

EfficientDet

November 15, 2023

#1. Install TensorFlow Object Detection Dependencies

Install the TensorFlow Object Detection API in this Google Colab instance.

The latest version of TensorFlow this Colab has been verified to work with is TF v2.8.0.

```
[1]: # Clone the tensorflow models repository from GitHub
!pip uninstall Cython -y # Temporary fix for "No module named
↪ 'object_detection'" error
!git clone --depth 1 https://github.com/tensorflow/models
```

Found existing installation: Cython 3.0.5

Uninstalling Cython-3.0.5:

```
Successfully uninstalled Cython-3.0.5
Cloning into 'models'...
remote: Enumerating objects: 4046, done.
remote: Counting objects: 100% (4046/4046), done.
remote: Compressing objects: 100% (3073/3073), done.
remote: Total 4046 (delta 1185), reused 2775 (delta 914), pack-reused 0
Receiving objects: 100% (4046/4046), 54.69 MiB | 28.64 MiB/s, done.
Resolving deltas: 100% (1185/1185), done.
```

```
[2]: # Copy setup files into models/research folder
%%bash
cd models/research/
protoc object_detection/protos/*.proto --python_out=.
#cp object_detection/packages/tf2/setup.py .
```

```
[3]: # Modify setup.py file to install the tf-models-official repository targeted at
↪TF v2.8.0
import re
with open('/content/models/research/object_detection/packages/tf2/setup.py') as f:
    s = f.read()

with open('/content/models/research/setup.py', 'w') as f:
    # Set fine_tune_checkpoint path
    s = re.sub('tf-models-official>=2.5.1',
               'tf-models-official==2.8.0', s)
```

```

f.write(s)

[4]: # Install the Object Detection API
# Need to do a temporary fix with PyYAML because Colab isn't able to install PyYAML v5.4.1
!pip install pyyaml==5.3
!pip install /content/models/research/

# Need to downgrade to TF v2.8.0 due to Colab compatibility bug with TF v2.10
# (as of 10/03/22)
!pip install tensorflow==2.8.0

```

```

Collecting pyyaml==5.3
  Downloading PyYAML-5.3.tar.gz (268 kB)
    268.2/268.2
kB 5.8 MB/s eta 0:00:00
  Preparing metadata (setup.py) ... done
Building wheels for collected packages: pyyaml
  Building wheel for pyyaml (setup.py) ... done
  Created wheel for pyyaml: filename=PyYAML-5.3-cp310-cp310-linux_x86_64.whl
size=44243
sha256=51ea0a781562afe5f388f5388c2b1b228b9128c57b2c582859df72b19c3f7298
  Stored in directory: /root/.cache/pip/wheels/0d/72/68/a263cf14175636cf26bada9
9f13b735be1b60a11318e08bfc
Successfully built pyyaml
Installing collected packages: pyyaml
  Attempting uninstall: pyyaml
    Found existing installation: PyYAML 6.0.1
    Uninstalling PyYAML-6.0.1:
      Successfully uninstalled PyYAML-6.0.1

```

```
ERROR: pip's dependency resolver does not currently take into account all  
the packages that are installed. This behaviour is the source of the following  
dependency conflicts.
```

```
llmx 0.0.15a0 requires cohere, which is not installed.
```

```
llmx 0.0.15a0 requires openai, which is not installed.
```

```
llmx 0.0.15a0 requires tiktoken, which is not installed.
```

```
dask 2023.8.1 requires pyyaml>=5.3.1, but you have pyyaml 5.3 which is  
incompatible.
```

```
distributed 2023.8.1 requires pyyaml>=5.3.1, but you have pyyaml 5.3 which is  
incompatible.
```

```
flax 0.7.5 requires PyYAML>=5.4.1, but you have pyyaml 5.3 which is  
incompatible.
```

```
Successfully installed pyyaml-5.3
```

```
Processing ./models/research
```

```
    Preparing metadata (setup.py) ... done  
Collecting avro-python3 (from object-detection==0.1)  
    Downloading avro-python3-1.10.2.tar.gz (38 kB)  
    Preparing metadata (setup.py) ... done  
Collecting apache-beam (from object-detection==0.1)  
    Downloading  
apache_beam-2.51.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl  
(14.7 MB)
```

```
        14.7/14.7 MB
```

```
36.5 MB/s eta 0:00:00
```

```
Requirement already satisfied: pillow in /usr/local/lib/python3.10/dist-  
packages (from object-detection==0.1) (9.4.0)  
Requirement already satisfied: lxml in /usr/local/lib/python3.10/dist-packages  
(from object-detection==0.1) (4.9.3)  
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-  
packages (from object-detection==0.1) (3.7.1)  
Collecting Cython (from object-detection==0.1)  
    Downloading
```

```
Cython-3.0.5-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.6 MB)  
        3.6/3.6 MB
```

```
60.5 MB/s eta 0:00:00
```

```
Requirement already satisfied: contextlib2 in  
/usr/local/lib/python3.10/dist-packages (from object-detection==0.1) (21.6.0)  
Requirement already satisfied: tf-slim in /usr/local/lib/python3.10/dist-  
packages (from object-detection==0.1) (1.1.0)  
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-packages  
(from object-detection==0.1) (1.16.0)
```

```
Requirement already satisfied: pycocotools in /usr/local/lib/python3.10/dist-
packages (from object-detection==0.1) (2.0.7)
Collecting lvis (from object-detection==0.1)
    Downloading lvis-0.5.3-py3-none-any.whl (14 kB)
Requirement already satisfied: scipy in /usr/local/lib/python3.10/dist-packages
(from object-detection==0.1) (1.11.3)
Requirement already satisfied: pandas in /usr/local/lib/python3.10/dist-packages
(from object-detection==0.1) (1.5.3)
Collecting tf-models-official==2.8.0 (from object-detection==0.1)
    Downloading tf_models_official-2.8.0-py2.py3-none-any.whl (2.2 MB)
                                         2.2/2.2 MB
61.0 MB/s eta 0:00:00
Collecting tensorflow_io (from object-detection==0.1)
    Downloading tensorflow_io-0.34.0-cp310-cp310-manylinux_2_12_x86_64.manylinux2010_x86_64.whl
(28.8 MB)
                                         28.8/28.8 MB
53.6 MB/s eta 0:00:00
Requirement already satisfied: keras in /usr/local/lib/python3.10/dist-
packages (from object-detection==0.1) (2.14.0)
Collecting pyparsing==2.4.7 (from object-detection==0.1)
    Downloading pyparsing-2.4.7-py2.py3-none-any.whl (67 kB)
                                         67.8/67.8 kB
9.4 MB/s eta 0:00:00
Collecting sacrebleu<=2.2.0 (from object-detection==0.1)
    Downloading sacrebleu-2.2.0-py3-none-any.whl (116 kB)
                                         116.6/116.6

kB 17.7 MB/s eta 0:00:00
Requirement already satisfied: gin-config in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
detection==0.1) (0.5.0)
Requirement already satisfied: google-api-python-client>=1.6.7 in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
detection==0.1) (2.84.0)
Requirement already satisfied: kaggle>=1.3.9 in /usr/local/lib/python3.10/dist-
packages (from tf-models-official==2.8.0->object-detection==0.1) (1.5.16)
Requirement already satisfied: numpy>=1.15.4 in /usr/local/lib/python3.10/dist-
packages (from tf-models-official==2.8.0->object-detection==0.1) (1.23.5)
Requirement already satisfied: oauth2client in /usr/local/lib/python3.10/dist-
packages (from tf-models-official==2.8.0->object-detection==0.1) (4.1.3)
Requirement already satisfied: opencv-python-headless in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
detection==0.1) (4.8.1.78)
Requirement already satisfied: psutil>=5.4.3 in /usr/local/lib/python3.10/dist-
packages (from tf-models-official==2.8.0->object-detection==0.1) (5.9.5)
Requirement already satisfied: py-cpuinfo>=3.3.0 in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
```

```
detection==0.1) (9.0.0)
Requirement already satisfied: pyyaml<6.0,>=5.1 in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
detection==0.1) (5.3)
Collecting sentencepiece (from tf-models-official==2.8.0->object-detection==0.1)
  Downloading
    sentencepiece-0.1.99-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
      (1.3 MB)
        1.3/1.3 MB
  88.2 MB/s eta 0:00:00
Collecting seqeval (from tf-models-official==2.8.0->object-detection==0.1)
  Downloading seqeval-1.2.2.tar.gz (43 kB)
    43.6/43.6 kB
  6.7 MB/s eta 0:00:00
  Preparing metadata (setup.py) ... done
Collecting tensorflow-addons (from tf-models-official==2.8.0->object-
detection==0.1)
  Downloading tensorflow_addons-0.22.0-cp310-cp310-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (612 kB)
    612.3/612.3 kB
  56.4 MB/s eta 0:00:00
Requirement already satisfied: tensorflow-datasets in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
detection==0.1) (4.9.3)
Requirement already satisfied: tensorflow-hub>=0.6.0 in
/usr/local/lib/python3.10/dist-packages (from tf-models-official==2.8.0->object-
detection==0.1) (0.15.0)
Collecting tensorflow-model-optimization>=0.4.1 (from tf-models-
official==2.8.0->object-detection==0.1)
  Downloading tensorflow_model_optimization-0.7.5-py2.py3-none-any.whl (241 kB)
    241.2/241.2 kB
  31.1 MB/s eta 0:00:00
Collecting tensorflow-text~=2.8.0 (from tf-models-official==2.8.0->object-
detection==0.1)
  Downloading
    tensorflow_text-2.8.2-cp310-cp310-manylinux_2_12_x86_64.manylinux2010_x86_64.whl
      (4.9 MB)
        4.9/4.9 MB
  117.3 MB/s eta 0:00:00
Collecting tensorflow~=2.8.0 (from tf-models-official==2.8.0->object-
detection==0.1)
  Downloading tensorflow-2.8.4-cp310-cp310-manylinux2010_x86_64.whl (498.1 MB)
    498.1/498.1 MB
  3.0 MB/s eta 0:00:00
Requirement already satisfied: python-dateutil>=2.8.1 in
/usr/local/lib/python3.10/dist-packages (from pandas->object-detection==0.1)
```

```

(2.8.2)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-
packages (from pandas->object-detection==0.1) (2023.3.post1)
Collecting portalocker (from sacrebleu<=2.2.0->object-detection==0.1)
    Downloading portalocker-2.8.2-py3-none-any.whl (17 kB)
Requirement already satisfied: regex in /usr/local/lib/python3.10/dist-packages
(from sacrebleu<=2.2.0->object-detection==0.1) (2023.6.3)
Requirement already satisfied: tabulate>=0.8.9 in
/usr/local/lib/python3.10/dist-packages (from sacrebleu<=2.2.0->object-
detection==0.1) (0.9.0)
Collecting colorama (from sacrebleu<=2.2.0->object-detection==0.1)
    Downloading colorama-0.4.6-py2.py3-none-any.whl (25 kB)
Requirement already satisfied: absl-py>=0.2.2 in /usr/local/lib/python3.10/dist-
packages (from tf-slim->object-detection==0.1) (1.4.0)
Collecting crcmod<2.0,>=1.7 (from apache-beam->object-detection==0.1)
    Downloading crcmod-1.7.tar.gz (89 kB)
    89.7/89.7 kB
14.0 kB/s eta 0:00:00
Preparing metadata (setup.py) ... done
Collecting orjson<4,>=3.9.7 (from apache-beam->object-detection==0.1)
    Downloading
orjson-3.9.10-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (138
kB)
    138.7/138.7
kB 19.1 kB/s eta 0:00:00
Collecting dill<0.3.2,>=0.3.1.1 (from apache-beam->object-detection==0.1)
    Downloading dill-0.3.1.1.tar.gz (151 kB)
    152.0/152.0
kB 23.3 kB/s eta 0:00:00
Preparing metadata (setup.py) ... done
Requirement already satisfied:云pickle~>2.2.1 in
/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (2.2.1)
Collecting fastavro<2,>=0.23.6 (from apache-beam->object-detection==0.1)
    Downloading
fastavro-1.9.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (3.1
MB)
    3.1/3.1 MB
115.3 kB/s eta 0:00:00
Collecting fasteners<1.0,>=0.3 (from apache-beam->object-detection==0.1)
    Downloading fasteners-0.19-py3-none-any.whl (18 kB)
Requirement already satisfied: grpcio!=1.48.0,<2,>=1.33.1 in
/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (1.59.2)
Collecting hdfs<3.0.0,>=2.1.0 (from apache-beam->object-detection==0.1)
    Downloading hdfs-2.7.3.tar.gz (43 kB)

```

43.5/43.5 kB

6.6 MB/s eta 0:00:00

Preparing metadata (setup.py) ... done

Requirement already satisfied: httplib2<0.23.0,>=0.8 in
/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (0.22.0)

Collecting js2py<1,>=0.74 (from apache-beam->object-detection==0.1)

Downloading Js2Py-0.74-py3-none-any.whl (1.0 MB)

1.0/1.0 MB

82.8 MB/s eta 0:00:00

Collecting objsize<0.7.0,>=0.6.1 (from apache-beam->object-detection==0.1)

Downloading objsize-0.6.1-py3-none-any.whl (9.3 kB)

Requirement already satisfied: packaging>=22.0 in
/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (23.2)

Collecting pymongo<5.0.0,>=3.8.0 (from apache-beam->object-detection==0.1)

Downloading

pymongo-4.6.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (677
kB)

677.1/677.1

kB 61.8 MB/s eta 0:00:00

Requirement already satisfied: proto-plus<2,>=1.7.1 in
/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (1.22.3)

Requirement already satisfied: protobuf!=4.0.*,!4.21.*,!4.22.0,!4.23.*,!4.24
.0,!4.24.1,!4.24.2,<4.25.0,>=3.20.3 in /usr/local/lib/python3.10/dist-packages
(from apache-beam->object-detection==0.1) (3.20.3)

Requirement already satisfied: pydot<2,>=1.2.0 in

/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (1.4.2)

Requirement already satisfied: requests<3.0.0,>=2.24.0 in

/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (2.31.0)

Requirement already satisfied: typing-extensions>=3.7.0 in

/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (4.5.0)

Collecting zstandard<1,>=0.18.0 (from apache-beam->object-detection==0.1)

Downloading

zstandard-0.22.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (5.4
MB)

5.4/5.4 MB

119.1 MB/s eta 0:00:00

Requirement already satisfied: pyarrow<12.0.0,>=3.0.0 in
/usr/local/lib/python3.10/dist-packages (from apache-beam->object-
detection==0.1) (9.0.0)

Requirement already satisfied: cycler>=0.10.0 in /usr/local/lib/python3.10/dist-
packages (from lvis->object-detection==0.1) (0.12.1)

```
Requirement already satisfied: kiwisolver>=1.1.0 in
/usr/local/lib/python3.10/dist-packages (from lvis->object-detection==0.1)
(1.4.5)
Requirement already satisfied: opencv-python>=4.1.0.25 in
/usr/local/lib/python3.10/dist-packages (from lvis->object-detection==0.1)
(4.8.0.76)
Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->object-detection==0.1)
(1.2.0)
Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->object-detection==0.1)
(4.44.0)
Requirement already satisfied: tensorflow-io-gcs-filesystem==0.34.0 in
/usr/local/lib/python3.10/dist-packages (from tensorflow_io->object-
detection==0.1) (0.34.0)
Requirement already satisfied: google-auth<3.0.0dev,>=1.19.0 in
/usr/local/lib/python3.10/dist-packages (from google-api-python-
client>=1.6.7->tf-models-official==2.8.0->object-detection==0.1) (2.17.3)
Requirement already satisfied: google-auth-httplib2>=0.1.0 in
/usr/local/lib/python3.10/dist-packages (from google-api-python-
client>=1.6.7->tf-models-official==2.8.0->object-detection==0.1) (0.1.1)
Requirement already satisfied: google-api-
core!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.0,<3.0.0dev,>=1.31.5 in
/usr/local/lib/python3.10/dist-packages (from google-api-python-
client>=1.6.7->tf-models-official==2.8.0->object-detection==0.1) (2.11.1)
Requirement already satisfied: uritemplate<5,>=3.0.1 in
/usr/local/lib/python3.10/dist-packages (from google-api-python-
client>=1.6.7->tf-models-official==2.8.0->object-detection==0.1) (4.1.1)
Collecting docopt (from hdfs<3.0.0,>=2.1.0->apache-beam->object-detection==0.1)
    Downloading docopt-0.6.2.tar.gz (25 kB)
    Preparing metadata (setup.py) ... done
Requirement already satisfied: tzlocal>=1.2 in /usr/local/lib/python3.10/dist-
packages (from js2py<1,>=0.74->apache-beam->object-detection==0.1) (5.2)
Collecting pyjsparser>=2.5.1 (from js2py<1,>=0.74->apache-beam->object-
detection==0.1)
    Downloading pyjsparser-2.7.1.tar.gz (24 kB)
    Preparing metadata (setup.py) ... done
Requirement already satisfied: certifi in /usr/local/lib/python3.10/dist-
packages (from kaggle>=1.3.9->tf-models-official==2.8.0->object-detection==0.1)
(2023.7.22)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-packages
(from kaggle>=1.3.9->tf-models-official==2.8.0->object-detection==0.1) (4.66.1)
Requirement already satisfied: python-slugify in /usr/local/lib/python3.10/dist-
packages (from kaggle>=1.3.9->tf-models-official==2.8.0->object-detection==0.1)
(8.0.1)
Requirement already satisfied: urllib3 in /usr/local/lib/python3.10/dist-
packages (from kaggle>=1.3.9->tf-models-official==2.8.0->object-detection==0.1)
(2.0.7)
```

```
Requirement already satisfied: bleach in /usr/local/lib/python3.10/dist-packages  
(from kaggle>=1.3.9->tf-models-official==2.8.0->object-detection==0.1) (6.1.0)  
Collecting dnspython<3.0.0,>=1.16.0 (from pymongo<5.0.0,>=3.8.0->apache-  
beam->object-detection==0.1)  
  Downloading dnspython-2.4.2-py3-none-any.whl (300 kB)  
    300.4/300.4  
  
kB 38.8 MB/s eta 0:00:00  
Requirement already satisfied: charset-normalizer<4,>=2 in  
/usr/local/lib/python3.10/dist-packages (from requests<3.0.0,>=2.24.0->apache-  
beam->object-detection==0.1) (3.3.2)  
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-  
packages (from requests<3.0.0,>=2.24.0->apache-beam->object-detection==0.1)  
(3.4)  
Requirement already satisfied: astunparse>=1.6.0 in  
/usr/local/lib/python3.10/dist-packages (from tensorflow~2.8.0->tf-models-  
official==2.8.0->object-detection==0.1) (1.6.3)  
Requirement already satisfied: flatbuffers>=1.12 in  
/usr/local/lib/python3.10/dist-packages (from tensorflow~2.8.0->tf-models-  
official==2.8.0->object-detection==0.1) (23.5.26)  
Requirement already satisfied: gast>=0.2.1 in /usr/local/lib/python3.10/dist-  
packages (from tensorflow~2.8.0->tf-models-official==2.8.0->object-  
detection==0.1) (0.5.4)  
Requirement already satisfied: google-pasta>=0.1.1 in  
/usr/local/lib/python3.10/dist-packages (from tensorflow~2.8.0->tf-models-  
official==2.8.0->object-detection==0.1) (0.2.0)  
Requirement already satisfied: h5py>=2.9.0 in /usr/local/lib/python3.10/dist-  
packages (from tensorflow~2.8.0->tf-models-official==2.8.0->object-  
detection==0.1) (3.9.0)  
Collecting keras-preprocessing>=1.1.1 (from tensorflow~2.8.0->tf-models-  
official==2.8.0->object-detection==0.1)  
  Downloading Keras_Preprocessing-1.1.2-py2.py3-none-any.whl (42 kB)  
    42.6/42.6 kB  
6.0 MB/s eta 0:00:00  
Requirement already satisfied: libclang>=9.0.1 in  
/usr/local/lib/python3.10/dist-packages (from tensorflow~2.8.0->tf-models-  
official==2.8.0->object-detection==0.1) (16.0.6)  
Requirement already satisfied: opt-einsum>=2.3.2 in  
/usr/local/lib/python3.10/dist-packages (from tensorflow~2.8.0->tf-models-  
official==2.8.0->object-detection==0.1) (3.3.0)  
INFO: pip is looking at multiple versions of tensorflow to determine which  
version is compatible with other requirements. This could take a while.  
Collecting tensorflow~2.8.0 (from tf-models-official==2.8.0->object-  
detection==0.1)  
  Downloading tensorflow-2.8.3-cp310-cp310-manylinux2010_x86_64.whl (498.5 MB)  
    498.5/498.5  
MB 2.3 MB/s eta 0:00:00
```

```
  Downloading tensorflow-2.8.2-cp310-cp310-manylinux2010_x86_64.whl (498.0
MB)
    498.0/498.0

  MB 3.0 MB/s eta 0:00:00
  Downloading tensorflow-2.8.1-cp310-cp310-manylinux2010_x86_64.whl (498.0
MB)
    498.0/498.0

  MB 2.1 MB/s eta 0:00:00
Requirement already satisfied: setuptools in
/usr/local/lib/python3.10/dist-packages (from tensorflow~=2.8.0->tf-models-
official==2.8.0->object-detection==0.1) (67.7.2)
Requirement already satisfied: termcolor>=1.1.0 in
/usr/local/lib/python3.10/dist-packages (from tensorflow~=2.8.0->tf-models-
official==2.8.0->object-detection==0.1) (2.3.0)
Requirement already satisfied: wrapt>=1.11.0 in /usr/local/lib/python3.10/dist-
packages (from tensorflow~=2.8.0->tf-models-official==2.8.0->object-
detection==0.1) (1.14.1)
Collecting tensorboard<2.9,>=2.8 (from tensorflow~=2.8.0->tf-models-
official==2.8.0->object-detection==0.1)
  Downloading tensorboard-2.8.0-py3-none-any.whl (5.8 MB)
    5.8/5.8 MB

  111.2 MB/s eta 0:00:00
Collecting tensorflow-estimator<2.9,>=2.8 (from tensorflow~=2.8.0->tf-
models-official==2.8.0->object-detection==0.1)
  Downloading tensorflow_estimator-2.8.0-py2.py3-none-any.whl (462 kB)
    462.3/462.3

  kB 39.1 MB/s eta 0:00:00
Collecting keras (from object-detection==0.1)
  Downloading keras-2.8.0-py2.py3-none-any.whl (1.4 MB)
    1.4/1.4 MB

  82.7 MB/s eta 0:00:00
Requirement already satisfied: dm-tree==0.1.1 in
/usr/local/lib/python3.10/dist-packages (from tensorflow-model-
optimization>=0.4.1->tf-models-official==2.8.0->object-detection==0.1) (0.1.8)
Requirement already satisfied: pyasn1>=0.1.7 in /usr/local/lib/python3.10/dist-
packages (from oauth2client->tf-models-official==2.8.0->object-detection==0.1)
(0.5.0)
Requirement already satisfied: pyasn1-modules>=0.0.5 in
/usr/local/lib/python3.10/dist-packages (from oauth2client->tf-models-
official==2.8.0->object-detection==0.1) (0.3.0)
Requirement already satisfied: rsa>=3.1.4 in /usr/local/lib/python3.10/dist-
packages (from oauth2client->tf-models-official==2.8.0->object-detection==0.1)
(4.9)
Requirement already satisfied: scikit-learn>=0.21.3 in
/usr/local/lib/python3.10/dist-packages (from seqeval->tf-models-
official==2.8.0->object-detection==0.1) (1.2.2)
```

```
Collecting typeguard<3.0.0,>=2.7 (from tensorflow-addons->tf-models-official==2.8.0->object-detection==0.1)
  Downloading typeguard-2.13.3-py3-none-any.whl (17 kB)
Requirement already satisfied: array-record in /usr/local/lib/python3.10/dist-packages (from tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (0.5.0)
Requirement already satisfied: click in /usr/local/lib/python3.10/dist-packages (from tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (8.1.7)
Requirement already satisfied: etils[enp,epath,etree]>=0.9.0 in /usr/local/lib/python3.10/dist-packages (from tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (1.5.2)
Requirement already satisfied: promise in /usr/local/lib/python3.10/dist-packages (from tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (2.3)
Requirement already satisfied: tensorflow-metadata in /usr/local/lib/python3.10/dist-packages (from tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (1.14.0)
Requirement already satisfied: toml in /usr/local/lib/python3.10/dist-packages (from tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (0.10.2)
Requirement already satisfied: wheel<1.0,>=0.23.0 in /usr/local/lib/python3.10/dist-packages (from astunparse>=1.6.0->tensorflow~2.8.0->tf-models-official==2.8.0->object-detection==0.1) (0.41.3)
Requirement already satisfied: fsspec in /usr/local/lib/python3.10/dist-packages (from etils[enp,epath,etree]>=0.9.0->tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (2023.6.0)
Requirement already satisfied: importlib_resources in /usr/local/lib/python3.10/dist-packages (from etils[enp,epath,etree]>=0.9.0->tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (6.1.1)
Requirement already satisfied: zipp in /usr/local/lib/python3.10/dist-packages (from etils[enp,epath,etree]>=0.9.0->tensorflow-datasets->tf-models-official==2.8.0->object-detection==0.1) (3.17.0)
Requirement already satisfied: googleapis-common-protos<2.0.dev0,>=1.56.2 in /usr/local/lib/python3.10/dist-packages (from google-api-core!=2.0.*,!2.1.*,!2.2.*,!2.3.0,<3.0.0dev,>=1.31.5->google-api-python-client>=1.6.7->tf-models-official==2.8.0->object-detection==0.1) (1.61.0)
Requirement already satisfied: cachetools<6.0,>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from google-auth<3.0.0dev,>=1.19.0->google-api-python-client>=1.6.7->tf-models-official==2.8.0->object-detection==0.1) (5.3.2)
Requirement already satisfied: joblib>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from scikit-learn>=0.21.3->seqeval->tf-models-official==2.8.0->object-detection==0.1) (1.3.2)
Requirement already satisfied: threadpoolctl>=2.0.0 in /usr/local/lib/python3.10/dist-packages (from scikit-learn>=0.21.3->seqeval->tf-
```

```

models-official==2.8.0->object-detection==0.1) (3.2.0)
Collecting google-auth-oauthlib<0.5,>=0.4.1 (from
tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-official==2.8.0->object-
detection==0.1)
    Downloading google_auth_oauthlib-0.4.6-py2.py3-none-any.whl (18 kB)
Requirement already satisfied: markdown>=2.6.8 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-official==2.8.0->object-
detection==0.1) (3.5.1)
Collecting tensorboard-data-server<0.7.0,>=0.6.0 (from
tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-official==2.8.0->object-
detection==0.1)
    Downloading tensorboard_data_server-0.6.1-py3-none-manylinux2010_x86_64.whl
(4.9 MB)
    4.9/4.9 MB
    117.7 MB/s eta 0:00:00
Collecting tensorboard-plugin-wit>=1.6.0 (from
tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-official==2.8.0->object-
detection==0.1)
    Downloading tensorboard_plugin_wit-1.8.1-py3-none-any.whl (781 kB)
    781.3/781.3
    kB 67.9 MB/s eta 0:00:00
Requirement already satisfied: werkzeug>=0.11.15 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-official==2.8.0->object-
detection==0.1) (3.0.1)
Requirement already satisfied: webencodings in /usr/local/lib/python3.10/dist-
packages (from bleach->kaggle>=1.3.9->tf-models-official==2.8.0->object-
detection==0.1) (0.5.1)
Requirement already satisfied: text-unidecode>=1.3 in
/usr/local/lib/python3.10/dist-packages (from python-slugify->kaggle>=1.3.9->tf-
models-official==2.8.0->object-detection==0.1) (1.3)
Requirement already satisfied: requests-oauthlib>=0.7.0 in
/usr/local/lib/python3.10/dist-packages (from google-auth-
oauthlib<0.5,>=0.4.1->tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-
official==2.8.0->object-detection==0.1) (1.3.1)
Requirement already satisfied: MarkupSafe>=2.1.1 in
/usr/local/lib/python3.10/dist-packages (from
werkzeug>=0.11.15->tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-
official==2.8.0->object-detection==0.1) (2.1.3)
Requirement already satisfied: oauthlib>=3.0.0 in
/usr/local/lib/python3.10/dist-packages (from requests-oauthlib>=0.7.0->google-
auth-oauthlib<0.5,>=0.4.1->tensorboard<2.9,>=2.8->tensorflow~=2.8.0->tf-models-
official==2.8.0->object-detection==0.1) (3.2.2)
Building wheels for collected packages: object-detection, avro-python3, crcmod,
dill, hdfs, seqeval, pyjsparser, docopt
    Building wheel for object-detection (setup.py) ... done

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Created wheel for object-detection: filename=object_detection-0.1-py3-none-
any.whl size=1697350
sha256=383236c12f10cf811b20c1b622631a716ff9d1a8afe6038cc0329cc60b1215cc
    Stored in directory: /tmp/pip-ephem-wheel-cache-
fcrcdtei/wheels/53/dd/70/2de274d6c443c69d367bd6a5606f95e5a6df61aacf1435ec0d
        Building wheel for avro-python3 (setup.py) ... done
        Created wheel for avro-python3: filename=avro_python3-1.10.2-py3-none-any.whl
size=43993
sha256=b3c7660719ecdc4a48e5a005912688ff880526df504700c4cdc6f35480c862b4
    Stored in directory: /root/.cache/pip/wheels/bc/85/62/6cdd81c56f923946b401cecf
f38055b94c9b766927f7d8ca82
        Building wheel for crcmod (setup.py) ... done
        Created wheel for crcmod: filename=crcmod-1.7-cp310-cp310-linux_x86_64.whl
size=31408
sha256=c32d624571f96371c6ac710af6196c68a5b7865129740b96978b079d3b00e73c
    Stored in directory: /root/.cache/pip/wheels/85/4c/07/72215c529bd59d67e3dac297
11d7aba1b692f543c808ba9e86
        Building wheel for dill (setup.py) ... done
        Created wheel for dill: filename=dill-0.3.1.1-py3-none-any.whl size=78542
sha256=2ec187559a42cd2b31f677e2398fda9221daabdcc4312b4e6dd049e0f96b2291
    Stored in directory: /root/.cache/pip/wheels/ea/e2/86/64980d90e297e7bf2ce588c2
b96e818f5399c515c4bb8a7e4f
        Building wheel for hdfs (setup.py) ... done
        Created wheel for hdfs: filename=hdfs-2.7.3-py3-none-any.whl size=34325
sha256=221381fefef891d8de4250ef6110fca2d2a09674c2cba57e2775cf1801743c05d
    Stored in directory: /root/.cache/pip/wheels/e5/8d/b6/99c1c0a3ac5788c866b0ecd3
f48b0134a5910e6ed26011800b
        Building wheel for seqeval (setup.py) ... done
        Created wheel for seqeval: filename=seqeval-1.2.2-py3-none-any.whl size=16161
sha256=195b374cdf3db74bfd910540912a33eb1ddee3e391018eeb769e02e0c2a6047d
    Stored in directory: /root/.cache/pip/wheels/1a/67/4a/ad4082dd7dfc30f2abfe4d80
a2ed5926a506eb8a972b4767fa
        Building wheel for pyjsparser (setup.py) ... done
        Created wheel for pyjsparser: filename=pyjsparser-2.7.1-py3-none-any.whl
size=25985
sha256=f52e8d597554b288447d8d788dc5c542864610a1288c52dc20cdaa3141dff22
    Stored in directory: /root/.cache/pip/wheels/5e/81/26/5956478df303e2bf5a85a5df
595bb307bd25948a4bab69f7c7
        Building wheel for docopt (setup.py) ... done
        Created wheel for docopt: filename=docopt-0.6.2-py2.py3-none-any.whl
size=13706
sha256=53eb996293394b59bfc437eaa5e39aca68bd460e9f9b5ed3d4d38a22bc67b5e3
    Stored in directory: /root/.cache/pip/wheels/fc/ab/d4/5da2067ac95b36618c629a5f
93f809425700506f72c9732fac
Successfully built object-detection avro-python3 crcmod dill hdfs seqeval
pyjsparser docopt
Installing collected packages: tensorflow-estimator, tensorboard-plugin-wit,
sentencepiece, pyjsparser, keras, docopt, crcmod, zstandard, typeguard,

