.utils.events]: eta: 0:21:02  iter: 879  total_loss:  
1.073  loss_cls: 0.3493  loss_box_reg: 0.689  loss_rpn_cls: 0.005315  
loss_rpn_loc: 0.01065  time: 0.5916  data_time: 0.0044  lr: 0.00021978  max_mem:  
1584M  
[11/23 21:09:19 d2.utils.events]: eta: 0:20:50  iter: 899  total_loss:  
0.7098  loss_cls: 0.2503  loss_box_reg: 0.4813  loss_rpn_cls: 0.00125  
loss_rpn_loc: 0.01496  time: 0.5915  data_time: 0.0040  lr: 0.00022478  max_mem:  
1584M  
[11/23 21:09:31 d2.utils.events]: eta: 0:20:38  iter: 919  total_loss:  
0.9504  loss_cls: 0.3128  loss_box_reg: 0.6054  loss_rpn_cls: 0.001662  
loss_rpn_loc: 0.01703  time: 0.5915  data_time: 0.0040  lr: 0.00022977  max_mem:  
1584M  
[11/23 21:09:43 d2.utils.events]: eta: 0:20:26  iter: 939  total_loss:  
0.9493  loss_cls: 0.2819  loss_box_reg: 0.5288  loss_rpn_cls: 0.001353  
loss_rpn_loc: 0.009559  time: 0.5918  data_time: 0.0041  lr: 0.00023477  
max_mem: 1584M  
[11/23 21:09:55 d2.utils.events]: eta: 0:20:15  iter: 959  total_loss:  
1.079  loss_cls: 0.3549  loss_box_reg: 0.692  loss_rpn_cls: 0.0176  
loss_rpn_loc: 0.01829  time: 0.5921  data_time: 0.0048  lr: 0.00023976  max_mem:  
1584M  
[11/23 21:10:06 d2.utils.events]: eta: 0:20:02  iter: 979  total_loss:  
0.7564  loss_cls: 0.2536  loss_box_reg: 0.4839  loss_rpn_cls: 0.006332  
loss_rpn_loc: 0.006924  time: 0.5917  data_time: 0.0046  lr: 0.00024476  
max_mem: 1584M  
[11/23 21:10:18 d2.utils.events]: eta: 0:19:50  iter: 999  total_loss:  
0.9808  loss_cls: 0.2547  loss_box_reg: 0.5716  loss_rpn_cls: 0.002336  
loss_rpn_loc: 0.01471  time: 0.5912  data_time: 0.0041  lr: 0.00024975  max_mem:  
1584M  
[11/23 21:10:29 d2.utils.events]: eta: 0:19:37  iter: 1019  
total_loss: 0.7451  loss_cls: 0.1774  loss_box_reg: 0.4852  loss_rpn_cls:
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0.004857 loss_rpn_loc: 0.01575 time: 0.5908 data_time: 0.0037 lr: 0.00025
max_mem: 1584M
[11/23 21:10:40 d2.utils.events]: eta: 0:19:25 iter: 1039
total_loss: 0.815 loss_cls: 0.2413 loss_box_reg: 0.5121 loss_rpn_cls:
0.003003 loss_rpn_loc: 0.01268 time: 0.5902 data_time: 0.0043 lr: 0.00025
max_mem: 1584M
[11/23 21:10:53 d2.utils.events]: eta: 0:19:14 iter: 1059
total_loss: 0.7849 loss_cls: 0.2656 loss_box_reg: 0.5273 loss_rpn_cls:
0.005452 loss_rpn_loc: 0.01692 time: 0.5906 data_time: 0.0043 lr: 0.00025
max_mem: 1584M
[11/23 21:11:04 d2.utils.events]: eta: 0:19:02 iter: 1079
total_loss: 0.8464 loss_cls: 0.2233 loss_box_reg: 0.5766 loss_rpn_cls:
0.006568 loss_rpn_loc: 0.01351 time: 0.5903 data_time: 0.0043 lr: 0.00025
max_mem: 1584M
[11/23 21:11:16 d2.utils.events]: eta: 0:18:51 iter: 1099
total_loss: 0.7641 loss_cls: 0.2189 loss_box_reg: 0.4935 loss_rpn_cls:
0.002871 loss_rpn_loc: 0.008826 time: 0.5902 data_time: 0.0046 lr: 0.00025
max_mem: 1584M
[11/23 21:11:28 d2.utils.events]: eta: 0:18:40 iter: 1119
total_loss: 0.6652 loss_cls: 0.2089 loss_box_reg: 0.4549 loss_rpn_cls:
0.004864 loss_rpn_loc: 0.01601 time: 0.5903 data_time: 0.0042 lr: 0.00025
max_mem: 1584M
[11/23 21:11:39 d2.utils.events]: eta: 0:18:27 iter: 1139
total_loss: 0.8027 loss_cls: 0.2205 loss_box_reg: 0.5707 loss_rpn_cls:
0.01055 loss_rpn_loc: 0.01561 time: 0.5901 data_time: 0.0037 lr: 0.00025
max_mem: 1584M
[11/23 21:11:51 d2.utils.events]: eta: 0:18:16 iter: 1159
total_loss: 0.8645 loss_cls: 0.2618 loss_box_reg: 0.5515 loss_rpn_cls:
0.001586 loss_rpn_loc: 0.01677 time: 0.5902 data_time: 0.0038 lr: 0.00025
max_mem: 1584M
[11/23 21:12:04 d2.utils.events]: eta: 0:18:06 iter: 1179
total_loss: 0.6373 loss_cls: 0.1898 loss_box_reg: 0.4214 loss_rpn_cls:
0.002256 loss_rpn_loc: 0.009321 time: 0.5908 data_time: 0.0042 lr: 0.00025
max_mem: 1584M
[11/23 21:12:16 d2.utils.events]: eta: 0:17:54 iter: 1199
total_loss: 0.6884 loss_cls: 0.1915 loss_box_reg: 0.4003 loss_rpn_cls:
0.001614 loss_rpn_loc: 0.009721 time: 0.5909 data_time: 0.0040 lr: 0.00025
max_mem: 1584M
[11/23 21:12:28 d2.utils.events]: eta: 0:17:42 iter: 1219
total_loss: 0.7494 loss_cls: 0.2162 loss_box_reg: 0.4655 loss_rpn_cls:
0.004208 loss_rpn_loc: 0.007287 time: 0.5910 data_time: 0.0044 lr: 0.00025
max_mem: 1584M
[11/23 21:12:39 d2.utils.events]: eta: 0:17:30 iter: 1239
total_loss: 0.9464 loss_cls: 0.3613 loss_box_reg: 0.5355 loss_rpn_cls:
0.00458 loss_rpn_loc: 0.02302 time: 0.5906 data_time: 0.0039 lr: 0.00025
max_mem: 1584M
[11/23 21:12:51 d2.utils.events]: eta: 0:17:18 iter: 1259
total_loss: 0.9036 loss_cls: 0.3437 loss_box_reg: 0.4798 loss_rpn_cls:
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0.004664 loss_rpn_loc: 0.01132 time: 0.5905 data_time: 0.0037 lr: 0.00025
max_mem: 1584M
[11/23 21:13:03 d2.utils.events]: eta: 0:17:06 iter: 1279
total_loss: 0.6771 loss_cls: 0.1899 loss_box_reg: 0.5065 loss_rpn_cls:
0.00132 loss_rpn_loc: 0.01899 time: 0.5907 data_time: 0.0037 lr: 0.00025
max_mem: 1584M
[11/23 21:13:15 d2.utils.events]: eta: 0:16:56 iter: 1299
total_loss: 0.5747 loss_cls: 0.2181 loss_box_reg: 0.3453 loss_rpn_cls:
0.001808 loss_rpn_loc: 0.0108 time: 0.5909 data_time: 0.0038 lr: 0.00025
max_mem: 1584M
[11/23 21:13:26 d2.utils.events]: eta: 0:16:42 iter: 1319
total_loss: 0.7959 loss_cls: 0.207 loss_box_reg: 0.4894 loss_rpn_cls:
0.005107 loss_rpn_loc: 0.02589 time: 0.5907 data_time: 0.0042 lr: 0.00025
max_mem: 1584M
[11/23 21:13:38 d2.utils.events]: eta: 0:16:29 iter: 1339
total_loss: 0.7126 loss_cls: 0.2014 loss_box_reg: 0.4273 loss_rpn_cls:
0.001272 loss_rpn_loc: 0.01373 time: 0.5905 data_time: 0.0039 lr: 0.00025
max_mem: 1584M
[11/23 21:13:50 d2.utils.events]: eta: 0:16:17 iter: 1359
total_loss: 0.5742 loss_cls: 0.1438 loss_box_reg: 0.387 loss_rpn_cls:
0.003603 loss_rpn_loc: 0.01043 time: 0.5904 data_time: 0.0046 lr: 0.00025
max_mem: 1584M
[11/23 21:14:01 d2.utils.events]: eta: 0:16:03 iter: 1379
total_loss: 0.7196 loss_cls: 0.2132 loss_box_reg: 0.4588 loss_rpn_cls:
0.003491 loss_rpn_loc: 0.0226 time: 0.5902 data_time: 0.0045 lr: 0.00025
max_mem: 1584M
[11/23 21:14:13 d2.utils.events]: eta: 0:15:51 iter: 1399
total_loss: 0.6834 loss_cls: 0.2016 loss_box_reg: 0.44 loss_rpn_cls: 0.002163
loss_rpn_loc: 0.01192 time: 0.5902 data_time: 0.0040 lr: 0.00025 max_mem:
1584M
[11/23 21:14:25 d2.utils.events]: eta: 0:15:39 iter: 1419
total_loss: 0.718 loss_cls: 0.1593 loss_box_reg: 0.5095 loss_rpn_cls:
0.004695 loss_rpn_loc: 0.01476 time: 0.5906 data_time: 0.0041 lr: 0.00025
max_mem: 1584M
[11/23 21:14:38 d2.utils.events]: eta: 0:15:29 iter: 1439
total_loss: 0.6594 loss_cls: 0.1947 loss_box_reg: 0.4743 loss_rpn_cls:
0.001492 loss_rpn_loc: 0.008362 time: 0.5908 data_time: 0.0038 lr: 0.00025
max_mem: 1584M
[11/23 21:14:50 d2.utils.events]: eta: 0:15:17 iter: 1459
total_loss: 0.7088 loss_cls: 0.1637 loss_box_reg: 0.4872 loss_rpn_cls:
0.001735 loss_rpn_loc: 0.0137 time: 0.5910 data_time: 0.0040 lr: 0.00025
max_mem: 1584M
[11/23 21:15:02 d2.utils.events]: eta: 0:15:06 iter: 1479
total_loss: 0.7053 loss_cls: 0.203 loss_box_reg: 0.448 loss_rpn_cls: 0.001642
loss_rpn_loc: 0.01367 time: 0.5915 data_time: 0.0043 lr: 0.00025 max_mem:
1584M
[11/23 21:15:14 d2.utils.events]: eta: 0:14:55 iter: 1499
total_loss: 0.8391 loss_cls: 0.2771 loss_box_reg: 0.4978 loss_rpn_cls:
```

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0.003485 loss_rpn_loc: 0.009194 time: 0.5917 data_time: 0.0037 lr: 0.00025
max_mem: 1584M
[11/23 21:15:27 d2.utils.events]: eta: 0:14:43 iter: 1519
total_loss: 0.7482 loss_cls: 0.2665 loss_box_reg: 0.4811 loss_rpn_cls:
0.005387 loss_rpn_loc: 0.01604 time: 0.5920 data_time: 0.0045 lr: 0.00025
max_mem: 1584M
[11/23 21:15:39 d2.utils.events]: eta: 0:14:31 iter: 1539
total_loss: 0.7761 loss_cls: 0.3107 loss_box_reg: 0.4068 loss_rpn_cls:
0.004539 loss_rpn_loc: 0.01113 time: 0.5920 data_time: 0.0049 lr: 0.00025
max_mem: 1584M
[11/23 21:15:50 d2.utils.events]: eta: 0:14:18 iter: 1559
total_loss: 0.8454 loss_cls: 0.2351 loss_box_reg: 0.5555 loss_rpn_cls:
0.002703 loss_rpn_loc: 0.01408 time: 0.5918 data_time: 0.0041 lr: 0.00025
max_mem: 1584M
[11/23 21:16:02 d2.utils.events]: eta: 0:14:05 iter: 1579
total_loss: 0.5164 loss_cls: 0.1642 loss_box_reg: 0.4022 loss_rpn_cls:
0.00131 loss_rpn_loc: 0.01502 time: 0.5919 data_time: 0.0041 lr: 0.00025
max_mem: 1584M
[11/23 21:16:15 d2.utils.events]: eta: 0:13:53 iter: 1599
total_loss: 0.8147 loss_cls: 0.2862 loss_box_reg: 0.4864 loss_rpn_cls:
0.005613 loss_rpn_loc: 0.01395 time: 0.5923 data_time: 0.0043 lr: 0.00025
max_mem: 1584M
[11/23 21:16:26 d2.utils.events]: eta: 0:13:41 iter: 1619
total_loss: 0.7648 loss_cls: 0.2644 loss_box_reg: 0.4585 loss_rpn_cls:
0.01099 loss_rpn_loc: 0.01628 time: 0.5923 data_time: 0.0046 lr: 0.00025
max_mem: 1584M
[11/23 21:16:38 d2.utils.events]: eta: 0:13:29 iter: 1639
total_loss: 0.6171 loss_cls: 0.1903 loss_box_reg: 0.4106 loss_rpn_cls:
0.002663 loss_rpn_loc: 0.00731 time: 0.5923 data_time: 0.0036 lr: 0.00025
max_mem: 1584M
[11/23 21:16:51 d2.utils.events]: eta: 0:13:19 iter: 1659
total_loss: 0.6931 loss_cls: 0.209 loss_box_reg: 0.4827 loss_rpn_cls:
0.001331 loss_rpn_loc: 0.006016 time: 0.5925 data_time: 0.0042 lr: 0.00025
max_mem: 1584M
[11/23 21:17:02 d2.utils.events]: eta: 0:13:06 iter: 1679
total_loss: 0.5101 loss_cls: 0.1962 loss_box_reg: 0.3364 loss_rpn_cls:
0.005488 loss_rpn_loc: 0.01016 time: 0.5925 data_time: 0.0038 lr: 0.00025
max_mem: 1584M
[11/23 21:17:14 d2.utils.events]: eta: 0:12:53 iter: 1699
total_loss: 0.689 loss_cls: 0.1668 loss_box_reg: 0.4816 loss_rpn_cls:
0.0006155 loss_rpn_loc: 0.0104 time: 0.5925 data_time: 0.0048 lr: 0.00025
max_mem: 1584M
[11/23 21:17:26 d2.utils.events]: eta: 0:12:41 iter: 1719
total_loss: 0.6262 loss_cls: 0.2184 loss_box_reg: 0.3918 loss_rpn_cls:
0.00188 loss_rpn_loc: 0.009904 time: 0.5926 data_time: 0.0046 lr: 0.00025
max_mem: 1584M
[11/23 21:17:39 d2.utils.events]: eta: 0:12:30 iter: 1739
total_loss: 0.82 loss_cls: 0.2296 loss_box_reg: 0.5068 loss_rpn_cls: 0.002323

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loss_rpn_loc: 0.01072  time: 0.5931  data_time: 0.0040  lr: 0.00025  max_mem:
1584M
[11/23 21:17:51 d2.utils.events]: eta: 0:12:17  iter: 1759
total_loss: 0.8159  loss_cls: 0.2341  loss_box_reg: 0.4964  loss_rpn_cls:
0.003948  loss_rpn_loc: 0.01647  time: 0.5933  data_time: 0.0046  lr: 0.00025
max_mem: 1584M
[11/23 21:18:03 d2.utils.events]: eta: 0:12:06  iter: 1779
total_loss: 0.6403  loss_cls: 0.1761  loss_box_reg: 0.4488  loss_rpn_cls:
0.006866  loss_rpn_loc: 0.02004  time: 0.5934  data_time: 0.0041  lr: 0.00025
max_mem: 1584M
[11/23 21:18:15 d2.utils.events]: eta: 0:11:54  iter: 1799
total_loss: 0.5987  loss_cls: 0.2006  loss_box_reg: 0.4073  loss_rpn_cls:
0.004546  loss_rpn_loc: 0.01179  time: 0.5934  data_time: 0.0044  lr: 0.00025
max_mem: 1584M
[11/23 21:18:28 d2.utils.events]: eta: 0:11:44  iter: 1819
total_loss: 0.4523  loss_cls: 0.1575  loss_box_reg: 0.3065  loss_rpn_cls:
0.0007194  loss_rpn_loc: 0.01226  time: 0.5939  data_time: 0.0046  lr: 0.00025
max_mem: 1584M
[11/23 21:18:40 d2.utils.events]: eta: 0:11:32  iter: 1839
total_loss: 0.5309  loss_cls: 0.137  loss_box_reg: 0.341  loss_rpn_cls: 0.001261
loss_rpn_loc: 0.01783  time: 0.5942  data_time: 0.0039  lr: 0.00025  max_mem:
1584M
[11/23 21:18:53 d2.utils.events]: eta: 0:11:21  iter: 1859
total_loss: 0.812  loss_cls: 0.2449  loss_box_reg: 0.4945  loss_rpn_cls:
0.002357  loss_rpn_loc: 0.01636  time: 0.5944  data_time: 0.0046  lr: 0.00025
max_mem: 1584M
[11/23 21:19:05 d2.utils.events]: eta: 0:11:08  iter: 1879
total_loss: 0.45  loss_cls: 0.1542  loss_box_reg: 0.2702  loss_rpn_cls: 0.002078
loss_rpn_loc: 0.01731  time: 0.5944  data_time: 0.0050  lr: 0.00025  max_mem:
1584M
[11/23 21:19:17 d2.utils.events]: eta: 0:10:56  iter: 1899
total_loss: 0.4881  loss_cls: 0.11  loss_box_reg: 0.3368  loss_rpn_cls: 0.002175
loss_rpn_loc: 0.01101  time: 0.5944  data_time: 0.0051  lr: 0.00025  max_mem:
1584M
[11/23 21:19:29 d2.utils.events]: eta: 0:10:44  iter: 1919
total_loss: 0.5367  loss_cls: 0.1503  loss_box_reg: 0.3609  loss_rpn_cls:
0.001933  loss_rpn_loc: 0.01074  time: 0.5946  data_time: 0.0038  lr: 0.00025
max_mem: 1584M
[11/23 21:19:41 d2.utils.events]: eta: 0:10:32  iter: 1939
total_loss: 0.7309  loss_cls: 0.2167  loss_box_reg: 0.4857  loss_rpn_cls:
0.008914  loss_rpn_loc: 0.01721  time: 0.5946  data_time: 0.0039  lr: 0.00025
max_mem: 1584M
[11/23 21:19:53 d2.utils.events]: eta: 0:10:20  iter: 1959
total_loss: 0.6231  loss_cls: 0.1953  loss_box_reg: 0.3727  loss_rpn_cls:
0.001582  loss_rpn_loc: 0.009646  time: 0.5946  data_time: 0.0043  lr: 0.00025
max_mem: 1584M
[11/23 21:20:04 d2.utils.events]: eta: 0:10:08  iter: 1979
total_loss: 0.6025  loss_cls: 0.1903  loss_box_reg: 0.3682  loss_rpn_cls:

```

```

0.003725 loss_rpn_loc: 0.006634 time: 0.5944 data_time: 0.0039 lr: 0.00025
max_mem: 1584M
[11/23 21:20:16 d2.utils.events]: eta: 0:09:56 iter: 1999
total_loss: 0.7593 loss_cls: 0.2674 loss_box_reg: 0.4081 loss_rpn_cls:
0.001805 loss_rpn_loc: 0.01413 time: 0.5942 data_time: 0.0040 lr: 0.00025
max_mem: 1584M
[11/23 21:20:28 d2.utils.events]: eta: 0:09:44 iter: 2019
total_loss: 0.6338 loss_cls: 0.2173 loss_box_reg: 0.3194 loss_rpn_cls:
0.001142 loss_rpn_loc: 0.01057 time: 0.5942 data_time: 0.0038 lr: 0.00025
max_mem: 1584M
[11/23 21:20:39 d2.utils.events]: eta: 0:09:33 iter: 2039
total_loss: 0.6699 loss_cls: 0.1758 loss_box_reg: 0.4641 loss_rpn_cls:
0.002303 loss_rpn_loc: 0.01003 time: 0.5941 data_time: 0.0039 lr: 0.00025
max_mem: 1584M
[11/23 21:20:52 d2.utils.events]: eta: 0:09:21 iter: 2059
total_loss: 0.6047 loss_cls: 0.1722 loss_box_reg: 0.4028 loss_rpn_cls:
0.00343 loss_rpn_loc: 0.01638 time: 0.5943 data_time: 0.0040 lr: 0.00025
max_mem: 1584M
[11/23 21:21:04 d2.utils.events]: eta: 0:09:10 iter: 2079
total_loss: 0.586 loss_cls: 0.2054 loss_box_reg: 0.4035 loss_rpn_cls: 0.01042
loss_rpn_loc: 0.0091 time: 0.5944 data_time: 0.0044 lr: 0.00025 max_mem:
1584M
[11/23 21:21:16 d2.utils.events]: eta: 0:08:58 iter: 2099
total_loss: 0.8034 loss_cls: 0.2339 loss_box_reg: 0.4545 loss_rpn_cls:
0.00608 loss_rpn_loc: 0.0204 time: 0.5944 data_time: 0.0044 lr: 0.00025
max_mem: 1584M
[11/23 21:21:27 d2.utils.events]: eta: 0:08:46 iter: 2119
total_loss: 0.5309 loss_cls: 0.1426 loss_box_reg: 0.3911 loss_rpn_cls:
0.001583 loss_rpn_loc: 0.01173 time: 0.5944 data_time: 0.0039 lr: 0.00025
max_mem: 1584M
[11/23 21:21:40 d2.utils.events]: eta: 0:08:35 iter: 2139
total_loss: 0.6721 loss_cls: 0.2254 loss_box_reg: 0.4124 loss_rpn_cls:
0.01332 loss_rpn_loc: 0.01342 time: 0.5945 data_time: 0.0038 lr: 0.00025
max_mem: 1614M
[11/23 21:21:51 d2.utils.events]: eta: 0:08:22 iter: 2159
total_loss: 0.6207 loss_cls: 0.244 loss_box_reg: 0.3988 loss_rpn_cls:
0.004522 loss_rpn_loc: 0.01053 time: 0.5944 data_time: 0.0043 lr: 0.00025
max_mem: 1614M
[11/23 21:22:03 d2.utils.events]: eta: 0:08:10 iter: 2179
total_loss: 0.8181 loss_cls: 0.2194 loss_box_reg: 0.5052 loss_rpn_cls:
0.005465 loss_rpn_loc: 0.02372 time: 0.5945 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:22:15 d2.utils.events]: eta: 0:07:57 iter: 2199
total_loss: 0.5827 loss_cls: 0.1256 loss_box_reg: 0.4008 loss_rpn_cls:
0.0008879 loss_rpn_loc: 0.008599 time: 0.5945 data_time: 0.0046 lr: 0.00025
max_mem: 1614M
[11/23 21:22:27 d2.utils.events]: eta: 0:07:45 iter: 2219
total_loss: 0.7681 loss_cls: 0.212 loss_box_reg: 0.5315 loss_rpn_cls:

```

```
0.009134 loss_rpn_loc: 0.01946 time: 0.5944 data_time: 0.0043 lr: 0.00025
max_mem: 1614M
[11/23 21:22:38 d2.utils.events]: eta: 0:07:34 iter: 2239
total_loss: 0.5543 loss_cls: 0.1191 loss_box_reg: 0.3801 loss_rpn_cls:
0.002517 loss_rpn_loc: 0.01103 time: 0.5942 data_time: 0.0044 lr: 0.00025
max_mem: 1614M
[11/23 21:22:50 d2.utils.events]: eta: 0:07:22 iter: 2259
total_loss: 0.6559 loss_cls: 0.2121 loss_box_reg: 0.4004 loss_rpn_cls:
0.00417 loss_rpn_loc: 0.01728 time: 0.5939 data_time: 0.0040 lr: 0.00025
max_mem: 1614M
[11/23 21:23:01 d2.utils.events]: eta: 0:07:10 iter: 2279
total_loss: 0.6366 loss_cls: 0.2191 loss_box_reg: 0.3143 loss_rpn_cls:
0.004767 loss_rpn_loc: 0.01136 time: 0.5936 data_time: 0.0043 lr: 0.00025
max_mem: 1614M
[11/23 21:23:13 d2.utils.events]: eta: 0:06:58 iter: 2299
total_loss: 0.4699 loss_cls: 0.13 loss_box_reg: 0.3267 loss_rpn_cls: 0.001578
loss_rpn_loc: 0.01297 time: 0.5939 data_time: 0.0039 lr: 0.00025 max_mem:
1614M
[11/23 21:23:26 d2.utils.events]: eta: 0:06:46 iter: 2319
total_loss: 0.4551 loss_cls: 0.1447 loss_box_reg: 0.3025 loss_rpn_cls:
0.009459 loss_rpn_loc: 0.008805 time: 0.5941 data_time: 0.0045 lr: 0.00025
max_mem: 1614M
[11/23 21:23:38 d2.utils.events]: eta: 0:06:34 iter: 2339
total_loss: 0.5657 loss_cls: 0.1778 loss_box_reg: 0.3607 loss_rpn_cls:
0.005441 loss_rpn_loc: 0.02341 time: 0.5941 data_time: 0.0039 lr: 0.00025
max_mem: 1614M
[11/23 21:23:49 d2.utils.events]: eta: 0:06:23 iter: 2359
total_loss: 0.5134 loss_cls: 0.1741 loss_box_reg: 0.3481 loss_rpn_cls:
0.004977 loss_rpn_loc: 0.01045 time: 0.5939 data_time: 0.0044 lr: 0.00025
max_mem: 1614M
[11/23 21:24:01 d2.utils.events]: eta: 0:06:11 iter: 2379
total_loss: 0.6398 loss_cls: 0.2323 loss_box_reg: 0.4205 loss_rpn_cls:
0.002292 loss_rpn_loc: 0.01866 time: 0.5939 data_time: 0.0044 lr: 0.00025
max_mem: 1614M
[11/23 21:24:13 d2.utils.events]: eta: 0:05:59 iter: 2399
total_loss: 0.5642 loss_cls: 0.1605 loss_box_reg: 0.3113 loss_rpn_cls:
0.004642 loss_rpn_loc: 0.01963 time: 0.5940 data_time: 0.0044 lr: 0.00025
max_mem: 1614M
[11/23 21:24:26 d2.utils.events]: eta: 0:05:47 iter: 2419
total_loss: 0.6326 loss_cls: 0.1669 loss_box_reg: 0.3882 loss_rpn_cls:
0.002654 loss_rpn_loc: 0.01902 time: 0.5942 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:24:37 d2.utils.events]: eta: 0:05:35 iter: 2439
total_loss: 0.4811 loss_cls: 0.1134 loss_box_reg: 0.2978 loss_rpn_cls:
0.001494 loss_rpn_loc: 0.006481 time: 0.5942 data_time: 0.0044 lr: 0.00025
max_mem: 1614M
[11/23 21:24:50 d2.utils.events]: eta: 0:05:23 iter: 2459
total_loss: 0.5706 loss_cls: 0.1705 loss_box_reg: 0.4144 loss_rpn_cls:
```

```
0.00615 loss_rpn_loc: 0.01877 time: 0.5942 data_time: 0.0050 lr: 0.00025
max_mem: 1614M
[11/23 21:25:01 d2.utils.events]: eta: 0:05:11 iter: 2479
total_loss: 0.4266 loss_cls: 0.1407 loss_box_reg: 0.351 loss_rpn_cls:
0.001903 loss_rpn_loc: 0.01063 time: 0.5941 data_time: 0.0039 lr: 0.00025
max_mem: 1614M
[11/23 21:25:13 d2.utils.events]: eta: 0:04:59 iter: 2499
total_loss: 0.5092 loss_cls: 0.1478 loss_box_reg: 0.3323 loss_rpn_cls:
0.0003996 loss_rpn_loc: 0.008115 time: 0.5943 data_time: 0.0040 lr: 0.00025
max_mem: 1614M
[11/23 21:25:25 d2.utils.events]: eta: 0:04:47 iter: 2519
total_loss: 0.6184 loss_cls: 0.1926 loss_box_reg: 0.3792 loss_rpn_cls:
0.002802 loss_rpn_loc: 0.01511 time: 0.5942 data_time: 0.0039 lr: 0.00025
max_mem: 1614M
[11/23 21:25:37 d2.utils.events]: eta: 0:04:34 iter: 2539
total_loss: 0.7139 loss_cls: 0.1676 loss_box_reg: 0.4596 loss_rpn_cls:
0.002608 loss_rpn_loc: 0.009606 time: 0.5941 data_time: 0.0040 lr: 0.00025
max_mem: 1614M
[11/23 21:25:48 d2.utils.events]: eta: 0:04:23 iter: 2559
total_loss: 0.4148 loss_cls: 0.1304 loss_box_reg: 0.2885 loss_rpn_cls:
0.000901 loss_rpn_loc: 0.006198 time: 0.5940 data_time: 0.0042 lr: 0.00025
max_mem: 1614M
[11/23 21:26:00 d2.utils.events]: eta: 0:04:10 iter: 2579
total_loss: 0.678 loss_cls: 0.1685 loss_box_reg: 0.4431 loss_rpn_cls:
0.002616 loss_rpn_loc: 0.01065 time: 0.5939 data_time: 0.0037 lr: 0.00025
max_mem: 1614M
[11/23 21:26:12 d2.utils.events]: eta: 0:03:59 iter: 2599
total_loss: 0.5446 loss_cls: 0.1647 loss_box_reg: 0.3508 loss_rpn_cls:
0.003069 loss_rpn_loc: 0.01227 time: 0.5939 data_time: 0.0045 lr: 0.00025
max_mem: 1614M
[11/23 21:26:24 d2.utils.events]: eta: 0:03:47 iter: 2619
total_loss: 0.5783 loss_cls: 0.1478 loss_box_reg: 0.4403 loss_rpn_cls:
0.002979 loss_rpn_loc: 0.01102 time: 0.5939 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:26:36 d2.utils.events]: eta: 0:03:35 iter: 2639
total_loss: 0.604 loss_cls: 0.1736 loss_box_reg: 0.4487 loss_rpn_cls:
0.007738 loss_rpn_loc: 0.01177 time: 0.5940 data_time: 0.0042 lr: 0.00025
max_mem: 1614M
[11/23 21:26:48 d2.utils.events]: eta: 0:03:23 iter: 2659
total_loss: 0.584 loss_cls: 0.1811 loss_box_reg: 0.3893 loss_rpn_cls: 0.00611
loss_rpn_loc: 0.01612 time: 0.5942 data_time: 0.0042 lr: 0.00025 max_mem:
1614M
[11/23 21:27:00 d2.utils.events]: eta: 0:03:11 iter: 2679
total_loss: 0.5382 loss_cls: 0.1301 loss_box_reg: 0.3632 loss_rpn_cls:
0.005178 loss_rpn_loc: 0.01367 time: 0.5942 data_time: 0.0035 lr: 0.00025
max_mem: 1614M
[11/23 21:27:12 d2.utils.events]: eta: 0:02:59 iter: 2699
total_loss: 0.5428 loss_cls: 0.1743 loss_box_reg: 0.3264 loss_rpn_cls:
```

```
0.001018 loss_rpn_loc: 0.009098 time: 0.5942 data_time: 0.0036 lr: 0.00025
max_mem: 1614M
[11/23 21:27:24 d2.utils.events]: eta: 0:02:47 iter: 2719
total_loss: 0.5154 loss_cls: 0.126 loss_box_reg: 0.3722 loss_rpn_cls:
0.001753 loss_rpn_loc: 0.005778 time: 0.5943 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:27:36 d2.utils.events]: eta: 0:02:35 iter: 2739
total_loss: 0.4226 loss_cls: 0.1305 loss_box_reg: 0.2794 loss_rpn_cls:
0.001257 loss_rpn_loc: 0.01352 time: 0.5943 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:27:49 d2.utils.events]: eta: 0:02:23 iter: 2759
total_loss: 0.4361 loss_cls: 0.1171 loss_box_reg: 0.3211 loss_rpn_cls:
0.0007616 loss_rpn_loc: 0.009184 time: 0.5945 data_time: 0.0036 lr: 0.00025
max_mem: 1614M
[11/23 21:28:01 d2.utils.events]: eta: 0:02:11 iter: 2779
total_loss: 0.602 loss_cls: 0.1476 loss_box_reg: 0.3747 loss_rpn_cls:
0.001405 loss_rpn_loc: 0.0125 time: 0.5946 data_time: 0.0043 lr: 0.00025
max_mem: 1614M
[11/23 21:28:13 d2.utils.events]: eta: 0:01:59 iter: 2799
total_loss: 0.6144 loss_cls: 0.1908 loss_box_reg: 0.4123 loss_rpn_cls:
0.002605 loss_rpn_loc: 0.01485 time: 0.5947 data_time: 0.0040 lr: 0.00025
max_mem: 1614M
[11/23 21:28:25 d2.utils.events]: eta: 0:01:47 iter: 2819
total_loss: 0.6699 loss_cls: 0.2151 loss_box_reg: 0.3961 loss_rpn_cls:
0.002941 loss_rpn_loc: 0.01692 time: 0.5946 data_time: 0.0038 lr: 0.00025
max_mem: 1614M
[11/23 21:28:37 d2.utils.events]: eta: 0:01:35 iter: 2839
total_loss: 0.5981 loss_cls: 0.1721 loss_box_reg: 0.3432 loss_rpn_cls:
0.001246 loss_rpn_loc: 0.01387 time: 0.5946 data_time: 0.0040 lr: 0.00025
max_mem: 1614M
[11/23 21:28:49 d2.utils.events]: eta: 0:01:23 iter: 2859
total_loss: 0.5318 loss_cls: 0.1486 loss_box_reg: 0.3205 loss_rpn_cls:
0.001405 loss_rpn_loc: 0.01094 time: 0.5946 data_time: 0.0045 lr: 0.00025
max_mem: 1614M
[11/23 21:29:01 d2.utils.events]: eta: 0:01:11 iter: 2879
total_loss: 0.562 loss_cls: 0.1634 loss_box_reg: 0.3292 loss_rpn_cls:
0.002347 loss_rpn_loc: 0.0149 time: 0.5949 data_time: 0.0045 lr: 0.00025
max_mem: 1614M
[11/23 21:29:14 d2.utils.events]: eta: 0:00:59 iter: 2899
total_loss: 0.3361 loss_cls: 0.07654 loss_box_reg: 0.1569 loss_rpn_cls:
0.001805 loss_rpn_loc: 0.009914 time: 0.5950 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:29:26 d2.utils.events]: eta: 0:00:47 iter: 2919
total_loss: 0.5419 loss_cls: 0.1342 loss_box_reg: 0.3973 loss_rpn_cls:
0.001256 loss_rpn_loc: 0.0109 time: 0.5950 data_time: 0.0040 lr: 0.00025
max_mem: 1614M
[11/23 21:29:38 d2.utils.events]: eta: 0:00:35 iter: 2939
total_loss: 0.5038 loss_cls: 0.1193 loss_box_reg: 0.3186 loss_rpn_cls:
```

```

0.002318 loss_rpn_loc: 0.006892 time: 0.5951 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:29:50 d2.utils.events]: eta: 0:00:23 iter: 2959
total_loss: 0.6057 loss_cls: 0.1866 loss_box_reg: 0.3886 loss_rpn_cls:
0.005662 loss_rpn_loc: 0.01582 time: 0.5952 data_time: 0.0038 lr: 0.00025
max_mem: 1614M
[11/23 21:30:02 d2.utils.events]: eta: 0:00:11 iter: 2979
total_loss: 0.5771 loss_cls: 0.1787 loss_box_reg: 0.3725 loss_rpn_cls:
0.004433 loss_rpn_loc: 0.01625 time: 0.5952 data_time: 0.0039 lr: 0.00025
max_mem: 1614M
[11/23 21:30:14 d2.utils.events]: eta: 0:00:00 iter: 2999
total_loss: 0.5324 loss_cls: 0.1596 loss_box_reg: 0.3511 loss_rpn_cls:
0.002201 loss_rpn_loc: 0.01891 time: 0.5952 data_time: 0.0041 lr: 0.00025
max_mem: 1614M
[11/23 21:30:15 d2.engine.hooks]: Overall training speed: 2998
iterations in 0:29:44 (0.5952 s / it)
[11/23 21:30:15 d2.engine.hooks]: Total training time: 0:29:47 (0:00:03
on hooks)