```

```
tensorflow-model-optimization, tensorflow_io, tensorboard-data-server,
pyparsing, portalocker, orjson, objsize, keras-preprocessing, js2py, fasteners,
fastavro, dnspython, dill, Cython, colorama, avro-python3, tensorflow-addons,
sacrebleu, pymongo, hdfs, seqeval, lvis, google-auth-oauthlib, apache-beam,
tensorboard, tensorflow, tensorflow-text, tf-models-official, object-detection

Attempting uninstall: tensorflow-estimator
  Found existing installation: tensorflow-estimator 2.14.0
  Uninstalling tensorflow-estimator-2.14.0:
    Successfully uninstalled tensorflow-estimator-2.14.0

Attempting uninstall: keras
  Found existing installation: keras 2.14.0
  Uninstalling keras-2.14.0:
    Successfully uninstalled keras-2.14.0

Attempting uninstall: tensorboard-data-server
  Found existing installation: tensorboard-data-server 0.7.2
  Uninstalling tensorboard-data-server-0.7.2:
    Successfully uninstalled tensorboard-data-server-0.7.2

Attempting uninstall: pyparsing
  Found existing installation: pyparsing 3.1.1
  Uninstalling pyparsing-3.1.1:
    Successfully uninstalled pyparsing-3.1.1

Attempting uninstall: google-auth-oauthlib
  Found existing installation: google-auth-oauthlib 1.0.0
  Uninstalling google-auth-oauthlib-1.0.0:
    Successfully uninstalled google-auth-oauthlib-1.0.0

Attempting uninstall: tensorboard
  Found existing installation: tensorboard 2.14.1
  Uninstalling tensorboard-2.14.1:
    Successfully uninstalled tensorboard-2.14.1

Attempting uninstall: tensorflow
  Found existing installation: tensorflow 2.14.0
  Uninstalling tensorflow-2.14.0:
    Successfully uninstalled tensorflow-2.14.0

Successfully installed Cython-3.0.5 apache-beam-2.51.0 avro-python3-1.10.2
colorama-0.4.6 crcmod-1.7 dill-0.3.1.1 dnspython-2.4.2 docopt-0.6.2
fastavro-1.9.0 fasteners-0.19 google-auth-oauthlib-0.4.6 hdfs-2.7.3 js2py-0.74
keras-2.8.0 keras-preprocessing-1.1.2 lvis-0.5.3 object-detection-0.1
objsize-0.6.1 orjson-3.9.10 portalocker-2.8.2 pyjsparser-2.7.1 pymongo-4.6.0
pyparsing-2.4.7 sacrebleu-2.2.0 sentencepiece-0.1.99 seqeval-1.2.2
tensorboard-2.8.0 tensorboard-data-server-0.6.1 tensorboard-plugin-wit-1.8.1
tensorflow-2.8.1 tensorflow-addons-0.22.0 tensorflow-estimator-2.8.0 tensorflow-
model-optimization-0.7.5 tensorflow-text-2.8.2 tensorflow_io-0.34.0 tf-models-
official-2.8.0 typeguard-2.13.3 zstandard-0.22.0

Collecting tensorflow==2.8.0
  Downloading tensorflow-2.8.0-cp310-cp310-manylinux2010_x86_64.whl (497.6 MB)
    497.6/497.6
```

MB 3.4 MB/s eta 0:00:00

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Requirement already satisfied: absl-py>=0.4.0 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (1.4.0)
Requirement already satisfied: astunparse>=1.6.0 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (1.6.3)
Requirement already satisfied: flatbuffers>=1.12 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (23.5.26)
Requirement already satisfied: gast>=0.2.1 in /usr/local/lib/python3.10/dist-
packages (from tensorflow==2.8.0) (0.5.4)
Requirement already satisfied: google-pasta>=0.1.1 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (0.2.0)
Requirement already satisfied: h5py>=2.9.0 in /usr/local/lib/python3.10/dist-
packages (from tensorflow==2.8.0) (3.9.0)
Requirement already satisfied: keras-preprocessing>=1.1.1 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (1.1.2)
Requirement already satisfied: libclang>=9.0.1 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (16.0.6)
Requirement already satisfied: numpy>=1.20 in /usr/local/lib/python3.10/dist-
packages (from tensorflow==2.8.0) (1.23.5)
Requirement already satisfied: opt-einsum>=2.3.2 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (3.3.0)
Requirement already satisfied: protobuf>=3.9.2 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (3.20.3)
Requirement already satisfied: setuptools in /usr/local/lib/python3.10/dist-
packages (from tensorflow==2.8.0) (67.7.2)
Requirement already satisfied: six>=1.12.0 in /usr/local/lib/python3.10/dist-
packages (from tensorflow==2.8.0) (1.16.0)
Requirement already satisfied: termcolor>=1.1.0 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (2.3.0)
Requirement already satisfied: typing-extensions>=3.6.6 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (4.5.0)
Requirement already satisfied: wrapt>=1.11.0 in /usr/local/lib/python3.10/dist-
packages (from tensorflow==2.8.0) (1.14.1)
Requirement already satisfied: tensorboard<2.9,>=2.8 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (2.8.0)
Collecting tf-estimator-nightly==2.8.0.dev2021122109 (from tensorflow==2.8.0)
  Downloading tf_estimator_nightly-2.8.0.dev2021122109-py2.py3-none-any.whl (462
kB)

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462.5/462.5

kB 47.9 MB/s eta 0:00:00

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Requirement already satisfied: keras<2.9,>=2.8.0rc0 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (2.8.0)
Requirement already satisfied: tensorflow-io-gcs-filesystem>=0.23.1 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (0.34.0)
Requirement already satisfied: grpcio<2.0,>=1.24.3 in
/usr/local/lib/python3.10/dist-packages (from tensorflow==2.8.0) (1.59.2)
Requirement already satisfied: wheel<1.0,>=0.23.0 in
/usr/local/lib/python3.10/dist-packages (from

```

```
astunparse>=1.6.0->tensorflow==2.8.0) (0.41.3)
Requirement already satisfied: google-auth<3,>=1.6.3 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (2.17.3)
Requirement already satisfied: google-auth-oauthlib<0.5,>=0.4.1 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (0.4.6)
Requirement already satisfied: markdown>=2.6.8 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (3.5.1)
Requirement already satisfied: requests<3,>=2.21.0 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (2.31.0)
Requirement already satisfied: tensorflow-data-server<0.7.0,>=0.6.0 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (0.6.1)
Requirement already satisfied: tensorflow-plugin-wit>=1.6.0 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (1.8.1)
Requirement already satisfied: werkzeug>=0.11.15 in
/usr/local/lib/python3.10/dist-packages (from
tensorboard<2.9,>=2.8->tensorflow==2.8.0) (3.0.1)
Requirement already satisfied: cachetools<6.0,>=2.0.0 in
/usr/local/lib/python3.10/dist-packages (from google-
auth<3,>=1.6.3->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (5.3.2)
Requirement already satisfied: pyasn1-modules>=0.2.1 in
/usr/local/lib/python3.10/dist-packages (from google-
auth<3,>=1.6.3->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (0.3.0)
Requirement already satisfied: rsa<5,>=3.1.4 in /usr/local/lib/python3.10/dist-
packages (from google-auth<3,>=1.6.3->tensorboard<2.9,>=2.8->tensorflow==2.8.0)
(4.9)
Requirement already satisfied: requests-oauthlib>=0.7.0 in
/usr/local/lib/python3.10/dist-packages (from google-auth-
oauthlib<0.5,>=0.4.1->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (1.3.1)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from
requests<3,>=2.21.0->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-
packages (from requests<3,>=2.21.0->tensorboard<2.9,>=2.8->tensorflow==2.8.0)
(3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in
/usr/local/lib/python3.10/dist-packages (from
requests<3,>=2.21.0->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in
/usr/local/lib/python3.10/dist-packages (from
requests<3,>=2.21.0->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (2023.7.22)
Requirement already satisfied: MarkupSafe>=2.1.1 in
/usr/local/lib/python3.10/dist-packages (from
```

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werkzeug>=0.11.15->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (2.1.3)
Requirement already satisfied: pyasn1<0.6.0,>=0.4.6 in
/usr/local/lib/python3.10/dist-packages (from pyasn1-modules>=0.2.1->google-
auth<3,>=1.6.3->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (0.5.0)
Requirement already satisfied: oauthlib>=3.0.0 in
/usr/local/lib/python3.10/dist-packages (from requests-oauthlib>=0.7.0->google-
auth-oauthlib<0.5,>=0.4.1->tensorboard<2.9,>=2.8->tensorflow==2.8.0) (3.2.2)
Installing collected packages: tf-estimator-nightly, tensorflow
  Attempting uninstall: tensorflow
    Found existing installation: tensorflow 2.8.1
    Uninstalling tensorflow-2.8.1:
      Successfully uninstalled tensorflow-2.8.1
Successfully installed tensorflow-2.8.0 tf-estimator-nightly-2.8.0.dev2021122109

```

[5]: # Run Model Bulider Test file, just to verify everything's working properly

```

!python /content/models/research/object_detection/builders/
  ↵model_builder_tf2_test.py

```

```

/usr/local/lib/python3.10/dist-packages/tensorflow_io/python/ops/__init__.py:98:
UserWarning: unable to load libtensorflow_io_plugins.so: unable to open file:
libtensorflow_io_plugins.so, from paths: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so']
caused by: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so: undefined symbol:
_ZN3tsl5mutexC1Ev']
  warnings.warn(f"unable to load libtensorflow_io_plugins.so: {e}")
/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/__init__.py:104: UserWarning: file system
plugins are not loaded: unable to open file: libtensorflow_io.so, from paths:
['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io.so']
caused by: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io.so: undefined symbol: _ZNK10t
ensorflow4data11DatasetBase8FinalizeEPNS_15OpKernelContextESt8functionIFN3tsl8St
atusOrINS5_4core11RefCountPtrIS1_EEEEvEE']
  warnings.warn(f"file system plugins are not loaded: {e}")
Running tests under Python 3.10.12: /usr/bin/python3
[ RUN      ] ModelBuilderTF2Test.test_create_center_net_deepmac
2023-11-15 15:27:39.007471: W
tensorflow/core/common_runtime/gpu/gpu_bfc_allocator.cc:39] Overriding
allow_growth setting because the TF_FORCE_GPU_ALLOW_GROWTH environment variable
is set. Original config value was 0.
W1115 15:27:39.231826 140647636762624 model_builder.py:1112] Building
experimental DeepMAC meta-arch. Some features may be omitted.
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_center_net_deepmac
): 1.57s
I1115 15:27:39.627226 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_center_net_deepmac): 1.57s

```

```

[      OK ] ModelBuilderTF2Test.test_create_center_net_deepmac
[ RUN      ] ModelBuilderTF2Test.test_create_center_net_model0
(customize_head_params=True)
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_center_net_model0
(customize_head_params=True)): 0.53s
I1115 15:27:40.159335 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_center_net_model0
(customize_head_params=True)): 0.53s
[      OK ] ModelBuilderTF2Test.test_create_center_net_model0
(customize_head_params=True)
[ RUN      ] ModelBuilderTF2Test.test_create_center_net_model1
(customize_head_params=False)
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_center_net_model1
(customize_head_params=False)): 0.26s
I1115 15:27:40.419795 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_center_net_model1
(customize_head_params=False)): 0.26s
[      OK ] ModelBuilderTF2Test.test_create_center_net_model1
(customize_head_params=False)
[ RUN      ] ModelBuilderTF2Test.test_create_center_net_model_from_keypoints
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_center_net_model_f
rom_keypoints): 0.26s
I1115 15:27:40.675565 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_center_net_model_from_keypoints):
0.26s
[      OK ] ModelBuilderTF2Test.test_create_center_net_model_from_keypoints
[ RUN      ] ModelBuilderTF2Test.test_create_center_net_model_mobilenet
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_center_net_model_m
obilenet): 1.78s
I1115 15:27:42.455629 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_center_net_model_mobilenet): 1.78s
[      OK ] ModelBuilderTF2Test.test_create_center_net_model_mobilenet
[ RUN      ] ModelBuilderTF2Test.test_create_experimental_model
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_experimental_model
): 0.0s
I1115 15:27:42.456905 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_experimental_model): 0.0s
[      OK ] ModelBuilderTF2Test.test_create_experimental_model
[ RUN      ]
ModelBuilderTF2Test.test_create_faster_rcnn_from_config_with_crop_feature0
(True)
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_from_c
onfig_with_crop_feature0 (True)): 0.03s
I1115 15:27:42.483490 140647636762624 test_util.py:2373] time(__main__.ModelBu
ilderTF2Test.test_create_faster_rcnn_from_config_with_crop_feature0 (True)): 0.03s
[      OK ]
ModelBuilderTF2Test.test_create_faster_rcnn_from_config_with_crop_feature0
(True)

```

```

[ RUN      ]
ModelBuilderTF2Test.test_create_faster_rcnn_from_config_with_crop_feature1
(False)
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_from_c
onfig_with_crop_feature1 (False)): 0.01s
I1115 15:27:42.498288 140647636762624 test_util.py:2373] time(__main__.ModelBu
ilderTF2Test.test_create_faster_rcnn_from_config_with_crop_feature1 (False)):
0.01s
[      OK ]
ModelBuilderTF2Test.test_create_faster_rcnn_from_config_with_crop_feature1
(False)
[ RUN      ]
ModelBuilderTF2Test.test_create_faster_rcnn_model_from_config_with_example_miner
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_model_
from_config_with_example_miner): 0.02s
I1115 15:27:42.513863 140647636762624 test_util.py:2373] time(__main__.ModelBu
ilderTF2Test.test_create_faster_rcnn_model_from_config_with_example_miner): 0.02s
[      OK ]
ModelBuilderTF2Test.test_create_faster_rcnn_model_from_config_with_example_miner
[ RUN      ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_fast
er_rcnn_with_matmul
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_models
_from_config_faster_rcnn_with_matmul): 0.11s
I1115 15:27:42.619637 140647636762624 test_util.py:2373] time(__main__.ModelBu
ilderTF2Test.test_create_faster_rcnn_models_from_config_faster_rcnn_with_matmul):
0.11s
[      OK ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_fast
er_rcnn_with_matmul
[ RUN      ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_fast
er_rcnn_without_matmul
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_models
_from_config_faster_rcnn_without_matmul): 0.09s
I1115 15:27:42.714033 140647636762624 test_util.py:2373] time(__main__.ModelBu
ilderTF2Test.test_create_faster_rcnn_models_from_config_faster_rcnn_without_matmul
): 0.09s
[      OK ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_fast
er_rcnn_without_matmul
[ RUN      ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_mask
_rcnn_with_matmul
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_models
_from_config_mask_rcnn_with_matmul): 0.09s
I1115 15:27:42.809229 140647636762624 test_util.py:2373] time(__main__.ModelBu
ilderTF2Test.test_create_faster_rcnn_models_from_config_mask_rcnn_with_matmul):
0.09s
[      OK ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_mask
_rcnn_with_matmul
[ RUN      ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_mask
_rcnn_without_matmul

```

```
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_faster_rcnn_models
_from_config_mask_rcnn_without_matmul): 0.09s
I1115 15:27:42.900500 140647636762624 test_util.py:2373] time(__main__.ModelBuil
derTF2Test.test_create_faster_rcnn_models_from_config_mask_rcnn_without_matmul):
0.09s
[      OK ] ModelBuilderTF2Test.test_create_faster_rcnn_models_from_config_mask
_rcnn_without_matmul
[ RUN      ] ModelBuilderTF2Test.test_create_rfcn_model_from_config
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_rfcn_model_from_co
nfig): 0.1s
I1115 15:27:43.005802 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_rfcn_model_from_config): 0.1s
[      OK ] ModelBuilderTF2Test.test_create_rfcn_model_from_config
[ RUN      ] ModelBuilderTF2Test.test_create_ssd_fpn_model_from_config
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_ssd_fpn_model_from
_config): 0.04s
I1115 15:27:43.046868 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_ssd_fpn_model_from_config): 0.04s
[      OK ] ModelBuilderTF2Test.test_create_ssd_fpn_model_from_config
[ RUN      ] ModelBuilderTF2Test.test_create_ssd_models_from_config
I1115 15:27:43.300474 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b0
I1115 15:27:43.300658 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
64
I1115 15:27:43.300731 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 3
I1115 15:27:43.304118 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 15:27:43.326094 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 15:27:43.326238 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 15:27:43.406882 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 15:27:43.407056 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 15:27:43.622613 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 15:27:43.622809 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 15:27:43.824576 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 15:27:43.824776 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 15:27:44.127336 140647636762624 efficientnet_model.py:144] round_filter
```

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input=80 output=80
I1115 15:27:44.127555 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 15:27:44.425371 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 15:27:44.425563 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 15:27:44.829748 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 15:27:44.829961 140647636762624 efficientnet_model.py:144] round_filter
input=320 output=320
I1115 15:27:44.930073 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=1280
I1115 15:27:44.974723 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.0,
depth_coefficient=1.0, resolution=224, dropout_rate=0.2,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
I1115 15:27:45.058454 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b1
I1115 15:27:45.058640 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
88
I1115 15:27:45.058715 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 4

```

```
I1115 15:27:45.061226 140647636762624 efficientnet_model.py:144] round_filter  
input=32 output=32  
I1115 15:27:45.082210 140647636762624 efficientnet_model.py:144] round_filter  
input=32 output=32  
I1115 15:27:45.082349 140647636762624 efficientnet_model.py:144] round_filter  
input=16 output=16  
I1115 15:27:45.236680 140647636762624 efficientnet_model.py:144] round_filter  
input=16 output=16  
I1115 15:27:45.236871 140647636762624 efficientnet_model.py:144] round_filter  
input=24 output=24  
I1115 15:27:45.538916 140647636762624 efficientnet_model.py:144] round_filter  
input=24 output=24  
I1115 15:27:45.539103 140647636762624 efficientnet_model.py:144] round_filter  
input=40 output=40  
I1115 15:27:45.836455 140647636762624 efficientnet_model.py:144] round_filter  
input=40 output=40  
I1115 15:27:45.836647 140647636762624 efficientnet_model.py:144] round_filter  
input=80 output=80  
I1115 15:27:46.512068 140647636762624 efficientnet_model.py:144] round_filter  
input=80 output=80  
I1115 15:27:46.512277 140647636762624 efficientnet_model.py:144] round_filter  
input=112 output=112  
I1115 15:27:46.948499 140647636762624 efficientnet_model.py:144] round_filter  
input=112 output=112  
I1115 15:27:46.948698 140647636762624 efficientnet_model.py:144] round_filter  
input=192 output=192  
I1115 15:27:47.520616 140647636762624 efficientnet_model.py:144] round_filter  
input=192 output=192  
I1115 15:27:47.520839 140647636762624 efficientnet_model.py:144] round_filter  
input=320 output=320  
I1115 15:27:47.746348 140647636762624 efficientnet_model.py:144] round_filter  
input=1280 output=1280  
I1115 15:27:47.787347 140647636762624 efficientnet_model.py:454] Building model  
efficientnet with params ModelConfig(width_coefficient=1.0,  
depth_coefficient=1.1, resolution=240, dropout_rate=0.2,  
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,  
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,  
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,  
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),  
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),  
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,  
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,  
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,  
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,  
id_skip=True, fused_conv=False, conv_type='depthwise'),  
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,  
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,  
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
```

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kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
I1115 15:27:47.891431 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b2
I1115 15:27:47.891640 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
112
I1115 15:27:47.891730 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 5
I1115 15:27:47.894255 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 15:27:47.917015 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 15:27:47.917157 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 15:27:48.095128 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 15:27:48.095336 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 15:27:48.424725 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 15:27:48.424967 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=48
I1115 15:27:48.773700 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=48
I1115 15:27:48.773938 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=88
I1115 15:27:49.212198 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=88
I1115 15:27:49.212424 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=120
I1115 15:27:49.660520 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=120
I1115 15:27:49.660722 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=208
I1115 15:27:50.209431 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=208
I1115 15:27:50.209644 140647636762624 efficientnet_model.py:144] round_filter

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input=320 output=352
I1115 15:27:50.422026 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=1408
I1115 15:27:50.467494 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.1,
depth_coefficient=1.2, resolution=260, dropout_rate=0.3,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
I1115 15:27:50.572145 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b3
I1115 15:27:50.572343 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
160
I1115 15:27:50.572430 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 6
I1115 15:27:50.574864 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=40
I1115 15:27:50.597393 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=40
I1115 15:27:50.597545 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=24
I1115 15:27:50.768385 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=24
I1115 15:27:50.768570 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=32

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I1115 15:27:51.108820 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=32
I1115 15:27:51.109040 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=48
I1115 15:27:51.441399 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=48
I1115 15:27:51.441645 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=96
I1115 15:27:52.018549 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=96
I1115 15:27:52.018757 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=136
I1115 15:27:52.582926 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=136
I1115 15:27:52.583136 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=232
I1115 15:27:53.249729 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=232
I1115 15:27:53.249953 140647636762624 efficientnet_model.py:144] round_filter
input=320 output=384
I1115 15:27:53.473248 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=1536
I1115 15:27:53.516658 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.2,
depth_coefficient=1.4, resolution=300, dropout_rate=0.3,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
```

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I1115 15:27:53.624155 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b4
I1115 15:27:53.624348 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
224
I1115 15:27:53.624432 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 7
I1115 15:27:53.626806 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=48
I1115 15:27:53.649016 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=48
I1115 15:27:53.649156 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=24
I1115 15:27:53.818369 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=24
I1115 15:27:53.818564 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=32
I1115 15:27:54.653126 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=32
I1115 15:27:54.653344 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=56
I1115 15:27:55.111353 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=56
I1115 15:27:55.111557 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=112
I1115 15:27:55.787763 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=112
I1115 15:27:55.788003 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=160
I1115 15:27:56.339226 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=160
I1115 15:27:56.339395 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=272
I1115 15:27:56.943238 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=272
I1115 15:27:56.943415 140647636762624 efficientnet_model.py:144] round_filter
input=320 output=448
I1115 15:27:57.103193 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=1792
I1115 15:27:57.131762 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.4,
depth_coefficient=1.8, resolution=380, dropout_rate=0.4,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
```

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    se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
    BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
    expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
    conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
    kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
    id_skip=True, fused_conv=False, conv_type='depthwise'),
    BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
    expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
    conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
    kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
    id_skip=True, fused_conv=False, conv_type='depthwise'),
    BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
    expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
    conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
I1115 15:27:57.212722 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b5
I1115 15:27:57.212886 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
288
I1115 15:27:57.212968 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 7
I1115 15:27:57.214526 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=48
I1115 15:27:57.229110 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=48
I1115 15:27:57.229213 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=24
I1115 15:27:57.399357 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=24
I1115 15:27:57.399521 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=40
I1115 15:27:57.760708 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=40
I1115 15:27:57.760889 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=64
I1115 15:27:58.126068 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=64
I1115 15:27:58.126222 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=128
I1115 15:27:58.651051 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=128
```

```
I1115 15:27:58.651216 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=176
I1115 15:27:59.167964 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=176
I1115 15:27:59.168129 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=304
I1115 15:27:59.842110 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=304
I1115 15:27:59.842276 140647636762624 efficientnet_model.py:144] round_filter
input=320 output=512
I1115 15:28:00.064878 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=2048
I1115 15:28:00.097836 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.6,
depth_coefficient=2.2, resolution=456, dropout_rate=0.4,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
I1115 15:28:00.457522 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b6
I1115 15:28:00.457698 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
384
I1115 15:28:00.457793 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 8
I1115 15:28:00.459506 140647636762624 efficientnet_model.py:144] round_filter
```

```
input=32 output=56
I1115 15:28:00.476295 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=56
I1115 15:28:00.476438 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=32
I1115 15:28:00.664691 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=32
I1115 15:28:00.664876 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=40
I1115 15:28:01.174695 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=40
I1115 15:28:01.174870 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=72
I1115 15:28:01.633371 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=72
I1115 15:28:01.633571 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=144
I1115 15:28:02.234873 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=144
I1115 15:28:02.235036 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=200
I1115 15:28:02.834524 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=200
I1115 15:28:02.834690 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=344
I1115 15:28:03.647065 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=344
I1115 15:28:03.647237 140647636762624 efficientnet_model.py:144] round_filter
input=320 output=576
I1115 15:28:03.865841 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=2304
I1115 15:28:03.895627 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.8,
depth_coefficient=2.6, resolution=528, dropout_rate=0.5,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
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    id_skip=True, fused_conv=False, conv_type='depthwise'),
    BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
    expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
    conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
    activation='simple_swish', batch_norm='default', bn_momentum=0.99,
    bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
    min_depth=None, use_se=True, input_channels=3, num_classes=1000,
    model_name='efficientnet', rescale_input=False, data_format='channels_last',
    dtype='float32')
I1115 15:28:03.993715 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b7
I1115 15:28:03.993874 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
384
I1115 15:28:03.993971 140647636762624
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 8
I1115 15:28:03.995486 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=64
I1115 15:28:04.011031 140647636762624 efficientnet_model.py:144] round_filter
input=32 output=64
I1115 15:28:04.011152 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=32
I1115 15:28:04.260559 140647636762624 efficientnet_model.py:144] round_filter
input=16 output=32
I1115 15:28:04.260723 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=48
I1115 15:28:04.779554 140647636762624 efficientnet_model.py:144] round_filter
input=24 output=48
I1115 15:28:04.779720 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=80
I1115 15:28:05.296559 140647636762624 efficientnet_model.py:144] round_filter
input=40 output=80
I1115 15:28:05.296724 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=160
I1115 15:28:06.036656 140647636762624 efficientnet_model.py:144] round_filter
input=80 output=160
I1115 15:28:06.036830 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=224
I1115 15:28:07.513832 140647636762624 efficientnet_model.py:144] round_filter
input=112 output=224
I1115 15:28:07.514035 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=384
I1115 15:28:08.849131 140647636762624 efficientnet_model.py:144] round_filter
input=192 output=384
I1115 15:28:08.849324 140647636762624 efficientnet_model.py:144] round_filter
input=320 output=640
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I1115 15:28:09.248158 140647636762624 efficientnet_model.py:144] round_filter
input=1280 output=2560
I1115 15:28:09.297953 140647636762624 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=2.0,
depth_coefficient=3.1, resolution=600, dropout_rate=0.5,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_create_ssd_models_from_config): 26.47s
I1115 15:28:09.518756 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_create_ssd_models_from_config): 26.47s
[ OK ] ModelBuilderTF2Test.test_create_ssd_models_from_config
[ RUN ] ModelBuilderTF2Test.test_invalid_faster_rcnn_batchnorm_update
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_invalid_faster_rcnn_batchnorm_update): 0.01s
I1115 15:28:09.535032 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_invalid_faster_rcnn_batchnorm_update):
0.01s
[ OK ] ModelBuilderTF2Test.test_invalid_faster_rcnn_batchnorm_update
[ RUN ] ModelBuilderTF2Test.test_invalid_first_stage_nms_iou_threshold
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_invalid_first_stage_nms_iou_threshold): 0.0s
I1115 15:28:09.537667 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_invalid_first_stage_nms_iou_threshold):
0.0s
[ OK ] ModelBuilderTF2Test.test_invalid_first_stage_nms_iou_threshold
[ RUN ] ModelBuilderTF2Test.test_invalid_model_config_proto

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```

INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_invalid_model_config_proto): 0.0s
I1115 15:28:09.538325 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_invalid_model_config_proto): 0.0s
[      OK ] ModelBuilderTF2Test.test_invalid_model_config_proto
[ RUN      ] ModelBuilderTF2Test.test_invalid_second_stage_batch_size
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_invalid_second_stage_batch_size): 0.0s
I1115 15:28:09.540683 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_invalid_second_stage_batch_size): 0.0s
[      OK ] ModelBuilderTF2Test.test_invalid_second_stage_batch_size
[ RUN      ] ModelBuilderTF2Test.test_session
[ SKIPPED ] ModelBuilderTF2Test.test_session
[ RUN      ] ModelBuilderTF2Test.test_unknown_faster_rcnn_feature_extractor
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_unknown_faster_rcnn_feature_extractor): 0.0s
I1115 15:28:09.542789 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_unknown_faster_rcnn_feature_extractor): 0.0s
[      OK ] ModelBuilderTF2Test.test_unknown_faster_rcnn_feature_extractor
[ RUN      ] ModelBuilderTF2Test.test_unknown_meta_architecture
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_unknown_meta_architecture): 0.0s
I1115 15:28:09.543349 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_unknown_meta_architecture): 0.0s
[      OK ] ModelBuilderTF2Test.test_unknown_meta_architecture
[ RUN      ] ModelBuilderTF2Test.test_unknown_ssd_feature_extractor
INFO:tensorflow:time(__main__.ModelBuilderTF2Test.test_unknown_ssd_feature_extractor): 0.0s
I1115 15:28:09.544928 140647636762624 test_util.py:2373]
time(__main__.ModelBuilderTF2Test.test_unknown_ssd_feature_extractor): 0.0s
[      OK ] ModelBuilderTF2Test.test_unknown_ssd_feature_extractor
-----
```

Ran 24 tests in 31.490s

OK (skipped=1)

0.1 2. Upload Image Dataset and Prepare Training Data

The code section below will create a “labelmap.txt” file that contains a list of classes. Replace the `class1`, `class2`, `class3` text with your own classes (for example, `penny`, `nickel`, `dime`, `quarter`), adding a new line for each class.

```
[6]: ### This creates a "labelmap.txt" file with a list of classes the object-detection model will detect.
%%bash
cat <<EOF >> /content/labelmap.txt
CrashBarrier
```

```
Sign
Terrain
Track
Tree
null
EOF
```

Download and run the data conversion scripts from the [GitHub repository](#) by clicking play on the following three sections of code. They will create TFRecord files for the train and validation datasets, as well as a `labelmap.pbtxt` file which contains the labelmap in a different format.

[7] : *# Download data conversion scripts*

```
! wget https://raw.githubusercontent.com/EdjeElectronics/
  ↵TensorFlow-Lite-Object-Detection-on-Android-and-Raspberry-Pi/master/
  ↵util_scripts/create_csv.py
! wget https://raw.githubusercontent.com/EdjeElectronics/
  ↵TensorFlow-Lite-Object-Detection-on-Android-and-Raspberry-Pi/master/
  ↵util_scripts/create_tfrecord.py
```

```
--2023-11-15 15:28:25--
https://raw.githubusercontent.com/EdjeElectronics/TensorFlow-Lite-Object-
Detection-on-Android-and-Raspberry-Pi/master/util_scripts/create_csv.py
Resolving raw.githubusercontent.com (raw.githubusercontent.com)...
185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to raw.githubusercontent.com
(raw.githubusercontent.com)|185.199.108.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1348 (1.3K) [text/plain]
Saving to: 'create_csv.py'
```

```
create_csv.py      100%[=====]    1.32K  --.-KB/s    in 0s
```

```
2023-11-15 15:28:25 (86.3 MB/s) - 'create_csv.py' saved [1348/1348]
```

```
--2023-11-15 15:28:25--
https://raw.githubusercontent.com/EdjeElectronics/TensorFlow-Lite-Object-
Detection-on-Android-and-Raspberry-Pi/master/util_scripts/create_tfrecord.py
Resolving raw.githubusercontent.com (raw.githubusercontent.com)...
185.199.108.133, 185.199.109.133, 185.199.110.133, ...
Connecting to raw.githubusercontent.com
(raw.githubusercontent.com)|185.199.108.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4414 (4.3K) [text/plain]
Saving to: 'create_tfrecord.py'
```

```
create_tfrecord.py 100%[=====]    4.31K  --.-KB/s    in 0s
```

```
2023-11-15 15:28:26 (66.0 MB/s) - 'create_tfrecord.py' saved [4414/4414]
```

```
[8]: !pip install roboflow

from roboflow import Roboflow
rf = Roboflow(api_key="2E621SGWIUyPuiRPamoA")
project = rf.workspace("hochschule-karlsruhe").project("unitysemseg")
dataset = project.version(2).download("tfrecord")

Collecting roboflow
  Downloading roboflow-1.1.9-py3-none-any.whl (63 kB)
    63.3/63.3 kB
  1.3 MB/s eta 0:00:00
Requirement already satisfied: certifi==2023.7.22 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2023.7.22)
Collecting chardet==4.0.0 (from roboflow)
  Downloading chardet-4.0.0-py2.py3-none-any.whl (178 kB)
    178.7/178.7 kB
  kB 7.4 MB/s eta 0:00:00
Collecting cycler==0.10.0 (from roboflow)
  Downloading cycler-0.10.0-py2.py3-none-any.whl (6.5 kB)
Collecting idna==2.10 (from roboflow)
  Downloading idna-2.10-py2.py3-none-any.whl (58 kB)
    58.8/58.8 kB
  5.4 MB/s eta 0:00:00
Requirement already satisfied: kiwisolver>=1.3.1 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (1.4.5)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-
packages (from roboflow) (3.7.1)
Requirement already satisfied: numpy>=1.18.5 in /usr/local/lib/python3.10/dist-
packages (from roboflow) (1.23.5)
Collecting opencv-python-headless==4.8.0.74 (from roboflow)
  Downloading opencv_python_headless-4.8.0.74-cp37-abi3-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (49.1 MB)
    49.1/49.1 kB
  17.4 MB/s eta 0:00:00
Requirement already satisfied: Pillow>=7.1.2 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (9.4.0)
Requirement already satisfied: pyparsing==2.4.7 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2.4.7)
Requirement already satisfied: python-dateutil in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2.8.2)
Collecting python-dotenv (from roboflow)
  Downloading python_dotenv-1.0.0-py3-none-any.whl (19 kB)
Requirement already satisfied: requests in /usr/local/lib/python3.10/dist-
packages (from roboflow) (2.31.0)
Requirement already satisfied: six in /usr/local/lib/python3.10/dist-packages
```

```
(from roboflow) (1.16.0)
Collecting supervision (from roboflow)
  Downloading supervision-0.16.0-py3-none-any.whl (72 kB)
    72.2/72.2 kB
  10.6 MB/s eta 0:00:00
Requirement already satisfied: urllib3>=1.26.6 in
/usr/local/lib/python3.10/dist-packages (from roboflow) (2.0.7)
Requirement already satisfied: tqdm>=4.41.0 in /usr/local/lib/python3.10/dist-
packages (from roboflow) (4.66.1)
Collecting PyYAML>=5.3.1 (from roboflow)
  Downloading
PyYAML-6.0.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (705 kB)
  705.5/705.5 kB
  kB 54.8 MB/s eta 0:00:00
Collecting requests-toolbelt (from roboflow)
  Downloading requests_toolbelt-1.0.0-py2.py3-none-any.whl (54 kB)
    54.5/54.5 kB
  8.6 MB/s eta 0:00:00
Collecting python-magic (from roboflow)
  Downloading python_magic-0.4.27-py2.py3-none-any.whl (13 kB)
Requirement already satisfied: contourpy>=1.0.1 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->roboflow) (1.2.0)
Requirement already satisfied: fonttools>=4.22.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->roboflow) (4.44.0)
Requirement already satisfied: packaging>=20.0 in
/usr/local/lib/python3.10/dist-packages (from matplotlib->roboflow) (23.2)
Requirement already satisfied: charset-normalizer<4,>=2 in
/usr/local/lib/python3.10/dist-packages (from requests->roboflow) (3.3.2)
Requirement already satisfied: scipy<2.0.0,>=1.9.0 in
/usr/local/lib/python3.10/dist-packages (from supervision->roboflow) (1.11.3)
Installing collected packages: PyYAML, python-magic, python-dotenv, opencv-
python-headless, idna, cycler, chardet, supervision, requests-toolbelt, roboflow
Attempting uninstall: PyYAML
  Found existing installation: PyYAML 5.3
  Uninstalling PyYAML-5.3:
    Successfully uninstalled PyYAML-5.3
Attempting uninstall: opencv-python-headless
  Found existing installation: opencv-python-headless 4.8.1.78
  Uninstalling opencv-python-headless-4.8.1.78:
    Successfully uninstalled opencv-python-headless-4.8.1.78
Attempting uninstall: idna
  Found existing installation: idna 3.4
  Uninstalling idna-3.4:
    Successfully uninstalled idna-3.4
Attempting uninstall: cycler
  Found existing installation: cycler 0.12.1
  Uninstalling cycler-0.12.1:
```

```

Successfully uninstalled cycler-0.12.1
Attempting uninstall: chardet
  Found existing installation: chardet 5.2.0
Uninstalling chardet-5.2.0:
  Successfully uninstalled chardet-5.2.0
ERROR: pip's dependency resolver does not currently take into account all
the packages that are installed. This behaviour is the source of the following
dependency conflicts.

llmx 0.0.15a0 requires cohere, which is not installed.
llmx 0.0.15a0 requires openai, which is not installed.
llmx 0.0.15a0 requires tiktoken, which is not installed.
tf-models-official 2.8.0 requires pyyaml<6.0,>=5.1, but you have pyyaml 6.0.1
which is incompatible.

Successfully installed PyYAML-6.0.1 chardet-4.0.0 cycler-0.10.0 idna-2.10
opencv-python-headless-4.8.0.74 python-dotenv-1.0.0 python-magic-0.4.27
requests-toolbelt-1.0.0 roboflow-1.1.9 supervision-0.16.0

loading Roboflow workspace...
loading Roboflow project...

Downloading Dataset Version Zip in UnitySemSeg-2 to tfrecord:: 100% | 1
199193/199193 [00:03<00:00, 60396.40it/s]

```

```

Extracting Dataset Version Zip to UnitySemSeg-2 in tfrecord:: 100% | 1
11/11 [00:00<00:00, 18.14it/s]

```

We'll store the locations of the TFRecord and labelmap files as variables so we can reference them later in this Colab session.

```
[9]: train_record_fname = '/content/UnitySemSeg-2/train/StreetBehaviour.tfrecord'
val_record_fname = '/content/UnitySemSeg-2/test/StreetBehaviour.tfrecord'
label_map_pbtxt_fname = '/content/UnitySemSeg-2/valid/StreetBehaviour_label_map.
˓→pbtxt'
```

0.2 3. Set Up Training Configuration

In this section, we'll set up the model and training configuration. Each model also comes with a configuration file that points to file locations, sets training parameters (such as learning rate and total number of training steps), and more. We'll modify the configuration file for our custom training job.

The first section of code lists out some models available in the TF2 Model Zoo and defines some filenames that will be used later to download the model and config file. This makes it easy to manage which model you're using and to add other models to the list later.

Set the “chosen_model” variable to match the name of the model you’d like to train with. It’s currently set to use the popular “ssd-mobilenet-v2” model. Click play on the next block once the chosen model has been set.

```
[10]: # Change the chosen_model variable to deploy different models available in the
      ↵TF2 object detection zoo
chosen_model = 'efficientdet-d0'

MODELS_CONFIG = {
    'ssd-mobilenet-v2': {
        'model_name': 'ssd_mobilenet_v2_320x320_coco17_tpu-8',
        'base_pipeline_file': 'ssd_mobilenet_v2_320x320_coco17_tpu-8.config',
        'pretrained_checkpoint': 'ssd_mobilenet_v2_320x320_coco17_tpu-8.tar.gz',
    },
    'efficientdet-d0': {
        'model_name': 'efficientdet_d0_coco17_tpu-32',
        'base_pipeline_file': 'ssd_efficientdet_d0_512x512_coco17_tpu-8.config',
        'pretrained_checkpoint': 'efficientdet_d0_coco17_tpu-32.tar.gz',
    },
    'ssd-mobilenet-v2-fpnlite-320': {
        'model_name': 'ssd_mobilenet_v2_fpnlite_320x320_coco17_tpu-8',
        'base_pipeline_file': 'ssd_mobilenet_v2_fpnlite_320x320_coco17_tpu-8.
        ↵config',
        'pretrained_checkpoint': 'ssd_mobilenet_v2_fpnlite_320x320_coco17_tpu-8.
        ↵tar.gz',
    },
    # The centernet model isn't working as of 9/10/22
    #'centernet-mobilenet-v2': {
    #    'model_name': 'centernet_mobilenetv2fpn_512x512_coco17_od',
    #    'base_pipeline_file': 'pipeline.config',
    #    'pretrained_checkpoint': 'centernet_mobilenetv2fpn_512x512_coco17_od.
    ↵tar.gz',
    #}
}

model_name = MODELS_CONFIG[chosen_model]['model_name']
pretrained_checkpoint = MODELS_CONFIG[chosen_model]['pretrained_checkpoint']
base_pipeline_file = MODELS_CONFIG[chosen_model]['base_pipeline_file']
```

Download the pretrained model file and configuration file by clicking Play on the following section.

```
[11]: # Create "mymodel" folder for holding pre-trained weights and configuration
      ↵files
mkdir /content/models/mymodel/
cd /content/models/mymodel/

# Download pre-trained model weights
import tarfile
```

```

download_tar = 'http://download.tensorflow.org/models/object_detection/tf2/
˓→20200711/' + pretrained_checkpoint
!wget {download_tar}
tar = tarfile.open(pretrained_checkpoint)
tar.extractall()
tar.close()

# Download training configuration file for model
download_config = 'https://raw.githubusercontent.com/tensorflow/models/master/
˓→research/object_detection/configs/tf2/' + base_pipeline_file
!wget {download_config}

```

```

/content/models/mymodel
--2023-11-15 15:29:06-- http://download.tensorflow.org/models/object_detection/
tf2/20200711/efficientdet_d0_coco17_tpu-32.tar.gz
Resolving download.tensorflow.org (download.tensorflow.org)... 142.250.152.207,
142.250.1.207, 108.177.121.207, ...
Connecting to download.tensorflow.org
(download.tensorflow.org)|142.250.152.207|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 30736482 (29M) [application/x-tar]
Saving to: 'efficientdet_d0_coco17_tpu-32.tar.gz'

efficientdet_d0_coc 100%[=====] 29.31M 185MB/s in 0.2s

2023-11-15 15:29:06 (185 MB/s) - 'efficientdet_d0_coco17_tpu-32.tar.gz' saved
[30736482/30736482]

--2023-11-15 15:29:07-- https://raw.githubusercontent.com/tensorflow/models/master/research/object_detection/configs/tf2/ssd_efficientdet_d0_512x512_coco17_tpu-8.config
Resolving raw.githubusercontent.com (raw.githubusercontent.com)...
185.199.111.133, 185.199.110.133, 185.199.108.133, ...
Connecting to raw.githubusercontent.com
(raw.githubusercontent.com)|185.199.111.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4630 (4.5K) [text/plain]
Saving to: 'ssd_efficientdet_d0_512x512_coco17_tpu-8.config'

ssd_efficientdet_d0 100%[=====] 4.52K --.-KB/s in 0s

2023-11-15 15:29:07 (48.7 MB/s) -
'ssd_efficientdet_d0_512x512_coco17_tpu-8.config' saved [4630/4630]

```

[12]: # Set training parameters for the model
num_steps = 28000

```

if chosen_model == 'efficientdet-d0':
    batch_size = 4
else:
    batch_size = 16

```

[]:

```

[13]: # Set file locations and get number of classes for config file
pipeline_fname = '/content/models/mymodel/' + base_pipeline_file
fine_tune_checkpoint = '/content/models/mymodel/' + model_name + '/checkpoint/'  
↪ckpt-0'

def get_num_classes(pbtxt_fname):
    from object_detection.utils import label_map_util
    label_map = label_map_util.load_labelmap(pbtxt_fname)
    categories = label_map_util.convert_label_map_to_categories(
        label_map, max_num_classes=90, use_display_name=True)
    category_index = label_map_util.create_category_index(categories)
    return len(category_index.keys())
num_classes = get_num_classes(label_map_pbtxt_fname)
print('Total classes:', num_classes)

```

Total classes: 5

```

[14]: # Create custom configuration file by writing the dataset, model checkpoint,  
↪and training parameters into the base pipeline file
import re

%cd /content/models/mymodel
print('writing custom configuration file')

with open(pipeline_fname) as f:
    s = f.read()
with open('pipeline_file.config', 'w') as f:

    # Set fine_tune_checkpoint path
    s = re.sub('fine_tune_checkpoint: ".*?"',
               'fine_tune_checkpoint: "{}".format(fine_tune_checkpoint), s')

    # Set tfrecord files for train and test datasets
    s = re.sub(
        '(input_path: ".*?)(PATH_TO_BE_CONFIGURED/train)(.*?)"', 'input_path:{}'.format(train_record_fname), s)
    s = re.sub(
        '(input_path: ".*?)(PATH_TO_BE_CONFIGURED/val)(.*?)"', 'input_path:{}'.format(val_record_fname), s)

```

```

# Set label_map_path
s = re.sub(
    'label_map_path: ".*?"', 'label_map_path: "{}"'.format(label_map_pbtxt_fname), s)

# Set batch_size
s = re.sub('batch_size: [0-9]+',
           'batch_size: {}'.format(batch_size), s)

# Set training steps, num_steps
s = re.sub('num_steps: [0-9]+',
           'num_steps: {}'.format(num_steps), s)

# Set number of classes num_classes
s = re.sub('num_classes: [0-9]+',
           'num_classes: {}'.format(num_classes), s)

# Change fine-tune checkpoint type from "classification" to "detection"
s = re.sub(
    'fine_tune_checkpoint_type: "classification"', 'fine_tune_checkpoint_type: "{}".format("detection")', s)

# If using ssd-mobilenet-v2, reduce learning rate (because it's too high in the default config file)
if chosen_model == 'ssd-mobilenet-v2':
    s = re.sub('learning_rate_base: .8',
               'learning_rate_base: .08', s)

    s = re.sub('warmup_learning_rate: 0.13333',
               'warmup_learning_rate: .026666', s)

# If using efficientdet-d0, use fixed_shape_resizer instead of keep_aspect_ratio_resizer (because it isn't supported by TFLite)
if chosen_model == 'efficientdet-d0':
    s = re.sub('keep_aspect_ratio_resizer', 'fixed_shape_resizer', s)
    s = re.sub('pad_to_max_dimension: true', '', s)
    s = re.sub('min_dimension', 'height', s)
    s = re.sub('max_dimension', 'width', s)

f.write(s)

```

/content/models/mymodel
writing custom configuration file

[15]: # (Optional) Display the custom configuration file's contents
!cat /content/models/mymodel/pipeline_file.config

```

# SSD with EfficientNet-b0 + BiFPN feature extractor,
# shared box predictor and focal loss (a.k.a EfficientDet-d0).
# See EfficientDet, Tan et al, https://arxiv.org/abs/1911.09070
# See Lin et al, https://arxiv.org/abs/1708.02002
# Trained on COCO, initialized from an EfficientNet-b0 checkpoint.
#
# Train on TPU-8

model {
  ssd {
    inplace_batchnorm_update: true
    freeze_batchnorm: false
    num_classes: 5
    add_background_class: false
    box_coder {
      faster_rcnn_box_coder {
        y_scale: 10.0
        x_scale: 10.0
        height_scale: 5.0
        width_scale: 5.0
      }
    }
    matcher {
      argmax_matcher {
        matched_threshold: 0.5
        unmatched_threshold: 0.5
        ignore_thresholds: false
        negatives_lower_than_unmatched: true
        force_match_for_each_row: true
        use_matmul_gather: true
      }
    }
    similarity_calculator {
      iou_similarity {
      }
    }
    encode_background_as_zeros: true
    anchor_generator {
      multiscale_anchor_generator {
        min_level: 3
        max_level: 7
        anchor_scale: 4.0
        aspect_ratios: [1.0, 2.0, 0.5]
        scales_per_octave: 3
      }
    }
    image_resizer {
      fixed_shape_resizer {

```

```

    height: 512
    width: 512

}
}

box_predictor {
    weight_shared_convolutional_box_predictor {
        depth: 64
        class_prediction_bias_init: -4.6
        conv_hyperparams {
            force_use_bias: true
            activation: SWISH
            regularizer {
                l2_regularizer {
                    weight: 0.00004
                }
            }
            initializer {
                random_normal_initializer {
                    stddev: 0.01
                    mean: 0.0
                }
            }
            batch_norm {
                scale: true
                decay: 0.99
                epsilon: 0.001
            }
        }
    }
    num_layers_before_predictor: 3
    kernel_size: 3
    use_depthwise: true
}
}

feature_extractor {
    type: 'ssd_efficientnet-b0_bifpn_keras'
    bifpn {
        min_level: 3
        max_level: 7
        num_iterations: 3
        num_filters: 64
    }
    conv_hyperparams {
        force_use_bias: true
        activation: SWISH
        regularizer {
            l2_regularizer {
                weight: 0.00004
            }
        }
    }
}

```

```

        }
    }
    initializer {
        truncated_normal_initializer {
            stddev: 0.03
            mean: 0.0
        }
    }
    batch_norm {
        scale: true,
        decay: 0.99,
        epsilon: 0.001,
    }
}
loss {
    classification_loss {
        weighted_sigmoid_focal {
            alpha: 0.25
            gamma: 1.5
        }
    }
    localization_loss {
        weighted_smooth_l1 {
        }
    }
    classification_weight: 1.0
    localization_weight: 1.0
}
normalize_loss_by_num_matches: true
normalize_loc_loss_by_codesize: true
post_processing {
    batch_non_max_suppression {
        score_threshold: 1e-8
        iou_threshold: 0.5
        max_detections_per_class: 100
        max_total_detections: 100
    }
    score_converter: SIGMOID
}
}
}

train_config: {
    fine_tune_checkpoint:
    "/content/models/mymodel/efficientdet_d0_coco17_tpu-32/checkpoint/ckpt-0"
    fine_tune_checkpoint_version: V2
    fine_tune_checkpoint_type: "detection"
}

```

```

batch_size: 4
sync_replicas: true
startup_delay_steps: 0
replicas_to_aggregate: 8
use_bfloat16: true
num_steps: 28000
data_augmentation_options {
    random_horizontal_flip {
    }
}
data_augmentation_options {
    random_scale_crop_and_pad_to_square {
        output_size: 512
        scale_min: 0.1
        scale_max: 2.0
    }
}
optimizer {
    momentum_optimizer: {
        learning_rate: {
            cosine_decay_learning_rate {
                learning_rate_base: 8e-2
                total_steps: 300000
                warmup_learning_rate: .001
                warmup_steps: 2500
            }
        }
        momentum_optimizer_value: 0.9
    }
    use_moving_average: false
}
max_number_of_boxes: 100
unpad_groundtruth_tensors: false
}

train_input_reader: {
    label_map_path: "/content/UnitySemSeg-2/valid/StreetBehaviour_label_map.pbtxt"
    tf_record_input_reader {
        input_path: "/content/UnitySemSeg-2/train/StreetBehaviour.tfrecord"
    }
}

eval_config: {
    metrics_set: "coco_detection_metrics"
    use_moving_averages: false
    batch_size: 4;
}

```

```

eval_input_reader: {
  label_map_path: "/content/UnitySemSeg-2/valid/StreetBehaviour_label_map.pbtxt"
  shuffle: false
  num_epochs: 1
  tf_record_input_reader {
    input_path: "/content/UnitySemSeg-2/test/StreetBehaviour.tfrecord"
  }
}

```

```
[16]: # Set the path to the custom config file and the directory to store training
      ↪checkpoints in
pipeline_file = '/content/models/mymodel/pipeline_file.config'
model_dir = '/content/training/'
```

1 4. Train Custom TFLite Detection Model

We're ready to train our object detection model! Before we start training, let's load up a TensorBoard session to monitor training progress. Run the following section of code, and a TensorBoard session will appear in the browser. It won't show anything yet, because we haven't started training. Once training starts, come back and click the refresh button to see the model's overall loss.

```
[ ]: %load_ext tensorboard
%tensorboard --logdir '/content/training/train'
```

<IPython.core.display.Javascript object>

```
[17]: # Run training!
!python /content/models/research/object_detection/model_main_tf2.py \
--pipeline_config_path={pipeline_file} \
--model_dir={model_dir} \
--alsologtostderr \
--num_train_steps={num_steps} \
--sample_1_of_n_eval_examples=1
```

```
/usr/local/lib/python3.10/dist-packages/tensorflow_io/python/ops/__init__.py:98:
UserWarning: unable to load libtensorflow_io_plugins.so: unable to open file:
libtensorflow_io_plugins.so, from paths: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so']
caused by: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so: undefined symbol:
_ZN3tsl5mutexC1Ev']
    warnings.warn(f"unable to load libtensorflow_io_plugins.so: {e}")
/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/__init__.py:104: UserWarning: file system
plugins are not loaded: unable to open file: libtensorflow_io.so, from paths:
['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io.so']
```

```

caused by: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io.so: undefined symbol: _ZNK10t
ensorflow4data11DatasetBase8FinalizeEPNS_15OpKernelContextESt8functionIFN3ts18St
atusOrINS5_4core11RefCountPtrIS1_EEEEvEE']
    warnings.warn(f"file system plugins are not loaded: {e}")
/usr/local/lib/python3.10/dist-
packages/tensorflow_addons/utils/tfa_eol_msg.py:23: UserWarning:

```

TensorFlow Addons (TFA) has ended development and introduction of new features. TFA has entered a minimal maintenance and release mode until a planned end of life in May 2024.
Please modify downstream libraries to take dependencies from other repositories in our TensorFlow community (e.g. Keras, Keras-CV, and Keras-NLP).

For more information see: <https://github.com/tensorflow/addons/issues/2807>

```

warnings.warn(
/usr/local/lib/python3.10/dist-
packages/tensorflow_addons/utils/ensure_tf_install.py:53: UserWarning:
Tensorflow Addons supports using Python ops for all Tensorflow versions above or
equal to 2.12.0 and strictly below 2.15.0 (nightly versions are not supported).
The versions of TensorFlow you are currently using is 2.8.0 and is not
supported.
Some things might work, some things might not.
If you were to encounter a bug, do not file an issue.
If you want to make sure you're using a tested and supported configuration,
either change the TensorFlow version or the TensorFlow Addons's version.
You can find the compatibility matrix in TensorFlow Addon's readme:
https://github.com/tensorflow/addons
warnings.warn(
2023-11-15 15:29:29.039151: W
tensorflow/core/common_runtime/gpu/gpu_bfc_allocator.cc:39] Overriding
allow_growth setting because the TF_FORCE_GPU_ALLOW_GROWTH environment variable
is set. Original config value was 0.
INFO:tensorflow:Using MirroredStrategy with devices
('/job:localhost/replica:0/task:0/device:GPU:0',)
I1115 15:29:29.049740 135323911028736 mirrored_strategy.py:374] Using
MirroredStrategy with devices ('/job:localhost/replica:0/task:0/device:GPU:0',)
INFO:tensorflow:Maybe overwriting train_steps: 28000
I1115 15:29:29.053236 135323911028736 config_util.py:552] Maybe overwriting
train_steps: 28000
INFO:tensorflow:Maybe overwriting use_bfloat16: False
I1115 15:29:29.053395 135323911028736 config_util.py:552] Maybe overwriting
use_bfloat16: False
I1115 15:29:29.063126 135323911028736
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b0
I1115 15:29:29.063236 135323911028736

```

```
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters: 64
I1115 15:29:29.063302 135323911028736
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num iterations: 3
I1115 15:29:29.067133 135323911028736 efficientnet_model.py:144] round_filter input=32 output=32
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.086004 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.087943 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.090045 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.090922 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.097061 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.099886 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.105815 135323911028736 efficientnet_model.py:144] round_filter input=32 output=32
I1115 15:29:29.105918 135323911028736 efficientnet_model.py:144] round_filter input=16 output=16
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.118232 135323911028736 cross_device_ops.py:616] Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
```

```
I1115 15:29:29.119165 135323911028736 cross_device_ops.py:616] Reduce to
/job:localhost/replica:0/task:0/device:CPU:0 then broadcast to
('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then
broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.120809 135323911028736 cross_device_ops.py:616] Reduce to
/job:localhost/replica:0/task:0/device:CPU:0 then broadcast to
('/job:localhost/replica:0/task:0/device:CPU:0',).
INFO:tensorflow:Reduce to /job:localhost/replica:0/task:0/device:CPU:0 then
broadcast to ('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.121714 135323911028736 cross_device_ops.py:616] Reduce to
/job:localhost/replica:0/task:0/device:CPU:0 then broadcast to
('/job:localhost/replica:0/task:0/device:CPU:0',).
I1115 15:29:29.199728 135323911028736 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 15:29:29.199870 135323911028736 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 15:29:29.577923 135323911028736 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 15:29:29.578073 135323911028736 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 15:29:29.827295 135323911028736 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 15:29:29.827446 135323911028736 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 15:29:30.175611 135323911028736 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 15:29:30.175807 135323911028736 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 15:29:30.542679 135323911028736 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 15:29:30.542849 135323911028736 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 15:29:31.012033 135323911028736 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 15:29:31.012187 135323911028736 efficientnet_model.py:144] round_filter
input=320 output=320
I1115 15:29:31.123649 135323911028736 efficientnet_model.py:144] round_filter
input=1280 output=1280
I1115 15:29:31.171131 135323911028736 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.0,
depth_coefficient=1.0, resolution=224, dropout_rate=0.2,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
```

```

expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
WARNING:tensorflow:From /usr/local/lib/python3.10/dist-
packages/object_detection/model_lib_v2.py:563:
StrategyBase.experimental_distribute_datasets_from_function (from
tensorflow.python.distribute.distribute_lib) is deprecated and will be removed
in a future version.

Instructions for updating:
rename to distribute_datasets_from_function
W1115 15:29:31.213960 135323911028736 deprecation.py:337] From
/usr/local/lib/python3.10/dist-packages/object_detection/model_lib_v2.py:563:
StrategyBase.experimental_distribute_datasets_from_function (from
tensorflow.python.distribute.distribute_lib) is deprecated and will be removed
in a future version.

Instructions for updating:
rename to distribute_datasets_from_function
INFO:tensorflow:Reading unweighted datasets:
['/content/UnitySemSeg-2/train/StreetBehaviour.tfrecord']
I1115 15:29:31.218171 135323911028736 dataset_builder.py:162] Reading unweighted
datasets: ['/content/UnitySemSeg-2/train/StreetBehaviour.tfrecord']
INFO:tensorflow:Reading record datasets for input file:
['/content/UnitySemSeg-2/train/StreetBehaviour.tfrecord']
I1115 15:29:31.218365 135323911028736 dataset_builder.py:79] Reading record
datasets for input file:
['/content/UnitySemSeg-2/train/StreetBehaviour.tfrecord']
INFO:tensorflow:Number of filenames to read: 1
I1115 15:29:31.218450 135323911028736 dataset_builder.py:80] Number of filenames
to read: 1
WARNING:tensorflow:num_readers has been reduced to 1 to match input file shards.
W1115 15:29:31.218528 135323911028736 dataset_builder.py:86] num_readers has
been reduced to 1 to match input file shards.
WARNING:tensorflow:From /usr/local/lib/python3.10/dist-
packages/object_detection/builders/dataset_builder.py:100: parallel_interleave

```

(from tensorflow.python.data.experimental.ops.interleave_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Use `tf.data.Dataset.interleave(map_func, cycle_length, block_length, num_parallel_calls=tf.data.AUTOTUNE)` instead. If sloppy execution is desired, use `tf.data.Options.deterministic`.

W1115 15:29:31.220518 135323911028736 deprecation.py:337] From /usr/local/lib/python3.10/dist-packages/object_detection/builders/dataset_builder.py:100: parallel_interleave (from tensorflow.python.data.experimental.ops.interleave_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Use `tf.data.Dataset.interleave(map_func, cycle_length, block_length, num_parallel_calls=tf.data.AUTOTUNE)` instead. If sloppy execution is desired, use `tf.data.Options.deterministic`.

WARNING:tensorflow:From /usr/local/lib/python3.10/dist-packages/object_detection/builders/dataset_builder.py:235: DatasetV1.map_with_legacy_function (from tensorflow.python.data.ops.dataset_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Use `tf.data.Dataset.map()`

W1115 15:29:31.243421 135323911028736 deprecation.py:337] From /usr/local/lib/python3.10/dist-packages/object_detection/builders/dataset_builder.py:235: DatasetV1.map_with_legacy_function (from tensorflow.python.data.ops.dataset_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Use `tf.data.Dataset.map()`

WARNING:tensorflow:From /usr/local/lib/python3.10/dist-packages/tensorflow/python/util/dispatch.py:1082: sparse_to_dense (from tensorflow.python.ops.sparse_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Create a `tf.sparse.SparseTensor` and use `tf.sparse.to_dense` instead.

W1115 15:29:39.132363 135323911028736 deprecation.py:337] From /usr/local/lib/python3.10/dist-packages/tensorflow/python/util/dispatch.py:1082: sparse_to_dense (from tensorflow.python.ops.sparse_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Create a `tf.sparse.SparseTensor` and use `tf.sparse.to_dense` instead.

WARNING:tensorflow:From /usr/local/lib/python3.10/dist-packages/tensorflow/python/util/dispatch.py:1082: to_float (from tensorflow.python.ops.math_ops) is deprecated and will be removed in a future version.

Instructions for updating:

Use `tf.cast` instead.

W1115 15:29:45.027920 135323911028736 deprecation.py:337] From /usr/local/lib/python3.10/dist-packages/tensorflow/python/util/dispatch.py:1082:

`to_float` (from `tensorflow.python.ops.math_ops`) is deprecated and will be removed in a future version.