```

### 0.6.1 Load weights onto predictor

```
[12]: cfg_fastrcnn.MODEL.WEIGHTS = os.path.join(cfg_fastrcnn.OUTPUT_DIR, "model_final.  
pth") # path to the model we just trained  
cfg_fastrcnn.MODEL.ROI_HEADS.SCORE_THRESH_TEST = 0.7 # set a custom testing  
threshold  
predictor = DefaultPredictor(cfg_fastrcnn)
```

Save output DIR to Drive

```
[22]: cp -r MyVOCTraining /content/drive/MyDrive/CV/HW6
```

Load tensorboard logs

```
[31]: %load_ext tensorboard  
%tensorboard --logdir MyVOCTraining/
```

The tensorboard extension is already loaded. To reload it, use:

```
%reload_ext tensorboard  
<IPython.core.display.Javascript object>
```

## 0.7 Run Inference on the trained model

```
[ ]: from detectron2.evaluation import PascalVOCDetectionEvaluator,  
    inference_on_dataset  
from detectron2.data import build_detection_test_loader  
evaluator = PascalVOCDetectionEvaluator("voc_2007_val")  
val_loader = build_detection_test_loader(cfg_fastrcnn, "voc_2007_val")
```

```

print(inference_on_dataset(predictor.model, val_loader,
                           evaluator)['bbox']['AP50'])

[11/22 23:01:09 d2.data.dataset_mapper]: [DatasetMapper] Augmentations
used in inference: [ResizeShortestEdge(short_edge_length=(800, 800),
max_size=1333, sample_style='choice')]
[11/22 23:01:09 d2.data.common]: Serializing 2510 elements to byte
tensors and concatenating them all ...
[11/22 23:01:09 d2.data.common]: Serialized dataset takes 1.14 MiB
[11/22 23:01:09 d2.evaluation.evaluator]: Start inference on 2510
batches

/usr/local/lib/python3.7/dist-packages/torch/utils/data/dataloader.py:481:
UserWarning: This DataLoader will create 4 worker processes in total. Our
suggested max number of worker in current system is 2, which is smaller than
what this DataLoader is going to create. Please be aware that excessive worker
creation might get DataLoader running slow or even freeze, lower the worker
number to avoid potential slowness/freeze if necessary.
    cpuset_checked))
/usr/local/lib/python3.7/dist-packages/detectron2/structures/image_list.py:88:
UserWarning: __floordiv__ is deprecated, and its behavior will change in a
future version of pytorch. It currently rounds toward 0 (like the 'trunc'
function NOT 'floor'). This results in incorrect rounding for negative values.
To keep the current behavior, use torch.div(a, b, rounding_mode='trunc'), or for
actual floor division, use torch.div(a, b, rounding_mode='floor').
    max_size = (max_size + (stride - 1)) // stride * stride

[11/22 23:01:13 d2.evaluation.evaluator]: Inference done 11/2510.
Dataloading: 0.0017 s/iter. Inference: 0.3468 s/iter. Eval: 0.0003 s/iter.
Total: 0.3488 s/iter. ETA=0:14:31
[11/22 23:01:18 d2.evaluation.evaluator]: Inference done 26/2510.
Dataloading: 0.0026 s/iter. Inference: 0.3435 s/iter. Eval: 0.0003 s/iter.
Total: 0.3466 s/iter. ETA=0:14:20
[11/22 23:01:24 d2.evaluation.evaluator]: Inference done 42/2510.
Dataloading: 0.0026 s/iter. Inference: 0.3374 s/iter. Eval: 0.0003 s/iter.
Total: 0.3404 s/iter. ETA=0:14:00
[11/22 23:01:29 d2.evaluation.evaluator]: Inference done 58/2510.
Dataloading: 0.0026 s/iter. Inference: 0.3332 s/iter. Eval: 0.0003 s/iter.
Total: 0.3362 s/iter. ETA=0:13:44
[11/22 23:01:34 d2.evaluation.evaluator]: Inference done 74/2510.
Dataloading: 0.0027 s/iter. Inference: 0.3322 s/iter. Eval: 0.0003 s/iter.
Total: 0.3354 s/iter. ETA=0:13:36
[11/22 23:01:39 d2.evaluation.evaluator]: Inference done 89/2510.
Dataloading: 0.0027 s/iter. Inference: 0.3332 s/iter. Eval: 0.0003 s/iter.
Total: 0.3364 s/iter. ETA=0:13:34
[11/22 23:01:44 d2.evaluation.evaluator]: Inference done 104/2510.
Dataloading: 0.0027 s/iter. Inference: 0.3335 s/iter. Eval: 0.0003 s/iter.
Total: 0.3366 s/iter. ETA=0:13:29
[11/22 23:01:49 d2.evaluation.evaluator]: Inference done 119/2510.

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Dataloading: 0.0028 s/iter. Inference: 0.3335 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3368 s/iter. ETA=0:13:25  
[11/22 23:01:55 d2.evaluation.evaluator]: Inference done 134/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3338 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3370 s/iter. ETA=0:13:20  
[11/22 23:02:00 d2.evaluation.evaluator]: Inference done 149/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:13:17  
[11/22 23:02:05 d2.evaluation.evaluator]: Inference done 164/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:13:12  
[11/22 23:02:10 d2.evaluation.evaluator]: Inference done 180/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3338 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3371 s/iter. ETA=0:13:05  
[11/22 23:02:15 d2.evaluation.evaluator]: Inference done 195/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:13:03  
[11/22 23:02:20 d2.evaluation.evaluator]: Inference done 210/2510.  
Dataloading: 0.0029 s/iter. Inference: 0.3346 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3380 s/iter. ETA=0:12:57  
[11/22 23:02:25 d2.evaluation.evaluator]: Inference done 225/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3347 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3381 s/iter. ETA=0:12:52  
[11/22 23:02:30 d2.evaluation.evaluator]: Inference done 240/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3345 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3378 s/iter. ETA=0:12:46  
[11/22 23:02:36 d2.evaluation.evaluator]: Inference done 255/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3346 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3379 s/iter. ETA=0:12:42  
[11/22 23:02:41 d2.evaluation.evaluator]: Inference done 271/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3377 s/iter. ETA=0:12:36  
[11/22 23:02:46 d2.evaluation.evaluator]: Inference done 286/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:12:32  
[11/22 23:02:51 d2.evaluation.evaluator]: Inference done 301/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3348 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:12:26  
[11/22 23:02:57 d2.evaluation.evaluator]: Inference done 317/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3346 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3379 s/iter. ETA=0:12:21  
[11/22 23:03:02 d2.evaluation.evaluator]: Inference done 332/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3348 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:12:16  
[11/22 23:03:07 d2.evaluation.evaluator]: Inference done 347/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3350 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3383 s/iter. ETA=0:12:11  
[11/22 23:03:12 d2.evaluation.evaluator]: Inference done 362/2510.
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Dataloading: 0.0028 s/iter. Inference: 0.3352 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3385 s/iter. ETA=0:12:07  
[11/22 23:03:17 d2.evaluation.evaluator]: Inference done 378/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:12:01  
[11/22 23:03:22 d2.evaluation.evaluator]: Inference done 393/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3383 s/iter. ETA=0:11:56  
[11/22 23:03:27 d2.evaluation.evaluator]: Inference done 408/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3348 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3381 s/iter. ETA=0:11:50  
[11/22 23:03:32 d2.evaluation.evaluator]: Inference done 423/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3348 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3381 s/iter. ETA=0:11:45  
[11/22 23:03:38 d2.evaluation.evaluator]: Inference done 438/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:11:40  
[11/22 23:03:43 d2.evaluation.evaluator]: Inference done 453/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:11:35  
[11/22 23:03:48 d2.evaluation.evaluator]: Inference done 469/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3347 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3381 s/iter. ETA=0:11:29  
[11/22 23:03:53 d2.evaluation.evaluator]: Inference done 484/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3347 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3380 s/iter. ETA=0:11:24  
[11/22 23:03:58 d2.evaluation.evaluator]: Inference done 499/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3348 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3381 s/iter. ETA=0:11:19  
[11/22 23:04:03 d2.evaluation.evaluator]: Inference done 514/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3347 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3380 s/iter. ETA=0:11:14  
[11/22 23:04:08 d2.evaluation.evaluator]: Inference done 529/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3347 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3380 s/iter. ETA=0:11:09  
[11/22 23:04:13 d2.evaluation.evaluator]: Inference done 544/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3349 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3382 s/iter. ETA=0:11:04  
[11/22 23:04:18 d2.evaluation.evaluator]: Inference done 559/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3348 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3381 s/iter. ETA=0:10:59  
[11/22 23:04:23 d2.evaluation.evaluator]: Inference done 574/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3347 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3380 s/iter. ETA=0:10:54  
[11/22 23:04:29 d2.evaluation.evaluator]: Inference done 590/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3345 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3378 s/iter. ETA=0:10:48  
[11/22 23:04:34 d2.evaluation.evaluator]: Inference done 605/2510.

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Dataloading: 0.0028 s/iter. Inference: 0.3345 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3378 s/iter. ETA=0:10:43  
[11/22 23:04:39 d2.evaluation.evaluator]: Inference done 621/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3377 s/iter. ETA=0:10:37  
[11/22 23:04:44 d2.evaluation.evaluator]: Inference done 637/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:10:32  
[11/22 23:04:49 d2.evaluation.evaluator]: Inference done 652/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:10:26  
[11/22 23:04:54 d2.evaluation.evaluator]: Inference done 667/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:10:21  
[11/22 23:05:00 d2.evaluation.evaluator]: Inference done 682/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:10:16  
[11/22 23:05:05 d2.evaluation.evaluator]: Inference done 698/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:10:11  
[11/22 23:05:10 d2.evaluation.evaluator]: Inference done 713/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:10:06  
[11/22 23:05:15 d2.evaluation.evaluator]: Inference done 728/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:10:01  
[11/22 23:05:20 d2.evaluation.evaluator]: Inference done 743/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:56  
[11/22 23:05:25 d2.evaluation.evaluator]: Inference done 758/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:51  
[11/22 23:05:30 d2.evaluation.evaluator]: Inference done 773/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:46  
[11/22 23:05:35 d2.evaluation.evaluator]: Inference done 788/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:41  
[11/22 23:05:40 d2.evaluation.evaluator]: Inference done 803/2510.  
Dataloading: 0.0028 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:09:36  
[11/22 23:05:46 d2.evaluation.evaluator]: Inference done 819/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:09:30  
[11/22 23:05:51 d2.evaluation.evaluator]: Inference done 834/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:09:25  
[11/22 23:05:56 d2.evaluation.evaluator]: Inference done 849/2510.
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Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:20  
[11/22 23:06:01 d2.evaluation.evaluator]: Inference done 864/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:15  
[11/22 23:06:06 d2.evaluation.evaluator]: Inference done 879/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:10  
[11/22 23:06:11 d2.evaluation.evaluator]: Inference done 894/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:05  
[11/22 23:06:16 d2.evaluation.evaluator]: Inference done 909/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:09:00  
[11/22 23:06:22 d2.evaluation.evaluator]: Inference done 925/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:08:54  
[11/22 23:06:27 d2.evaluation.evaluator]: Inference done 940/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:08:49  
[11/22 23:06:32 d2.evaluation.evaluator]: Inference done 955/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:08:44  
[11/22 23:06:37 d2.evaluation.evaluator]: Inference done 971/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:08:39  
[11/22 23:06:42 d2.evaluation.evaluator]: Inference done 986/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:08:34  
[11/22 23:06:47 d2.evaluation.evaluator]: Inference done 1001/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:08:29  
[11/22 23:06:52 d2.evaluation.evaluator]: Inference done 1016/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:08:24  
[11/22 23:06:58 d2.evaluation.evaluator]: Inference done 1032/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:08:18  
[11/22 23:07:03 d2.evaluation.evaluator]: Inference done 1047/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:08:13  
[11/22 23:07:08 d2.evaluation.evaluator]: Inference done 1062/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:08:08  
[11/22 23:07:13 d2.evaluation.evaluator]: Inference done 1078/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:08:02  
[11/22 23:07:18 d2.evaluation.evaluator]: Inference done 1093/2510.
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Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:07:57  
[11/22 23:07:23 d2.evaluation.evaluator]: Inference done 1108/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:07:52  
[11/22 23:07:28 d2.evaluation.evaluator]: Inference done 1124/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:07:47  
[11/22 23:07:33 d2.evaluation.evaluator]: Inference done 1139/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:07:42  
[11/22 23:07:39 d2.evaluation.evaluator]: Inference done 1154/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:07:37  
[11/22 23:07:44 d2.evaluation.evaluator]: Inference done 1169/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:07:32  
[11/22 23:07:49 d2.evaluation.evaluator]: Inference done 1184/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:07:27  
[11/22 23:07:54 d2.evaluation.evaluator]: Inference done 1199/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:07:22  
[11/22 23:07:59 d2.evaluation.evaluator]: Inference done 1214/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:07:17  
[11/22 23:08:04 d2.evaluation.evaluator]: Inference done 1229/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:07:12  
[11/22 23:08:09 d2.evaluation.evaluator]: Inference done 1244/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:07:07  
[11/22 23:08:14 d2.evaluation.evaluator]: Inference done 1259/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:07:02  
[11/22 23:08:19 d2.evaluation.evaluator]: Inference done 1274/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:57  
[11/22 23:08:24 d2.evaluation.evaluator]: Inference done 1289/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:52  
[11/22 23:08:29 d2.evaluation.evaluator]: Inference done 1304/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:46  
[11/22 23:08:34 d2.evaluation.evaluator]: Inference done 1319/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:06:41  
[11/22 23:08:40 d2.evaluation.evaluator]: Inference done 1334/2510.
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Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:36  
[11/22 23:08:45 d2.evaluation.evaluator]: Inference done 1349/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:31  
[11/22 23:08:50 d2.evaluation.evaluator]: Inference done 1364/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:26  
[11/22 23:08:55 d2.evaluation.evaluator]: Inference done 1379/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:06:21  
[11/22 23:09:00 d2.evaluation.evaluator]: Inference done 1395/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:06:16  
[11/22 23:09:05 d2.evaluation.evaluator]: Inference done 1410/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:06:11  
[11/22 23:09:10 d2.evaluation.evaluator]: Inference done 1425/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:06:06  
[11/22 23:09:15 d2.evaluation.evaluator]: Inference done 1440/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:06:01  
[11/22 23:09:20 d2.evaluation.evaluator]: Inference done 1455/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:56  
[11/22 23:09:26 d2.evaluation.evaluator]: Inference done 1470/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:50  
[11/22 23:09:31 d2.evaluation.evaluator]: Inference done 1485/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:45  
[11/22 23:09:36 d2.evaluation.evaluator]: Inference done 1501/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:40  
[11/22 23:09:41 d2.evaluation.evaluator]: Inference done 1516/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:35  
[11/22 23:09:46 d2.evaluation.evaluator]: Inference done 1531/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:30  
[11/22 23:09:51 d2.evaluation.evaluator]: Inference done 1546/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:25  
[11/22 23:09:57 d2.evaluation.evaluator]: Inference done 1562/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:05:19  
[11/22 23:10:02 d2.evaluation.evaluator]: Inference done 1577/2510.
```

```
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:05:14  
[11/22 23:10:07 d2.evaluation.evaluator]: Inference done 1592/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:05:09  
[11/22 23:10:12 d2.evaluation.evaluator]: Inference done 1607/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:05:04  
[11/22 23:10:17 d2.evaluation.evaluator]: Inference done 1622/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:04:59  
[11/22 23:10:22 d2.evaluation.evaluator]: Inference done 1637/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:04:54  
[11/22 23:10:27 d2.evaluation.evaluator]: Inference done 1652/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:04:49  
[11/22 23:10:32 d2.evaluation.evaluator]: Inference done 1667/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:04:44  
[11/22 23:10:37 d2.evaluation.evaluator]: Inference done 1683/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:04:39  
[11/22 23:10:43 d2.evaluation.evaluator]: Inference done 1699/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:04:33  
[11/22 23:10:48 d2.evaluation.evaluator]: Inference done 1715/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:04:28  
[11/22 23:10:53 d2.evaluation.evaluator]: Inference done 1730/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:04:23  
[11/22 23:10:58 d2.evaluation.evaluator]: Inference done 1745/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:04:18  
[11/22 23:11:03 d2.evaluation.evaluator]: Inference done 1760/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:04:13  
[11/22 23:11:08 d2.evaluation.evaluator]: Inference done 1775/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:04:08  
[11/22 23:11:13 d2.evaluation.evaluator]: Inference done 1790/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:04:02  
[11/22 23:11:19 d2.evaluation.evaluator]: Inference done 1805/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:57  
[11/22 23:11:24 d2.evaluation.evaluator]: Inference done 1820/2510.
```

```
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:52  
[11/22 23:11:29 d2.evaluation.evaluator]: Inference done 1835/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:47  
[11/22 23:11:34 d2.evaluation.evaluator]: Inference done 1850/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:42  
[11/22 23:11:39 d2.evaluation.evaluator]: Inference done 1865/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:37  
[11/22 23:11:44 d2.evaluation.evaluator]: Inference done 1880/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:32  
[11/22 23:11:49 d2.evaluation.evaluator]: Inference done 1895/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:03:27  
[11/22 23:11:54 d2.evaluation.evaluator]: Inference done 1911/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:22  
[11/22 23:11:59 d2.evaluation.evaluator]: Inference done 1926/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:17  
[11/22 23:12:05 d2.evaluation.evaluator]: Inference done 1941/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:03:12  
[11/22 23:12:10 d2.evaluation.evaluator]: Inference done 1956/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:03:07  
[11/22 23:12:15 d2.evaluation.evaluator]: Inference done 1971/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:03:01  
[11/22 23:12:20 d2.evaluation.evaluator]: Inference done 1986/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3344 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:02:56  
[11/22 23:12:25 d2.evaluation.evaluator]: Inference done 2002/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:51  
[11/22 23:12:30 d2.evaluation.evaluator]: Inference done 2017/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:46  
[11/22 23:12:35 d2.evaluation.evaluator]: Inference done 2033/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:02:40  
[11/22 23:12:41 d2.evaluation.evaluator]: Inference done 2048/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:35  
[11/22 23:12:46 d2.evaluation.evaluator]: Inference done 2063/2510.
```

```
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:30  
[11/22 23:12:51 d2.evaluation.evaluator]: Inference done 2078/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:25  
[11/22 23:12:56 d2.evaluation.evaluator]: Inference done 2094/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:20  
[11/22 23:13:01 d2.evaluation.evaluator]: Inference done 2109/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:15  
[11/22 23:13:07 d2.evaluation.evaluator]: Inference done 2125/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:09  
[11/22 23:13:12 d2.evaluation.evaluator]: Inference done 2140/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:02:04  
[11/22 23:13:17 d2.evaluation.evaluator]: Inference done 2155/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:59  
[11/22 23:13:22 d2.evaluation.evaluator]: Inference done 2170/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:54  
[11/22 23:13:27 d2.evaluation.evaluator]: Inference done 2185/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:49  
[11/22 23:13:32 d2.evaluation.evaluator]: Inference done 2200/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:01:44  
[11/22 23:13:37 d2.evaluation.evaluator]: Inference done 2215/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3376 s/iter. ETA=0:01:39  
[11/22 23:13:42 d2.evaluation.evaluator]: Inference done 2231/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:34  
[11/22 23:13:47 d2.evaluation.evaluator]: Inference done 2246/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:29  
[11/22 23:13:53 d2.evaluation.evaluator]: Inference done 2262/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3343 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:23  
[11/22 23:13:58 d2.evaluation.evaluator]: Inference done 2277/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:18  
[11/22 23:14:03 d2.evaluation.evaluator]: Inference done 2292/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3375 s/iter. ETA=0:01:13  
[11/22 23:14:08 d2.evaluation.evaluator]: Inference done 2307/2510.
```

```
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:01:08  
[11/22 23:14:13 d2.evaluation.evaluator]: Inference done 2322/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:01:03  
[11/22 23:14:18 d2.evaluation.evaluator]: Inference done 2337/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:00:58  
[11/22 23:14:23 d2.evaluation.evaluator]: Inference done 2353/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:00:52  
[11/22 23:14:28 d2.evaluation.evaluator]: Inference done 2368/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3342 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:00:47  
[11/22 23:14:34 d2.evaluation.evaluator]: Inference done 2384/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:00:42  
[11/22 23:14:39 d2.evaluation.evaluator]: Inference done 2399/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:00:37  
[11/22 23:14:44 d2.evaluation.evaluator]: Inference done 2414/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3374 s/iter. ETA=0:00:32  
[11/22 23:14:49 d2.evaluation.evaluator]: Inference done 2430/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:00:26  
[11/22 23:14:54 d2.evaluation.evaluator]: Inference done 2446/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3341 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:00:21  
[11/22 23:15:00 d2.evaluation.evaluator]: Inference done 2462/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:00:16  
[11/22 23:15:05 d2.evaluation.evaluator]: Inference done 2477/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:00:11  
[11/22 23:15:10 d2.evaluation.evaluator]: Inference done 2492/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3373 s/iter. ETA=0:00:06  
[11/22 23:15:15 d2.evaluation.evaluator]: Inference done 2507/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3340 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3372 s/iter. ETA=0:00:01  
[11/22 23:15:16 d2.evaluation.evaluator]: Total inference time:  
0:14:04.868870 (0.337273 s / iter per device, on 1 devices)  
[11/22 23:15:16 d2.evaluation.evaluator]: Total inference pure compute  
time: 0:13:56 (0.333999 s / iter per device, on 1 devices)  
[11/22 23:15:16 d2.evaluation.pascal_voc_evaluation]: Evaluating  
voc_2007_val using 2007 metric. Note that results do not use the official Matlab  
API.
```

67.82648480352114

## 0.8 Visualize Predictions

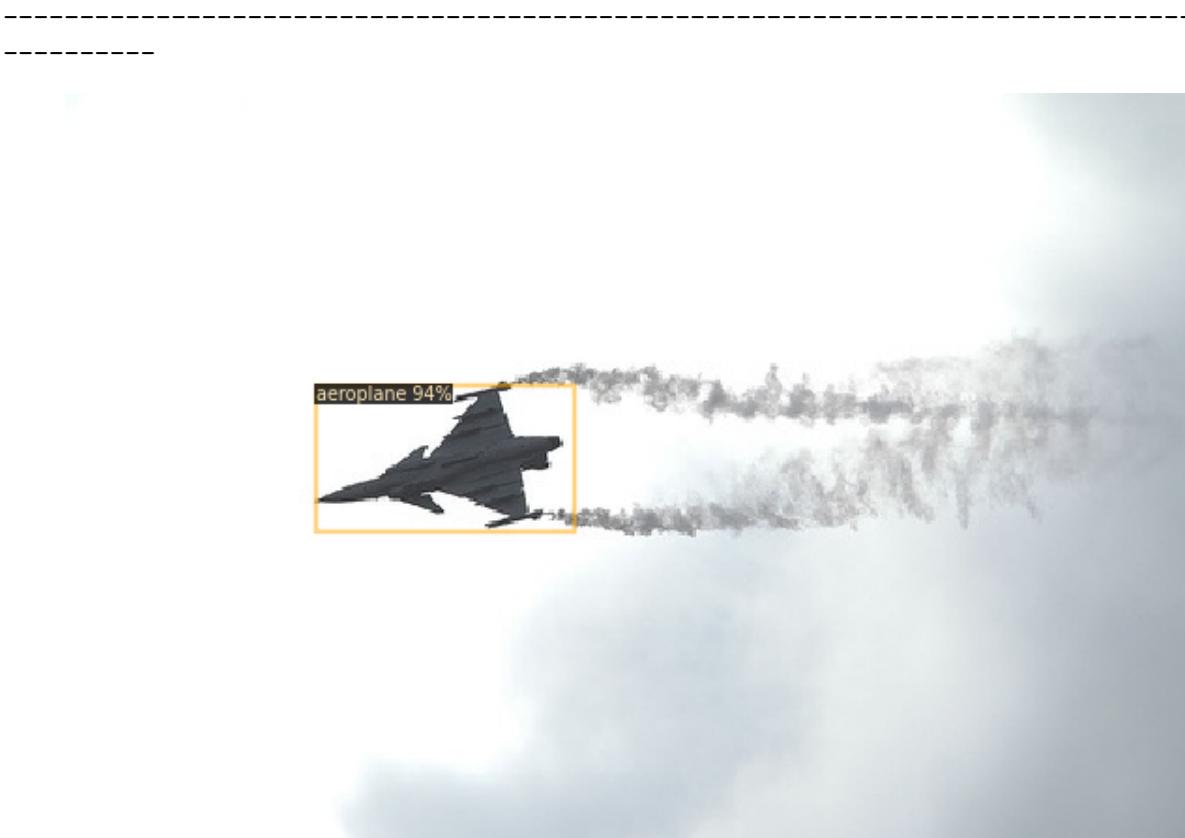
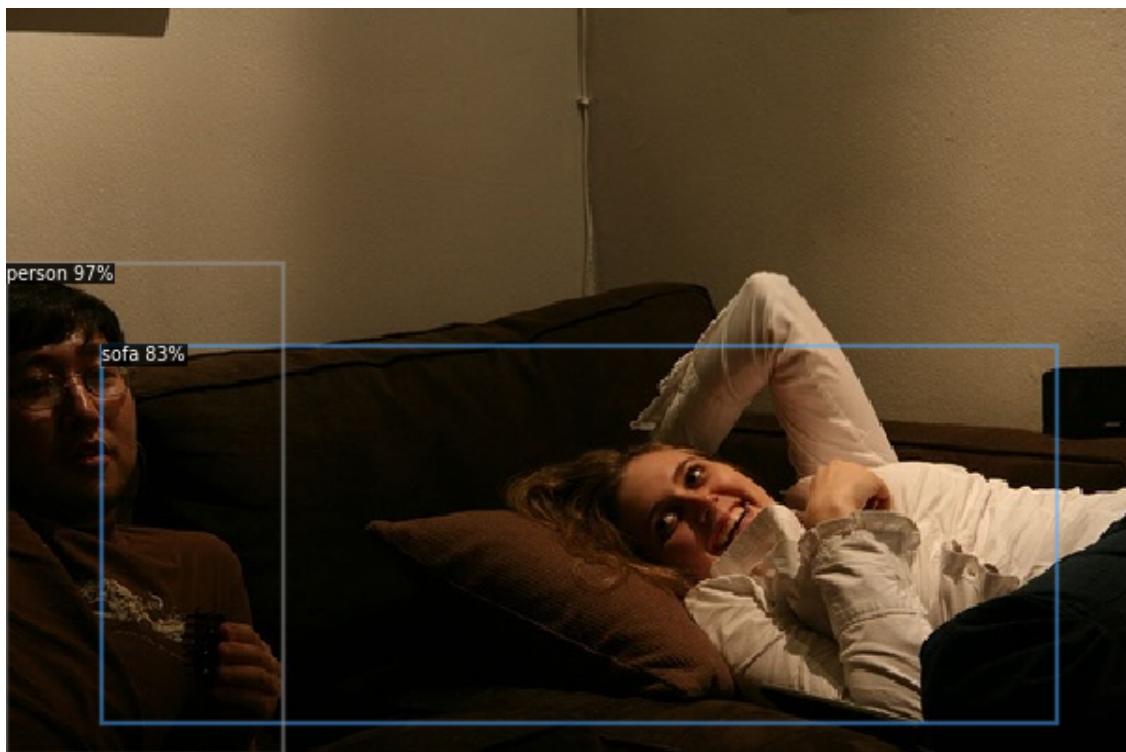
[15]: # We can use `Visualizer` to draw the predictions on the image.

```
cfg_fastrcnn.MODEL.WEIGHTS = os.path.join(cfg_fastrcnn.OUTPUT_DIR, "model_final.  
→pth") # path to the model we just trained  
cfg_fastrcnn.MODEL.ROI_HEADS.SCORE_THRESH_TEST = 0.7 # set a custom testing  
→threshold  
predictor = DefaultPredictor(cfg_fastrcnn)  
  
valimages_metadata_dict = MetadataCatalog.get("voc_2007_val")  
valimages_dataset_dict = DatasetCatalog.get("voc_2007_val")  
  
for fname in random.sample(valimages_dataset_dict,5):  
    print("-"*90)  
    #path = os.path.join(dirpath, )  
    im = cv2.imread(fname['file_name'])  
    outputs = predictor(im) # format is documented at https://detectron2.  
→readthedocs.io/tutorials/models.html#model-output-format  
  
    v = Visualizer(im[:, :, ::-1], valimages_metadata_dict, scale=1.2)  
    out = v.draw_instance_predictions(outputs["instances"].to("cpu"))  
    cv2.imshow(out.get_image()[:, :, ::-1])
```

---

---

```
/usr/local/lib/python3.7/dist-packages/detectron2/structures/image_list.py:88:  
UserWarning: __floordiv__ is deprecated, and its behavior will change in a  
future version of pytorch. It currently rounds toward 0 (like the 'trunc'  
function NOT 'floor'). This results in incorrect rounding for negative values.  
To keep the current behavior, use torch.div(a, b, rounding_mode='trunc'), or for  
actual floor division, use torch.div(a, b, rounding_mode='floor').  
    max_size = (max_size + (stride - 1)) // stride * stride
```