Instructions for updating:
Use ``tf.cast` instead.`

```
/usr/local/lib/python3.10/dist-packages/keras/backend.py:450: UserWarning:  
`tf.keras.backend.set_learning_phase` is deprecated and will be removed after  
2020-10-11. To update it, simply pass a True/False value to the `training`  
argument of the `__call__` method of your layer or model.  
    warnings.warn(``tf.keras.backend.set_learning_phase` is deprecated and '  
I1115 15:29:54.772215 135318112007744 api.py:441] feature_map_spatial_dims:  
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]  
I1115 15:30:10.544803 135318112007744 api.py:441] feature_map_spatial_dims:  
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]  
WARNING:tensorflow:From /usr/local/lib/python3.10/dist-  
packages/tensorflow/python/util/deprecation.py:616: calling map_fn_v2 (from  
tensorflow.python.ops.map_fn) with dtype is deprecated and will be removed in a  
future version.
```

Instructions for updating:
Use `fn_output_signature` instead

```
W1115 15:30:32.087417 135318128793152 deprecation.py:541] From  
/usr/local/lib/python3.10/dist-  
packages/tensorflow/python/util/deprecation.py:616: calling map_fn_v2 (from  
tensorflow.python.ops.map_fn) with dtype is deprecated and will be removed in a  
future version.
```

Instructions for updating:
Use `fn_output_signature` instead

```
I1115 15:30:35.132940 135318128793152 api.py:441] feature_map_spatial_dims:  
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]  
WARNING:tensorflow:Gradients do not exist for variables ['top_bn/gamma:0',  
'top_bn/beta:0'] when minimizing the loss. If you're using `model.compile()`,  
did you forget to provide a `loss` argument?  
W1115 15:30:42.036053 135318128793152 utils.py:76] Gradients do not exist for  
variables ['top_bn/gamma:0', 'top_bn/beta:0'] when minimizing the loss. If  
you're using `model.compile()`, did you forget to provide a `loss` argument?  
I1115 15:30:47.593699 135318128793152 api.py:441] feature_map_spatial_dims:  
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]  
WARNING:tensorflow:Gradients do not exist for variables ['top_bn/gamma:0',  
'top_bn/beta:0'] when minimizing the loss. If you're using `model.compile()`,  
did you forget to provide a `loss` argument?  
W1115 15:30:55.386617 135318128793152 utils.py:76] Gradients do not exist for  
variables ['top_bn/gamma:0', 'top_bn/beta:0'] when minimizing the loss. If  
you're using `model.compile()`, did you forget to provide a `loss` argument?  
I1115 15:31:00.670610 135318128793152 api.py:441] feature_map_spatial_dims:  
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]  
WARNING:tensorflow:Gradients do not exist for variables ['top_bn/gamma:0',  
'top_bn/beta:0'] when minimizing the loss. If you're using `model.compile()`,  
did you forget to provide a `loss` argument?  
W1115 15:31:08.658080 135318128793152 utils.py:76] Gradients do not exist for
```

```

variables ['top_bn/gamma:0', 'top_bn/beta:0'] when minimizing the loss. If
you're using `model.compile()`, did you forget to provide a `loss` argument?
I1115 15:31:14.768758 135318128793152 api.py:441] feature_map_spatial_dims:
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]
WARNING:tensorflow:Gradients do not exist for variables ['top_bn/gamma:0',
'top_bn/beta:0'] when minimizing the loss. If you're using `model.compile()`,
did you forget to provide a `loss` argument?
W1115 15:31:23.383302 135318128793152 utils.py:76] Gradients do not exist for
variables ['top_bn/gamma:0', 'top_bn/beta:0'] when minimizing the loss. If
you're using `model.compile()`, did you forget to provide a `loss` argument?
INFO:tensorflow:Step 100 per-step time 1.101s
I1115 15:32:21.534836 135323911028736 model_lib_v2.py:705] Step 100 per-step
time 1.101s
INFO:tensorflow:{'Loss/classification_loss': 1.0258468,
'Loss/localization_loss': 1.6649241,
'Loss/regularization_loss': 0.028342666,
'Loss/total_loss': 2.7191138,
'learning_rate': 0.00416}
I1115 15:32:21.535189 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 1.0258468,
'Loss/localization_loss': 1.6649241,
'Loss/regularization_loss': 0.028342666,
'Loss/total_loss': 2.7191138,
'learning_rate': 0.00416}
INFO:tensorflow:Step 200 per-step time 0.304s
I1115 15:32:51.979464 135323911028736 model_lib_v2.py:705] Step 200 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.579487,
'Loss/localization_loss': 1.0300301,
'Loss/regularization_loss': 0.028353306,
'Loss/total_loss': 1.6378704,
'learning_rate': 0.0073200003}
I1115 15:32:51.979866 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.579487,
'Loss/localization_loss': 1.0300301,
'Loss/regularization_loss': 0.028353306,
'Loss/total_loss': 1.6378704,
'learning_rate': 0.0073200003}
INFO:tensorflow:Step 300 per-step time 0.303s
I1115 15:33:22.248877 135323911028736 model_lib_v2.py:705] Step 300 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.71892554,
'Loss/localization_loss': 2.2842891,
'Loss/regularization_loss': 0.028372385,
'Loss/total_loss': 3.031587,
'learning_rate': 0.010480001}
I1115 15:33:22.249285 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.71892554,

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'Loss/localization_loss': 2.2842891,
'Loss/regularization_loss': 0.028372385,
'Loss/total_loss': 3.031587,
'learning_rate': 0.010480001}
INFO:tensorflow:Step 400 per-step time 0.302s
I1115 15:33:52.466621 135323911028736 model_lib_v2.py:705] Step 400 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.50764453,
'Loss/localization_loss': 0.80281085,
'Loss/regularization_loss': 0.028414797,
'Loss/total_loss': 1.3388702,
'learning_rate': 0.0136400005}
I1115 15:33:52.466973 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.50764453,
'Loss/localization_loss': 0.80281085,
'Loss/regularization_loss': 0.028414797,
'Loss/total_loss': 1.3388702,
'learning_rate': 0.0136400005}
INFO:tensorflow:Step 500 per-step time 0.292s
I1115 15:34:21.670883 135323911028736 model_lib_v2.py:705] Step 500 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.46109805,
'Loss/localization_loss': 0.98129594,
'Loss/regularization_loss': 0.028451495,
'Loss/total_loss': 1.4708455,
'learning_rate': 0.016800001}
I1115 15:34:21.671211 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.46109805,
'Loss/localization_loss': 0.98129594,
'Loss/regularization_loss': 0.028451495,
'Loss/total_loss': 1.4708455,
'learning_rate': 0.016800001}
INFO:tensorflow:Step 600 per-step time 0.300s
I1115 15:34:51.633563 135323911028736 model_lib_v2.py:705] Step 600 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.46436498,
'Loss/localization_loss': 0.8052948,
'Loss/regularization_loss': 0.028491491,
'Loss/total_loss': 1.2981513,
'learning_rate': 0.019960001}
I1115 15:34:51.633938 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.46436498,
'Loss/localization_loss': 0.8052948,
'Loss/regularization_loss': 0.028491491,
'Loss/total_loss': 1.2981513,
'learning_rate': 0.019960001}
INFO:tensorflow:Step 700 per-step time 0.311s
I1115 15:35:22.693417 135323911028736 model_lib_v2.py:705] Step 700 per-step
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time 0.311s
INFO:tensorflow:{'Loss/classification_loss': 0.42136544,
'Loss/localization_loss': 0.6807841,
'Loss/regularization_loss': 0.028585956,
'Loss/total_loss': 1.1307354,
'learning_rate': 0.023120001}
I1115 15:35:22.693964 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.42136544,
'Loss/localization_loss': 0.6807841,
'Loss/regularization_loss': 0.028585956,
'Loss/total_loss': 1.1307354,
'learning_rate': 0.023120001}
INFO:tensorflow:Step 800 per-step time 0.303s
I1115 15:35:53.015843 135323911028736 model_lib_v2.py:705] Step 800 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.42792752,
'Loss/localization_loss': 0.68948346,
'Loss/regularization_loss': 0.02865372,
'Loss/total_loss': 1.1460648,
'learning_rate': 0.02628}
I1115 15:35:53.016177 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.42792752,
'Loss/localization_loss': 0.68948346,
'Loss/regularization_loss': 0.02865372,
'Loss/total_loss': 1.1460648,
'learning_rate': 0.02628}
INFO:tensorflow:Step 900 per-step time 0.296s
I1115 15:36:22.604299 135323911028736 model_lib_v2.py:705] Step 900 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.4051199,
'Loss/localization_loss': 0.71839035,
'Loss/regularization_loss': 0.028731214,
'Loss/total_loss': 1.1522415,
'learning_rate': 0.02944}
I1115 15:36:22.604636 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.4051199,
'Loss/localization_loss': 0.71839035,
'Loss/regularization_loss': 0.028731214,
'Loss/total_loss': 1.1522415,
'learning_rate': 0.02944}
INFO:tensorflow:Step 1000 per-step time 0.300s
I1115 15:36:52.651500 135323911028736 model_lib_v2.py:705] Step 1000 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.44328028,
'Loss/localization_loss': 0.60685587,
'Loss/regularization_loss': 0.028815908,
'Loss/total_loss': 1.078952,
'learning_rate': 0.0326}

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I1115 15:36:52.651878 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.44328028,
 'Loss/localization_loss': 0.60685587,
 'Loss/regularization_loss': 0.028815908,
 'Loss/total_loss': 1.078952,
 'learning_rate': 0.0326}
INFO:tensorflow:Step 1100 per-step time 0.316s
I1115 15:37:24.303153 135323911028736 model_lib_v2.py:705] Step 1100 per-step
time 0.316s
INFO:tensorflow:{'Loss/classification_loss': 0.40830952,
 'Loss/localization_loss': 0.67183626,
 'Loss/regularization_loss': 0.028948035,
 'Loss/total_loss': 1.1090939,
 'learning_rate': 0.03576}
I1115 15:37:24.303577 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.40830952,
 'Loss/localization_loss': 0.67183626,
 'Loss/regularization_loss': 0.028948035,
 'Loss/total_loss': 1.1090939,
 'learning_rate': 0.03576}
INFO:tensorflow:Step 1200 per-step time 0.302s
I1115 15:37:54.458224 135323911028736 model_lib_v2.py:705] Step 1200 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.38665545,
 'Loss/localization_loss': 0.6400823,
 'Loss/regularization_loss': 0.02905687,
 'Loss/total_loss': 1.0557946,
 'learning_rate': 0.03892}
I1115 15:37:54.458557 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.38665545,
 'Loss/localization_loss': 0.6400823,
 'Loss/regularization_loss': 0.02905687,
 'Loss/total_loss': 1.0557946,
 'learning_rate': 0.03892}
INFO:tensorflow:Step 1300 per-step time 0.298s
I1115 15:38:24.302073 135323911028736 model_lib_v2.py:705] Step 1300 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.46133897,
 'Loss/localization_loss': 0.88228184,
 'Loss/regularization_loss': 0.029179178,
 'Loss/total_loss': 1.3728,
 'learning_rate': 0.04208}
I1115 15:38:24.302406 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.46133897,
 'Loss/localization_loss': 0.88228184,
 'Loss/regularization_loss': 0.029179178,
 'Loss/total_loss': 1.3728,
 'learning_rate': 0.04208}
```

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INFO:tensorflow:Step 1400 per-step time 0.313s
I1115 15:38:55.589330 135323911028736 model_lib_v2.py:705] Step 1400 per-step
time 0.313s
INFO:tensorflow:{'Loss/classification_loss': 0.37880415,
'Loss/localization_loss': 0.6916996,
'Loss/regularization_loss': 0.02935696,
'Loss/total_loss': 1.0998607,
'learning_rate': 0.04524}
I1115 15:38:55.589703 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.37880415,
'Loss/localization_loss': 0.6916996,
'Loss/regularization_loss': 0.02935696,
'Loss/total_loss': 1.0998607,
'learning_rate': 0.04524}
INFO:tensorflow:Step 1500 per-step time 0.330s
I1115 15:39:28.565833 135323911028736 model_lib_v2.py:705] Step 1500 per-step
time 0.330s
INFO:tensorflow:{'Loss/classification_loss': 0.3796434,
'Loss/localization_loss': 0.63215613,
'Loss/regularization_loss': 0.029495923,
'Loss/total_loss': 1.0412955,
'learning_rate': 0.0484}
I1115 15:39:28.566267 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3796434,
'Loss/localization_loss': 0.63215613,
'Loss/regularization_loss': 0.029495923,
'Loss/total_loss': 1.0412955,
'learning_rate': 0.0484}
INFO:tensorflow:Step 1600 per-step time 0.308s
I1115 15:39:59.321687 135323911028736 model_lib_v2.py:705] Step 1600 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.38501984,
'Loss/localization_loss': 0.61951184,
'Loss/regularization_loss': 0.029629527,
'Loss/total_loss': 1.0341611,
'learning_rate': 0.05156}
I1115 15:39:59.322020 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.38501984,
'Loss/localization_loss': 0.61951184,
'Loss/regularization_loss': 0.029629527,
'Loss/total_loss': 1.0341611,
'learning_rate': 0.05156}
INFO:tensorflow:Step 1700 per-step time 0.297s
I1115 15:40:29.010739 135323911028736 model_lib_v2.py:705] Step 1700 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.34133235,
'Loss/localization_loss': 0.6207094,
'Loss/regularization_loss': 0.029796788,
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'Loss/total_loss': 0.9918385,
'learning_rate': 0.05472}
I1115 15:40:29.011068 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34133235,
'Loss/localization_loss': 0.6207094,
'Loss/regularization_loss': 0.029796788,
'Loss/total_loss': 0.9918385,
'learning_rate': 0.05472}
INFO:tensorflow:Step 1800 per-step time 0.300s
I1115 15:40:59.010225 135323911028736 model_lib_v2.py:705] Step 1800 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.44472134,
'Loss/localization_loss': 0.81304604,
'Loss/regularization_loss': 0.029994985,
'Loss/total_loss': 1.2877624,
'learning_rate': 0.05788}
I1115 15:40:59.010611 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.44472134,
'Loss/localization_loss': 0.81304604,
'Loss/regularization_loss': 0.029994985,
'Loss/total_loss': 1.2877624,
'learning_rate': 0.05788}
INFO:tensorflow:Step 1900 per-step time 0.308s
I1115 15:41:29.840086 135323911028736 model_lib_v2.py:705] Step 1900 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.36729616,
'Loss/localization_loss': 0.7112847,
'Loss/regularization_loss': 0.030199377,
'Loss/total_loss': 1.1087803,
'learning_rate': 0.06104}
I1115 15:41:29.840508 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.36729616,
'Loss/localization_loss': 0.7112847,
'Loss/regularization_loss': 0.030199377,
'Loss/total_loss': 1.1087803,
'learning_rate': 0.06104}
INFO:tensorflow:Step 2000 per-step time 0.300s
I1115 15:41:59.847526 135323911028736 model_lib_v2.py:705] Step 2000 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.3611924,
'Loss/localization_loss': 0.60201055,
'Loss/regularization_loss': 0.030463675,
'Loss/total_loss': 0.99366665,
'learning_rate': 0.06420001}
I1115 15:41:59.847881 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3611924,
'Loss/localization_loss': 0.60201055,
'Loss/regularization_loss': 0.030463675,
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'Loss/total_loss': 0.99366665,
'learning_rate': 0.06420001}
INFO:tensorflow:Step 2100 per-step time 0.306s
I1115 15:42:30.443825 135323911028736 model_lib_v2.py:705] Step 2100 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.32373148,
'Loss/localization_loss': 0.5523068,
'Loss/regularization_loss': 0.030672656,
'Loss/total_loss': 0.9067109,
'learning_rate': 0.067360006}
I1115 15:42:30.444228 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32373148,
'Loss/localization_loss': 0.5523068,
'Loss/regularization_loss': 0.030672656,
'Loss/total_loss': 0.9067109,
'learning_rate': 0.067360006}
INFO:tensorflow:Step 2200 per-step time 0.307s
I1115 15:43:01.192061 135323911028736 model_lib_v2.py:705] Step 2200 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.38182008,
'Loss/localization_loss': 0.65192556,
'Loss/regularization_loss': 0.0309374,
'Loss/total_loss': 1.0646831,
'learning_rate': 0.070520006}
I1115 15:43:01.192449 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.38182008,
'Loss/localization_loss': 0.65192556,
'Loss/regularization_loss': 0.0309374,
'Loss/total_loss': 1.0646831,
'learning_rate': 0.070520006}
INFO:tensorflow:Step 2300 per-step time 0.299s
I1115 15:43:31.133777 135323911028736 model_lib_v2.py:705] Step 2300 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.37013304,
'Loss/localization_loss': 0.63222575,
'Loss/regularization_loss': 0.03119151,
'Loss/total_loss': 1.0335503,
'learning_rate': 0.073680006}
I1115 15:43:31.134105 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.37013304,
'Loss/localization_loss': 0.63222575,
'Loss/regularization_loss': 0.03119151,
'Loss/total_loss': 1.0335503,
'learning_rate': 0.073680006}
INFO:tensorflow:Step 2400 per-step time 0.299s
I1115 15:44:01.024837 135323911028736 model_lib_v2.py:705] Step 2400 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.3705333,

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'Loss/localization_loss': 0.7229831,
'Loss/regularization_loss': 0.031430565,
'Loss/total_loss': 1.124947,
'learning_rate': 0.076840006}
I1115 15:44:01.025215 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3705333,
 'Loss/localization_loss': 0.7229831,
 'Loss/regularization_loss': 0.031430565,
 'Loss/total_loss': 1.124947,
 'learning_rate': 0.076840006}
INFO:tensorflow:Step 2500 per-step time 0.308s
I1115 15:44:31.785869 135323911028736 model_lib_v2.py:705] Step 2500 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.4847238,
 'Loss/localization_loss': 0.8069423,
 'Loss/regularization_loss': 0.031682454,
 'Loss/total_loss': 1.3233485,
 'learning_rate': 0.08}
I1115 15:44:31.786262 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.4847238,
 'Loss/localization_loss': 0.8069423,
 'Loss/regularization_loss': 0.031682454,
 'Loss/total_loss': 1.3233485,
 'learning_rate': 0.08}
INFO:tensorflow:Step 2600 per-step time 0.298s
I1115 15:45:01.587363 135323911028736 model_lib_v2.py:705] Step 2600 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.32226235,
 'Loss/localization_loss': 0.43261132,
 'Loss/regularization_loss': 0.03196793,
 'Loss/total_loss': 0.7868416,
 'learning_rate': 0.079999976}
I1115 15:45:01.587678 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32226235,
 'Loss/localization_loss': 0.43261132,
 'Loss/regularization_loss': 0.03196793,
 'Loss/total_loss': 0.7868416,
 'learning_rate': 0.079999976}
INFO:tensorflow:Step 2700 per-step time 0.297s
I1115 15:45:31.313457 135323911028736 model_lib_v2.py:705] Step 2700 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.3518469,
 'Loss/localization_loss': 0.54901963,
 'Loss/regularization_loss': 0.03220741,
 'Loss/total_loss': 0.93307394,
 'learning_rate': 0.07999991}
I1115 15:45:31.313869 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3518469,
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'Loss/localization_loss': 0.54901963,
'Loss/regularization_loss': 0.03220741,
'Loss/total_loss': 0.93307394,
'learning_rate': 0.07999991}
INFO:tensorflow:Step 2800 per-step time 0.307s
I1115 15:46:01.974047 135323911028736 model_lib_v2.py:705] Step 2800 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.3332853,
'Loss/localization_loss': 0.45383587,
'Loss/regularization_loss': 0.03245031,
'Loss/total_loss': 0.8195715,
'learning_rate': 0.0799998}
I1115 15:46:01.974477 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3332853,
'Loss/localization_loss': 0.45383587,
'Loss/regularization_loss': 0.03245031,
'Loss/total_loss': 0.8195715,
'learning_rate': 0.0799998}
INFO:tensorflow:Step 2900 per-step time 0.298s
I1115 15:46:31.811704 135323911028736 model_lib_v2.py:705] Step 2900 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.34227765,
'Loss/localization_loss': 0.5497626,
'Loss/regularization_loss': 0.0327068,
'Loss/total_loss': 0.92474705,
'learning_rate': 0.07999964}
I1115 15:46:31.812052 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34227765,
'Loss/localization_loss': 0.5497626,
'Loss/regularization_loss': 0.0327068,
'Loss/total_loss': 0.92474705,
'learning_rate': 0.07999964}
INFO:tensorflow:Step 3000 per-step time 0.297s
I1115 15:47:01.461673 135323911028736 model_lib_v2.py:705] Step 3000 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.33905312,
'Loss/localization_loss': 0.5149751,
'Loss/regularization_loss': 0.03291805,
'Loss/total_loss': 0.88694626,
'learning_rate': 0.07999944}
I1115 15:47:01.462076 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33905312,
'Loss/localization_loss': 0.5149751,
'Loss/regularization_loss': 0.03291805,
'Loss/total_loss': 0.88694626,
'learning_rate': 0.07999944}
INFO:tensorflow:Step 3100 per-step time 0.326s
I1115 15:47:34.087165 135323911028736 model_lib_v2.py:705] Step 3100 per-step
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time 0.326s
INFO:tensorflow:{'Loss/classification_loss': 0.34172928,
'Loss/localization_loss': 0.54921997,
'Loss/regularization_loss': 0.033142816,
'Loss/total_loss': 0.92409205,
'learning_rate': 0.07999919}
I1115 15:47:34.087573 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34172928,
'Loss/localization_loss': 0.54921997,
'Loss/regularization_loss': 0.033142816,
'Loss/total_loss': 0.92409205,
'learning_rate': 0.07999919}
INFO:tensorflow:Step 3200 per-step time 0.314s
I1115 15:48:05.431982 135323911028736 model_lib_v2.py:705] Step 3200 per-step
time 0.314s
INFO:tensorflow:{'Loss/classification_loss': 0.34232545,
'Loss/localization_loss': 0.5366543,
'Loss/regularization_loss': 0.03330153,
'Loss/total_loss': 0.9122813,
'learning_rate': 0.0799989}
I1115 15:48:05.432304 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34232545,
'Loss/localization_loss': 0.5366543,
'Loss/regularization_loss': 0.03330153,
'Loss/total_loss': 0.9122813,
'learning_rate': 0.0799989}
INFO:tensorflow:Step 3300 per-step time 0.300s
I1115 15:48:35.400434 135323911028736 model_lib_v2.py:705] Step 3300 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.41955364,
'Loss/localization_loss': 0.59167594,
'Loss/regularization_loss': 0.03352089,
'Loss/total_loss': 1.0447505,
'learning_rate': 0.07999857}
I1115 15:48:35.400853 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.41955364,
'Loss/localization_loss': 0.59167594,
'Loss/regularization_loss': 0.03352089,
'Loss/total_loss': 1.0447505,
'learning_rate': 0.07999857}
INFO:tensorflow:Step 3400 per-step time 0.301s
I1115 15:49:05.532039 135323911028736 model_lib_v2.py:705] Step 3400 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.36818635,
'Loss/localization_loss': 0.629504,
'Loss/regularization_loss': 0.03374022,
'Loss/total_loss': 1.0314306,
'learning_rate': 0.07999819}
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I1115 15:49:05.532404 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.36818635,
 'Loss/localization_loss': 0.629504,
 'Loss/regularization_loss': 0.03374022,
 'Loss/total_loss': 1.0314306,
 'learning_rate': 0.07999819}
INFO:tensorflow:Step 3500 per-step time 0.292s
I1115 15:49:34.724847 135323911028736 model_lib_v2.py:705] Step 3500 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.33629224,
 'Loss/localization_loss': 0.57273513,
 'Loss/regularization_loss': 0.03396576,
 'Loss/total_loss': 0.9429931,
 'learning_rate': 0.07999776}
I1115 15:49:34.725167 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33629224,
 'Loss/localization_loss': 0.57273513,
 'Loss/regularization_loss': 0.03396576,
 'Loss/total_loss': 0.9429931,
 'learning_rate': 0.07999776}
INFO:tensorflow:Step 3600 per-step time 0.297s
I1115 15:50:04.417859 135323911028736 model_lib_v2.py:705] Step 3600 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.3392746,
 'Loss/localization_loss': 0.78198594,
 'Loss/regularization_loss': 0.034136616,
 'Loss/total_loss': 1.1553972,
 'learning_rate': 0.0799973}
I1115 15:50:04.418292 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3392746,
 'Loss/localization_loss': 0.78198594,
 'Loss/regularization_loss': 0.034136616,
 'Loss/total_loss': 1.1553972,
 'learning_rate': 0.0799973}
INFO:tensorflow:Step 3700 per-step time 0.305s
I1115 15:50:34.948921 135323911028736 model_lib_v2.py:705] Step 3700 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.3757932,
 'Loss/localization_loss': 0.6942518,
 'Loss/regularization_loss': 0.03435764,
 'Loss/total_loss': 1.1044027,
 'learning_rate': 0.07999679}
I1115 15:50:34.949249 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3757932,
 'Loss/localization_loss': 0.6942518,
 'Loss/regularization_loss': 0.03435764,
 'Loss/total_loss': 1.1044027,
 'learning_rate': 0.07999679}
```

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INFO:tensorflow:Step 3800 per-step time 0.293s
I1115 15:51:04.234844 135323911028736 model_lib_v2.py:705] Step 3800 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.33756536,
'Loss/localization_loss': 0.59273547,
'Loss/regularization_loss': 0.034574587,
'Loss/total_loss': 0.9648754,
'learning_rate': 0.07999623}
I1115 15:51:04.235176 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33756536,
'Loss/localization_loss': 0.59273547,
'Loss/regularization_loss': 0.034574587,
'Loss/total_loss': 0.9648754,
'learning_rate': 0.07999623}
INFO:tensorflow:Step 3900 per-step time 0.301s
I1115 15:51:34.338243 135323911028736 model_lib_v2.py:705] Step 3900 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.40621355,
'Loss/localization_loss': 0.6346883,
'Loss/regularization_loss': 0.034755286,
'Loss/total_loss': 1.0756571,
'learning_rate': 0.07999563}
I1115 15:51:34.338619 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.40621355,
'Loss/localization_loss': 0.6346883,
'Loss/regularization_loss': 0.034755286,
'Loss/total_loss': 1.0756571,
'learning_rate': 0.07999563}
INFO:tensorflow:Step 4000 per-step time 0.303s
I1115 15:52:04.647600 135323911028736 model_lib_v2.py:705] Step 4000 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.3739493,
'Loss/localization_loss': 0.5720157,
'Loss/regularization_loss': 0.03493116,
'Loss/total_loss': 0.9808962,
'learning_rate': 0.079994984}
I1115 15:52:04.647909 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3739493,
'Loss/localization_loss': 0.5720157,
'Loss/regularization_loss': 0.03493116,
'Loss/total_loss': 0.9808962,
'learning_rate': 0.079994984}
INFO:tensorflow:Step 4100 per-step time 0.305s
I1115 15:52:35.104069 135323911028736 model_lib_v2.py:705] Step 4100 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.32864973,
'Loss/localization_loss': 0.60750496,
'Loss/regularization_loss': 0.035136178,
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'Loss/total_loss': 0.9712909,
'learning_rate': 0.07999428}
I1115 15:52:35.104379 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32864973,
'Loss/localization_loss': 0.60750496,
'Loss/regularization_loss': 0.035136178,
'Loss/total_loss': 0.9712909,
'learning_rate': 0.07999428}
INFO:tensorflow:Step 4200 per-step time 0.301s
I1115 15:53:05.172699 135323911028736 model_lib_v2.py:705] Step 4200 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.38877568,
'Loss/localization_loss': 0.63863623,
'Loss/regularization_loss': 0.035319295,
'Loss/total_loss': 1.0627313,
'learning_rate': 0.07999355}
I1115 15:53:05.173154 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.38877568,
'Loss/localization_loss': 0.63863623,
'Loss/regularization_loss': 0.035319295,
'Loss/total_loss': 1.0627313,
'learning_rate': 0.07999355}
INFO:tensorflow:Step 4300 per-step time 0.303s
I1115 15:53:35.512249 135323911028736 model_lib_v2.py:705] Step 4300 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.31802204,
'Loss/localization_loss': 0.5203554,
'Loss/regularization_loss': 0.03549594,
'Loss/total_loss': 0.8738734,
'learning_rate': 0.07999277}
I1115 15:53:35.512548 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31802204,
'Loss/localization_loss': 0.5203554,
'Loss/regularization_loss': 0.03549594,
'Loss/total_loss': 0.8738734,
'learning_rate': 0.07999277}
INFO:tensorflow:Step 4400 per-step time 0.294s
I1115 15:54:04.914450 135323911028736 model_lib_v2.py:705] Step 4400 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.36864504,
'Loss/localization_loss': 0.53997386,
'Loss/regularization_loss': 0.035655733,
'Loss/total_loss': 0.94427466,
'learning_rate': 0.07999195}
I1115 15:54:04.914788 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.36864504,
'Loss/localization_loss': 0.53997386,
'Loss/regularization_loss': 0.035655733,

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'Loss/total_loss': 0.94427466,
'learning_rate': 0.07999195}
INFO:tensorflow:Step 4500 per-step time 0.302s
I1115 15:54:35.100858 135323911028736 model_lib_v2.py:705] Step 4500 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.32666847,
'Loss/localization_loss': 0.51167196,
'Loss/regularization_loss': 0.035809144,
'Loss/total_loss': 0.87414956,
'learning_rate': 0.07999108}
I1115 15:54:35.101253 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32666847,
'Loss/localization_loss': 0.51167196,
'Loss/regularization_loss': 0.035809144,
'Loss/total_loss': 0.87414956,
'learning_rate': 0.07999108}
INFO:tensorflow:Step 4600 per-step time 0.299s
I1115 15:55:05.018652 135323911028736 model_lib_v2.py:705] Step 4600 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.31001458,
'Loss/localization_loss': 0.41292793,
'Loss/regularization_loss': 0.035974428,
'Loss/total_loss': 0.7589169,
'learning_rate': 0.07999016}
I1115 15:55:05.018972 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31001458,
'Loss/localization_loss': 0.41292793,
'Loss/regularization_loss': 0.035974428,
'Loss/total_loss': 0.7589169,
'learning_rate': 0.07999016}
INFO:tensorflow:Step 4700 per-step time 0.307s
I1115 15:55:35.687466 135323911028736 model_lib_v2.py:705] Step 4700 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.36077446,
'Loss/localization_loss': 0.54217947,
'Loss/regularization_loss': 0.036140036,
'Loss/total_loss': 0.93909395,
'learning_rate': 0.0799892}
I1115 15:55:35.688245 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.36077446,
'Loss/localization_loss': 0.54217947,
'Loss/regularization_loss': 0.036140036,
'Loss/total_loss': 0.93909395,
'learning_rate': 0.0799892}
INFO:tensorflow:Step 4800 per-step time 0.301s
I1115 15:56:05.811835 135323911028736 model_lib_v2.py:705] Step 4800 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.3425714,

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'Loss/localization_loss': 0.58141243,
'Loss/regularization_loss': 0.036302842,
'Loss/total_loss': 0.9602867,
'learning_rate': 0.079988204}
I1115 15:56:05.812229 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3425714,
 'Loss/localization_loss': 0.58141243,
 'Loss/regularization_loss': 0.036302842,
 'Loss/total_loss': 0.9602867,
 'learning_rate': 0.079988204}
INFO:tensorflow:Step 4900 per-step time 0.308s
I1115 15:56:36.580969 135323911028736 model_lib_v2.py:705] Step 4900 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.31751922,
 'Loss/localization_loss': 0.49431175,
 'Loss/regularization_loss': 0.036480144,
 'Loss/total_loss': 0.8483111,
 'learning_rate': 0.07998715}
I1115 15:56:36.581388 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31751922,
 'Loss/localization_loss': 0.49431175,
 'Loss/regularization_loss': 0.036480144,
 'Loss/total_loss': 0.8483111,
 'learning_rate': 0.07998715}
INFO:tensorflow:Step 5000 per-step time 0.299s
I1115 15:57:06.459019 135323911028736 model_lib_v2.py:705] Step 5000 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.27054757,
 'Loss/localization_loss': 0.7340842,
 'Loss/regularization_loss': 0.03662316,
 'Loss/total_loss': 1.0412549,
 'learning_rate': 0.07998606}
I1115 15:57:06.459390 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27054757,
 'Loss/localization_loss': 0.7340842,
 'Loss/regularization_loss': 0.03662316,
 'Loss/total_loss': 1.0412549,
 'learning_rate': 0.07998606}
INFO:tensorflow:Step 5100 per-step time 0.316s
I1115 15:57:38.014313 135323911028736 model_lib_v2.py:705] Step 5100 per-step
time 0.316s
INFO:tensorflow:{'Loss/classification_loss': 0.317367,
 'Loss/localization_loss': 0.43453497,
 'Loss/regularization_loss': 0.03679352,
 'Loss/total_loss': 0.7886955,
 'learning_rate': 0.07998492}
I1115 15:57:38.014693 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.317367,
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'Loss/localization_loss': 0.43453497,
'Loss/regularization_loss': 0.03679352,
'Loss/total_loss': 0.7886955,
'learning_rate': 0.07998492}
INFO:tensorflow:Step 5200 per-step time 0.295s
I1115 15:58:07.525730 135323911028736 model_lib_v2.py:705] Step 5200 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.30361125,
'Loss/localization_loss': 0.47979337,
'Loss/regularization_loss': 0.036938198,
'Loss/total_loss': 0.8203428,
'learning_rate': 0.07998374}
I1115 15:58:07.526064 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30361125,
'Loss/localization_loss': 0.47979337,
'Loss/regularization_loss': 0.036938198,
'Loss/total_loss': 0.8203428,
'learning_rate': 0.07998374}
INFO:tensorflow:Step 5300 per-step time 0.296s
I1115 15:58:37.136394 135323911028736 model_lib_v2.py:705] Step 5300 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.30126113,
'Loss/localization_loss': 0.40236777,
'Loss/regularization_loss': 0.037082344,
'Loss/total_loss': 0.7407112,
'learning_rate': 0.07998252}
I1115 15:58:37.136830 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30126113,
'Loss/localization_loss': 0.40236777,
'Loss/regularization_loss': 0.037082344,
'Loss/total_loss': 0.7407112,
'learning_rate': 0.07998252}
INFO:tensorflow:Step 5400 per-step time 0.303s
I1115 15:59:07.429127 135323911028736 model_lib_v2.py:705] Step 5400 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.33792657,
'Loss/localization_loss': 0.560144,
'Loss/regularization_loss': 0.037207846,
'Loss/total_loss': 0.9352784,
'learning_rate': 0.079981245}
I1115 15:59:07.429512 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33792657,
'Loss/localization_loss': 0.560144,
'Loss/regularization_loss': 0.037207846,
'Loss/total_loss': 0.9352784,
'learning_rate': 0.079981245}
INFO:tensorflow:Step 5500 per-step time 0.293s
I1115 15:59:36.745353 135323911028736 model_lib_v2.py:705] Step 5500 per-step
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time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.33593386,
'Loss/localization_loss': 0.5332345,
'Loss/regularization_loss': 0.037365444,
'Loss/total_loss': 0.9065338,
'learning_rate': 0.07997993}
I1115 15:59:36.745682 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33593386,
'Loss/localization_loss': 0.5332345,
'Loss/regularization_loss': 0.037365444,
'Loss/total_loss': 0.9065338,
'learning_rate': 0.07997993}
INFO:tensorflow:Step 5600 per-step time 0.296s
I1115 16:00:06.340002 135323911028736 model_lib_v2.py:705] Step 5600 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.30598336,
'Loss/localization_loss': 0.51949036,
'Loss/regularization_loss': 0.03751428,
'Loss/total_loss': 0.862988,
'learning_rate': 0.07997857}
I1115 16:00:06.340388 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30598336,
'Loss/localization_loss': 0.51949036,
'Loss/regularization_loss': 0.03751428,
'Loss/total_loss': 0.862988,
'learning_rate': 0.07997857}
INFO:tensorflow:Step 5700 per-step time 0.303s
I1115 16:00:36.658464 135323911028736 model_lib_v2.py:705] Step 5700 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.35671896,
'Loss/localization_loss': 0.4118848,
'Loss/regularization_loss': 0.037676882,
'Loss/total_loss': 0.8062807,
'learning_rate': 0.07997716}
I1115 16:00:36.658887 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.35671896,
'Loss/localization_loss': 0.4118848,
'Loss/regularization_loss': 0.037676882,
'Loss/total_loss': 0.8062807,
'learning_rate': 0.07997716}
INFO:tensorflow:Step 5800 per-step time 0.295s
I1115 16:01:06.203658 135323911028736 model_lib_v2.py:705] Step 5800 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.32912055,
'Loss/localization_loss': 0.51464754,
'Loss/regularization_loss': 0.03783187,
'Loss/total_loss': 0.88159996,
'learning_rate': 0.07997571}

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I1115 16:01:06.203993 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32912055,
 'Loss/localization_loss': 0.51464754,
 'Loss/regularization_loss': 0.03783187,
 'Loss/total_loss': 0.88159996,
 'learning_rate': 0.07997571}
INFO:tensorflow:Step 5900 per-step time 0.293s
I1115 16:01:35.521828 135323911028736 model_lib_v2.py:705] Step 5900 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.31590006,
 'Loss/localization_loss': 0.46056795,
 'Loss/regularization_loss': 0.038007814,
 'Loss/total_loss': 0.81447583,
 'learning_rate': 0.07997422}
I1115 16:01:35.522242 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31590006,
 'Loss/localization_loss': 0.46056795,
 'Loss/regularization_loss': 0.038007814,
 'Loss/total_loss': 0.81447583,
 'learning_rate': 0.07997422}
INFO:tensorflow:Step 6000 per-step time 0.307s
I1115 16:02:06.195891 135323911028736 model_lib_v2.py:705] Step 6000 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.34699437,
 'Loss/localization_loss': 0.5834201,
 'Loss/regularization_loss': 0.038175747,
 'Loss/total_loss': 0.9685902,
 'learning_rate': 0.07997268}
I1115 16:02:06.196273 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34699437,
 'Loss/localization_loss': 0.5834201,
 'Loss/regularization_loss': 0.038175747,
 'Loss/total_loss': 0.9685902,
 'learning_rate': 0.07997268}
INFO:tensorflow:Step 6100 per-step time 0.308s
I1115 16:02:36.983141 135323911028736 model_lib_v2.py:705] Step 6100 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.27915278,
 'Loss/localization_loss': 0.5460133,
 'Loss/regularization_loss': 0.038293142,
 'Loss/total_loss': 0.8634592,
 'learning_rate': 0.0799711}
I1115 16:02:36.983461 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27915278,
 'Loss/localization_loss': 0.5460133,
 'Loss/regularization_loss': 0.038293142,
 'Loss/total_loss': 0.8634592,
 'learning_rate': 0.0799711}
```