## 0.9 Setting Configurations for Retina Net

```
[16]: cfg_retinanet = get_cfg()
cfg_retinanet.merge_from_file(model_zoo.get_config_file("COCO-Detection/
    ↪retinanet_R_50_FPN_3x.yaml"))
cfg_retinanet.OUTPUT_DIR = 'MyVOCTraining2'
cfg_retinanet.DATASETS.TRAIN = ("voc_2007_train",)
cfg_retinanet.DATASETS.TEST = ()
cfg_retinanet.DATALOADER.NUM_WORKERS = 2
cfg_retinanet.MODEL.WEIGHTS = model_zoo.get_checkpoint_url("COCO-Detection/
    ↪retinanet_R_50_FPN_3x.yaml") # Let training initialize from model zoo
cfg_retinanet.SOLVER.IMS_PER_BATCH = 1
cfg_retinanet.SOLVER.BASE_LR = 0.00025 # pick a good LR
cfg_retinanet.SOLVER.MAX_ITER = 3000
cfg_retinanet.MODEL.RETINANET.BATCH_SIZE_PER_IMAGE = 128
cfg_retinanet.MODEL.RETINANET.NUM_CLASSES = 20
```

```
Loading config /usr/local/lib/python3.7/dist-
packages/detectron2/model_zoo/configs/COCO-Detection/..../Base-RetinaNet.yaml with
yaml.unsafe_load. Your machine may be at risk if the file contains malicious
content.
```

## 0.10 Train the model

```
[17]: os.makedirs(cfg_retinanet.OUTPUT_DIR, exist_ok=True)
trainer = DefaultTrainer(cfg_retinanet)
trainer.resume_or_load(resume=False)
trainer.train()
```

```
[11/23 21:46:42 d2.engine.defaults]: Model:
RetinaNet(
    (backbone): FPN(
        (fpn_lateral3): Conv2d(512, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output3): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (fpn_lateral4): Conv2d(1024, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output4): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (fpn_lateral5): Conv2d(2048, 256, kernel_size=(1, 1), stride=(1, 1))
        (fpn_output5): Conv2d(256, 256, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1))
        (top_block): LastLevelP6P7(
            (p6): Conv2d(2048, 256, kernel_size=(3, 3), stride=(2, 2),
padding=(1, 1))
            (p7): Conv2d(256, 256, kernel_size=(3, 3), stride=(2, 2),
padding=(1, 1))
        )
    (bottom_up): ResNet(
        (stem): BasicStem(
            (conv1): Conv2d(
                3, 64, kernel_size=(7, 7), stride=(2, 2), padding=(3, 3),
bias=False
                (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
            )
        )
        (res2): Sequential(
            (0): BottleneckBlock(
                (shortcut): Conv2d(
                    64, 256, kernel_size=(1, 1), stride=(1, 1),
bias=False
                    (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
                )
            )
            (conv1): Conv2d(
                64, 64, kernel_size=(1, 1), stride=(1, 1),
bias=False
                (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
            )
            (conv2): Conv2d(
                64, 64, kernel_size=(3, 3), stride=(1, 1),
padding=(1, 1),
bias=False
                (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
            )
            (conv3): Conv2d(
                64, 256, kernel_size=(1, 1), stride=(1, 1),
bias=False
                (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
            )
        )
    )
)
```

```

        )
    )
(1): BottleneckBlock(
    (conv1): Conv2d(
        256, 64, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
    )
    (conv2): Conv2d(
        64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
    )
    (conv3): Conv2d(
        64, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
)
(2): BottleneckBlock(
    (conv1): Conv2d(
        256, 64, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
    )
    (conv2): Conv2d(
        64, 64, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=64, eps=1e-05)
    )
    (conv3): Conv2d(
        64, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
)
)
(res3): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            256, 512, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv1): Conv2d(
            256, 128, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
        )
        (conv2): Conv2d(
            128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
        )
    )
)

```

```

(conv3): Conv2d(
    128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
)
)
(1): BottleneckBlock(
    (conv1): Conv2d(
        512, 128, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv2): Conv2d(
        128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv3): Conv2d(
        128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
)
(2): BottleneckBlock(
    (conv1): Conv2d(
        512, 128, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv2): Conv2d(
        128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv3): Conv2d(
        128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
)
(3): BottleneckBlock(
    (conv1): Conv2d(
        512, 128, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv2): Conv2d(
        128, 128, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=128, eps=1e-05)
    )
    (conv3): Conv2d(
        128, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
    )
)

```

```

        )
    )
)
(res4): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            512, 1024, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
        )
        (conv1): Conv2d(
            512, 256, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv2): Conv2d(
            256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv3): Conv2d(
            256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
        )
    )
    (1): BottleneckBlock(
        (conv1): Conv2d(
            1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv2): Conv2d(
            256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv3): Conv2d(
            256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
        )
    )
    (2): BottleneckBlock(
        (conv1): Conv2d(
            1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
        (conv2): Conv2d(
            256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
        )
    )
)

```

```

(conv3): Conv2d(
    256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
    (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
)
)
(3): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)
(4): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)
(5): BottleneckBlock(
    (conv1): Conv2d(
        1024, 256, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv2): Conv2d(
        256, 256, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
        (norm): FrozenBatchNorm2d(num_features=256, eps=1e-05)
    )
    (conv3): Conv2d(
        256, 1024, kernel_size=(1, 1), stride=(1, 1), bias=False
        (norm): FrozenBatchNorm2d(num_features=1024, eps=1e-05)
    )
)

```

```

        )
    )
)
(res5): Sequential(
    (0): BottleneckBlock(
        (shortcut): Conv2d(
            1024, 2048, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
        )
        (conv1): Conv2d(
            1024, 512, kernel_size=(1, 1), stride=(2, 2), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv2): Conv2d(
            512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv3): Conv2d(
            512, 2048, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
        )
    )
    (1): BottleneckBlock(
        (conv1): Conv2d(
            2048, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv2): Conv2d(
            512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv3): Conv2d(
            512, 2048, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=2048, eps=1e-05)
        )
    )
    (2): BottleneckBlock(
        (conv1): Conv2d(
            2048, 512, kernel_size=(1, 1), stride=(1, 1), bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
        (conv2): Conv2d(
            512, 512, kernel_size=(3, 3), stride=(1, 1), padding=(1, 1),
bias=False
            (norm): FrozenBatchNorm2d(num_features=512, eps=1e-05)
        )
    )
)

```



contains values larger than SOLVER.MAX\_ITER. These values will be ignored.

```
model_final_5bd44e.pkl: 152MB [00:14, 10.2MB/s]
Skip loading parameter 'head.cls_score.weight' to the model due to incompatible
shapes: (720, 256, 3, 3) in the checkpoint but (180, 256, 3, 3) in the model!
You might want to double check if this is expected.
Skip loading parameter 'head.cls_score.bias' to the model due to incompatible
shapes: (720,) in the checkpoint but (180,) in the model! You might want to
double check if this is expected.
Some model parameters or buffers are not found in the checkpoint:
head.cls_score.{bias, weight}
```

The checkpoint state\_dict contains keys that are not used by the model:

```
pixel_mean
pixel_std
```

```
[11/23 21:46:58 d2.engine.train_loop]: Starting training from iteration
0

/usr/local/lib/python3.7/dist-packages/detectron2/structures/image_list.py:88:
UserWarning: __floordiv__ is deprecated, and its behavior will change in a
future version of pytorch. It currently rounds toward 0 (like the 'trunc'
function NOT 'floor'). This results in incorrect rounding for negative values.
To keep the current behavior, use torch.div(a, b, rounding_mode='trunc'), or for
actual floor division, use torch.div(a, b, rounding_mode='floor').
    max_size = (max_size + (stride - 1)) // stride * stride

[11/23 21:47:26 d2.utils.events]: eta: 1:11:31 iter: 19 total_loss:
0.925 loss_cls: 0.7669 loss_box_reg: 0.1202 time: 1.4298 data_time: 0.0123
lr: 4.9953e-06 max_mem: 2672M
[11/23 21:47:42 d2.utils.events]: eta: 1:03:48 iter: 39 total_loss:
1.362 loss_cls: 1.167 loss_box_reg: 0.2126 time: 1.0966 data_time: 0.0043
lr: 9.9902e-06 max_mem: 2711M
[11/23 21:47:56 d2.utils.events]: eta: 0:38:00 iter: 59 total_loss:
0.9882 loss_cls: 0.825 loss_box_reg: 0.1461 time: 0.9603 data_time: 0.0042
lr: 1.4985e-05 max_mem: 2711M
[11/23 21:48:10 d2.utils.events]: eta: 0:36:49 iter: 79 total_loss:
0.8348 loss_cls: 0.7828 loss_box_reg: 0.07275 time: 0.8889 data_time: 0.0041
lr: 1.998e-05 max_mem: 2711M
[11/23 21:48:23 d2.utils.events]: eta: 0:36:02 iter: 99 total_loss:
0.9806 loss_cls: 0.7895 loss_box_reg: 0.1414 time: 0.8447 data_time: 0.0039
lr: 2.4975e-05 max_mem: 2711M
[11/23 21:48:37 d2.utils.events]: eta: 0:34:52 iter: 119 total_loss:
0.8638 loss_cls: 0.7786 loss_box_reg: 0.1243 time: 0.8157 data_time: 0.0044
lr: 2.997e-05 max_mem: 2711M
[11/23 21:48:50 d2.utils.events]: eta: 0:34:24 iter: 139 total_loss:
1.012 loss_cls: 0.9213 loss_box_reg: 0.122 time: 0.7986 data_time: 0.0042
lr: 3.4965e-05 max_mem: 2711M
[11/23 21:49:04 d2.utils.events]: eta: 0:34:01 iter: 159 total_loss:
0.8995 loss_cls: 0.7654 loss_box_reg: 0.1557 time: 0.7836 data_time: 0.0038
lr: 3.996e-05 max_mem: 2711M
```

```
[11/23 21:49:18 d2.utils.events]: eta: 0:33:39 iter: 179 total_loss:  
1.208 loss_cls: 1.044 loss_box_reg: 0.1662 time: 0.7718 data_time: 0.0039  
lr: 4.4955e-05 max_mem: 2711M  
[11/23 21:49:32 d2.utils.events]: eta: 0:33:29 iter: 199 total_loss:  
0.9418 loss_cls: 0.7015 loss_box_reg: 0.1339 time: 0.7660 data_time: 0.0039  
lr: 4.995e-05 max_mem: 2711M  
[11/23 21:49:46 d2.utils.events]: eta: 0:33:14 iter: 219 total_loss:  
0.9609 loss_cls: 0.7606 loss_box_reg: 0.1507 time: 0.7612 data_time: 0.0040  
lr: 5.4945e-05 max_mem: 2711M  
[11/23 21:50:00 d2.utils.events]: eta: 0:33:01 iter: 239 total_loss:  
0.6907 loss_cls: 0.5828 loss_box_reg: 0.09108 time: 0.7559 data_time: 0.0037  
lr: 5.994e-05 max_mem: 2711M  
[11/23 21:50:14 d2.utils.events]: eta: 0:32:47 iter: 259 total_loss:  
0.9259 loss_cls: 0.8147 loss_box_reg: 0.1352 time: 0.7512 data_time: 0.0039  
lr: 6.4935e-05 max_mem: 2711M  
[11/23 21:50:28 d2.utils.events]: eta: 0:32:36 iter: 279 total_loss:  
1.116 loss_cls: 0.9088 loss_box_reg: 0.2165 time: 0.7485 data_time: 0.0043  
lr: 6.993e-05 max_mem: 2711M  
[11/23 21:50:42 d2.utils.events]: eta: 0:32:18 iter: 299 total_loss:  
0.9302 loss_cls: 0.7611 loss_box_reg: 0.1207 time: 0.7440 data_time: 0.0049  
lr: 7.4925e-05 max_mem: 2711M  
[11/23 21:50:57 d2.utils.events]: eta: 0:32:06 iter: 319 total_loss:  
0.5902 loss_cls: 0.4885 loss_box_reg: 0.09586 time: 0.7428 data_time: 0.0046  
lr: 7.992e-05 max_mem: 2711M  
[11/23 21:51:10 d2.utils.events]: eta: 0:31:48 iter: 339 total_loss:  
0.7187 loss_cls: 0.6345 loss_box_reg: 0.114 time: 0.7392 data_time: 0.0043  
lr: 8.4915e-05 max_mem: 2711M  
[11/23 21:51:24 d2.utils.events]: eta: 0:31:28 iter: 359 total_loss:  
0.6632 loss_cls: 0.6024 loss_box_reg: 0.1508 time: 0.7362 data_time: 0.0042  
lr: 8.991e-05 max_mem: 2711M  
[11/23 21:51:38 d2.utils.events]: eta: 0:31:14 iter: 379 total_loss:  
0.7531 loss_cls: 0.5911 loss_box_reg: 0.1314 time: 0.7343 data_time: 0.0038  
lr: 9.4905e-05 max_mem: 2711M  
[11/23 21:51:52 d2.utils.events]: eta: 0:31:04 iter: 399 total_loss:  
0.7524 loss_cls: 0.6676 loss_box_reg: 0.08479 time: 0.7320 data_time: 0.0039  
lr: 9.99e-05 max_mem: 2711M  
[11/23 21:52:05 d2.utils.events]: eta: 0:30:42 iter: 419 total_loss:  
0.4574 loss_cls: 0.4135 loss_box_reg: 0.03788 time: 0.7291 data_time: 0.0040  
lr: 0.0001049 max_mem: 2711M  
[11/23 21:52:19 d2.utils.events]: eta: 0:30:23 iter: 439 total_loss:  
0.6656 loss_cls: 0.5508 loss_box_reg: 0.1469 time: 0.7268 data_time: 0.0040  
lr: 0.00010989 max_mem: 2711M  
[11/23 21:52:32 d2.utils.events]: eta: 0:30:06 iter: 459 total_loss:  
0.8114 loss_cls: 0.6636 loss_box_reg: 0.1684 time: 0.7238 data_time: 0.0036  
lr: 0.00011489 max_mem: 2711M  
[11/23 21:52:46 d2.utils.events]: eta: 0:29:49 iter: 479 total_loss:  
0.7065 loss_cls: 0.5582 loss_box_reg: 0.116 time: 0.7225 data_time: 0.0042  
lr: 0.00011988 max_mem: 2711M
```

```
[11/23 21:53:00 d2.utils.events]: eta: 0:29:37 iter: 499 total_loss:  
0.455 loss_cls: 0.4161 loss_box_reg: 0.07056 time: 0.7217 data_time: 0.0042  
lr: 0.00012488 max_mem: 2711M  
[11/23 21:53:14 d2.utils.events]: eta: 0:29:17 iter: 519 total_loss:  
0.5889 loss_cls: 0.4659 loss_box_reg: 0.102 time: 0.7204 data_time: 0.0038  
lr: 0.00012987 max_mem: 2711M  
[11/23 21:53:28 d2.utils.events]: eta: 0:29:06 iter: 539 total_loss:  
0.4808 loss_cls: 0.3946 loss_box_reg: 0.06382 time: 0.7195 data_time: 0.0044  
lr: 0.00013487 max_mem: 2711M  
[11/23 21:53:41 d2.utils.events]: eta: 0:28:47 iter: 559 total_loss:  
0.6831 loss_cls: 0.5251 loss_box_reg: 0.1137 time: 0.7184 data_time: 0.0040  
lr: 0.00013986 max_mem: 2711M  
[11/23 21:53:55 d2.utils.events]: eta: 0:28:33 iter: 579 total_loss:  
0.4812 loss_cls: 0.3298 loss_box_reg: 0.1153 time: 0.7174 data_time: 0.0041  
lr: 0.00014486 max_mem: 2711M  
[11/23 21:54:09 d2.utils.events]: eta: 0:28:17 iter: 599 total_loss:  
0.6686 loss_cls: 0.5169 loss_box_reg: 0.1727 time: 0.7162 data_time: 0.0041  
lr: 0.00014985 max_mem: 2711M  
[11/23 21:54:23 d2.utils.events]: eta: 0:28:01 iter: 619 total_loss:  
0.385 loss_cls: 0.3048 loss_box_reg: 0.1028 time: 0.7153 data_time: 0.0043  
lr: 0.00015485 max_mem: 2711M  
[11/23 21:54:37 d2.utils.events]: eta: 0:27:47 iter: 639 total_loss:  
0.4552 loss_cls: 0.3597 loss_box_reg: 0.1107 time: 0.7151 data_time: 0.0047  
lr: 0.00015984 max_mem: 2711M  
[11/23 21:54:51 d2.utils.events]: eta: 0:27:43 iter: 659 total_loss:  
0.4533 loss_cls: 0.3445 loss_box_reg: 0.09343 time: 0.7155 data_time: 0.0037  
lr: 0.00016484 max_mem: 2711M  
[11/23 21:55:05 d2.utils.events]: eta: 0:27:29 iter: 679 total_loss:  
0.4875 loss_cls: 0.3144 loss_box_reg: 0.1127 time: 0.7150 data_time: 0.0036  
lr: 0.00016983 max_mem: 2711M  
[11/23 21:55:19 d2.utils.events]: eta: 0:27:15 iter: 699 total_loss:  
0.5156 loss_cls: 0.3815 loss_box_reg: 0.148 time: 0.7142 data_time: 0.0038  
lr: 0.00017483 max_mem: 2711M  
[11/23 21:55:32 d2.utils.events]: eta: 0:26:55 iter: 719 total_loss:  
0.5036 loss_cls: 0.3592 loss_box_reg: 0.1643 time: 0.7127 data_time: 0.0038  
lr: 0.00017982 max_mem: 2711M  
[11/23 21:55:47 d2.utils.events]: eta: 0:26:46 iter: 739 total_loss:  
0.7266 loss_cls: 0.5449 loss_box_reg: 0.1737 time: 0.7128 data_time: 0.0041  
lr: 0.00018482 max_mem: 2711M  
[11/23 21:56:00 d2.utils.events]: eta: 0:26:31 iter: 759 total_loss:  
0.4572 loss_cls: 0.3073 loss_box_reg: 0.144 time: 0.7119 data_time: 0.0040  
lr: 0.00018981 max_mem: 2711M  
[11/23 21:56:14 d2.utils.events]: eta: 0:26:12 iter: 779 total_loss:  
0.2959 loss_cls: 0.2092 loss_box_reg: 0.1196 time: 0.7108 data_time: 0.0045  
lr: 0.00019481 max_mem: 2711M  
[11/23 21:56:27 d2.utils.events]: eta: 0:25:57 iter: 799 total_loss:  
0.417 loss_cls: 0.2624 loss_box_reg: 0.1247 time: 0.7098 data_time: 0.0038  
lr: 0.0001998 max_mem: 2711M
```

```
[11/23 21:56:41 d2.utils.events]: eta: 0:25:44 iter: 819 total_loss:  
0.3775 loss_cls: 0.2667 loss_box_reg: 0.1524 time: 0.7096 data_time: 0.0039  
lr: 0.0002048 max_mem: 2711M  
[11/23 21:56:55 d2.utils.events]: eta: 0:25:30 iter: 839 total_loss:  
0.5049 loss_cls: 0.3341 loss_box_reg: 0.1862 time: 0.7095 data_time: 0.0036  
lr: 0.00020979 max_mem: 2711M  
[11/23 21:57:09 d2.utils.events]: eta: 0:25:15 iter: 859 total_loss:  
0.8013 loss_cls: 0.4086 loss_box_reg: 0.2995 time: 0.7087 data_time: 0.0043  
lr: 0.00021479 max_mem: 2711M  
[11/23 21:57:23 d2.utils.events]: eta: 0:25:02 iter: 879 total_loss:  
0.5936 loss_cls: 0.3373 loss_box_reg: 0.2426 time: 0.7091 data_time: 0.0041  
lr: 0.00021978 max_mem: 2711M  
[11/23 21:57:38 d2.utils.events]: eta: 0:24:48 iter: 899 total_loss:  
0.4711 loss_cls: 0.3042 loss_box_reg: 0.1802 time: 0.7092 data_time: 0.0044  
lr: 0.00022478 max_mem: 2728M  
[11/23 21:57:51 d2.utils.events]: eta: 0:24:34 iter: 919 total_loss:  
0.4582 loss_cls: 0.3217 loss_box_reg: 0.1669 time: 0.7088 data_time: 0.0038  
lr: 0.00022977 max_mem: 2728M  
[11/23 21:58:06 d2.utils.events]: eta: 0:24:23 iter: 939 total_loss:  
0.474 loss_cls: 0.2823 loss_box_reg: 0.1599 time: 0.7093 data_time: 0.0044  
lr: 0.00023477 max_mem: 2728M  
[11/23 21:58:20 d2.utils.events]: eta: 0:24:07 iter: 959 total_loss:  
0.4124 loss_cls: 0.2637 loss_box_reg: 0.1143 time: 0.7090 data_time: 0.0048  
lr: 0.00023976 max_mem: 2728M  
[11/23 21:58:33 d2.utils.events]: eta: 0:23:50 iter: 979 total_loss:  
0.3437 loss_cls: 0.2246 loss_box_reg: 0.1144 time: 0.7079 data_time: 0.0036  
lr: 0.00024476 max_mem: 2728M  
[11/23 21:58:47 d2.utils.events]: eta: 0:23:36 iter: 999 total_loss:  
0.3193 loss_cls: 0.2447 loss_box_reg: 0.1419 time: 0.7076 data_time: 0.0044  
lr: 0.00024975 max_mem: 2728M  
[11/23 21:59:01 d2.utils.events]: eta: 0:23:18 iter: 1019  
total_loss: 0.3162 loss_cls: 0.2101 loss_box_reg: 0.1251 time: 0.7076  
data_time: 0.0041 lr: 0.00025 max_mem: 2728M  
[11/23 21:59:15 d2.utils.events]: eta: 0:23:03 iter: 1039  
total_loss: 0.275 loss_cls: 0.1811 loss_box_reg: 0.09387 time: 0.7075  
data_time: 0.0043 lr: 0.00025 max_mem: 2728M  
[11/23 21:59:29 d2.utils.events]: eta: 0:22:48 iter: 1059  
total_loss: 0.2484 loss_cls: 0.1505 loss_box_reg: 0.1007 time: 0.7072  
data_time: 0.0044 lr: 0.00025 max_mem: 2728M  
[11/23 21:59:42 d2.utils.events]: eta: 0:22:33 iter: 1079  
total_loss: 0.2599 loss_cls: 0.1348 loss_box_reg: 0.1041 time: 0.7063  
data_time: 0.0041 lr: 0.00025 max_mem: 2728M  
[11/23 21:59:57 d2.utils.events]: eta: 0:22:21 iter: 1099  
total_loss: 0.3932 loss_cls: 0.2417 loss_box_reg: 0.1465 time: 0.7065  
data_time: 0.0045 lr: 0.00025 max_mem: 2728M  
[11/23 22:00:11 d2.utils.events]: eta: 0:22:08 iter: 1119  
total_loss: 0.3882 loss_cls: 0.2034 loss_box_reg: 0.1552 time: 0.7063  
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
```

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[11/23 22:00:25 d2.utils.events]: eta: 0:21:54 iter: 1139
total_loss: 0.2518 loss_cls: 0.1536 loss_box_reg: 0.08944 time: 0.7065
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:00:38 d2.utils.events]: eta: 0:21:40 iter: 1159
total_loss: 0.465 loss_cls: 0.2383 loss_box_reg: 0.1493 time: 0.7058
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:00:52 d2.utils.events]: eta: 0:21:25 iter: 1179
total_loss: 0.2712 loss_cls: 0.1786 loss_box_reg: 0.1009 time: 0.7053
data_time: 0.0035 lr: 0.00025 max_mem: 2728M
[11/23 22:01:06 d2.utils.events]: eta: 0:21:10 iter: 1199
total_loss: 0.6369 loss_cls: 0.3622 loss_box_reg: 0.1819 time: 0.7050
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:01:19 d2.utils.events]: eta: 0:20:56 iter: 1219
total_loss: 0.2115 loss_cls: 0.1236 loss_box_reg: 0.07518 time: 0.7048
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
[11/23 22:01:33 d2.utils.events]: eta: 0:20:41 iter: 1239
total_loss: 0.3794 loss_cls: 0.2499 loss_box_reg: 0.09493 time: 0.7045
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:01:47 d2.utils.events]: eta: 0:20:26 iter: 1259
total_loss: 0.3205 loss_cls: 0.2258 loss_box_reg: 0.1167 time: 0.7044
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:02:00 d2.utils.events]: eta: 0:20:08 iter: 1279
total_loss: 0.2687 loss_cls: 0.1645 loss_box_reg: 0.09187 time: 0.7037
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
[11/23 22:02:15 d2.utils.events]: eta: 0:19:54 iter: 1299
total_loss: 0.4472 loss_cls: 0.2398 loss_box_reg: 0.1742 time: 0.7038
data_time: 0.0036 lr: 0.00025 max_mem: 2728M
[11/23 22:02:29 d2.utils.events]: eta: 0:19:40 iter: 1319
total_loss: 0.2432 loss_cls: 0.118 loss_box_reg: 0.06404 time: 0.7037
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:02:41 d2.utils.events]: eta: 0:19:25 iter: 1339
total_loss: 0.4452 loss_cls: 0.2299 loss_box_reg: 0.1465 time: 0.7027
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:02:55 d2.utils.events]: eta: 0:19:11 iter: 1359
total_loss: 0.56 loss_cls: 0.2668 loss_box_reg: 0.293 time: 0.7024
data_time: 0.0051 lr: 0.00025 max_mem: 2728M
[11/23 22:03:10 d2.utils.events]: eta: 0:18:58 iter: 1379
total_loss: 0.3783 loss_cls: 0.2232 loss_box_reg: 0.1012 time: 0.7030
data_time: 0.0048 lr: 0.00025 max_mem: 2728M
[11/23 22:03:24 d2.utils.events]: eta: 0:18:44 iter: 1399
total_loss: 0.2915 loss_cls: 0.2063 loss_box_reg: 0.09294 time: 0.7029
data_time: 0.0051 lr: 0.00025 max_mem: 2728M
[11/23 22:03:37 d2.utils.events]: eta: 0:18:31 iter: 1419
total_loss: 0.5286 loss_cls: 0.3101 loss_box_reg: 0.1952 time: 0.7025
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:03:52 d2.utils.events]: eta: 0:18:19 iter: 1439
total_loss: 0.4045 loss_cls: 0.186 loss_box_reg: 0.1915 time: 0.7028
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
```

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[11/23 22:04:05 d2.utils.events]: eta: 0:18:06 iter: 1459
total_loss: 0.4024 loss_cls: 0.2444 loss_box_reg: 0.1405 time: 0.7025
data_time: 0.0035 lr: 0.00025 max_mem: 2728M
[11/23 22:04:20 d2.utils.events]: eta: 0:17:52 iter: 1479
total_loss: 0.4094 loss_cls: 0.2254 loss_box_reg: 0.1863 time: 0.7026
data_time: 0.0036 lr: 0.00025 max_mem: 2728M
[11/23 22:04:34 d2.utils.events]: eta: 0:17:38 iter: 1499
total_loss: 0.4118 loss_cls: 0.2385 loss_box_reg: 0.1062 time: 0.7026
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:04:48 d2.utils.events]: eta: 0:17:24 iter: 1519
total_loss: 0.3906 loss_cls: 0.2505 loss_box_reg: 0.1813 time: 0.7026
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:05:02 d2.utils.events]: eta: 0:17:09 iter: 1539
total_loss: 0.3842 loss_cls: 0.1853 loss_box_reg: 0.173 time: 0.7024
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:05:15 d2.utils.events]: eta: 0:16:55 iter: 1559
total_loss: 0.195 loss_cls: 0.1388 loss_box_reg: 0.09839 time: 0.7022
data_time: 0.0047 lr: 0.00025 max_mem: 2728M
[11/23 22:05:28 d2.utils.events]: eta: 0:16:39 iter: 1579
total_loss: 0.3047 loss_cls: 0.1895 loss_box_reg: 0.1323 time: 0.7017
data_time: 0.0042 lr: 0.00025 max_mem: 2728M
[11/23 22:05:42 d2.utils.events]: eta: 0:16:26 iter: 1599
total_loss: 0.3975 loss_cls: 0.2344 loss_box_reg: 0.1648 time: 0.7014
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:05:56 d2.utils.events]: eta: 0:16:12 iter: 1619
total_loss: 0.5381 loss_cls: 0.2954 loss_box_reg: 0.2533 time: 0.7011
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
[11/23 22:06:09 d2.utils.events]: eta: 0:15:57 iter: 1639
total_loss: 0.3346 loss_cls: 0.2381 loss_box_reg: 0.1132 time: 0.7008
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
[11/23 22:06:23 d2.utils.events]: eta: 0:15:40 iter: 1659
total_loss: 0.3476 loss_cls: 0.2392 loss_box_reg: 0.1043 time: 0.7006
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:06:36 d2.utils.events]: eta: 0:15:24 iter: 1679
total_loss: 0.2242 loss_cls: 0.1523 loss_box_reg: 0.09031 time: 0.7003
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:06:50 d2.utils.events]: eta: 0:15:10 iter: 1699
total_loss: 0.2431 loss_cls: 0.1693 loss_box_reg: 0.1079 time: 0.7003
data_time: 0.0042 lr: 0.00025 max_mem: 2728M
[11/23 22:07:05 d2.utils.events]: eta: 0:14:59 iter: 1719
total_loss: 0.2694 loss_cls: 0.1258 loss_box_reg: 0.1355 time: 0.7006
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:07:18 d2.utils.events]: eta: 0:14:41 iter: 1739
total_loss: 0.225 loss_cls: 0.1495 loss_box_reg: 0.09767 time: 0.7000
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:07:31 d2.utils.events]: eta: 0:14:28 iter: 1759
total_loss: 0.2248 loss_cls: 0.1726 loss_box_reg: 0.08114 time: 0.6997
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
```

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[11/23 22:07:45 d2.utils.events]: eta: 0:14:15 iter: 1779
total_loss: 0.3043 loss_cls: 0.1766 loss_box_reg: 0.08308 time: 0.6994
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:07:59 d2.utils.events]: eta: 0:14:02 iter: 1799
total_loss: 0.3084 loss_cls: 0.1716 loss_box_reg: 0.1347 time: 0.6994
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:08:13 d2.utils.events]: eta: 0:13:48 iter: 1819
total_loss: 0.191 loss_cls: 0.0932 loss_box_reg: 0.07488 time: 0.6993
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
[11/23 22:08:27 d2.utils.events]: eta: 0:13:33 iter: 1839
total_loss: 0.4947 loss_cls: 0.2564 loss_box_reg: 0.2234 time: 0.6993
data_time: 0.0035 lr: 0.00025 max_mem: 2728M
[11/23 22:08:40 d2.utils.events]: eta: 0:13:19 iter: 1859
total_loss: 0.3288 loss_cls: 0.2121 loss_box_reg: 0.09207 time: 0.6991
data_time: 0.0033 lr: 0.00025 max_mem: 2728M
[11/23 22:08:55 d2.utils.events]: eta: 0:13:05 iter: 1879
total_loss: 0.3989 loss_cls: 0.1717 loss_box_reg: 0.173 time: 0.6994
data_time: 0.0036 lr: 0.00025 max_mem: 2728M
[11/23 22:09:09 d2.utils.events]: eta: 0:12:49 iter: 1899
total_loss: 0.1611 loss_cls: 0.1058 loss_box_reg: 0.06967 time: 0.6992
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:09:22 d2.utils.events]: eta: 0:12:34 iter: 1919
total_loss: 0.3597 loss_cls: 0.2467 loss_box_reg: 0.1406 time: 0.6990
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:09:36 d2.utils.events]: eta: 0:12:17 iter: 1939
total_loss: 0.4263 loss_cls: 0.2179 loss_box_reg: 0.1897 time: 0.6989
data_time: 0.0052 lr: 0.00025 max_mem: 2728M
[11/23 22:09:49 d2.utils.events]: eta: 0:12:00 iter: 1959
total_loss: 0.2895 loss_cls: 0.1993 loss_box_reg: 0.1061 time: 0.6985
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:10:03 d2.utils.events]: eta: 0:11:49 iter: 1979
total_loss: 0.4204 loss_cls: 0.2188 loss_box_reg: 0.1971 time: 0.6986
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:10:17 d2.utils.events]: eta: 0:11:35 iter: 1999
total_loss: 0.1949 loss_cls: 0.1089 loss_box_reg: 0.07721 time: 0.6984
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:10:30 d2.utils.events]: eta: 0:11:17 iter: 2019
total_loss: 0.3035 loss_cls: 0.1736 loss_box_reg: 0.1084 time: 0.6982
data_time: 0.0045 lr: 0.00025 max_mem: 2728M
[11/23 22:10:44 d2.utils.events]: eta: 0:11:07 iter: 2039
total_loss: 0.158 loss_cls: 0.125 loss_box_reg: 0.04567 time: 0.6981
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:10:58 d2.utils.events]: eta: 0:10:52 iter: 2059
total_loss: 0.2206 loss_cls: 0.126 loss_box_reg: 0.1095 time: 0.6981
data_time: 0.0047 lr: 0.00025 max_mem: 2728M
[11/23 22:11:12 d2.utils.events]: eta: 0:10:42 iter: 2079
total_loss: 0.3616 loss_cls: 0.2394 loss_box_reg: 0.1442 time: 0.6979
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
```

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[11/23 22:11:26 d2.utils.events]: eta: 0:10:27 iter: 2099
total_loss: 0.3506 loss_cls: 0.2023 loss_box_reg: 0.1206 time: 0.6981
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:11:40 d2.utils.events]: eta: 0:10:12 iter: 2119
total_loss: 0.3522 loss_cls: 0.1566 loss_box_reg: 0.1736 time: 0.6981
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:11:54 d2.utils.events]: eta: 0:09:54 iter: 2139
total_loss: 0.2929 loss_cls: 0.1767 loss_box_reg: 0.09962 time: 0.6981
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:12:09 d2.utils.events]: eta: 0:09:45 iter: 2159
total_loss: 0.4111 loss_cls: 0.2699 loss_box_reg: 0.1569 time: 0.6983
data_time: 0.0042 lr: 0.00025 max_mem: 2728M
[11/23 22:12:22 d2.utils.events]: eta: 0:09:33 iter: 2179
total_loss: 0.4125 loss_cls: 0.1853 loss_box_reg: 0.207 time: 0.6982
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:12:37 d2.utils.events]: eta: 0:09:20 iter: 2199
total_loss: 0.2821 loss_cls: 0.1396 loss_box_reg: 0.1442 time: 0.6983
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:12:50 d2.utils.events]: eta: 0:09:05 iter: 2219
total_loss: 0.3457 loss_cls: 0.1725 loss_box_reg: 0.1441 time: 0.6980
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:13:04 d2.utils.events]: eta: 0:08:51 iter: 2239
total_loss: 0.2889 loss_cls: 0.1946 loss_box_reg: 0.1143 time: 0.6979
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:13:18 d2.utils.events]: eta: 0:08:38 iter: 2259
total_loss: 0.3236 loss_cls: 0.1861 loss_box_reg: 0.1265 time: 0.6980
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:13:32 d2.utils.events]: eta: 0:08:25 iter: 2279
total_loss: 0.1568 loss_cls: 0.09676 loss_box_reg: 0.06286 time: 0.6981
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:13:45 d2.utils.events]: eta: 0:08:10 iter: 2299
total_loss: 0.3093 loss_cls: 0.1929 loss_box_reg: 0.1128 time: 0.6976
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
[11/23 22:13:58 d2.utils.events]: eta: 0:07:54 iter: 2319
total_loss: 0.2355 loss_cls: 0.1662 loss_box_reg: 0.1059 time: 0.6972
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
[11/23 22:14:12 d2.utils.events]: eta: 0:07:42 iter: 2339
total_loss: 0.2433 loss_cls: 0.1107 loss_box_reg: 0.1346 time: 0.6972
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
[11/23 22:14:26 d2.utils.events]: eta: 0:07:28 iter: 2359
total_loss: 0.3143 loss_cls: 0.1603 loss_box_reg: 0.1685 time: 0.6972
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:14:40 d2.utils.events]: eta: 0:07:13 iter: 2379
total_loss: 0.2725 loss_cls: 0.1807 loss_box_reg: 0.1471 time: 0.6974
data_time: 0.0047 lr: 0.00025 max_mem: 2728M
[11/23 22:14:54 d2.utils.events]: eta: 0:06:59 iter: 2399
total_loss: 0.2876 loss_cls: 0.1535 loss_box_reg: 0.1228 time: 0.6974
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
```