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INFO:tensorflow:Step 6200 per-step time 0.304s
I1115 16:03:07.376931 135323911028736 model_lib_v2.py:705] Step 6200 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.330791,
'Loss/localization_loss': 0.4785313,
'Loss/regularization_loss': 0.038442805,
'Loss/total_loss': 0.8477651,
'learning_rate': 0.07996947}
I1115 16:03:07.377360 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.330791,
'Loss/localization_loss': 0.4785313,
'Loss/regularization_loss': 0.038442805,
'Loss/total_loss': 0.8477651,
'learning_rate': 0.07996947}
INFO:tensorflow:Step 6300 per-step time 0.325s
I1115 16:03:39.872531 135323911028736 model_lib_v2.py:705] Step 6300 per-step
time 0.325s
INFO:tensorflow:{'Loss/classification_loss': 0.3497769,
'Loss/localization_loss': 0.5338537,
'Loss/regularization_loss': 0.03858308,
'Loss/total_loss': 0.92221373,
'learning_rate': 0.0799678}
I1115 16:03:39.872863 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3497769,
'Loss/localization_loss': 0.5338537,
'Loss/regularization_loss': 0.03858308,
'Loss/total_loss': 0.92221373,
'learning_rate': 0.0799678}
INFO:tensorflow:Step 6400 per-step time 0.292s
I1115 16:04:09.043639 135323911028736 model_lib_v2.py:705] Step 6400 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.37680346,
'Loss/localization_loss': 0.56740713,
'Loss/regularization_loss': 0.038720846,
'Loss/total_loss': 0.98293144,
'learning_rate': 0.07996608}
I1115 16:04:09.043968 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.37680346,
'Loss/localization_loss': 0.56740713,
'Loss/regularization_loss': 0.038720846,
'Loss/total_loss': 0.98293144,
'learning_rate': 0.07996608}
INFO:tensorflow:Step 6500 per-step time 0.304s
I1115 16:04:39.409520 135323911028736 model_lib_v2.py:705] Step 6500 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.3132868,
'Loss/localization_loss': 0.43174276,
'Loss/regularization_loss': 0.038869772,
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'Loss/total_loss': 0.78389937,
'learning_rate': 0.079964325}
I1115 16:04:39.409900 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3132868,
'Loss/localization_loss': 0.43174276,
'Loss/regularization_loss': 0.038869772,
'Loss/total_loss': 0.78389937,
'learning_rate': 0.079964325}
INFO:tensorflow:Step 6600 per-step time 0.304s
I1115 16:05:09.818696 135323911028736 model_lib_v2.py:705] Step 6600 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.2911363,
'Loss/localization_loss': 0.49517816,
'Loss/regularization_loss': 0.03905074,
'Loss/total_loss': 0.82536525,
'learning_rate': 0.079962514}
I1115 16:05:09.819010 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2911363,
'Loss/localization_loss': 0.49517816,
'Loss/regularization_loss': 0.03905074,
'Loss/total_loss': 0.82536525,
'learning_rate': 0.079962514}
INFO:tensorflow:Step 6700 per-step time 0.306s
I1115 16:05:40.393942 135323911028736 model_lib_v2.py:705] Step 6700 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.31957942,
'Loss/localization_loss': 0.5661045,
'Loss/regularization_loss': 0.0391618,
'Loss/total_loss': 0.9248457,
'learning_rate': 0.07996067}
I1115 16:05:40.394392 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31957942,
'Loss/localization_loss': 0.5661045,
'Loss/regularization_loss': 0.0391618,
'Loss/total_loss': 0.9248457,
'learning_rate': 0.07996067}
INFO:tensorflow:Step 6800 per-step time 0.301s
I1115 16:06:10.458882 135323911028736 model_lib_v2.py:705] Step 6800 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.34390232,
'Loss/localization_loss': 0.6262813,
'Loss/regularization_loss': 0.039319973,
'Loss/total_loss': 1.0095036,
'learning_rate': 0.079958774}
I1115 16:06:10.459272 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34390232,
'Loss/localization_loss': 0.6262813,
'Loss/regularization_loss': 0.039319973,
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'Loss/total_loss': 1.0095036,
'learning_rate': 0.079958774}
INFO:tensorflow:Step 6900 per-step time 0.303s
I1115 16:06:40.724535 135323911028736 model_lib_v2.py:705] Step 6900 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.35160276,
'Loss/localization_loss': 0.56543547,
'Loss/regularization_loss': 0.03945886,
'Loss/total_loss': 0.9564971,
'learning_rate': 0.07995682}
I1115 16:06:40.724863 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.35160276,
'Loss/localization_loss': 0.56543547,
'Loss/regularization_loss': 0.03945886,
'Loss/total_loss': 0.9564971,
'learning_rate': 0.07995682}
INFO:tensorflow:Step 7000 per-step time 0.294s
I1115 16:07:10.075899 135323911028736 model_lib_v2.py:705] Step 7000 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.31966776,
'Loss/localization_loss': 0.59288406,
'Loss/regularization_loss': 0.039582923,
'Loss/total_loss': 0.9521347,
'learning_rate': 0.07995484}
I1115 16:07:10.076209 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31966776,
'Loss/localization_loss': 0.59288406,
'Loss/regularization_loss': 0.039582923,
'Loss/total_loss': 0.9521347,
'learning_rate': 0.07995484}
INFO:tensorflow:Step 7100 per-step time 0.313s
I1115 16:07:41.350466 135323911028736 model_lib_v2.py:705] Step 7100 per-step
time 0.313s
INFO:tensorflow:{'Loss/classification_loss': 0.31216815,
'Loss/localization_loss': 0.40790692,
'Loss/regularization_loss': 0.039723855,
'Loss/total_loss': 0.75979894,
'learning_rate': 0.07995281}
I1115 16:07:41.350888 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31216815,
'Loss/localization_loss': 0.40790692,
'Loss/regularization_loss': 0.039723855,
'Loss/total_loss': 0.75979894,
'learning_rate': 0.07995281}
INFO:tensorflow:Step 7200 per-step time 0.302s
I1115 16:08:11.568046 135323911028736 model_lib_v2.py:705] Step 7200 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.32290807,

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'Loss/localization_loss': 0.4991263,
'Loss/regularization_loss': 0.0398454,
'Loss/total_loss': 0.86187977,
'learning_rate': 0.07995074}
I1115 16:08:11.568363 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32290807,
 'Loss/localization_loss': 0.4991263,
 'Loss/regularization_loss': 0.0398454,
 'Loss/total_loss': 0.86187977,
 'learning_rate': 0.07995074}

INFO:tensorflow:Step 7300 per-step time 0.293s
I1115 16:08:40.834528 135323911028736 model_lib_v2.py:705] Step 7300 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.3340617,
 'Loss/localization_loss': 0.5635559,
 'Loss/regularization_loss': 0.039983723,
 'Loss/total_loss': 0.9376013,
 'learning_rate': 0.07994863}
I1115 16:08:40.834905 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3340617,
 'Loss/localization_loss': 0.5635559,
 'Loss/regularization_loss': 0.039983723,
 'Loss/total_loss': 0.9376013,
 'learning_rate': 0.07994863}

INFO:tensorflow:Step 7400 per-step time 0.306s
I1115 16:09:11.390167 135323911028736 model_lib_v2.py:705] Step 7400 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.32325435,
 'Loss/localization_loss': 0.6199197,
 'Loss/regularization_loss': 0.04011665,
 'Loss/total_loss': 0.98329073,
 'learning_rate': 0.07994646}
I1115 16:09:11.390530 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32325435,
 'Loss/localization_loss': 0.6199197,
 'Loss/regularization_loss': 0.04011665,
 'Loss/total_loss': 0.98329073,
 'learning_rate': 0.07994646}

INFO:tensorflow:Step 7500 per-step time 0.300s
I1115 16:09:41.355722 135323911028736 model_lib_v2.py:705] Step 7500 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.34181246,
 'Loss/localization_loss': 0.536955,
 'Loss/regularization_loss': 0.04022907,
 'Loss/total_loss': 0.9189966,
 'learning_rate': 0.07994425}
I1115 16:09:41.356034 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34181246,

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'Loss/localization_loss': 0.536955,
'Loss/regularization_loss': 0.04022907,
'Loss/total_loss': 0.9189966,
'learning_rate': 0.07994425}
INFO:tensorflow:Step 7600 per-step time 0.294s
I1115 16:10:10.735391 135323911028736 model_lib_v2.py:705] Step 7600 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.32440478,
'Loss/localization_loss': 0.5163521,
'Loss/regularization_loss': 0.04036677,
'Loss/total_loss': 0.88112366,
'learning_rate': 0.079942}
I1115 16:10:10.735708 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32440478,
'Loss/localization_loss': 0.5163521,
'Loss/regularization_loss': 0.04036677,
'Loss/total_loss': 0.88112366,
'learning_rate': 0.079942}
INFO:tensorflow:Step 7700 per-step time 0.302s
I1115 16:10:40.969806 135323911028736 model_lib_v2.py:705] Step 7700 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.33757314,
'Loss/localization_loss': 0.60763973,
'Loss/regularization_loss': 0.04050682,
'Loss/total_loss': 0.9857197,
'learning_rate': 0.07993971}
I1115 16:10:40.970181 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33757314,
'Loss/localization_loss': 0.60763973,
'Loss/regularization_loss': 0.04050682,
'Loss/total_loss': 0.9857197,
'learning_rate': 0.07993971}
INFO:tensorflow:Step 7800 per-step time 0.312s
I1115 16:11:12.157076 135323911028736 model_lib_v2.py:705] Step 7800 per-step
time 0.312s
INFO:tensorflow:{'Loss/classification_loss': 0.31538922,
'Loss/localization_loss': 0.4082717,
'Loss/regularization_loss': 0.040695123,
'Loss/total_loss': 0.7643561,
'learning_rate': 0.07993737}
I1115 16:11:12.157513 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31538922,
'Loss/localization_loss': 0.4082717,
'Loss/regularization_loss': 0.040695123,
'Loss/total_loss': 0.7643561,
'learning_rate': 0.07993737}
INFO:tensorflow:Step 7900 per-step time 0.299s
I1115 16:11:42.041913 135323911028736 model_lib_v2.py:705] Step 7900 per-step

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time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.32409716,
'Loss/localization_loss': 0.55746865,
'Loss/regularization_loss': 0.040791422,
'Loss/total_loss': 0.9223572,
'learning_rate': 0.079934984}
I1115 16:11:42.042307 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32409716,
'Loss/localization_loss': 0.55746865,
'Loss/regularization_loss': 0.040791422,
'Loss/total_loss': 0.9223572,
'learning_rate': 0.079934984}
INFO:tensorflow:Step 8000 per-step time 0.309s
I1115 16:12:12.902696 135323911028736 model_lib_v2.py:705] Step 8000 per-step
time 0.309s
INFO:tensorflow:{'Loss/classification_loss': 0.2717208,
'Loss/localization_loss': 0.4184933,
'Loss/regularization_loss': 0.040894456,
'Loss/total_loss': 0.73110855,
'learning_rate': 0.079932556}
I1115 16:12:12.903110 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2717208,
'Loss/localization_loss': 0.4184933,
'Loss/regularization_loss': 0.040894456,
'Loss/total_loss': 0.73110855,
'learning_rate': 0.079932556}
INFO:tensorflow:Step 8100 per-step time 0.310s
I1115 16:12:43.904808 135323911028736 model_lib_v2.py:705] Step 8100 per-step
time 0.310s
INFO:tensorflow:{'Loss/classification_loss': 0.28633156,
'Loss/localization_loss': 0.44613895,
'Loss/regularization_loss': 0.040997475,
'Loss/total_loss': 0.773468,
'learning_rate': 0.079930075}
I1115 16:12:43.905122 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28633156,
'Loss/localization_loss': 0.44613895,
'Loss/regularization_loss': 0.040997475,
'Loss/total_loss': 0.773468,
'learning_rate': 0.079930075}
INFO:tensorflow:Step 8200 per-step time 0.296s
I1115 16:13:13.460151 135323911028736 model_lib_v2.py:705] Step 8200 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.30765417,
'Loss/localization_loss': 0.3783171,
'Loss/regularization_loss': 0.04110965,
'Loss/total_loss': 0.72708094,
'learning_rate': 0.079927556}
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I1115 16:13:13.460515 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30765417,
 'Loss/localization_loss': 0.3783171,
 'Loss/regularization_loss': 0.04110965,
 'Loss/total_loss': 0.72708094,
 'learning_rate': 0.079927556}
INFO:tensorflow:Step 8300 per-step time 0.307s
I1115 16:13:44.112567 135323911028736 model_lib_v2.py:705] Step 8300 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.3351497,
 'Loss/localization_loss': 0.54387486,
 'Loss/regularization_loss': 0.04124646,
 'Loss/total_loss': 0.92027104,
 'learning_rate': 0.07992499}
I1115 16:13:44.112914 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3351497,
 'Loss/localization_loss': 0.54387486,
 'Loss/regularization_loss': 0.04124646,
 'Loss/total_loss': 0.92027104,
 'learning_rate': 0.07992499}
INFO:tensorflow:Step 8400 per-step time 0.308s
I1115 16:14:14.876405 135323911028736 model_lib_v2.py:705] Step 8400 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.31321454,
 'Loss/localization_loss': 0.3867854,
 'Loss/regularization_loss': 0.041376747,
 'Loss/total_loss': 0.7413767,
 'learning_rate': 0.079922386}
I1115 16:14:14.876728 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31321454,
 'Loss/localization_loss': 0.3867854,
 'Loss/regularization_loss': 0.041376747,
 'Loss/total_loss': 0.7413767,
 'learning_rate': 0.079922386}
INFO:tensorflow:Step 8500 per-step time 0.304s
I1115 16:14:45.250664 135323911028736 model_lib_v2.py:705] Step 8500 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.31856757,
 'Loss/localization_loss': 0.537205,
 'Loss/regularization_loss': 0.041507903,
 'Loss/total_loss': 0.89728045,
 'learning_rate': 0.07991974}
I1115 16:14:45.251054 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31856757,
 'Loss/localization_loss': 0.537205,
 'Loss/regularization_loss': 0.041507903,
 'Loss/total_loss': 0.89728045,
 'learning_rate': 0.07991974}
```

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INFO:tensorflow:Step 8600 per-step time 0.307s
I1115 16:15:15.946144 135323911028736 model_lib_v2.py:705] Step 8600 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.3249834,
'Loss/localization_loss': 0.45879072,
'Loss/regularization_loss': 0.041618314,
'Loss/total_loss': 0.8253924,
'learning_rate': 0.079917036}
I1115 16:15:15.946545 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3249834,
'Loss/localization_loss': 0.45879072,
'Loss/regularization_loss': 0.041618314,
'Loss/total_loss': 0.8253924,
'learning_rate': 0.079917036}
INFO:tensorflow:Step 8700 per-step time 0.297s
I1115 16:15:45.627562 135323911028736 model_lib_v2.py:705] Step 8700 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.24518895,
'Loss/localization_loss': 0.39547604,
'Loss/regularization_loss': 0.041732147,
'Loss/total_loss': 0.6823971,
'learning_rate': 0.0799143}
I1115 16:15:45.627893 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24518895,
'Loss/localization_loss': 0.39547604,
'Loss/regularization_loss': 0.041732147,
'Loss/total_loss': 0.6823971,
'learning_rate': 0.0799143}
INFO:tensorflow:Step 8800 per-step time 0.298s
I1115 16:16:15.419295 135323911028736 model_lib_v2.py:705] Step 8800 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.3455159,
'Loss/localization_loss': 0.5279961,
'Loss/regularization_loss': 0.04188892,
'Loss/total_loss': 0.9154009,
'learning_rate': 0.079911515}
I1115 16:16:15.419669 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3455159,
'Loss/localization_loss': 0.5279961,
'Loss/regularization_loss': 0.04188892,
'Loss/total_loss': 0.9154009,
'learning_rate': 0.079911515}
INFO:tensorflow:Step 8900 per-step time 0.307s
I1115 16:16:46.140664 135323911028736 model_lib_v2.py:705] Step 8900 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.36408794,
'Loss/localization_loss': 0.5827679,
'Loss/regularization_loss': 0.041996088,
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'Loss/total_loss': 0.9888519,
'learning_rate': 0.079908684}
I1115 16:16:46.141056 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.36408794,
'Loss/localization_loss': 0.5827679,
'Loss/regularization_loss': 0.041996088,
'Loss/total_loss': 0.9888519,
'learning_rate': 0.079908684}
INFO:tensorflow:Step 9000 per-step time 0.294s
I1115 16:17:15.506682 135323911028736 model_lib_v2.py:705] Step 9000 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.27735275,
'Loss/localization_loss': 0.34945217,
'Loss/regularization_loss': 0.0421226,
'Loss/total_loss': 0.66892755,
'learning_rate': 0.0799058}
I1115 16:17:15.507032 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27735275,
'Loss/localization_loss': 0.34945217,
'Loss/regularization_loss': 0.0421226,
'Loss/total_loss': 0.66892755,
'learning_rate': 0.0799058}
INFO:tensorflow:Step 9100 per-step time 0.310s
I1115 16:17:46.523971 135323911028736 model_lib_v2.py:705] Step 9100 per-step
time 0.310s
INFO:tensorflow:{'Loss/classification_loss': 0.29921883,
'Loss/localization_loss': 0.48459247,
'Loss/regularization_loss': 0.042238746,
'Loss/total_loss': 0.8260501,
'learning_rate': 0.07990289}
I1115 16:17:46.524375 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29921883,
'Loss/localization_loss': 0.48459247,
'Loss/regularization_loss': 0.042238746,
'Loss/total_loss': 0.8260501,
'learning_rate': 0.07990289}
INFO:tensorflow:Step 9200 per-step time 0.308s
I1115 16:18:17.334102 135323911028736 model_lib_v2.py:705] Step 9200 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.31871527,
'Loss/localization_loss': 0.6472046,
'Loss/regularization_loss': 0.042361632,
'Loss/total_loss': 1.0082815,
'learning_rate': 0.07989992}
I1115 16:18:17.334508 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31871527,
'Loss/localization_loss': 0.6472046,
'Loss/regularization_loss': 0.042361632,
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'Loss/total_loss': 1.0082815,
'learning_rate': 0.07989992}
INFO:tensorflow:Step 9300 per-step time 0.291s
I1115 16:18:46.437247 135323911028736 model_lib_v2.py:705] Step 9300 per-step
time 0.291s
INFO:tensorflow:{'Loss/classification_loss': 0.29444274,
'Loss/localization_loss': 0.40630347,
'Loss/regularization_loss': 0.042490266,
'Loss/total_loss': 0.7432364,
'learning_rate': 0.07989691}
I1115 16:18:46.437565 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29444274,
'Loss/localization_loss': 0.40630347,
'Loss/regularization_loss': 0.042490266,
'Loss/total_loss': 0.7432364,
'learning_rate': 0.07989691}
INFO:tensorflow:Step 9400 per-step time 0.318s
I1115 16:19:18.232584 135323911028736 model_lib_v2.py:705] Step 9400 per-step
time 0.318s
INFO:tensorflow:{'Loss/classification_loss': 0.32190362,
'Loss/localization_loss': 0.45210415,
'Loss/regularization_loss': 0.04261372,
'Loss/total_loss': 0.81662154,
'learning_rate': 0.079893865}
I1115 16:19:18.232994 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32190362,
'Loss/localization_loss': 0.45210415,
'Loss/regularization_loss': 0.04261372,
'Loss/total_loss': 0.81662154,
'learning_rate': 0.079893865}
INFO:tensorflow:Step 9500 per-step time 0.305s
I1115 16:19:48.736100 135323911028736 model_lib_v2.py:705] Step 9500 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.35997275,
'Loss/localization_loss': 0.5047397,
'Loss/regularization_loss': 0.0427075,
'Loss/total_loss': 0.90742,
'learning_rate': 0.079890765}
I1115 16:19:48.736441 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.35997275,
'Loss/localization_loss': 0.5047397,
'Loss/regularization_loss': 0.0427075,
'Loss/total_loss': 0.90742,
'learning_rate': 0.079890765}
INFO:tensorflow:Step 9600 per-step time 0.293s
I1115 16:20:18.045843 135323911028736 model_lib_v2.py:705] Step 9600 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.30831537,

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'Loss/localization_loss': 0.41561264,
'Loss/regularization_loss': 0.04281821,
'Loss/total_loss': 0.76674616,
'learning_rate': 0.07988763}
I1115 16:20:18.046184 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30831537,
 'Loss/localization_loss': 0.41561264,
 'Loss/regularization_loss': 0.04281821,
 'Loss/total_loss': 0.76674616,
 'learning_rate': 0.07988763}

INFO:tensorflow:Step 9700 per-step time 0.303s
I1115 16:20:48.306375 135323911028736 model_lib_v2.py:705] Step 9700 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.28849062,
 'Loss/localization_loss': 0.34733835,
 'Loss/regularization_loss': 0.04294363,
 'Loss/total_loss': 0.6787726,
 'learning_rate': 0.07988444}

I1115 16:20:48.306760 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28849062,
 'Loss/localization_loss': 0.34733835,
 'Loss/regularization_loss': 0.04294363,
 'Loss/total_loss': 0.6787726,
 'learning_rate': 0.07988444}

INFO:tensorflow:Step 9800 per-step time 0.304s
I1115 16:21:18.732689 135323911028736 model_lib_v2.py:705] Step 9800 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.3278226,
 'Loss/localization_loss': 0.5360498,
 'Loss/regularization_loss': 0.043054428,
 'Loss/total_loss': 0.9069268,
 'learning_rate': 0.079881206}

I1115 16:21:18.733018 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3278226,
 'Loss/localization_loss': 0.5360498,
 'Loss/regularization_loss': 0.043054428,
 'Loss/total_loss': 0.9069268,
 'learning_rate': 0.079881206}

INFO:tensorflow:Step 9900 per-step time 0.296s
I1115 16:21:48.350219 135323911028736 model_lib_v2.py:705] Step 9900 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.29697645,
 'Loss/localization_loss': 0.458689,
 'Loss/regularization_loss': 0.043159567,
 'Loss/total_loss': 0.79882497,
 'learning_rate': 0.07987793}

I1115 16:21:48.350549 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29697645,

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'Loss/localization_loss': 0.458689,
'Loss/regularization_loss': 0.043159567,
'Loss/total_loss': 0.79882497,
'learning_rate': 0.07987793}
INFO:tensorflow:Step 10000 per-step time 0.306s
I1115 16:22:18.947736 135323911028736 model_lib_v2.py:705] Step 10000 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.2857895,
'Loss/localization_loss': 0.42481983,
'Loss/regularization_loss': 0.04326386,
'Loss/total_loss': 0.75387317,
'learning_rate': 0.07987461}
I1115 16:22:18.948076 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2857895,
'Loss/localization_loss': 0.42481983,
'Loss/regularization_loss': 0.04326386,
'Loss/total_loss': 0.75387317,
'learning_rate': 0.07987461}
INFO:tensorflow:Step 10100 per-step time 0.314s
I1115 16:22:50.326330 135323911028736 model_lib_v2.py:705] Step 10100 per-step
time 0.314s
INFO:tensorflow:{'Loss/classification_loss': 0.28988504,
'Loss/localization_loss': 0.4601794,
'Loss/regularization_loss': 0.043373242,
'Loss/total_loss': 0.79343766,
'learning_rate': 0.079871245}
I1115 16:22:50.326665 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28988504,
'Loss/localization_loss': 0.4601794,
'Loss/regularization_loss': 0.043373242,
'Loss/total_loss': 0.79343766,
'learning_rate': 0.079871245}
INFO:tensorflow:Step 10200 per-step time 0.303s
I1115 16:23:20.642107 135323911028736 model_lib_v2.py:705] Step 10200 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.2968874,
'Loss/localization_loss': 0.47027734,
'Loss/regularization_loss': 0.04348128,
'Loss/total_loss': 0.810646,
'learning_rate': 0.07986784}
I1115 16:23:20.642462 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2968874,
'Loss/localization_loss': 0.47027734,
'Loss/regularization_loss': 0.04348128,
'Loss/total_loss': 0.810646,
'learning_rate': 0.07986784}
INFO:tensorflow:Step 10300 per-step time 0.308s
I1115 16:23:51.398051 135323911028736 model_lib_v2.py:705] Step 10300 per-step
```

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time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.3025176,
'Loss/localization_loss': 0.48434672,
'Loss/regularization_loss': 0.043566972,
'Loss/total_loss': 0.8304312,
'learning_rate': 0.07986438}
I1115 16:23:51.398431 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3025176,
'Loss/localization_loss': 0.48434672,
'Loss/regularization_loss': 0.043566972,
'Loss/total_loss': 0.8304312,
'learning_rate': 0.07986438}
INFO:tensorflow:Step 10400 per-step time 0.300s
I1115 16:24:21.372864 135323911028736 model_lib_v2.py:705] Step 10400 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.32624146,
'Loss/localization_loss': 0.4823941,
'Loss/regularization_loss': 0.043726116,
'Loss/total_loss': 0.8523617,
'learning_rate': 0.07986089}
I1115 16:24:21.373181 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32624146,
'Loss/localization_loss': 0.4823941,
'Loss/regularization_loss': 0.043726116,
'Loss/total_loss': 0.8523617,
'learning_rate': 0.07986089}
INFO:tensorflow:Step 10500 per-step time 0.294s
I1115 16:24:50.745542 135323911028736 model_lib_v2.py:705] Step 10500 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.30167508,
'Loss/localization_loss': 0.4593977,
'Loss/regularization_loss': 0.043826852,
'Loss/total_loss': 0.80489963,
'learning_rate': 0.07985735}
I1115 16:24:50.745957 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30167508,
'Loss/localization_loss': 0.4593977,
'Loss/regularization_loss': 0.043826852,
'Loss/total_loss': 0.80489963,
'learning_rate': 0.07985735}
INFO:tensorflow:Step 10600 per-step time 0.306s
I1115 16:25:21.352167 135323911028736 model_lib_v2.py:705] Step 10600 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.28640693,
'Loss/localization_loss': 0.41823423,
'Loss/regularization_loss': 0.04394898,
'Loss/total_loss': 0.7485901,
'learning_rate': 0.07985376}
```

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I1115 16:25:21.352539 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28640693,
 'Loss/localization_loss': 0.41823423,
 'Loss/regularization_loss': 0.04394898,
 'Loss/total_loss': 0.7485901,
 'learning_rate': 0.07985376}
INFO:tensorflow:Step 10700 per-step time 0.302s
I1115 16:25:51.510623 135323911028736 model_lib_v2.py:705] Step 10700 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.27752197,
 'Loss/localization_loss': 0.4045684,
 'Loss/regularization_loss': 0.044054817,
 'Loss/total_loss': 0.7261452,
 'learning_rate': 0.07985013}
I1115 16:25:51.510973 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27752197,
 'Loss/localization_loss': 0.4045684,
 'Loss/regularization_loss': 0.044054817,
 'Loss/total_loss': 0.7261452,
 'learning_rate': 0.07985013}
INFO:tensorflow:Step 10800 per-step time 0.295s
I1115 16:26:20.986273 135323911028736 model_lib_v2.py:705] Step 10800 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.26998898,
 'Loss/localization_loss': 0.43836054,
 'Loss/regularization_loss': 0.044162977,
 'Loss/total_loss': 0.7525125,
 'learning_rate': 0.07984646}
I1115 16:26:20.986679 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26998898,
 'Loss/localization_loss': 0.43836054,
 'Loss/regularization_loss': 0.044162977,
 'Loss/total_loss': 0.7525125,
 'learning_rate': 0.07984646}
INFO:tensorflow:Step 10900 per-step time 0.322s
I1115 16:26:53.143532 135323911028736 model_lib_v2.py:705] Step 10900 per-step
time 0.322s
INFO:tensorflow:{'Loss/classification_loss': 0.27872375,
 'Loss/localization_loss': 0.42289433,
 'Loss/regularization_loss': 0.04425127,
 'Loss/total_loss': 0.74586934,
 'learning_rate': 0.07984274}
I1115 16:26:53.143943 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27872375,
 'Loss/localization_loss': 0.42289433,
 'Loss/regularization_loss': 0.04425127,
 'Loss/total_loss': 0.74586934,
 'learning_rate': 0.07984274}
```