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[11/23 22:15:09 d2.utils.events]: eta: 0:06:46 iter: 2419
total_loss: 0.2752 loss_cls: 0.1167 loss_box_reg: 0.1585 time: 0.6977
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:15:23 d2.utils.events]: eta: 0:06:32 iter: 2439
total_loss: 0.2347 loss_cls: 0.145 loss_box_reg: 0.08346 time: 0.6977
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:15:36 d2.utils.events]: eta: 0:06:17 iter: 2459
total_loss: 0.4165 loss_cls: 0.222 loss_box_reg: 0.203 time: 0.6975
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:15:50 d2.utils.events]: eta: 0:06:03 iter: 2479
total_loss: 0.2614 loss_cls: 0.1593 loss_box_reg: 0.08917 time: 0.6974
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
[11/23 22:16:03 d2.utils.events]: eta: 0:05:47 iter: 2499
total_loss: 0.2441 loss_cls: 0.1411 loss_box_reg: 0.1192 time: 0.6972
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
[11/23 22:16:17 d2.utils.events]: eta: 0:05:33 iter: 2519
total_loss: 0.3832 loss_cls: 0.1935 loss_box_reg: 0.1278 time: 0.6970
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:16:31 d2.utils.events]: eta: 0:05:20 iter: 2539
total_loss: 0.1809 loss_cls: 0.093 loss_box_reg: 0.08487 time: 0.6969
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:16:44 d2.utils.events]: eta: 0:05:06 iter: 2559
total_loss: 0.2814 loss_cls: 0.1765 loss_box_reg: 0.1183 time: 0.6968
data_time: 0.0043 lr: 0.00025 max_mem: 2728M
[11/23 22:16:58 d2.utils.events]: eta: 0:04:53 iter: 2579
total_loss: 0.2084 loss_cls: 0.1003 loss_box_reg: 0.1178 time: 0.6967
data_time: 0.0038 lr: 0.00025 max_mem: 2728M
[11/23 22:17:12 d2.utils.events]: eta: 0:04:40 iter: 2599
total_loss: 0.2927 loss_cls: 0.1237 loss_box_reg: 0.1496 time: 0.6967
data_time: 0.0036 lr: 0.00025 max_mem: 2728M
[11/23 22:17:26 d2.utils.events]: eta: 0:04:26 iter: 2619
total_loss: 0.2639 loss_cls: 0.128 loss_box_reg: 0.09446 time: 0.6966
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:17:39 d2.utils.events]: eta: 0:04:11 iter: 2639
total_loss: 0.2304 loss_cls: 0.1247 loss_box_reg: 0.1145 time: 0.6965
data_time: 0.0039 lr: 0.00025 max_mem: 2728M
[11/23 22:17:53 d2.utils.events]: eta: 0:03:58 iter: 2659
total_loss: 0.3022 loss_cls: 0.1506 loss_box_reg: 0.1255 time: 0.6964
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:18:07 d2.utils.events]: eta: 0:03:44 iter: 2679
total_loss: 0.3196 loss_cls: 0.1702 loss_box_reg: 0.1534 time: 0.6963
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:18:20 d2.utils.events]: eta: 0:03:29 iter: 2699
total_loss: 0.275 loss_cls: 0.1692 loss_box_reg: 0.1199 time: 0.6962
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:18:34 d2.utils.events]: eta: 0:03:14 iter: 2719
total_loss: 0.2976 loss_cls: 0.1414 loss_box_reg: 0.1289 time: 0.6961
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
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[11/23 22:18:48 d2.utils.events]: eta: 0:03:01 iter: 2739
total_loss: 0.3038 loss_cls: 0.179 loss_box_reg: 0.1523 time: 0.6962
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:19:02 d2.utils.events]: eta: 0:02:48 iter: 2759
total_loss: 0.2419 loss_cls: 0.1294 loss_box_reg: 0.1078 time: 0.6962
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:19:16 d2.utils.events]: eta: 0:02:34 iter: 2779
total_loss: 0.2669 loss_cls: 0.1107 loss_box_reg: 0.1004 time: 0.6961
data_time: 0.0053 lr: 0.00025 max_mem: 2728M
[11/23 22:19:29 d2.utils.events]: eta: 0:02:19 iter: 2799
total_loss: 0.3125 loss_cls: 0.1721 loss_box_reg: 0.142 time: 0.6959
data_time: 0.0045 lr: 0.00025 max_mem: 2728M
[11/23 22:19:43 d2.utils.events]: eta: 0:02:05 iter: 2819
total_loss: 0.2766 loss_cls: 0.1501 loss_box_reg: 0.09674 time: 0.6957
data_time: 0.0041 lr: 0.00025 max_mem: 2728M
[11/23 22:19:56 d2.utils.events]: eta: 0:01:51 iter: 2839
total_loss: 0.1871 loss_cls: 0.1186 loss_box_reg: 0.07084 time: 0.6956
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:20:10 d2.utils.events]: eta: 0:01:36 iter: 2859
total_loss: 0.2633 loss_cls: 0.1511 loss_box_reg: 0.1132 time: 0.6954
data_time: 0.0035 lr: 0.00025 max_mem: 2728M
[11/23 22:20:24 d2.utils.events]: eta: 0:01:22 iter: 2879
total_loss: 0.2539 loss_cls: 0.1349 loss_box_reg: 0.119 time: 0.6954
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:20:38 d2.utils.events]: eta: 0:01:09 iter: 2899
total_loss: 0.1953 loss_cls: 0.115 loss_box_reg: 0.07629 time: 0.6956
data_time: 0.0042 lr: 0.00025 max_mem: 2728M
[11/23 22:20:51 d2.utils.events]: eta: 0:00:55 iter: 2919
total_loss: 0.183 loss_cls: 0.09814 loss_box_reg: 0.08469 time: 0.6954
data_time: 0.0044 lr: 0.00025 max_mem: 2728M
[11/23 22:21:05 d2.utils.events]: eta: 0:00:41 iter: 2939
total_loss: 0.3628 loss_cls: 0.1761 loss_box_reg: 0.1734 time: 0.6954
data_time: 0.0036 lr: 0.00025 max_mem: 2728M
[11/23 22:21:19 d2.utils.events]: eta: 0:00:27 iter: 2959
total_loss: 0.2331 loss_cls: 0.1135 loss_box_reg: 0.09013 time: 0.6953
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:21:32 d2.utils.events]: eta: 0:00:13 iter: 2979
total_loss: 0.1248 loss_cls: 0.06011 loss_box_reg: 0.05939 time: 0.6952
data_time: 0.0040 lr: 0.00025 max_mem: 2728M
[11/23 22:21:46 d2.utils.events]: eta: 0:00:00 iter: 2999
total_loss: 0.2562 loss_cls: 0.1546 loss_box_reg: 0.09847 time: 0.6951
data_time: 0.0037 lr: 0.00025 max_mem: 2728M
[11/23 22:21:47 d2.engine.hooks]: Overall training speed: 2998
iterations in 0:34:43 (0.6951 s / it)
[11/23 22:21:47 d2.engine.hooks]: Total training time: 0:34:46 (0:00:02
on hooks)
```

## 0.11 Load model weights into predictor

```
[26]: cfg_retinanet.MODEL.WEIGHTS = os.path.join(cfg_retinanet.OUTPUT_DIR, "model_final.pth") # path to the model we just trained  
cfg_retinanet.MODEL.RETINANET.SCORE_THRESH_TEST = 0.7 # set a custom testing threshold  
predictor = DefaultPredictor(cfg_retinanet)
```

## 0.12 Copy the output files to drive

```
[27]: cp -r MyVOCTraining2 /content/drive/MyDrive/CV/HW6/
```

```
[20]: from google.colab import drive  
drive.mount('/content/drive')
```

Mounted at /content/drive

```
[ ]:
```

```
[ ]: cp -r /content/drive/MyDrive/CV/HW6/MyVOCTraining MyVOCTraining
```

## 0.13 Display on Tensorboard

```
[30]: %load_ext tensorboard  
%tensorboard --logdir MyVOCTraining2/
```

The tensorboard extension is already loaded. To reload it, use:

```
%reload_ext tensorboard  
<IPython.core.display.Javascript object>
```

## 0.14 Run Inference on dataset

```
[25]: from detectron2.evaluation import PascalVOCDetectionEvaluator, inference_on_dataset  
from detectron2.data import build_detection_test_loader  
evaluator = PascalVOCDetectionEvaluator("voc_2007_val")  
val_loader = build_detection_test_loader(cfg_retinanet, "voc_2007_val")  
print(inference_on_dataset(predictor.model, val_loader, evaluator)['bbox']['AP50'])
```

```
[11/23 22:39:13 d2.data.dataset_mapper]: [DatasetMapper] Augmentations used in inference: [ResizeShortestEdge(short_edge_length=(800, 800), max_size=1333, sample_style='choice')]  
[11/23 22:39:13 d2.data.common]: Serializing 2510 elements to byte tensors and concatenating them all ...  
[11/23 22:39:13 d2.data.common]: Serialized dataset takes 1.14 MiB  
[11/23 22:39:13 d2.evaluation.evaluator]: Start inference on 2510 batches
```

```
/usr/local/lib/python3.7/dist-packages/detectron2/structures/image_list.py:88:  
UserWarning: __floordiv__ is deprecated, and its behavior will change in a  
future version of pytorch. It currently rounds toward 0 (like the 'trunc'  
function NOT 'floor'). This results in incorrect rounding for negative values.  
To keep the current behavior, use torch.div(a, b, rounding_mode='trunc'), or for  
actual floor division, use torch.div(a, b, rounding_mode='floor').  
    max_size = (max_size + (stride - 1)) // stride * stride  
  
[11/23 22:39:17 d2.evaluation.evaluator]: Inference done 11/2510.  
Dataloading: 0.0018 s/iter. Inference: 0.3617 s/iter. Eval: 0.0002 s/iter.  
Total: 0.3636 s/iter. ETA=0:15:08  
[11/23 22:39:22 d2.evaluation.evaluator]: Inference done 25/2510.  
Dataloading: 0.0022 s/iter. Inference: 0.3600 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3629 s/iter. ETA=0:15:01  
[11/23 22:39:27 d2.evaluation.evaluator]: Inference done 40/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3515 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3547 s/iter. ETA=0:14:36  
[11/23 22:39:32 d2.evaluation.evaluator]: Inference done 55/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3495 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3525 s/iter. ETA=0:14:25  
[11/23 22:39:38 d2.evaluation.evaluator]: Inference done 70/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3477 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3507 s/iter. ETA=0:14:15  
[11/23 22:39:43 d2.evaluation.evaluator]: Inference done 85/2510.  
Dataloading: 0.0024 s/iter. Inference: 0.3486 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3516 s/iter. ETA=0:14:12  
[11/23 22:39:48 d2.evaluation.evaluator]: Inference done 99/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3496 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3527 s/iter. ETA=0:14:10  
[11/23 22:39:53 d2.evaluation.evaluator]: Inference done 114/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3496 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3528 s/iter. ETA=0:14:05  
[11/23 22:39:59 d2.evaluation.evaluator]: Inference done 129/2510.  
Dataloading: 0.0027 s/iter. Inference: 0.3499 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3530 s/iter. ETA=0:14:00  
[11/23 22:40:04 d2.evaluation.evaluator]: Inference done 144/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3502 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3533 s/iter. ETA=0:13:55  
[11/23 22:40:09 d2.evaluation.evaluator]: Inference done 158/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3508 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3539 s/iter. ETA=0:13:52  
[11/23 22:40:14 d2.evaluation.evaluator]: Inference done 173/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3507 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3538 s/iter. ETA=0:13:46  
[11/23 22:40:19 d2.evaluation.evaluator]: Inference done 188/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3506 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3536 s/iter. ETA=0:13:41  
[11/23 22:40:25 d2.evaluation.evaluator]: Inference done 203/2510.
```

```
Dataloading: 0.0025 s/iter. Inference: 0.3510 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3540 s/iter. ETA=0:13:36  
[11/23 22:40:30 d2.evaluation.evaluator]: Inference done 218/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3506 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3536 s/iter. ETA=0:13:30  
[11/23 22:40:35 d2.evaluation.evaluator]: Inference done 233/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3505 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3535 s/iter. ETA=0:13:24  
[11/23 22:40:41 d2.evaluation.evaluator]: Inference done 248/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3502 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3532 s/iter. ETA=0:13:18  
[11/23 22:40:46 d2.evaluation.evaluator]: Inference done 263/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3501 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3531 s/iter. ETA=0:13:13  
[11/23 22:40:51 d2.evaluation.evaluator]: Inference done 278/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3502 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3532 s/iter. ETA=0:13:08  
[11/23 22:40:56 d2.evaluation.evaluator]: Inference done 292/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3508 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3537 s/iter. ETA=0:13:04  
[11/23 22:41:01 d2.evaluation.evaluator]: Inference done 307/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3503 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3532 s/iter. ETA=0:12:58  
[11/23 22:41:07 d2.evaluation.evaluator]: Inference done 322/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3503 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3533 s/iter. ETA=0:12:53  
[11/23 22:41:12 d2.evaluation.evaluator]: Inference done 336/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3508 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3538 s/iter. ETA=0:12:49  
[11/23 22:41:17 d2.evaluation.evaluator]: Inference done 351/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3506 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3536 s/iter. ETA=0:12:43  
[11/23 22:41:22 d2.evaluation.evaluator]: Inference done 365/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3508 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3537 s/iter. ETA=0:12:38  
[11/23 22:41:27 d2.evaluation.evaluator]: Inference done 380/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3503 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3532 s/iter. ETA=0:12:32  
[11/23 22:41:32 d2.evaluation.evaluator]: Inference done 395/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3502 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3531 s/iter. ETA=0:12:26  
[11/23 22:41:38 d2.evaluation.evaluator]: Inference done 410/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3501 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3530 s/iter. ETA=0:12:21  
[11/23 22:41:43 d2.evaluation.evaluator]: Inference done 425/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3501 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3531 s/iter. ETA=0:12:16  
[11/23 22:41:48 d2.evaluation.evaluator]: Inference done 440/2510.
```

```
Dataloading: 0.0025 s/iter. Inference: 0.3501 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3530 s/iter. ETA=0:12:10  
[11/23 22:41:54 d2.evaluation.evaluator]: Inference done 455/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3499 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3529 s/iter. ETA=0:12:05  
[11/23 22:41:59 d2.evaluation.evaluator]: Inference done 470/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3498 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3528 s/iter. ETA=0:11:59  
[11/23 22:42:04 d2.evaluation.evaluator]: Inference done 485/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3498 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3527 s/iter. ETA=0:11:54  
[11/23 22:42:09 d2.evaluation.evaluator]: Inference done 499/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3500 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3530 s/iter. ETA=0:11:49  
[11/23 22:42:14 d2.evaluation.evaluator]: Inference done 514/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3498 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3528 s/iter. ETA=0:11:44  
[11/23 22:42:20 d2.evaluation.evaluator]: Inference done 529/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3498 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3528 s/iter. ETA=0:11:38  
[11/23 22:42:25 d2.evaluation.evaluator]: Inference done 543/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3500 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3530 s/iter. ETA=0:11:34  
[11/23 22:42:30 d2.evaluation.evaluator]: Inference done 558/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3499 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3529 s/iter. ETA=0:11:28  
[11/23 22:42:35 d2.evaluation.evaluator]: Inference done 573/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3498 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3528 s/iter. ETA=0:11:23  
[11/23 22:42:40 d2.evaluation.evaluator]: Inference done 588/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3496 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3526 s/iter. ETA=0:11:17  
[11/23 22:42:45 d2.evaluation.evaluator]: Inference done 603/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3494 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3524 s/iter. ETA=0:11:11  
[11/23 22:42:51 d2.evaluation.evaluator]: Inference done 618/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:11:06  
[11/23 22:42:56 d2.evaluation.evaluator]: Inference done 633/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:11:00  
[11/23 22:43:01 d2.evaluation.evaluator]: Inference done 648/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:10:55  
[11/23 22:43:06 d2.evaluation.evaluator]: Inference done 663/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:10:50  
[11/23 22:43:12 d2.evaluation.evaluator]: Inference done 678/2510.
```

```
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:10:44  
[11/23 22:43:17 d2.evaluation.evaluator]: Inference done 693/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:10:39  
[11/23 22:43:22 d2.evaluation.evaluator]: Inference done 708/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:10:34  
[11/23 22:43:28 d2.evaluation.evaluator]: Inference done 723/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:10:29  
[11/23 22:43:33 d2.evaluation.evaluator]: Inference done 738/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:10:23  
[11/23 22:43:38 d2.evaluation.evaluator]: Inference done 753/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:10:18  
[11/23 22:43:43 d2.evaluation.evaluator]: Inference done 768/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:10:13  
[11/23 22:43:49 d2.evaluation.evaluator]: Inference done 783/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:10:07  
[11/23 22:43:54 d2.evaluation.evaluator]: Inference done 798/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:10:02  
[11/23 22:43:59 d2.evaluation.evaluator]: Inference done 813/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:09:57  
[11/23 22:44:04 d2.evaluation.evaluator]: Inference done 827/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:09:52  
[11/23 22:44:10 d2.evaluation.evaluator]: Inference done 842/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:09:47  
[11/23 22:44:15 d2.evaluation.evaluator]: Inference done 857/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:09:42  
[11/23 22:44:20 d2.evaluation.evaluator]: Inference done 872/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:09:36  
[11/23 22:44:25 d2.evaluation.evaluator]: Inference done 887/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:09:31  
[11/23 22:44:31 d2.evaluation.evaluator]: Inference done 902/2510.  
Dataloading: 0.0026 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:09:26  
[11/23 22:44:36 d2.evaluation.evaluator]: Inference done 917/2510.
```

```
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:09:20  
[11/23 22:44:41 d2.evaluation.evaluator]: Inference done 932/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:09:15  
[11/23 22:44:46 d2.evaluation.evaluator]: Inference done 946/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:09:10  
[11/23 22:44:51 d2.evaluation.evaluator]: Inference done 961/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:09:05  
[11/23 22:44:57 d2.evaluation.evaluator]: Inference done 976/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:09:00  
[11/23 22:45:02 d2.evaluation.evaluator]: Inference done 990/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:08:55  
[11/23 22:45:07 d2.evaluation.evaluator]: Inference done 1004/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:08:50  
[11/23 22:45:12 d2.evaluation.evaluator]: Inference done 1019/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:08:44  
[11/23 22:45:17 d2.evaluation.evaluator]: Inference done 1034/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:08:39  
[11/23 22:45:22 d2.evaluation.evaluator]: Inference done 1049/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:08:34  
[11/23 22:45:27 d2.evaluation.evaluator]: Inference done 1064/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:08:28  
[11/23 22:45:33 d2.evaluation.evaluator]: Inference done 1079/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:08:23  
[11/23 22:45:38 d2.evaluation.evaluator]: Inference done 1094/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:08:18  
[11/23 22:45:43 d2.evaluation.evaluator]: Inference done 1109/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:08:12  
[11/23 22:45:48 d2.evaluation.evaluator]: Inference done 1124/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:08:07  
[11/23 22:45:54 d2.evaluation.evaluator]: Inference done 1139/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:08:02  
[11/23 22:45:59 d2.evaluation.evaluator]: Inference done 1153/2510.
```

Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:07:57  
[11/23 22:46:04 d2.evaluation.evaluator]: Inference done 1167/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:07:52  
[11/23 22:46:09 d2.evaluation.evaluator]: Inference done 1182/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:07:47  
[11/23 22:46:14 d2.evaluation.evaluator]: Inference done 1196/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:07:42  
[11/23 22:46:19 d2.evaluation.evaluator]: Inference done 1211/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:07:37  
[11/23 22:46:25 d2.evaluation.evaluator]: Inference done 1226/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:07:32  
[11/23 22:46:30 d2.evaluation.evaluator]: Inference done 1241/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:07:26  
[11/23 22:46:35 d2.evaluation.evaluator]: Inference done 1255/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:07:22  
[11/23 22:46:40 d2.evaluation.evaluator]: Inference done 1270/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:07:16  
[11/23 22:46:46 d2.evaluation.evaluator]: Inference done 1285/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:07:11  
[11/23 22:46:51 d2.evaluation.evaluator]: Inference done 1300/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:07:06  
[11/23 22:46:56 d2.evaluation.evaluator]: Inference done 1315/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:07:00  
[11/23 22:47:01 d2.evaluation.evaluator]: Inference done 1329/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:06:56  
[11/23 22:47:06 d2.evaluation.evaluator]: Inference done 1344/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:06:50  
[11/23 22:47:12 d2.evaluation.evaluator]: Inference done 1359/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:06:45  
[11/23 22:47:17 d2.evaluation.evaluator]: Inference done 1374/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:06:40  
[11/23 22:47:22 d2.evaluation.evaluator]: Inference done 1389/2510.

Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:06:34  
[11/23 22:47:27 d2.evaluation.evaluator]: Inference done 1404/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:06:29  
[11/23 22:47:32 d2.evaluation.evaluator]: Inference done 1418/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:06:24  
[11/23 22:47:38 d2.evaluation.evaluator]: Inference done 1433/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:06:19  
[11/23 22:47:43 d2.evaluation.evaluator]: Inference done 1448/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:06:14  
[11/23 22:47:48 d2.evaluation.evaluator]: Inference done 1462/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:06:09  
[11/23 22:47:53 d2.evaluation.evaluator]: Inference done 1477/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:06:03  
[11/23 22:47:59 d2.evaluation.evaluator]: Inference done 1492/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:05:58  
[11/23 22:48:04 d2.evaluation.evaluator]: Inference done 1507/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:05:53  
[11/23 22:48:09 d2.evaluation.evaluator]: Inference done 1522/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:05:48  
[11/23 22:48:14 d2.evaluation.evaluator]: Inference done 1536/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:05:43  
[11/23 22:48:19 d2.evaluation.evaluator]: Inference done 1551/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:05:37  
[11/23 22:48:25 d2.evaluation.evaluator]: Inference done 1566/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:05:32  
[11/23 22:48:30 d2.evaluation.evaluator]: Inference done 1581/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:05:27  
[11/23 22:48:35 d2.evaluation.evaluator]: Inference done 1596/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:05:21  
[11/23 22:48:40 d2.evaluation.evaluator]: Inference done 1611/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:05:16  
[11/23 22:48:46 d2.evaluation.evaluator]: Inference done 1626/2510.

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Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:05:11  
[11/23 22:48:51 d2.evaluation.evaluator]: Inference done 1641/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:05:06  
[11/23 22:48:56 d2.evaluation.evaluator]: Inference done 1655/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3494 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:05:01  
[11/23 22:49:01 d2.evaluation.evaluator]: Inference done 1670/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:04:55  
[11/23 22:49:06 d2.evaluation.evaluator]: Inference done 1685/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:04:50  
[11/23 22:49:12 d2.evaluation.evaluator]: Inference done 1700/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:04:45  
[11/23 22:49:17 d2.evaluation.evaluator]: Inference done 1715/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:04:39  
[11/23 22:49:22 d2.evaluation.evaluator]: Inference done 1729/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:04:34  
[11/23 22:49:27 d2.evaluation.evaluator]: Inference done 1744/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:04:29  
[11/23 22:49:32 d2.evaluation.evaluator]: Inference done 1759/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:04:24  
[11/23 22:49:38 d2.evaluation.evaluator]: Inference done 1774/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:04:19  
[11/23 22:49:43 d2.evaluation.evaluator]: Inference done 1789/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:04:13  
[11/23 22:49:48 d2.evaluation.evaluator]: Inference done 1803/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:04:08  
[11/23 22:49:53 d2.evaluation.evaluator]: Inference done 1818/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:04:03  
[11/23 22:49:58 d2.evaluation.evaluator]: Inference done 1833/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:58  
[11/23 22:50:04 d2.evaluation.evaluator]: Inference done 1848/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:53  
[11/23 22:50:09 d2.evaluation.evaluator]: Inference done 1863/2510.
```

Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:03:47  
[11/23 22:50:14 d2.evaluation.evaluator]: Inference done 1878/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:42  
[11/23 22:50:19 d2.evaluation.evaluator]: Inference done 1892/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:37  
[11/23 22:50:25 d2.evaluation.evaluator]: Inference done 1907/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:32  
[11/23 22:50:30 d2.evaluation.evaluator]: Inference done 1922/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:27  
[11/23 22:50:35 d2.evaluation.evaluator]: Inference done 1936/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:22  
[11/23 22:50:40 d2.evaluation.evaluator]: Inference done 1951/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:16  
[11/23 22:50:46 d2.evaluation.evaluator]: Inference done 1966/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:03:11  
[11/23 22:50:51 d2.evaluation.evaluator]: Inference done 1981/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3493 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3523 s/iter. ETA=0:03:06  
[11/23 22:50:56 d2.evaluation.evaluator]: Inference done 1996/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:03:01  
[11/23 22:51:01 d2.evaluation.evaluator]: Inference done 2011/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:02:55  
[11/23 22:51:06 d2.evaluation.evaluator]: Inference done 2026/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:02:50  
[11/23 22:51:12 d2.evaluation.evaluator]: Inference done 2041/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:02:45  
[11/23 22:51:17 d2.evaluation.evaluator]: Inference done 2056/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:02:39  
[11/23 22:51:22 d2.evaluation.evaluator]: Inference done 2071/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:02:34  
[11/23 22:51:27 d2.evaluation.evaluator]: Inference done 2086/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:02:29  
[11/23 22:51:33 d2.evaluation.evaluator]: Inference done 2100/2510.

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Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:02:24  
[11/23 22:51:38 d2.evaluation.evaluator]: Inference done 2115/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:02:19  
[11/23 22:51:43 d2.evaluation.evaluator]: Inference done 2130/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:02:13  
[11/23 22:51:48 d2.evaluation.evaluator]: Inference done 2145/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:02:08  
[11/23 22:51:54 d2.evaluation.evaluator]: Inference done 2160/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3522 s/iter. ETA=0:02:03  
[11/23 22:51:59 d2.evaluation.evaluator]: Inference done 2175/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:57  
[11/23 22:52:04 d2.evaluation.evaluator]: Inference done 2190/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:52  
[11/23 22:52:09 d2.evaluation.evaluator]: Inference done 2205/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:47  
[11/23 22:52:14 d2.evaluation.evaluator]: Inference done 2219/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3492 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:42  
[11/23 22:52:20 d2.evaluation.evaluator]: Inference done 2234/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:37  
[11/23 22:52:25 d2.evaluation.evaluator]: Inference done 2249/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:31  
[11/23 22:52:30 d2.evaluation.evaluator]: Inference done 2264/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3521 s/iter. ETA=0:01:26  
[11/23 22:52:35 d2.evaluation.evaluator]: Inference done 2279/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3491 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:01:21  
[11/23 22:52:40 d2.evaluation.evaluator]: Inference done 2294/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:01:16  
[11/23 22:52:46 d2.evaluation.evaluator]: Inference done 2309/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:01:10  
[11/23 22:52:51 d2.evaluation.evaluator]: Inference done 2324/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:01:05  
[11/23 22:52:56 d2.evaluation.evaluator]: Inference done 2339/2510.
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Dataloading: 0.0025 s/iter. Inference: 0.3490 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3520 s/iter. ETA=0:01:00  
[11/23 22:53:01 d2.evaluation.evaluator]: Inference done 2354/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:54  
[11/23 22:53:06 d2.evaluation.evaluator]: Inference done 2368/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:49  
[11/23 22:53:12 d2.evaluation.evaluator]: Inference done 2383/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:44  
[11/23 22:53:17 d2.evaluation.evaluator]: Inference done 2398/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:39  
[11/23 22:53:22 d2.evaluation.evaluator]: Inference done 2412/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:34  
[11/23 22:53:27 d2.evaluation.evaluator]: Inference done 2427/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:29  
[11/23 22:53:32 d2.evaluation.evaluator]: Inference done 2442/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3489 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3519 s/iter. ETA=0:00:23  
[11/23 22:53:37 d2.evaluation.evaluator]: Inference done 2457/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:00:18  
[11/23 22:53:43 d2.evaluation.evaluator]: Inference done 2472/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:00:13  
[11/23 22:53:48 d2.evaluation.evaluator]: Inference done 2487/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:00:08  
[11/23 22:53:53 d2.evaluation.evaluator]: Inference done 2502/2510.  
Dataloading: 0.0025 s/iter. Inference: 0.3488 s/iter. Eval: 0.0003 s/iter.  
Total: 0.3518 s/iter. ETA=0:00:02  
[11/23 22:53:56 d2.evaluation.evaluator]: Total inference time:  
0:14:41.317127 (0.351823 s / iter per device, on 1 devices)  
[11/23 22:53:56 d2.evaluation.evaluator]: Total inference pure compute  
time: 0:14:33 (0.348809 s / iter per device, on 1 devices)  
[11/23 22:53:56 d2.evaluation.pascal_voc_evaluation]: Evaluating  
voc_2007_val using 2007 metric. Note that results do not use the official Matlab  
API.  
58.14725484082461
```

## 0.15 Visualize the predictions

```
[29]: # We can use `Visualizer` to draw the predictions on the image.
```

```
cfg_retinanet.MODEL.WEIGHTS = os.path.join(cfg_retinanet.OUTPUT_DIR, □
    →"model_final.pth") # path to the model we just trained
cfg_retinanet.MODEL.RETINANET.SCORE_THRESH_TEST = 0.7 # set a custom testing □
    →threshold
predictor = DefaultPredictor(cfg_retinanet)

valimages_metadata_dict = MetadataCatalog.get("voc_2007_val")
valimages_dataset_dict = DatasetCatalog.get("voc_2007_val")

for fname in random.sample(valimages_dataset_dict, 5):
    print("-" * 90)
    #path = os.path.join(dirpath, )
    im = cv2.imread(fname['file_name'])
    outputs = predictor(im) # format is documented at https://detectron2.
    →readthedocs.io/tutorials/models.html#model-output-format

    v = Visualizer(im[:, :, ::-1], valimages_metadata_dict, scale=1.2)
    out = v.draw_instance_predictions(outputs["instances"].to("cpu"))
    cv2.imshow(out.get_image()[:, :, ::-1])
```

---

---

```
/usr/local/lib/python3.7/dist-packages/detectron2/structures/image_list.py:88:
UserWarning: __floordiv__ is deprecated, and its behavior will change in a
future version of pytorch. It currently rounds toward 0 (like the 'trunc'
function NOT 'floor'). This results in incorrect rounding for negative values.
To keep the current behavior, use torch.div(a, b, rounding_mode='trunc'), or for
actual floor division, use torch.div(a, b, rounding_mode='floor').
    max_size = (max_size + (stride - 1)) // stride * stride
```