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INFO:tensorflow:Step 11000 per-step time 0.299s
I1115 16:27:23.021323 135323911028736 model_lib_v2.py:705] Step 11000 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.28195825,
'Loss/localization_loss': 0.4501191,
'Loss/regularization_loss': 0.044359695,
'Loss/total_loss': 0.77643704,
'learning_rate': 0.07983897}
I1115 16:27:23.021661 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28195825,
'Loss/localization_loss': 0.4501191,
'Loss/regularization_loss': 0.044359695,
'Loss/total_loss': 0.77643704,
'learning_rate': 0.07983897}
INFO:tensorflow:Step 11100 per-step time 0.304s
I1115 16:27:53.472577 135323911028736 model_lib_v2.py:705] Step 11100 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.272375,
'Loss/localization_loss': 0.49351615,
'Loss/regularization_loss': 0.04448191,
'Loss/total_loss': 0.81037307,
'learning_rate': 0.07983516}
I1115 16:27:53.473024 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.272375,
'Loss/localization_loss': 0.49351615,
'Loss/regularization_loss': 0.04448191,
'Loss/total_loss': 0.81037307,
'learning_rate': 0.07983516}
INFO:tensorflow:Step 11200 per-step time 0.307s
I1115 16:28:24.145936 135323911028736 model_lib_v2.py:705] Step 11200 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.32137576,
'Loss/localization_loss': 0.50207734,
'Loss/regularization_loss': 0.044599235,
'Loss/total_loss': 0.8680523,
'learning_rate': 0.07983131}
I1115 16:28:24.146367 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32137576,
'Loss/localization_loss': 0.50207734,
'Loss/regularization_loss': 0.044599235,
'Loss/total_loss': 0.8680523,
'learning_rate': 0.07983131}
INFO:tensorflow:Step 11300 per-step time 0.298s
I1115 16:28:53.960118 135323911028736 model_lib_v2.py:705] Step 11300 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.26773158,
'Loss/localization_loss': 0.37387493,
'Loss/regularization_loss': 0.044688113,
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'Loss/total_loss': 0.6862946,
'learning_rate': 0.07982741}
I1115 16:28:53.960417 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26773158,
'Loss/localization_loss': 0.37387493,
'Loss/regularization_loss': 0.044688113,
'Loss/total_loss': 0.6862946,
'learning_rate': 0.07982741}
INFO:tensorflow:Step 11400 per-step time 0.296s
I1115 16:29:23.571366 135323911028736 model_lib_v2.py:705] Step 11400 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.2425198,
'Loss/localization_loss': 0.34566596,
'Loss/regularization_loss': 0.044776186,
'Loss/total_loss': 0.632962,
'learning_rate': 0.07982347}
I1115 16:29:23.571742 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2425198,
'Loss/localization_loss': 0.34566596,
'Loss/regularization_loss': 0.044776186,
'Loss/total_loss': 0.632962,
'learning_rate': 0.07982347}
INFO:tensorflow:Step 11500 per-step time 0.308s
I1115 16:29:54.413708 135323911028736 model_lib_v2.py:705] Step 11500 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.27877676,
'Loss/localization_loss': 0.36872455,
'Loss/regularization_loss': 0.0448638,
'Loss/total_loss': 0.69236517,
'learning_rate': 0.079819486}
I1115 16:29:54.414115 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27877676,
'Loss/localization_loss': 0.36872455,
'Loss/regularization_loss': 0.0448638,
'Loss/total_loss': 0.69236517,
'learning_rate': 0.079819486}
INFO:tensorflow:Step 11600 per-step time 0.298s
I1115 16:30:24.189470 135323911028736 model_lib_v2.py:705] Step 11600 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.28586525,
'Loss/localization_loss': 0.45986938,
'Loss/regularization_loss': 0.044981565,
'Loss/total_loss': 0.7907162,
'learning_rate': 0.079815455}
I1115 16:30:24.189829 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28586525,
'Loss/localization_loss': 0.45986938,
'Loss/regularization_loss': 0.044981565,
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'Loss/total_loss': 0.7907162,
'learning_rate': 0.079815455}
INFO:tensorflow:Step 11700 per-step time 0.297s
I1115 16:30:53.935343 135323911028736 model_lib_v2.py:705] Step 11700 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.2960071,
'Loss/localization_loss': 0.40264615,
'Loss/regularization_loss': 0.045092825,
'Loss/total_loss': 0.74374604,
'learning_rate': 0.07981138}
I1115 16:30:53.935924 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2960071,
'Loss/localization_loss': 0.40264615,
'Loss/regularization_loss': 0.045092825,
'Loss/total_loss': 0.74374604,
'learning_rate': 0.07981138}
INFO:tensorflow:Step 11800 per-step time 0.316s
I1115 16:31:25.561112 135323911028736 model_lib_v2.py:705] Step 11800 per-step
time 0.316s
INFO:tensorflow:{'Loss/classification_loss': 0.2823765,
'Loss/localization_loss': 0.38911593,
'Loss/regularization_loss': 0.04518462,
'Loss/total_loss': 0.71667707,
'learning_rate': 0.07980726}
I1115 16:31:25.561500 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2823765,
'Loss/localization_loss': 0.38911593,
'Loss/regularization_loss': 0.04518462,
'Loss/total_loss': 0.71667707,
'learning_rate': 0.07980726}
INFO:tensorflow:Step 11900 per-step time 0.302s
I1115 16:31:55.725700 135323911028736 model_lib_v2.py:705] Step 11900 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.30092928,
'Loss/localization_loss': 0.63036895,
'Loss/regularization_loss': 0.04527378,
'Loss/total_loss': 0.97657204,
'learning_rate': 0.079803094}
I1115 16:31:55.726045 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30092928,
'Loss/localization_loss': 0.63036895,
'Loss/regularization_loss': 0.04527378,
'Loss/total_loss': 0.97657204,
'learning_rate': 0.079803094}
INFO:tensorflow:Step 12000 per-step time 0.298s
I1115 16:32:25.513507 135323911028736 model_lib_v2.py:705] Step 12000 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.2675179,

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'Loss/localization_loss': 0.40577385,
'Loss/regularization_loss': 0.045418657,
'Loss/total_loss': 0.7187104,
'learning_rate': 0.079798885}
I1115 16:32:25.513931 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2675179,
 'Loss/localization_loss': 0.40577385,
 'Loss/regularization_loss': 0.045418657,
 'Loss/total_loss': 0.7187104,
 'learning_rate': 0.079798885}

INFO:tensorflow:Step 12100 per-step time 0.323s
I1115 16:32:57.851504 135323911028736 model_lib_v2.py:705] Step 12100 per-step
time 0.323s
INFO:tensorflow:{'Loss/classification_loss': 0.27368414,
 'Loss/localization_loss': 0.41005033,
 'Loss/regularization_loss': 0.04550847,
 'Loss/total_loss': 0.7292429,
 'learning_rate': 0.07979463}

I1115 16:32:57.851825 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27368414,
 'Loss/localization_loss': 0.41005033,
 'Loss/regularization_loss': 0.04550847,
 'Loss/total_loss': 0.7292429,
 'learning_rate': 0.07979463}

INFO:tensorflow:Step 12200 per-step time 0.292s
I1115 16:33:27.032329 135323911028736 model_lib_v2.py:705] Step 12200 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.2847247,
 'Loss/localization_loss': 0.40561324,
 'Loss/regularization_loss': 0.045632236,
 'Loss/total_loss': 0.7359702,
 'learning_rate': 0.07979033}

I1115 16:33:27.032671 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2847247,
 'Loss/localization_loss': 0.40561324,
 'Loss/regularization_loss': 0.045632236,
 'Loss/total_loss': 0.7359702,
 'learning_rate': 0.07979033}

INFO:tensorflow:Step 12300 per-step time 0.302s
I1115 16:33:57.199612 135323911028736 model_lib_v2.py:705] Step 12300 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.27015242,
 'Loss/localization_loss': 0.43200943,
 'Loss/regularization_loss': 0.045768123,
 'Loss/total_loss': 0.74793,
 'learning_rate': 0.079785995}

I1115 16:33:57.200054 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27015242,

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'Loss/localization_loss': 0.43200943,
'Loss/regularization_loss': 0.045768123,
'Loss/total_loss': 0.74793,
'learning_rate': 0.079785995}
INFO:tensorflow:Step 12400 per-step time 0.317s
I1115 16:34:28.872642 135323911028736 model_lib_v2.py:705] Step 12400 per-step
time 0.317s
INFO:tensorflow:{'Loss/classification_loss': 0.28385115,
'Loss/localization_loss': 0.41428846,
'Loss/regularization_loss': 0.045876306,
'Loss/total_loss': 0.74401593,
'learning_rate': 0.07978161}
I1115 16:34:28.873080 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28385115,
'Loss/localization_loss': 0.41428846,
'Loss/regularization_loss': 0.045876306,
'Loss/total_loss': 0.74401593,
'learning_rate': 0.07978161}
INFO:tensorflow:Step 12500 per-step time 0.295s
I1115 16:34:58.342599 135323911028736 model_lib_v2.py:705] Step 12500 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.3204617,
'Loss/localization_loss': 0.5155176,
'Loss/regularization_loss': 0.0459558,
'Loss/total_loss': 0.88193506,
'learning_rate': 0.07977718}
I1115 16:34:58.342943 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3204617,
'Loss/localization_loss': 0.5155176,
'Loss/regularization_loss': 0.0459558,
'Loss/total_loss': 0.88193506,
'learning_rate': 0.07977718}
INFO:tensorflow:Step 12600 per-step time 0.307s
I1115 16:35:29.088513 135323911028736 model_lib_v2.py:705] Step 12600 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.3261333,
'Loss/localization_loss': 0.69605273,
'Loss/regularization_loss': 0.046037182,
'Loss/total_loss': 1.0682232,
'learning_rate': 0.0797727}
I1115 16:35:29.088907 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3261333,
'Loss/localization_loss': 0.69605273,
'Loss/regularization_loss': 0.046037182,
'Loss/total_loss': 1.0682232,
'learning_rate': 0.0797727}
INFO:tensorflow:Step 12700 per-step time 0.300s
I1115 16:35:59.103965 135323911028736 model_lib_v2.py:705] Step 12700 per-step
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time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.28925604,
'Loss/localization_loss': 0.38853517,
'Loss/regularization_loss': 0.046107113,
'Loss/total_loss': 0.72389835,
'learning_rate': 0.07976819}
I1115 16:35:59.104298 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28925604,
'Loss/localization_loss': 0.38853517,
'Loss/regularization_loss': 0.046107113,
'Loss/total_loss': 0.72389835,
'learning_rate': 0.07976819}
INFO:tensorflow:Step 12800 per-step time 0.294s
I1115 16:36:28.490972 135323911028736 model_lib_v2.py:705] Step 12800 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.3048303,
'Loss/localization_loss': 0.40037715,
'Loss/regularization_loss': 0.04619917,
'Loss/total_loss': 0.7514066,
'learning_rate': 0.07976362}
I1115 16:36:28.491384 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3048303,
'Loss/localization_loss': 0.40037715,
'Loss/regularization_loss': 0.04619917,
'Loss/total_loss': 0.7514066,
'learning_rate': 0.07976362}
INFO:tensorflow:Step 12900 per-step time 0.305s
I1115 16:36:59.023980 135323911028736 model_lib_v2.py:705] Step 12900 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.31108958,
'Loss/localization_loss': 0.3841456,
'Loss/regularization_loss': 0.046284143,
'Loss/total_loss': 0.7415193,
'learning_rate': 0.07975902}
I1115 16:36:59.024383 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31108958,
'Loss/localization_loss': 0.3841456,
'Loss/regularization_loss': 0.046284143,
'Loss/total_loss': 0.7415193,
'learning_rate': 0.07975902}
INFO:tensorflow:Step 13000 per-step time 0.302s
I1115 16:37:29.170206 135323911028736 model_lib_v2.py:705] Step 13000 per-step
time 0.302s
INFO:tensorflow:{'Loss/classification_loss': 0.2920558,
'Loss/localization_loss': 0.43153685,
'Loss/regularization_loss': 0.046414487,
'Loss/total_loss': 0.77000713,
'learning_rate': 0.07975436}
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I1115 16:37:29.170507 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2920558,
 'Loss/localization_loss': 0.43153685,
 'Loss/regularization_loss': 0.046414487,
 'Loss/total_loss': 0.77000713,
 'learning_rate': 0.07975436}
INFO:tensorflow:Step 13100 per-step time 0.305s
I1115 16:37:59.654621 135323911028736 model_lib_v2.py:705] Step 13100 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.29410568,
 'Loss/localization_loss': 0.4284085,
 'Loss/regularization_loss': 0.04649096,
 'Loss/total_loss': 0.7690051,
 'learning_rate': 0.079749666}
I1115 16:37:59.655035 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29410568,
 'Loss/localization_loss': 0.4284085,
 'Loss/regularization_loss': 0.04649096,
 'Loss/total_loss': 0.7690051,
 'learning_rate': 0.079749666}
INFO:tensorflow:Step 13200 per-step time 0.308s
I1115 16:38:30.457610 135323911028736 model_lib_v2.py:705] Step 13200 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.2738859,
 'Loss/localization_loss': 0.44760686,
 'Loss/regularization_loss': 0.04657356,
 'Loss/total_loss': 0.76806635,
 'learning_rate': 0.07974493}
I1115 16:38:30.458018 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2738859,
 'Loss/localization_loss': 0.44760686,
 'Loss/regularization_loss': 0.04657356,
 'Loss/total_loss': 0.76806635,
 'learning_rate': 0.07974493}
INFO:tensorflow:Step 13300 per-step time 0.303s
I1115 16:39:00.715236 135323911028736 model_lib_v2.py:705] Step 13300 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.3318287,
 'Loss/localization_loss': 0.47119135,
 'Loss/regularization_loss': 0.04667583,
 'Loss/total_loss': 0.8496959,
 'learning_rate': 0.079740144}
I1115 16:39:00.715632 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3318287,
 'Loss/localization_loss': 0.47119135,
 'Loss/regularization_loss': 0.04667583,
 'Loss/total_loss': 0.8496959,
 'learning_rate': 0.079740144}
```

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INFO:tensorflow:Step 13400 per-step time 0.313s
I1115 16:39:31.979819 135323911028736 model_lib_v2.py:705] Step 13400 per-step
time 0.313s
INFO:tensorflow:{'Loss/classification_loss': 0.26456866,
'Loss/localization_loss': 0.36823186,
'Loss/regularization_loss': 0.04675432,
'Loss/total_loss': 0.6795548,
'learning_rate': 0.07973532}
I1115 16:39:31.980193 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26456866,
'Loss/localization_loss': 0.36823186,
'Loss/regularization_loss': 0.04675432,
'Loss/total_loss': 0.6795548,
'learning_rate': 0.07973532}
INFO:tensorflow:Step 13500 per-step time 0.307s
I1115 16:40:02.692704 135323911028736 model_lib_v2.py:705] Step 13500 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.28242993,
'Loss/localization_loss': 0.46591055,
'Loss/regularization_loss': 0.04687815,
'Loss/total_loss': 0.79521865,
'learning_rate': 0.07973044}
I1115 16:40:02.693098 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28242993,
'Loss/localization_loss': 0.46591055,
'Loss/regularization_loss': 0.04687815,
'Loss/total_loss': 0.79521865,
'learning_rate': 0.07973044}
INFO:tensorflow:Step 13600 per-step time 0.298s
I1115 16:40:32.512624 135323911028736 model_lib_v2.py:705] Step 13600 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.2704561,
'Loss/localization_loss': 0.35783008,
'Loss/regularization_loss': 0.04695718,
'Loss/total_loss': 0.6752434,
'learning_rate': 0.07972552}
I1115 16:40:32.512937 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2704561,
'Loss/localization_loss': 0.35783008,
'Loss/regularization_loss': 0.04695718,
'Loss/total_loss': 0.6752434,
'learning_rate': 0.07972552}
INFO:tensorflow:Step 13700 per-step time 0.298s
I1115 16:41:02.282160 135323911028736 model_lib_v2.py:705] Step 13700 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.27077454,
'Loss/localization_loss': 0.31292477,
'Loss/regularization_loss': 0.047011804,
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'Loss/total_loss': 0.63071114,
'learning_rate': 0.079720564}
I1115 16:41:02.282558 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27077454,
'Loss/localization_loss': 0.31292477,
'Loss/regularization_loss': 0.047011804,
'Loss/total_loss': 0.63071114,
'learning_rate': 0.079720564}
INFO:tensorflow:Step 13800 per-step time 0.309s
I1115 16:41:33.226408 135323911028736 model_lib_v2.py:705] Step 13800 per-step
time 0.309s
INFO:tensorflow:{'Loss/classification_loss': 0.23383403,
'Loss/localization_loss': 0.33713958,
'Loss/regularization_loss': 0.0470789,
'Loss/total_loss': 0.61805254,
'learning_rate': 0.07971556}
I1115 16:41:33.226817 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.23383403,
'Loss/localization_loss': 0.33713958,
'Loss/regularization_loss': 0.0470789,
'Loss/total_loss': 0.61805254,
'learning_rate': 0.07971556}
INFO:tensorflow:Step 13900 per-step time 0.312s
I1115 16:42:04.440941 135323911028736 model_lib_v2.py:705] Step 13900 per-step
time 0.312s
INFO:tensorflow:{'Loss/classification_loss': 0.28012353,
'Loss/localization_loss': 0.3477337,
'Loss/regularization_loss': 0.04715982,
'Loss/total_loss': 0.675017,
'learning_rate': 0.0797105}
I1115 16:42:04.441294 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28012353,
'Loss/localization_loss': 0.3477337,
'Loss/regularization_loss': 0.04715982,
'Loss/total_loss': 0.675017,
'learning_rate': 0.0797105}
INFO:tensorflow:Step 14000 per-step time 0.300s
I1115 16:42:34.397648 135323911028736 model_lib_v2.py:705] Step 14000 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.24484009,
'Loss/localization_loss': 0.33671454,
'Loss/regularization_loss': 0.047243197,
'Loss/total_loss': 0.6287978,
'learning_rate': 0.07970541}
I1115 16:42:34.398080 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24484009,
'Loss/localization_loss': 0.33671454,
'Loss/regularization_loss': 0.047243197,
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'Loss/total_loss': 0.6287978,
'learning_rate': 0.07970541}
INFO:tensorflow:Step 14100 per-step time 0.319s
I1115 16:43:06.303623 135323911028736 model_lib_v2.py:705] Step 14100 per-step
time 0.319s
INFO:tensorflow:{'Loss/classification_loss': 0.26667863,
'Loss/localization_loss': 0.377382,
'Loss/regularization_loss': 0.047308918,
'Loss/total_loss': 0.69136953,
'learning_rate': 0.07970027}
I1115 16:43:06.304001 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26667863,
'Loss/localization_loss': 0.377382,
'Loss/regularization_loss': 0.047308918,
'Loss/total_loss': 0.69136953,
'learning_rate': 0.07970027}
INFO:tensorflow:Step 14200 per-step time 0.295s
I1115 16:43:35.801259 135323911028736 model_lib_v2.py:705] Step 14200 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.30965275,
'Loss/localization_loss': 0.541103,
'Loss/regularization_loss': 0.047385145,
'Loss/total_loss': 0.8981409,
'learning_rate': 0.07969508}
I1115 16:43:35.801648 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30965275,
'Loss/localization_loss': 0.541103,
'Loss/regularization_loss': 0.047385145,
'Loss/total_loss': 0.8981409,
'learning_rate': 0.07969508}
INFO:tensorflow:Step 14300 per-step time 0.301s
I1115 16:44:05.871730 135323911028736 model_lib_v2.py:705] Step 14300 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.34356016,
'Loss/localization_loss': 0.67334694,
'Loss/regularization_loss': 0.04748248,
'Loss/total_loss': 1.0643896,
'learning_rate': 0.07968986}
I1115 16:44:05.872124 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.34356016,
'Loss/localization_loss': 0.67334694,
'Loss/regularization_loss': 0.04748248,
'Loss/total_loss': 1.0643896,
'learning_rate': 0.07968986}
INFO:tensorflow:Step 14400 per-step time 0.304s
I1115 16:44:36.291919 135323911028736 model_lib_v2.py:705] Step 14400 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.28745523,

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'Loss/localization_loss': 0.38488436,
'Loss/regularization_loss': 0.047586896,
'Loss/total_loss': 0.7199265,
'learning_rate': 0.07968459}
I1115 16:44:36.292253 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28745523,
 'Loss/localization_loss': 0.38488436,
 'Loss/regularization_loss': 0.047586896,
 'Loss/total_loss': 0.7199265,
 'learning_rate': 0.07968459}

INFO:tensorflow:Step 14500 per-step time 0.292s
I1115 16:45:05.451704 135323911028736 model_lib_v2.py:705] Step 14500 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.26572427,
 'Loss/localization_loss': 0.3180572,
 'Loss/regularization_loss': 0.047676545,
 'Loss/total_loss': 0.63145804,
 'learning_rate': 0.079679266}
I1115 16:45:05.452017 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26572427,
 'Loss/localization_loss': 0.3180572,
 'Loss/regularization_loss': 0.047676545,
 'Loss/total_loss': 0.63145804,
 'learning_rate': 0.079679266}

INFO:tensorflow:Step 14600 per-step time 0.303s
I1115 16:45:35.772130 135323911028736 model_lib_v2.py:705] Step 14600 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.31922996,
 'Loss/localization_loss': 0.5478758,
 'Loss/regularization_loss': 0.04773685,
 'Loss/total_loss': 0.9148426,
 'learning_rate': 0.07967391}
I1115 16:45:35.772519 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31922996,
 'Loss/localization_loss': 0.5478758,
 'Loss/regularization_loss': 0.04773685,
 'Loss/total_loss': 0.9148426,
 'learning_rate': 0.07967391}

INFO:tensorflow:Step 14700 per-step time 0.304s
I1115 16:46:06.157847 135323911028736 model_lib_v2.py:705] Step 14700 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.27896193,
 'Loss/localization_loss': 0.35198775,
 'Loss/regularization_loss': 0.047812834,
 'Loss/total_loss': 0.6787625,
 'learning_rate': 0.07966851}
I1115 16:46:06.158187 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27896193,
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'Loss/localization_loss': 0.35198775,
'Loss/regularization_loss': 0.047812834,
'Loss/total_loss': 0.6787625,
'learning_rate': 0.07966851}
INFO:tensorflow:Step 14800 per-step time 0.297s
I1115 16:46:35.849874 135323911028736 model_lib_v2.py:705] Step 14800 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.25188023,
'Loss/localization_loss': 0.33178985,
'Loss/regularization_loss': 0.047889035,
'Loss/total_loss': 0.63155913,
'learning_rate': 0.07966305}
I1115 16:46:35.850258 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25188023,
'Loss/localization_loss': 0.33178985,
'Loss/regularization_loss': 0.047889035,
'Loss/total_loss': 0.63155913,
'learning_rate': 0.07966305}
INFO:tensorflow:Step 14900 per-step time 0.312s
I1115 16:47:07.001111 135323911028736 model_lib_v2.py:705] Step 14900 per-step
time 0.312s
INFO:tensorflow:{'Loss/classification_loss': 0.26664743,
'Loss/localization_loss': 0.50677,
'Loss/regularization_loss': 0.047964487,
'Loss/total_loss': 0.821382,
'learning_rate': 0.07965756}
I1115 16:47:07.001519 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26664743,
'Loss/localization_loss': 0.50677,
'Loss/regularization_loss': 0.047964487,
'Loss/total_loss': 0.821382,
'learning_rate': 0.07965756}
INFO:tensorflow:Step 15000 per-step time 0.304s
I1115 16:47:37.433225 135323911028736 model_lib_v2.py:705] Step 15000 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.29979625,
'Loss/localization_loss': 0.51190656,
'Loss/regularization_loss': 0.048060425,
'Loss/total_loss': 0.85976326,
'learning_rate': 0.07965203}
I1115 16:47:37.433635 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29979625,
'Loss/localization_loss': 0.51190656,
'Loss/regularization_loss': 0.048060425,
'Loss/total_loss': 0.85976326,
'learning_rate': 0.07965203}
INFO:tensorflow:Step 15100 per-step time 0.298s
I1115 16:48:07.274565 135323911028736 model_lib_v2.py:705] Step 15100 per-step
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time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.27212384,
'Loss/localization_loss': 0.3995225,
'Loss/regularization_loss': 0.048152328,
'Loss/total_loss': 0.7197987,
'learning_rate': 0.079646446}
I1115 16:48:07.274924 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27212384,
'Loss/localization_loss': 0.3995225,
'Loss/regularization_loss': 0.048152328,
'Loss/total_loss': 0.7197987,
'learning_rate': 0.079646446}
INFO:tensorflow:Step 15200 per-step time 0.293s
I1115 16:48:36.577549 135323911028736 model_lib_v2.py:705] Step 15200 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.26850724,
'Loss/localization_loss': 0.4449584,
'Loss/regularization_loss': 0.04823335,
'Loss/total_loss': 0.76169896,
'learning_rate': 0.07964081}
I1115 16:48:36.577929 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26850724,
'Loss/localization_loss': 0.4449584,
'Loss/regularization_loss': 0.04823335,
'Loss/total_loss': 0.76169896,
'learning_rate': 0.07964081}
INFO:tensorflow:Step 15300 per-step time 0.312s
I1115 16:49:07.806886 135323911028736 model_lib_v2.py:705] Step 15300 per-step
time 0.312s
INFO:tensorflow:{'Loss/classification_loss': 0.2561955,
'Loss/localization_loss': 0.4088015,
'Loss/regularization_loss': 0.048308596,
'Loss/total_loss': 0.7133056,
'learning_rate': 0.07963515}
I1115 16:49:07.807282 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2561955,
'Loss/localization_loss': 0.4088015,
'Loss/regularization_loss': 0.048308596,
'Loss/total_loss': 0.7133056,
'learning_rate': 0.07963515}
INFO:tensorflow:Step 15400 per-step time 0.295s
I1115 16:49:37.246973 135323911028736 model_lib_v2.py:705] Step 15400 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.33852744,
'Loss/localization_loss': 0.5385291,
'Loss/regularization_loss': 0.04836691,
'Loss/total_loss': 0.92542344,
'learning_rate': 0.079629436}
```

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I1115 16:49:37.247303 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.33852744,
 'Loss/localization_loss': 0.5385291,
 'Loss/regularization_loss': 0.04836691,
 'Loss/total_loss': 0.92542344,
 'learning_rate': 0.079629436}
INFO:tensorflow:Step 15500 per-step time 0.291s
I1115 16:50:06.322849 135323911028736 model_lib_v2.py:705] Step 15500 per-step
time 0.291s
INFO:tensorflow:{'Loss/classification_loss': 0.25915515,
 'Loss/localization_loss': 0.43849355,
 'Loss/regularization_loss': 0.04845569,
 'Loss/total_loss': 0.7461044,
 'learning_rate': 0.07962368}
I1115 16:50:06.323256 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25915515,
 'Loss/localization_loss': 0.43849355,
 'Loss/regularization_loss': 0.04845569,
 'Loss/total_loss': 0.7461044,
 'learning_rate': 0.07962368}
INFO:tensorflow:Step 15600 per-step time 0.308s
I1115 16:50:37.118888 135323911028736 model_lib_v2.py:705] Step 15600 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.30036944,
 'Loss/localization_loss': 0.49740067,
 'Loss/regularization_loss': 0.048527937,
 'Loss/total_loss': 0.8462981,
 'learning_rate': 0.07961787}
I1115 16:50:37.119259 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30036944,
 'Loss/localization_loss': 0.49740067,
 'Loss/regularization_loss': 0.048527937,
 'Loss/total_loss': 0.8462981,
 'learning_rate': 0.07961787}
INFO:tensorflow:Step 15700 per-step time 0.297s
I1115 16:51:06.859209 135323911028736 model_lib_v2.py:705] Step 15700 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.2610928,
 'Loss/localization_loss': 0.57409465,
 'Loss/regularization_loss': 0.0486026,
 'Loss/total_loss': 0.88379,
 'learning_rate': 0.079612024}
I1115 16:51:06.859517 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2610928,
 'Loss/localization_loss': 0.57409465,
 'Loss/regularization_loss': 0.0486026,
 'Loss/total_loss': 0.88379,
 'learning_rate': 0.079612024}
```

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INFO:tensorflow:Step 15800 per-step time 0.297s
I1115 16:51:36.586693 135323911028736 model_lib_v2.py:705] Step 15800 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.25901267,
'Loss/localization_loss': 0.48575708,
'Loss/regularization_loss': 0.048719764,
'Loss/total_loss': 0.7934895,
'learning_rate': 0.07960614}
I1115 16:51:36.587207 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25901267,
'Loss/localization_loss': 0.48575708,
'Loss/regularization_loss': 0.048719764,
'Loss/total_loss': 0.7934895,
'learning_rate': 0.07960614}
INFO:tensorflow:Step 15900 per-step time 0.304s
I1115 16:52:06.977967 135323911028736 model_lib_v2.py:705] Step 15900 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.24329767,
'Loss/localization_loss': 0.3749479,
'Loss/regularization_loss': 0.048777018,
'Loss/total_loss': 0.66702265,
'learning_rate': 0.0796002}
I1115 16:52:06.978400 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24329767,
'Loss/localization_loss': 0.3749479,
'Loss/regularization_loss': 0.048777018,
'Loss/total_loss': 0.66702265,
'learning_rate': 0.0796002}
INFO:tensorflow:Step 16000 per-step time 0.294s
I1115 16:52:36.404174 135323911028736 model_lib_v2.py:705] Step 16000 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.24034388,
'Loss/localization_loss': 0.31285203,
'Loss/regularization_loss': 0.04885824,
'Loss/total_loss': 0.6020541,
'learning_rate': 0.07959422}
I1115 16:52:36.404482 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24034388,
'Loss/localization_loss': 0.31285203,
'Loss/regularization_loss': 0.04885824,
'Loss/total_loss': 0.6020541,
'learning_rate': 0.07959422}
INFO:tensorflow:Step 16100 per-step time 0.306s
I1115 16:53:06.980600 135323911028736 model_lib_v2.py:705] Step 16100 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.28075635,
'Loss/localization_loss': 0.33332092,
'Loss/regularization_loss': 0.04892081,
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'Loss/total_loss': 0.6629981,
'learning_rate': 0.0795882}
I1115 16:53:06.981054 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28075635,
'Loss/localization_loss': 0.33332092,
'Loss/regularization_loss': 0.04892081,
'Loss/total_loss': 0.6629981,
'learning_rate': 0.0795882}
INFO:tensorflow:Step 16200 per-step time 0.304s
I1115 16:53:37.327404 135323911028736 model_lib_v2.py:705] Step 16200 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.24721287,
'Loss/localization_loss': 0.3690028,
'Loss/regularization_loss': 0.048956428,
'Loss/total_loss': 0.6651721,
'learning_rate': 0.079582125}
I1115 16:53:37.327726 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24721287,
'Loss/localization_loss': 0.3690028,
'Loss/regularization_loss': 0.048956428,
'Loss/total_loss': 0.6651721,
'learning_rate': 0.079582125}
INFO:tensorflow:Step 16300 per-step time 0.305s
I1115 16:54:07.825270 135323911028736 model_lib_v2.py:705] Step 16300 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.24961336,
'Loss/localization_loss': 0.32641327,
'Loss/regularization_loss': 0.049031448,
'Loss/total_loss': 0.62505805,
'learning_rate': 0.079576015}
I1115 16:54:07.825671 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24961336,
'Loss/localization_loss': 0.32641327,
'Loss/regularization_loss': 0.049031448,
'Loss/total_loss': 0.62505805,
'learning_rate': 0.079576015}
INFO:tensorflow:Step 16400 per-step time 0.307s
I1115 16:54:38.477305 135323911028736 model_lib_v2.py:705] Step 16400 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.25256586,
'Loss/localization_loss': 0.31279162,
'Loss/regularization_loss': 0.049078185,
'Loss/total_loss': 0.6144356,
'learning_rate': 0.07956986}
I1115 16:54:38.477671 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25256586,
'Loss/localization_loss': 0.31279162,
'Loss/regularization_loss': 0.049078185,
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'Loss/total_loss': 0.6144356,
'learning_rate': 0.07956986}
INFO:tensorflow:Step 16500 per-step time 0.301s
I1115 16:55:08.546512 135323911028736 model_lib_v2.py:705] Step 16500 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.24537668,
'Loss/localization_loss': 0.37404746,
'Loss/regularization_loss': 0.04913345,
'Loss/total_loss': 0.6685575,
'learning_rate': 0.07956366}
I1115 16:55:08.546837 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24537668,
'Loss/localization_loss': 0.37404746,
'Loss/regularization_loss': 0.04913345,
'Loss/total_loss': 0.6685575,
'learning_rate': 0.07956366}
INFO:tensorflow:Step 16600 per-step time 0.290s
I1115 16:55:37.595759 135323911028736 model_lib_v2.py:705] Step 16600 per-step
time 0.290s
INFO:tensorflow:{'Loss/classification_loss': 0.24938962,
'Loss/localization_loss': 0.27031088,
'Loss/regularization_loss': 0.049193226,
'Loss/total_loss': 0.56889373,
'learning_rate': 0.07955742}
I1115 16:55:37.596109 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24938962,
'Loss/localization_loss': 0.27031088,
'Loss/regularization_loss': 0.049193226,
'Loss/total_loss': 0.56889373,
'learning_rate': 0.07955742}
INFO:tensorflow:Step 16700 per-step time 0.307s
I1115 16:56:08.281987 135323911028736 model_lib_v2.py:705] Step 16700 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.29090998,
'Loss/localization_loss': 0.3745068,
'Loss/regularization_loss': 0.04925151,
'Loss/total_loss': 0.7146683,
'learning_rate': 0.07955113}
I1115 16:56:08.282380 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29090998,
'Loss/localization_loss': 0.3745068,
'Loss/regularization_loss': 0.04925151,
'Loss/total_loss': 0.7146683,
'learning_rate': 0.07955113}
INFO:tensorflow:Step 16800 per-step time 0.308s
I1115 16:56:39.050796 135323911028736 model_lib_v2.py:705] Step 16800 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.3184614,
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'Loss/localization_loss': 0.55682826,
'Loss/regularization_loss': 0.049383294,
'Loss/total_loss': 0.92467296,
'learning_rate': 0.0795448}
I1115 16:56:39.051138 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3184614,
 'Loss/localization_loss': 0.55682826,
 'Loss/regularization_loss': 0.049383294,
 'Loss/total_loss': 0.92467296,
 'learning_rate': 0.0795448}
INFO:tensorflow:Step 16900 per-step time 0.290s
I1115 16:57:08.048891 135323911028736 model_lib_v2.py:705] Step 16900 per-step
time 0.290s
INFO:tensorflow:{'Loss/classification_loss': 0.29359126,
 'Loss/localization_loss': 0.492237,
 'Loss/regularization_loss': 0.049444954,
 'Loss/total_loss': 0.8352778,
 'learning_rate': 0.07953842}
I1115 16:57:08.049221 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.29359126,
 'Loss/localization_loss': 0.492237,
 'Loss/regularization_loss': 0.049444954,
 'Loss/total_loss': 0.8352778,
 'learning_rate': 0.07953842}
INFO:tensorflow:Step 17000 per-step time 0.300s
I1115 16:57:38.025148 135323911028736 model_lib_v2.py:705] Step 17000 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.24098049,
 'Loss/localization_loss': 0.32625362,
 'Loss/regularization_loss': 0.049537238,
 'Loss/total_loss': 0.61677134,
 'learning_rate': 0.079532005}
I1115 16:57:38.025527 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24098049,
 'Loss/localization_loss': 0.32625362,
 'Loss/regularization_loss': 0.049537238,
 'Loss/total_loss': 0.61677134,
 'learning_rate': 0.079532005}
INFO:tensorflow:Step 17100 per-step time 0.311s
I1115 16:58:09.095241 135323911028736 model_lib_v2.py:705] Step 17100 per-step
time 0.311s
INFO:tensorflow:{'Loss/classification_loss': 0.25988606,
 'Loss/localization_loss': 0.37376407,
 'Loss/regularization_loss': 0.04962599,
 'Loss/total_loss': 0.6832761,
 'learning_rate': 0.07952554}
I1115 16:58:09.095574 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25988606,
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'Loss/localization_loss': 0.37376407,
'Loss/regularization_loss': 0.04962599,
'Loss/total_loss': 0.6832761,
'learning_rate': 0.07952554}
INFO:tensorflow:Step 17200 per-step time 0.293s
I1115 16:58:38.439820 135323911028736 model_lib_v2.py:705] Step 17200 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.23938656,
'Loss/localization_loss': 0.48090795,
'Loss/regularization_loss': 0.04968336,
'Loss/total_loss': 0.7699778,
'learning_rate': 0.079519026}
I1115 16:58:38.440114 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.23938656,
'Loss/localization_loss': 0.48090795,
'Loss/regularization_loss': 0.04968336,
'Loss/total_loss': 0.7699778,
'learning_rate': 0.079519026}
INFO:tensorflow:Step 17300 per-step time 0.301s
I1115 16:59:08.554778 135323911028736 model_lib_v2.py:705] Step 17300 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.26748076,
'Loss/localization_loss': 0.43553877,
'Loss/regularization_loss': 0.049768507,
'Loss/total_loss': 0.752788,
'learning_rate': 0.07951248}
I1115 16:59:08.555268 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26748076,
'Loss/localization_loss': 0.43553877,
'Loss/regularization_loss': 0.049768507,
'Loss/total_loss': 0.752788,
'learning_rate': 0.07951248}
INFO:tensorflow:Step 17400 per-step time 0.300s
I1115 16:59:38.539550 135323911028736 model_lib_v2.py:705] Step 17400 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.28221345,
'Loss/localization_loss': 0.45721567,
'Loss/regularization_loss': 0.0498161,
'Loss/total_loss': 0.78924525,
'learning_rate': 0.07950588}
I1115 16:59:38.539899 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28221345,
'Loss/localization_loss': 0.45721567,
'Loss/regularization_loss': 0.0498161,
'Loss/total_loss': 0.78924525,
'learning_rate': 0.07950588}
INFO:tensorflow:Step 17500 per-step time 0.294s
I1115 17:00:07.895531 135323911028736 model_lib_v2.py:705] Step 17500 per-step
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time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.26334932,
'Loss/localization_loss': 0.3814495,
'Loss/regularization_loss': 0.04988997,
'Loss/total_loss': 0.6946888,
'learning_rate': 0.07949924}
I1115 17:00:07.895855 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26334932,
'Loss/localization_loss': 0.3814495,
'Loss/regularization_loss': 0.04988997,
'Loss/total_loss': 0.6946888,
'learning_rate': 0.07949924}
INFO:tensorflow:Step 17600 per-step time 0.305s
I1115 17:00:38.392389 135323911028736 model_lib_v2.py:705] Step 17600 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.25237632,
'Loss/localization_loss': 0.38735518,
'Loss/regularization_loss': 0.049943153,
'Loss/total_loss': 0.6896747,
'learning_rate': 0.079492554}
I1115 17:00:38.392792 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25237632,
'Loss/localization_loss': 0.38735518,
'Loss/regularization_loss': 0.049943153,
'Loss/total_loss': 0.6896747,
'learning_rate': 0.079492554}
INFO:tensorflow:Step 17700 per-step time 0.299s
I1115 17:01:08.310272 135323911028736 model_lib_v2.py:705] Step 17700 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.23009582,
'Loss/localization_loss': 0.36383218,
'Loss/regularization_loss': 0.050005794,
'Loss/total_loss': 0.6439338,
'learning_rate': 0.079485826}
I1115 17:01:08.310572 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.23009582,
'Loss/localization_loss': 0.36383218,
'Loss/regularization_loss': 0.050005794,
'Loss/total_loss': 0.6439338,
'learning_rate': 0.079485826}
INFO:tensorflow:Step 17800 per-step time 0.307s
I1115 17:01:39.051491 135323911028736 model_lib_v2.py:705] Step 17800 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.26756686,
'Loss/localization_loss': 0.30119875,
'Loss/regularization_loss': 0.050082114,
'Loss/total_loss': 0.6188477,
'learning_rate': 0.07947905}
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I1115 17:01:39.051924 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26756686,
 'Loss/localization_loss': 0.30119875,
 'Loss/regularization_loss': 0.050082114,
 'Loss/total_loss': 0.6188477,
 'learning_rate': 0.07947905}
INFO:tensorflow:Step 17900 per-step time 0.304s
I1115 17:02:09.467712 135323911028736 model_lib_v2.py:705] Step 17900 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.27884647,
 'Loss/localization_loss': 0.42695358,
 'Loss/regularization_loss': 0.05015466,
 'Loss/total_loss': 0.75595474,
 'learning_rate': 0.07947224}
I1115 17:02:09.468145 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27884647,
 'Loss/localization_loss': 0.42695358,
 'Loss/regularization_loss': 0.05015466,
 'Loss/total_loss': 0.75595474,
 'learning_rate': 0.07947224}
INFO:tensorflow:Step 18000 per-step time 0.300s
I1115 17:02:39.434743 135323911028736 model_lib_v2.py:705] Step 18000 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.25508055,
 'Loss/localization_loss': 0.32967114,
 'Loss/regularization_loss': 0.05022608,
 'Loss/total_loss': 0.6349778,
 'learning_rate': 0.079465374}
I1115 17:02:39.435057 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25508055,
 'Loss/localization_loss': 0.32967114,
 'Loss/regularization_loss': 0.05022608,
 'Loss/total_loss': 0.6349778,
 'learning_rate': 0.079465374}
INFO:tensorflow:Step 18100 per-step time 0.317s
I1115 17:03:11.130114 135323911028736 model_lib_v2.py:705] Step 18100 per-step
time 0.317s
INFO:tensorflow:{'Loss/classification_loss': 0.27997085,
 'Loss/localization_loss': 0.33920613,
 'Loss/regularization_loss': 0.050296407,
 'Loss/total_loss': 0.6694734,
 'learning_rate': 0.07945847}
I1115 17:03:11.130531 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27997085,
 'Loss/localization_loss': 0.33920613,
 'Loss/regularization_loss': 0.050296407,
 'Loss/total_loss': 0.6694734,
 'learning_rate': 0.07945847}
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INFO:tensorflow:Step 18200 per-step time 0.310s
I1115 17:03:42.096328 135323911028736 model_lib_v2.py:705] Step 18200 per-step
time 0.310s
INFO:tensorflow:{'Loss/classification_loss': 0.27571133,
'Loss/localization_loss': 0.37451172,
'Loss/regularization_loss': 0.05037154,
'Loss/total_loss': 0.70059454,
'learning_rate': 0.07945152}
I1115 17:03:42.096700 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27571133,
'Loss/localization_loss': 0.37451172,
'Loss/regularization_loss': 0.05037154,
'Loss/total_loss': 0.70059454,
'learning_rate': 0.07945152}
INFO:tensorflow:Step 18300 per-step time 0.295s
I1115 17:04:11.589753 135323911028736 model_lib_v2.py:705] Step 18300 per-step
time 0.295s
INFO:tensorflow:{'Loss/classification_loss': 0.24039349,
'Loss/localization_loss': 0.44647542,
'Loss/regularization_loss': 0.050436743,
'Loss/total_loss': 0.73730564,
'learning_rate': 0.07944453}
I1115 17:04:11.590089 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24039349,
'Loss/localization_loss': 0.44647542,
'Loss/regularization_loss': 0.050436743,
'Loss/total_loss': 0.73730564,
'learning_rate': 0.07944453}
INFO:tensorflow:Step 18400 per-step time 0.293s
I1115 17:04:40.924210 135323911028736 model_lib_v2.py:705] Step 18400 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.2849187,
'Loss/localization_loss': 0.34843004,
'Loss/regularization_loss': 0.050487306,
'Loss/total_loss': 0.683836,
'learning_rate': 0.079437494}
I1115 17:04:40.925344 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2849187,
'Loss/localization_loss': 0.34843004,
'Loss/regularization_loss': 0.050487306,
'Loss/total_loss': 0.683836,
'learning_rate': 0.079437494}
INFO:tensorflow:Step 18500 per-step time 0.305s
I1115 17:05:11.395544 135323911028736 model_lib_v2.py:705] Step 18500 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.32482076,
'Loss/localization_loss': 0.72852266,
'Loss/regularization_loss': 0.05059187,
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'Loss/total_loss': 1.1039352,
'learning_rate': 0.07943041}
I1115 17:05:11.395948 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32482076,
'Loss/localization_loss': 0.72852266,
'Loss/regularization_loss': 0.05059187,
'Loss/total_loss': 1.1039352,
'learning_rate': 0.07943041}
INFO:tensorflow:Step 18600 per-step time 0.297s
I1115 17:05:41.065472 135323911028736 model_lib_v2.py:705] Step 18600 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.30086458,
'Loss/localization_loss': 0.4292515,
'Loss/regularization_loss': 0.050665993,
'Loss/total_loss': 0.78078204,
'learning_rate': 0.079423286}
I1115 17:05:41.065820 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30086458,
'Loss/localization_loss': 0.4292515,
'Loss/regularization_loss': 0.050665993,
'Loss/total_loss': 0.78078204,
'learning_rate': 0.079423286}
INFO:tensorflow:Step 18700 per-step time 0.294s
I1115 17:06:10.437754 135323911028736 model_lib_v2.py:705] Step 18700 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.32513955,
'Loss/localization_loss': 0.4916452,
'Loss/regularization_loss': 0.05073245,
'Loss/total_loss': 0.8675172,
'learning_rate': 0.07941611}
I1115 17:06:10.438160 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.32513955,
'Loss/localization_loss': 0.4916452,
'Loss/regularization_loss': 0.05073245,
'Loss/total_loss': 0.8675172,
'learning_rate': 0.07941611}
INFO:tensorflow:Step 18800 per-step time 0.305s
I1115 17:06:40.984514 135323911028736 model_lib_v2.py:705] Step 18800 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.2483538,
'Loss/localization_loss': 0.35942182,
'Loss/regularization_loss': 0.050788425,
'Loss/total_loss': 0.65856403,
'learning_rate': 0.0794089}
I1115 17:06:40.985075 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2483538,
'Loss/localization_loss': 0.35942182,
'Loss/regularization_loss': 0.050788425,
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'Loss/total_loss': 0.65856403,
'learning_rate': 0.0794089}
INFO:tensorflow:Step 18900 per-step time 0.292s
I1115 17:07:10.217018 135323911028736 model_lib_v2.py:705] Step 18900 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.22835016,
'Loss/localization_loss': 0.32224566,
'Loss/regularization_loss': 0.05085037,
'Loss/total_loss': 0.6014462,
'learning_rate': 0.07940164}
I1115 17:07:10.217333 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.22835016,
'Loss/localization_loss': 0.32224566,
'Loss/regularization_loss': 0.05085037,
'Loss/total_loss': 0.6014462,
'learning_rate': 0.07940164}
INFO:tensorflow:Step 19000 per-step time 0.289s
I1115 17:07:39.102537 135323911028736 model_lib_v2.py:705] Step 19000 per-step
time 0.289s
INFO:tensorflow:{'Loss/classification_loss': 0.2882399,
'Loss/localization_loss': 0.39252165,
'Loss/regularization_loss': 0.05092076,
'Loss/total_loss': 0.73168236,
'learning_rate': 0.07939434}
I1115 17:07:39.102922 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2882399,
'Loss/localization_loss': 0.39252165,
'Loss/regularization_loss': 0.05092076,
'Loss/total_loss': 0.73168236,
'learning_rate': 0.07939434}
INFO:tensorflow:Step 19100 per-step time 0.316s
I1115 17:08:10.719270 135323911028736 model_lib_v2.py:705] Step 19100 per-step
time 0.316s
INFO:tensorflow:{'Loss/classification_loss': 0.27722612,
'Loss/localization_loss': 0.38710362,
'Loss/regularization_loss': 0.05099248,
'Loss/total_loss': 0.71532226,
'learning_rate': 0.079387}
I1115 17:08:10.719662 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27722612,
'Loss/localization_loss': 0.38710362,
'Loss/regularization_loss': 0.05099248,
'Loss/total_loss': 0.71532226,
'learning_rate': 0.079387}
INFO:tensorflow:Step 19200 per-step time 0.308s
I1115 17:08:41.504987 135323911028736 model_lib_v2.py:705] Step 19200 per-step
time 0.308s
INFO:tensorflow:{'Loss/classification_loss': 0.25684774,
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'Loss/localization_loss': 0.332185,
'Loss/regularization_loss': 0.05104958,
'Loss/total_loss': 0.64008236,
'learning_rate': 0.07937961}
I1115 17:08:41.505293 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25684774,
 'Loss/localization_loss': 0.332185,
 'Loss/regularization_loss': 0.05104958,
 'Loss/total_loss': 0.64008236,
 'learning_rate': 0.07937961}

INFO:tensorflow:Step 19300 per-step time 0.290s
I1115 17:09:10.459419 135323911028736 model_lib_v2.py:705] Step 19300 per-step
time 0.290s
INFO:tensorflow:{'Loss/classification_loss': 0.2912822,
 'Loss/localization_loss': 0.5596258,
 'Loss/regularization_loss': 0.051111046,
 'Loss/total_loss': 0.9020191,
 'learning_rate': 0.079372175}
I1115 17:09:10.459821 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2912822,
 'Loss/localization_loss': 0.5596258,
 'Loss/regularization_loss': 0.051111046,
 'Loss/total_loss': 0.9020191,
 'learning_rate': 0.079372175}

INFO:tensorflow:Step 19400 per-step time 0.303s
I1115 17:09:40.812404 135323911028736 model_lib_v2.py:705] Step 19400 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.27869,
 'Loss/localization_loss': 0.44728357,
 'Loss/regularization_loss': 0.051197313,
 'Loss/total_loss': 0.7771709,
 'learning_rate': 0.0793647}
I1115 17:09:40.812808 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27869,
 'Loss/localization_loss': 0.44728357,
 'Loss/regularization_loss': 0.051197313,
 'Loss/total_loss': 0.7771709,
 'learning_rate': 0.0793647}

INFO:tensorflow:Step 19500 per-step time 0.307s
I1115 17:10:11.502135 135323911028736 model_lib_v2.py:705] Step 19500 per-step
time 0.307s
INFO:tensorflow:{'Loss/classification_loss': 0.23358595,
 'Loss/localization_loss': 0.32072276,
 'Loss/regularization_loss': 0.051281407,
 'Loss/total_loss': 0.6055901,
 'learning_rate': 0.079357184}
I1115 17:10:11.502468 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.23358595,
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'Loss/localization_loss': 0.32072276,
'Loss/regularization_loss': 0.051281407,
'Loss/total_loss': 0.6055901,
'learning_rate': 0.079357184}
INFO:tensorflow:Step 19600 per-step time 0.293s
I1115 17:10:40.784999 135323911028736 model_lib_v2.py:705] Step 19600 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.25577998,
'Loss/localization_loss': 0.429752,
'Loss/regularization_loss': 0.051369246,
'Loss/total_loss': 0.7369012,
'learning_rate': 0.07934962}
I1115 17:10:40.785355 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25577998,
'Loss/localization_loss': 0.429752,
'Loss/regularization_loss': 0.051369246,
'Loss/total_loss': 0.7369012,
'learning_rate': 0.07934962}
INFO:tensorflow:Step 19700 per-step time 0.301s
I1115 17:11:10.925946 135323911028736 model_lib_v2.py:705] Step 19700 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.2961746,
'Loss/localization_loss': 0.4988172,
'Loss/regularization_loss': 0.051433355,
'Loss/total_loss': 0.8464252,
'learning_rate': 0.07934201}
I1115 17:11:10.926258 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2961746,
'Loss/localization_loss': 0.4988172,
'Loss/regularization_loss': 0.051433355,
'Loss/total_loss': 0.8464252,
'learning_rate': 0.07934201}
INFO:tensorflow:Step 19800 per-step time 0.296s
I1115 17:11:40.484017 135323911028736 model_lib_v2.py:705] Step 19800 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.3004625,
'Loss/localization_loss': 0.46271685,
'Loss/regularization_loss': 0.051481683,
'Loss/total_loss': 0.814661,
'learning_rate': 0.079334356}
I1115 17:11:40.484365 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.3004625,
'Loss/localization_loss': 0.46271685,
'Loss/regularization_loss': 0.051481683,
'Loss/total_loss': 0.814661,
'learning_rate': 0.079334356}
INFO:tensorflow:Step 19900 per-step time 0.291s
I1115 17:12:09.549776 135323911028736 model_lib_v2.py:705] Step 19900 per-step
```

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time 0.291s
INFO:tensorflow:{'Loss/classification_loss': 0.271513,
'Loss/localization_loss': 0.4531185,
'Loss/regularization_loss': 0.05153797,
'Loss/total_loss': 0.7761695,
'learning_rate': 0.07932666}
I1115 17:12:09.550117 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.271513,
'Loss/localization_loss': 0.4531185,
'Loss/regularization_loss': 0.05153797,
'Loss/total_loss': 0.7761695,
'learning_rate': 0.07932666}
INFO:tensorflow:Step 20000 per-step time 0.303s
I1115 17:12:39.820852 135323911028736 model_lib_v2.py:705] Step 20000 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.24461722,
'Loss/localization_loss': 0.39218527,
'Loss/regularization_loss': 0.051609468,
'Loss/total_loss': 0.68841195,
'learning_rate': 0.079318926}
I1115 17:12:39.821253 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24461722,
'Loss/localization_loss': 0.39218527,
'Loss/regularization_loss': 0.051609468,
'Loss/total_loss': 0.68841195,
'learning_rate': 0.079318926}
INFO:tensorflow:Step 20100 per-step time 0.318s
I1115 17:13:11.572518 135323911028736 model_lib_v2.py:705] Step 20100 per-step
time 0.318s
INFO:tensorflow:{'Loss/classification_loss': 0.25221223,
'Loss/localization_loss': 0.39904177,
'Loss/regularization_loss': 0.05168212,
'Loss/total_loss': 0.7029361,
'learning_rate': 0.07931114}
I1115 17:13:11.572861 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25221223,
'Loss/localization_loss': 0.39904177,
'Loss/regularization_loss': 0.05168212,
'Loss/total_loss': 0.7029361,
'learning_rate': 0.07931114}
INFO:tensorflow:Step 20200 per-step time 0.294s
I1115 17:13:40.969544 135323911028736 model_lib_v2.py:705] Step 20200 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.25517893,
'Loss/localization_loss': 0.42494324,
'Loss/regularization_loss': 0.051734757,
'Loss/total_loss': 0.7318569,
'learning_rate': 0.07930331}
```

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I1115 17:13:40.969931 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25517893,
 'Loss/localization_loss': 0.42494324,
 'Loss/regularization_loss': 0.051734757,
 'Loss/total_loss': 0.7318569,
 'learning_rate': 0.07930331}
INFO:tensorflow:Step 20300 per-step time 0.300s
I1115 17:14:10.980571 135323911028736 model_lib_v2.py:705] Step 20300 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.26601827,
 'Loss/localization_loss': 0.47924605,
 'Loss/regularization_loss': 0.05179481,
 'Loss/total_loss': 0.7970591,
 'learning_rate': 0.07929544}
I1115 17:14:10.980956 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26601827,
 'Loss/localization_loss': 0.47924605,
 'Loss/regularization_loss': 0.05179481,
 'Loss/total_loss': 0.7970591,
 'learning_rate': 0.07929544}
INFO:tensorflow:Step 20400 per-step time 0.296s
I1115 17:14:40.616147 135323911028736 model_lib_v2.py:705] Step 20400 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.24469873,
 'Loss/localization_loss': 0.35800225,
 'Loss/regularization_loss': 0.051871832,
 'Loss/total_loss': 0.6545728,
 'learning_rate': 0.07928753}
I1115 17:14:40.616444 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24469873,
 'Loss/localization_loss': 0.35800225,
 'Loss/regularization_loss': 0.051871832,
 'Loss/total_loss': 0.6545728,
 'learning_rate': 0.07928753}
INFO:tensorflow:Step 20500 per-step time 0.289s
I1115 17:15:09.485574 135323911028736 model_lib_v2.py:705] Step 20500 per-step
time 0.289s
INFO:tensorflow:{'Loss/classification_loss': 0.294093,
 'Loss/localization_loss': 0.50282204,
 'Loss/regularization_loss': 0.051940225,
 'Loss/total_loss': 0.84885526,
 'learning_rate': 0.079279564}
I1115 17:15:09.485900 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.294093,
 'Loss/localization_loss': 0.50282204,
 'Loss/regularization_loss': 0.051940225,
 'Loss/total_loss': 0.84885526,
 'learning_rate': 0.079279564}
```

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INFO:tensorflow:Step 20600 per-step time 0.319s
I1115 17:15:41.411906 135323911028736 model_lib_v2.py:705] Step 20600 per-step
time 0.319s
INFO:tensorflow:{'Loss/classification_loss': 0.30904981,
'Loss/localization_loss': 0.44649836,
'Loss/regularization_loss': 0.052001763,
'Loss/total_loss': 0.80754995,
'learning_rate': 0.07927156}
I1115 17:15:41.412310 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30904981,
'Loss/localization_loss': 0.44649836,
'Loss/regularization_loss': 0.052001763,
'Loss/total_loss': 0.80754995,
'learning_rate': 0.07927156}
INFO:tensorflow:Step 20700 per-step time 0.298s
I1115 17:16:11.195813 135323911028736 model_lib_v2.py:705] Step 20700 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.27807784,
'Loss/localization_loss': 0.4406686,
'Loss/regularization_loss': 0.052055746,
'Loss/total_loss': 0.77080214,
'learning_rate': 0.079263516}
I1115 17:16:11.196137 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27807784,
'Loss/localization_loss': 0.4406686,
'Loss/regularization_loss': 0.052055746,
'Loss/total_loss': 0.77080214,
'learning_rate': 0.079263516}
INFO:tensorflow:Step 20800 per-step time 0.292s
I1115 17:16:40.396807 135323911028736 model_lib_v2.py:705] Step 20800 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.25065985,
'Loss/localization_loss': 0.3874772,
'Loss/regularization_loss': 0.052120633,
'Loss/total_loss': 0.69025767,
'learning_rate': 0.079255424}
I1115 17:16:40.397181 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25065985,
'Loss/localization_loss': 0.3874772,
'Loss/regularization_loss': 0.052120633,
'Loss/total_loss': 0.69025767,
'learning_rate': 0.079255424}
INFO:tensorflow:Step 20900 per-step time 0.319s
I1115 17:17:12.251053 135323911028736 model_lib_v2.py:705] Step 20900 per-step
time 0.319s
INFO:tensorflow:{'Loss/classification_loss': 0.25143024,
'Loss/localization_loss': 0.36839053,
'Loss/regularization_loss': 0.052214656,
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'Loss/total_loss': 0.67203546,
'learning_rate': 0.07924729}
I1115 17:17:12.251464 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25143024,
'Loss/localization_loss': 0.36839053,
'Loss/regularization_loss': 0.052214656,
'Loss/total_loss': 0.67203546,
'learning_rate': 0.07924729}
INFO:tensorflow:Step 21000 per-step time 0.299s
I1115 17:17:42.119246 135323911028736 model_lib_v2.py:705] Step 21000 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.20574729,
'Loss/localization_loss': 0.3841868,
'Loss/regularization_loss': 0.05227607,
'Loss/total_loss': 0.6422102,
'learning_rate': 0.079239115}
I1115 17:17:42.119573 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.20574729,
'Loss/localization_loss': 0.3841868,
'Loss/regularization_loss': 0.05227607,
'Loss/total_loss': 0.6422102,
'learning_rate': 0.079239115}
INFO:tensorflow:Step 21100 per-step time 0.299s
I1115 17:18:12.021243 135323911028736 model_lib_v2.py:705] Step 21100 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.26670733,
'Loss/localization_loss': 0.46038386,
'Loss/regularization_loss': 0.05233496,
'Loss/total_loss': 0.77942616,
'learning_rate': 0.07923089}
I1115 17:18:12.021603 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26670733,
'Loss/localization_loss': 0.46038386,
'Loss/regularization_loss': 0.05233496,
'Loss/total_loss': 0.77942616,
'learning_rate': 0.07923089}
INFO:tensorflow:Step 21200 per-step time 0.306s
I1115 17:18:42.651298 135323911028736 model_lib_v2.py:705] Step 21200 per-step
time 0.306s
INFO:tensorflow:{'Loss/classification_loss': 0.24453351,
'Loss/localization_loss': 0.35316482,
'Loss/regularization_loss': 0.052382134,
'Loss/total_loss': 0.65008044,
'learning_rate': 0.07922263}
I1115 17:18:42.651687 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24453351,
'Loss/localization_loss': 0.35316482,
'Loss/regularization_loss': 0.052382134,

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'Loss/total_loss': 0.65008044,
'learning_rate': 0.07922263}
INFO:tensorflow:Step 21300 per-step time 0.300s
I1115 17:19:12.658936 135323911028736 model_lib_v2.py:705] Step 21300 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.26216644,
'Loss/localization_loss': 0.4287269,
'Loss/regularization_loss': 0.05243353,
'Loss/total_loss': 0.7433269,
'learning_rate': 0.07921432}
I1115 17:19:12.659258 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26216644,
'Loss/localization_loss': 0.4287269,
'Loss/regularization_loss': 0.05243353,
'Loss/total_loss': 0.7433269,
'learning_rate': 0.07921432}
INFO:tensorflow:Step 21400 per-step time 0.291s
I1115 17:19:41.732851 135323911028736 model_lib_v2.py:705] Step 21400 per-step
time 0.291s
INFO:tensorflow:{'Loss/classification_loss': 0.25895497,
'Loss/localization_loss': 0.36951798,
'Loss/regularization_loss': 0.052488476,
'Loss/total_loss': 0.6809614,
'learning_rate': 0.07920597}
I1115 17:19:41.733189 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25895497,
'Loss/localization_loss': 0.36951798,
'Loss/regularization_loss': 0.052488476,
'Loss/total_loss': 0.6809614,
'learning_rate': 0.07920597}
INFO:tensorflow:Step 21500 per-step time 0.301s
I1115 17:20:11.865175 135323911028736 model_lib_v2.py:705] Step 21500 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.28966314,
'Loss/localization_loss': 0.4270857,
'Loss/regularization_loss': 0.05254476,
'Loss/total_loss': 0.7692936,
'learning_rate': 0.07919757}
I1115 17:20:11.865561 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28966314,
'Loss/localization_loss': 0.4270857,
'Loss/regularization_loss': 0.05254476,
'Loss/total_loss': 0.7692936,
'learning_rate': 0.07919757}
INFO:tensorflow:Step 21600 per-step time 0.299s
I1115 17:20:41.773010 135323911028736 model_lib_v2.py:705] Step 21600 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.24481365,
```

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'Loss/localization_loss': 0.32224885,
'Loss/regularization_loss': 0.052603066,
'Loss/total_loss': 0.61966556,
'learning_rate': 0.07918913}
I1115 17:20:41.773337 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24481365,
 'Loss/localization_loss': 0.32224885,
 'Loss/regularization_loss': 0.052603066,
 'Loss/total_loss': 0.61966556,
 'learning_rate': 0.07918913}

INFO:tensorflow:Step 21700 per-step time 0.292s
I1115 17:21:10.952976 135323911028736 model_lib_v2.py:705] Step 21700 per-step
time 0.292s
INFO:tensorflow:{'Loss/classification_loss': 0.23441367,
 'Loss/localization_loss': 0.29925433,
 'Loss/regularization_loss': 0.052697122,
 'Loss/total_loss': 0.5863651,
 'learning_rate': 0.07918065}
I1115 17:21:10.953279 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.23441367,
 'Loss/localization_loss': 0.29925433,
 'Loss/regularization_loss': 0.052697122,
 'Loss/total_loss': 0.5863651,
 'learning_rate': 0.07918065}

INFO:tensorflow:Step 21800 per-step time 0.300s
I1115 17:21:40.912614 135323911028736 model_lib_v2.py:705] Step 21800 per-step
time 0.300s
INFO:tensorflow:{'Loss/classification_loss': 0.26438433,
 'Loss/localization_loss': 0.38500056,
 'Loss/regularization_loss': 0.05276551,
 'Loss/total_loss': 0.70215034,
 'learning_rate': 0.07917212}
I1115 17:21:40.913034 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26438433,
 'Loss/localization_loss': 0.38500056,
 'Loss/regularization_loss': 0.05276551,
 'Loss/total_loss': 0.70215034,
 'learning_rate': 0.07917212}

INFO:tensorflow:Step 21900 per-step time 0.313s
I1115 17:22:12.200022 135323911028736 model_lib_v2.py:705] Step 21900 per-step
time 0.313s
INFO:tensorflow:{'Loss/classification_loss': 0.2255786,
 'Loss/localization_loss': 0.34395018,
 'Loss/regularization_loss': 0.052815195,
 'Loss/total_loss': 0.622344,
 'learning_rate': 0.07916355}
I1115 17:22:12.200419 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2255786,
```

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'Loss/localization_loss': 0.34395018,
'Loss/regularization_loss': 0.052815195,
'Loss/total_loss': 0.622344,
'learning_rate': 0.07916355}
INFO:tensorflow:Step 22000 per-step time 0.293s
I1115 17:22:41.508209 135323911028736 model_lib_v2.py:705] Step 22000 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.30387303,
'Loss/localization_loss': 0.3646322,
'Loss/regularization_loss': 0.05286229,
'Loss/total_loss': 0.7213675,
'learning_rate': 0.07915493}
I1115 17:22:41.508530 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.30387303,
'Loss/localization_loss': 0.3646322,
'Loss/regularization_loss': 0.05286229,
'Loss/total_loss': 0.7213675,
'learning_rate': 0.07915493}
INFO:tensorflow:Step 22100 per-step time 0.305s
I1115 17:23:11.963524 135323911028736 model_lib_v2.py:705] Step 22100 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.2602089,
'Loss/localization_loss': 0.36300462,
'Loss/regularization_loss': 0.052939665,
'Loss/total_loss': 0.6761532,
'learning_rate': 0.07914628}
I1115 17:23:11.963943 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2602089,
'Loss/localization_loss': 0.36300462,
'Loss/regularization_loss': 0.052939665,
'Loss/total_loss': 0.6761532,
'learning_rate': 0.07914628}
INFO:tensorflow:Step 22200 per-step time 0.321s
I1115 17:23:44.037500 135323911028736 model_lib_v2.py:705] Step 22200 per-step
time 0.321s
INFO:tensorflow:{'Loss/classification_loss': 0.22640258,
'Loss/localization_loss': 0.31385162,
'Loss/regularization_loss': 0.05302102,
'Loss/total_loss': 0.59327525,
'learning_rate': 0.07913757}
I1115 17:23:44.037849 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.22640258,
'Loss/localization_loss': 0.31385162,
'Loss/regularization_loss': 0.05302102,
'Loss/total_loss': 0.59327525,
'learning_rate': 0.07913757}
INFO:tensorflow:Step 22300 per-step time 0.291s
I1115 17:24:13.115266 135323911028736 model_lib_v2.py:705] Step 22300 per-step
```

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time 0.291s
INFO:tensorflow:{'Loss/classification_loss': 0.22216065,
'Loss/localization_loss': 0.2956398,
'Loss/regularization_loss': 0.05305569,
'Loss/total_loss': 0.57085615,
'learning_rate': 0.079128824}
I1115 17:24:13.115611 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.22216065,
'Loss/localization_loss': 0.2956398,
'Loss/regularization_loss': 0.05305569,
'Loss/total_loss': 0.57085615,
'learning_rate': 0.079128824}
INFO:tensorflow:Step 22400 per-step time 0.297s
I1115 17:24:42.794074 135323911028736 model_lib_v2.py:705] Step 22400 per-step
time 0.297s
INFO:tensorflow:{'Loss/classification_loss': 0.24945036,
'Loss/localization_loss': 0.4835274,
'Loss/regularization_loss': 0.05310264,
'Loss/total_loss': 0.78608036,
'learning_rate': 0.07912004}
I1115 17:24:42.794462 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24945036,
'Loss/localization_loss': 0.4835274,
'Loss/regularization_loss': 0.05310264,
'Loss/total_loss': 0.78608036,
'learning_rate': 0.07912004}
INFO:tensorflow:Step 22500 per-step time 0.303s
I1115 17:25:13.090032 135323911028736 model_lib_v2.py:705] Step 22500 per-step
time 0.303s
INFO:tensorflow:{'Loss/classification_loss': 0.25846347,
'Loss/localization_loss': 0.42908576,
'Loss/regularization_loss': 0.053159446,
'Loss/total_loss': 0.7407087,
'learning_rate': 0.0791112}
I1115 17:25:13.090435 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25846347,
'Loss/localization_loss': 0.42908576,
'Loss/regularization_loss': 0.053159446,
'Loss/total_loss': 0.7407087,
'learning_rate': 0.0791112}
INFO:tensorflow:Step 22600 per-step time 0.293s
I1115 17:25:42.364667 135323911028736 model_lib_v2.py:705] Step 22600 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.2741269,
'Loss/localization_loss': 0.42664805,
'Loss/regularization_loss': 0.053219654,
'Loss/total_loss': 0.7539946,
'learning_rate': 0.07910233}
```

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I1115 17:25:42.364999 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2741269,
 'Loss/localization_loss': 0.42664805,
 'Loss/regularization_loss': 0.053219654,
 'Loss/total_loss': 0.7539946,
 'learning_rate': 0.07910233}
INFO:tensorflow:Step 22700 per-step time 0.296s
I1115 17:26:11.999605 135323911028736 model_lib_v2.py:705] Step 22700 per-step
time 0.296s
INFO:tensorflow:{'Loss/classification_loss': 0.24351895,
 'Loss/localization_loss': 0.3475157,
 'Loss/regularization_loss': 0.053314835,
 'Loss/total_loss': 0.64434946,
 'learning_rate': 0.079093404}
I1115 17:26:12.000057 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.24351895,
 'Loss/localization_loss': 0.3475157,
 'Loss/regularization_loss': 0.053314835,
 'Loss/total_loss': 0.64434946,
 'learning_rate': 0.079093404}
INFO:tensorflow:Step 22800 per-step time 0.305s
I1115 17:26:42.449505 135323911028736 model_lib_v2.py:705] Step 22800 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.25064602,
 'Loss/localization_loss': 0.38331446,
 'Loss/regularization_loss': 0.053387474,
 'Loss/total_loss': 0.68734795,
 'learning_rate': 0.07908444}
I1115 17:26:42.450031 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25064602,
 'Loss/localization_loss': 0.38331446,
 'Loss/regularization_loss': 0.053387474,
 'Loss/total_loss': 0.68734795,
 'learning_rate': 0.07908444}
INFO:tensorflow:Step 22900 per-step time 0.293s
I1115 17:27:11.736039 135323911028736 model_lib_v2.py:705] Step 22900 per-step
time 0.293s
INFO:tensorflow:{'Loss/classification_loss': 0.27833647,
 'Loss/localization_loss': 0.4645949,
 'Loss/regularization_loss': 0.053434603,
 'Loss/total_loss': 0.796366,
 'learning_rate': 0.07907544}
I1115 17:27:11.736341 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27833647,
 'Loss/localization_loss': 0.4645949,
 'Loss/regularization_loss': 0.053434603,
 'Loss/total_loss': 0.796366,
 'learning_rate': 0.07907544}
```

```
INFO:tensorflow:Step 23000 per-step time 0.290s
I1115 17:27:40.755106 135323911028736 model_lib_v2.py:705] Step 23000 per-step
time 0.290s
INFO:tensorflow:{'Loss/classification_loss': 0.28373745,
'Loss/localization_loss': 0.45660922,
'Loss/regularization_loss': 0.053496175,
'Loss/total_loss': 0.79384285,
'learning_rate': 0.07906638}
I1115 17:27:40.755459 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28373745,
'Loss/localization_loss': 0.45660922,
'Loss/regularization_loss': 0.053496175,
'Loss/total_loss': 0.79384285,
'learning_rate': 0.07906638}
INFO:tensorflow:Step 23100 per-step time 0.316s
I1115 17:28:12.359845 135323911028736 model_lib_v2.py:705] Step 23100 per-step
time 0.316s
INFO:tensorflow:{'Loss/classification_loss': 0.25346944,
'Loss/localization_loss': 0.43821028,
'Loss/regularization_loss': 0.05354191,
'Loss/total_loss': 0.7452216,
'learning_rate': 0.07905729}
I1115 17:28:12.360270 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25346944,
'Loss/localization_loss': 0.43821028,
'Loss/regularization_loss': 0.05354191,
'Loss/total_loss': 0.7452216,
'learning_rate': 0.07905729}
INFO:tensorflow:Step 23200 per-step time 0.299s
I1115 17:28:42.291621 135323911028736 model_lib_v2.py:705] Step 23200 per-step
time 0.299s
INFO:tensorflow:{'Loss/classification_loss': 0.22025757,
'Loss/localization_loss': 0.27637723,
'Loss/regularization_loss': 0.053598173,
'Loss/total_loss': 0.55023295,
'learning_rate': 0.07904816}
I1115 17:28:42.292034 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.22025757,
'Loss/localization_loss': 0.27637723,
'Loss/regularization_loss': 0.053598173,
'Loss/total_loss': 0.55023295,
'learning_rate': 0.07904816}
INFO:tensorflow:Step 23300 per-step time 0.311s
I1115 17:29:13.357659 135323911028736 model_lib_v2.py:705] Step 23300 per-step
time 0.311s
INFO:tensorflow:{'Loss/classification_loss': 0.28926927,
'Loss/localization_loss': 0.6114609,
'Loss/regularization_loss': 0.053645153,
```

```
'Loss/total_loss': 0.9543753,
'learning_rate': 0.07903897}
I1115 17:29:13.358049 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.28926927,
'Loss/localization_loss': 0.6114609,
'Loss/regularization_loss': 0.053645153,
'Loss/total_loss': 0.9543753,
'learning_rate': 0.07903897}
INFO:tensorflow:Step 23400 per-step time 0.305s
I1115 17:29:43.809759 135323911028736 model_lib_v2.py:705] Step 23400 per-step
time 0.305s
INFO:tensorflow:{'Loss/classification_loss': 0.31108668,
'Loss/localization_loss': 0.39922893,
'Loss/regularization_loss': 0.05369325,
'Loss/total_loss': 0.7640088,
'learning_rate': 0.07902975}
I1115 17:29:43.810158 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.31108668,
'Loss/localization_loss': 0.39922893,
'Loss/regularization_loss': 0.05369325,
'Loss/total_loss': 0.7640088,
'learning_rate': 0.07902975}
INFO:tensorflow:Step 23500 per-step time 0.311s
I1115 17:30:14.864532 135323911028736 model_lib_v2.py:705] Step 23500 per-step
time 0.311s
INFO:tensorflow:{'Loss/classification_loss': 0.252112,
'Loss/localization_loss': 0.40583155,
'Loss/regularization_loss': 0.053763084,
'Loss/total_loss': 0.71170664,
'learning_rate': 0.07902048}
I1115 17:30:14.864859 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.252112,
'Loss/localization_loss': 0.40583155,
'Loss/regularization_loss': 0.053763084,
'Loss/total_loss': 0.71170664,
'learning_rate': 0.07902048}
INFO:tensorflow:Step 23600 per-step time 0.301s
I1115 17:30:44.935694 135323911028736 model_lib_v2.py:705] Step 23600 per-step
time 0.301s
INFO:tensorflow:{'Loss/classification_loss': 0.27479783,
'Loss/localization_loss': 0.35591412,
'Loss/regularization_loss': 0.053810976,
'Loss/total_loss': 0.68452287,
'learning_rate': 0.079011165}
I1115 17:30:44.936104 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.27479783,
'Loss/localization_loss': 0.35591412,
'Loss/regularization_loss': 0.053810976,
```

```
'Loss/total_loss': 0.68452287,
'learning_rate': 0.079011165}
INFO:tensorflow:Step 23700 per-step time 0.304s
I1115 17:31:15.362385 135323911028736 model_lib_v2.py:705] Step 23700 per-step
time 0.304s
INFO:tensorflow:{'Loss/classification_loss': 0.26211277,
'Loss/localization_loss': 0.43244365,
'Loss/regularization_loss': 0.053838048,
'Loss/total_loss': 0.7483945,
'learning_rate': 0.07900181}
I1115 17:31:15.362686 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.26211277,
'Loss/localization_loss': 0.43244365,
'Loss/regularization_loss': 0.053838048,
'Loss/total_loss': 0.7483945,
'learning_rate': 0.07900181}
INFO:tensorflow:Step 23800 per-step time 0.294s
I1115 17:31:44.750315 135323911028736 model_lib_v2.py:705] Step 23800 per-step
time 0.294s
INFO:tensorflow:{'Loss/classification_loss': 0.25732017,
'Loss/localization_loss': 0.36519065,
'Loss/regularization_loss': 0.05389226,
'Loss/total_loss': 0.67640305,
'learning_rate': 0.07899241}
I1115 17:31:44.750635 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.25732017,
'Loss/localization_loss': 0.36519065,
'Loss/regularization_loss': 0.05389226,
'Loss/total_loss': 0.67640305,
'learning_rate': 0.07899241}
INFO:tensorflow:Step 23900 per-step time 0.298s
I1115 17:32:14.582630 135323911028736 model_lib_v2.py:705] Step 23900 per-step
time 0.298s
INFO:tensorflow:{'Loss/classification_loss': 0.2280245,
'Loss/localization_loss': 0.30034837,
'Loss/regularization_loss': 0.053962156,
'Loss/total_loss': 0.58233505,
'learning_rate': 0.078982964}
I1115 17:32:14.583063 135323911028736 model_lib_v2.py:708]
{'Loss/classification_loss': 0.2280245,
'Loss/localization_loss': 0.30034837,
'Loss/regularization_loss': 0.053962156,
'Loss/total_loss': 0.58233505,
'learning_rate': 0.078982964}
```

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```
[18]: #see where our model saved weights  
%ls '/content/training/'
```

```
checkpoint ckpt-20.index ckpt-23.index  
ckpt-18.data-00000-of-00001 ckpt-21.data-00000-of-00001  
ckpt-24.data-00000-of-00001  
ckpt-18.index ckpt-21.index ckpt-24.index  
ckpt-19.data-00000-of-00001 ckpt-22.data-00000-of-00001 train/  
ckpt-19.index ckpt-22.index  
ckpt-20.data-00000-of-00001 ckpt-23.data-00000-of-00001
```

```
[19]: #run conversion script  
import re  
import numpy as np  
  
output_directory = '/content/fine_tuned_model'  
  
#place the model weights you would like to export here  
last_model_path = '/content/training/'  
print(last_model_path)  
!python /content/models/research/object_detection/exporter_main_v2.py \  
--trained_checkpoint_dir {last_model_path} \  
--output_directory {output_directory} \  
--pipeline_config_path {pipeline_file}
```

```
/content/training/  
/usr/local/lib/python3.10/dist-packages/tensorflow_io/python/ops/__init__.py:98:  
UserWarning: unable to load libtensorflow_io_plugins.so: unable to open file:  
libtensorflow_io_plugins.so, from paths: ['/usr/local/lib/python3.10/dist-  
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so']  
caused by: ['/usr/local/lib/python3.10/dist-  
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so: undefined symbol:  
_ZN3tsl5mutexC1Ev']  
    warnings.warn(f"unable to load libtensorflow_io_plugins.so: {e}")  
/usr/local/lib/python3.10/dist-  
packages/tensorflow_io/python/ops/__init__.py:104: UserWarning: file system  
plugins are not loaded: unable to open file: libtensorflow_io.so, from paths:  
['/usr/local/lib/python3.10/dist-  
packages/tensorflow_io/python/ops/libtensorflow_io.so']  
caused by: ['/usr/local/lib/python3.10/dist-  
packages/tensorflow_io/python/ops/libtensorflow_io.so: undefined symbol: _ZNK10t  
ensorflow4data11DatasetBase8FinalizeEPNS_150pKernelContextESt8functionIFN3ts18St  
atusOrINS5_4core11RefCountPtrIS1_EEEEvEE']  
    warnings.warn(f"file system plugins are not loaded: {e}")  
2023-11-15 17:32:46.919984: W  
tensorflow/core/common_runtime/gpu/gpu_bfc_allocator.cc:39] Overriding  
allow_growth setting because the TF_FORCE_GPU_ALLOW_GROWTH environment variable  
is set. Original config value was 0.
```

```
I1115 17:32:46.948564 137501698469888
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b0
I1115 17:32:46.955847 137501698469888
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
64
I1115 17:32:46.955991 137501698469888
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 3
I1115 17:32:46.962753 137501698469888 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 17:32:47.029055 137501698469888 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 17:32:47.029229 137501698469888 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 17:32:47.132028 137501698469888 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 17:32:47.132222 137501698469888 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 17:32:47.440285 137501698469888 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 17:32:47.440475 137501698469888 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 17:32:47.655362 137501698469888 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 17:32:47.655574 137501698469888 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 17:32:48.168309 137501698469888 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 17:32:48.168522 137501698469888 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 17:32:48.527973 137501698469888 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 17:32:48.528176 137501698469888 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 17:32:49.466117 137501698469888 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 17:32:49.467703 137501698469888 efficientnet_model.py:144] round_filter
input=320 output=320
I1115 17:32:49.609093 137501698469888 efficientnet_model.py:144] round_filter
input=1280 output=1280
I1115 17:32:49.679968 137501698469888 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.0,
depth_coefficient=1.0, resolution=224, dropout_rate=0.2,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
```

```

se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
min_depth=None, use_se=True, input_channels=3, num_classes=1000,
model_name='efficientnet', rescale_input=False, data_format='channels_last',
dtype='float32')
WARNING:tensorflow:From /usr/local/lib/python3.10/dist-
packages/tensorflow/python/autograph/impl/api.py:458: calling map_fn_v2 (from
tensorflow.python.ops.map_fn) with back_prop=False is deprecated and will be
removed in a future version.
Instructions for updating:
back_prop=False is deprecated. Consider using tf.stop_gradient instead.
Instead of:
results = tf.map_fn(fn, elems, back_prop=False)
Use:
results = tf.nest.map_structure(tf.stop_gradient, tf.map_fn(fn, elems))
W1115 17:32:54.521966 137501698469888 deprecation.py:610] From
/usr/local/lib/python3.10/dist-
packages/tensorflow/python/autograph/impl/api.py:458: calling map_fn_v2 (from
tensorflow.python.ops.map_fn) with back_prop=False is deprecated and will be
removed in a future version.
Instructions for updating:
back_prop=False is deprecated. Consider using tf.stop_gradient instead.
Instead of:
results = tf.map_fn(fn, elems, back_prop=False)
Use:
results = tf.nest.map_structure(tf.stop_gradient, tf.map_fn(fn, elems))
I1115 17:33:02.074076 137501698469888 api.py:441] feature_map_spatial_dims:
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]
I1115 17:33:15.981668 137501698469888 api.py:441] feature_map_spatial_dims:
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]
2023-11-15 17:33:20.507108: W tensorflow/python/util/util.cc:368] Sets are not
currently considered sequences, but this may change in the future, so consider
avoiding using them.
I1115 17:33:22.967281 137501698469888 api.py:441] feature_map_spatial_dims:

```

```
[(64, 64), (32, 32), (16, 16), (8, 8), (4, 4)]  
WARNING:tensorflow:Skipping full serialization of Keras layer  
<object_detection.meta_architectures.ssd_meta_arch.SSDMetaArch object at  
0x7d0e2016fa60>, because it is not built.  
W1115 17:33:27.904706 137501698469888 save_impl.py:71] Skipping full  
serialization of Keras layer  
<object_detection.meta_architectures.ssd_meta_arch.SSDMetaArch object at  
0x7d0e2016fa60>, because it is not built.  
W1115 17:34:18.900469 137501698469888 save.py:260] Found untraced functions such  
as WeightSharedConvolutionalBoxPredictor_layer_call_fn,  
WeightSharedConvolutionalBoxPredictor_layer_call_and_return_conditional_losses,  
WeightSharedConvolutionalBoxHead_layer_call_fn,  
WeightSharedConvolutionalBoxHead_layer_call_and_return_conditional_losses,  
WeightSharedConvolutionalClassHead_layer_call_fn while saving (showing 5 of  
318). These functions will not be directly callable after loading.  
INFO:tensorflow:Assets written to: /content/fine_tuned_model/saved_model/assets  
I1115 17:34:46.969506 137501698469888 builder_impl.py:779] Assets written to:  
/content/fine_tuned_model/saved_model/assets  
INFO:tensorflow:Writing pipeline config file to  
/content/fine_tuned_model/pipeline.config  
I1115 17:34:48.684725 137501698469888 config_util.py:253] Writing pipeline  
config file to /content/fine_tuned_model/pipeline.config
```

```
[20]: %ls '/content/fine_tuned_model/saved_model/'
```

```
assets/ saved_model.pb variables/
```

```
[21]: #downloading test images from Roboflow  
#export dataset above with format COCO JSON  
#or import your test images via other means.  
%mkdir /content/test/  
%cd /content/test/  
!curl -L "https://universe.roboflow.com/ds/UKbqIMkNot?key=tSPLhCwrEi" >  
roboflow.zip; unzip roboflow.zip; rm roboflow.zip
```

```
/content/test  
% Total    % Received % Xferd  Average Speed   Time      Time      Time  Current  
                                         Dload  Upload Total   Spent    Left Speed  
100  892  100  892    0     0   2478      0 --::-- --::-- --::--  2484  
100 237M  100 237M    0     0  93.4M      0  0:00:02  0:00:02 --::--  133M  
Archive: roboflow.zip  
extracting: README.dataset.txt  
extracting: README.roboflow.txt  
  creating: test/  
extracting: test/_annotations.coco.json  
extracting: test/rgb_1010_png.rf.73e98054f17c842af915625b6b64071f.jpg  
extracting: test/rgb_1012_png.rf.89c973b3fc02e6ab12817895b070ffe4.jpg  
extracting: test/rgb_1015_png.rf.5509f1f4f41ee0195ed1e2efa5005d94.jpg
```

extracting: test/rgb_1021_png.rf.b6b02c0f099af103141139cf2a0e509a.jpg
extracting: test/rgb_102_png.rf.d508bd15d5c39d46172bdd88ab0218d5.jpg
extracting: test/rgb_1031_png.rf.38ac58df4933e4a95d302fd43bed9e07.jpg
extracting: test/rgb_1038_png.rf.cc6e15775a4cfca9a4243f1c3dc80e15.jpg
extracting: test/rgb_1068_png.rf.09be594f3ff116dbb0b78c75c9267e06.jpg
extracting: test/rgb_106_png.rf.f99824d78ca1e0a09297314dc63e19b2.jpg
extracting: test/rgb_1071_png.rf.20d3a757e4635ffaadb830f0ce0295ce.jpg
extracting: test/rgb_1081_png.rf.b22d5e5a2ee1e75bba08fb9e96de372.jpg
extracting: test/rgb_1082_png.rf.363fdbdfb7b9b7a4656cb6c7327dacea.jpg
extracting: test/rgb_1093_png.rf.abc969df628ff2c4365ba3a186d2e1b0.jpg
extracting: test/rgb_1103_png.rf.01f43bc00ae120e11f20ffaefb8d51f1.jpg
extracting: test/rgb_110_png.rf.0a68fa29529aa23d82446698f5a15548.jpg
extracting: test/rgb_111_png.rf.38b0e27c75c8f5eb9785aad87dda682b.jpg
extracting: test/rgb_1120_png.rf.36666084d678da540f660ab759d0b541.jpg
extracting: test/rgb_1123_png.rf.84b337bc937f5df57daf52553c390d43.jpg
extracting: test/rgb_1140_png.rf.8f2f740756ddf4ae6f1f2643adce2121.jpg
extracting: test/rgb_1142_png.rf.2b62c25b222efaf93c97d380365b3913.jpg
extracting: test/rgb_1156_png.rf.dae57009deb6b309fc2070ed04db5fb.jpg
extracting: test/rgb_115_png.rf.fd496ffb0414687ecb8376c415672741.jpg
extracting: test/rgb_1162_png.rf.921bd76248c207caabd592914c1a2c59.jpg
extracting: test/rgb_1175_png.rf.8d0f0c5915060448b1cd678e616fe81f.jpg
extracting: test/rgb_1177_png.rf.a1def161bf70abf0b012327eb4c1872b.jpg
extracting: test/rgb_1180_png.rf.fd362668266b44fc1aa0b6792089f432.jpg
extracting: test/rgb_1190_png.rf.208f50c81f6ee195577abefc080ebd1b.jpg
extracting: test/rgb_1192_png.rf.c0b35c31f5a8544b66d3def59291c53a.jpg
extracting: test/rgb_1200_png.rf.93ee8ca2f5c67f7365b066b4d30028b3.jpg
extracting: test/rgb_1213_png.rf.cf299510739a135a2d352db15dd93286.jpg
extracting: test/rgb_121_png.rf.61de446c5f8bfcfc5cc8a15920279709.jpg
extracting: test/rgb_1230_png.rf.507488c7ed959e3fc72926319c246f7a.jpg
extracting: test/rgb_1250_png.rf.f8f1e86a4a31d4b7b6f9a5fb2e1e19f5.jpg
extracting: test/rgb_1269_png.rf.f7216af66db7a2003a54438b7b6dd837.jpg
extracting: test/rgb_126_png.rf.437af4b1bf9efb36d6a865ca48ae6d1d.jpg
extracting: test/rgb_126_png.rf.d84f5a92a3092f3ba3141e50a7d190ab.jpg
extracting: test/rgb_1272_png.rf.6f0ce6e90bc261c5e0256006ab83db59.jpg
extracting: test/rgb_128_png.rf.c6c090a19f1fe30f34f838eb5864cb99.jpg
extracting: test/rgb_1294_png.rf.62ca90f705e9593311afe3efe028ac59.jpg
extracting: test/rgb_1298_png.rf.d62dbfd5950844178eaf9a837753659e.jpg
extracting: test/rgb_1313_png.rf.bb8f02466ec2cd96ac2f28173a952e3f.jpg
extracting: test/rgb_131_png.rf.361ce9c1ff68c1b34eaaa657e5f025c3.jpg
extracting: test/rgb_133_png.rf.4471ccb9112fae6551c968afa5e63cae.jpg
extracting: test/rgb_1340_png.rf.b283211c9eecdac53eb58cfea1dce5b8.jpg
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extracting: valid/rgb_989_png.rf.8941adc954a0fdd131f068825eaf5ec7.jpg
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extracting: valid/rgb_996_png.rf.185ec2f929e67065a4a62000e7b624b0.jpg
extracting: valid/rgb_997_png.rf.61767b5867b34f3f1bf2918c136550fd.jpg
extracting: valid/rgb_99_png.rf.d3fb2dac785b13b58635daebc64da345.jpg
extracting: valid/rgb_9_png.rf.40ed27ec4269066fdc4eff68eb4b225f.jpg
```

```
[27]: import matplotlib
       import matplotlib.pyplot as plt

       import io
       import scipy.misc
       import numpy as np
       from six import BytesIO
       from PIL import Image, ImageDraw, ImageFont

       import tensorflow as tf

       from object_detection.utils import label_map_util
       from object_detection.utils import config_util
       from object_detection.utils import visualization_utils as viz_utils
       from object_detection.builders import model_builder

%matplotlib inline
```

```
[28]: def load_image_into_numpy_array(path):
    """Load an image from file into a numpy array.

    Puts image into numpy array to feed into tensorflow graph.
    Note that by convention we put it into a numpy array with shape
    (height, width, channels), where channels=3 for RGB.

    Args:
        path: the file path to the image

    Returns:
        uint8 numpy array with shape (img_height, img_width, 3)
    """
    img_data = tf.io.gfile.GFile(path, 'rb').read()
    image = Image.open(BytesIO(img_data))
    (im_width, im_height) = image.size
    return np.array(image.getdata()).reshape(
        (im_height, im_width, 3)).astype(np.uint8)
```

```
[29]: %ls '/content/training/'
```

checkpoint	ckpt-20.index	ckpt-23.index
ckpt-18.data-00000-of-00001	ckpt-21.data-00000-of-00001	
ckpt-24.data-00000-of-00001		
ckpt-18.index	ckpt-21.index	ckpt-24.index
ckpt-19.data-00000-of-00001	ckpt-22.data-00000-of-00001	train/
ckpt-19.index	ckpt-22.index	
ckpt-20.data-00000-of-00001	ckpt-23.data-00000-of-00001	

```
[31]: import os
import pathlib

filenames = list(pathlib.Path('/content/training/').glob('*.*index'))

filenames.sort()
print(filenames)

#recover our saved model
pipeline_config = pipeline_file
#generally you want to put the last ckpt from training in here
model_dir = str(filenames[-1]).replace('.index','')
configs = config_util.get_configs_from_pipeline_file(pipeline_config)
model_config = configs['model']
detection_model = model_builder.build(
    model_config=model_config, is_training=False)

# Restore checkpoint
```

```

ckpt = tf.compat.v2.train.Checkpoint(
    model=detection_model)
ckpt.restore(os.path.join(str(filenames[-1]).replace('.index', '')))

def get_model_detection_function(model):
    """Get a tf.function for detection."""

    @tf.function
    def detect_fn(image):
        """Detect objects in image."""

        image, shapes = model.preprocess(image)
        prediction_dict = model.predict(image, shapes)
        detections = model.postprocess(prediction_dict, shapes)

        return detections, prediction_dict, tf.reshape(shapes, [-1])

    return detect_fn

detect_fn = get_model_detection_function(detection_model)

```

```
[PosixPath('/content/training/ckpt-18.index'),
 PosixPath('/content/training/ckpt-19.index'),
 PosixPath('/content/training/ckpt-20.index'),
 PosixPath('/content/training/ckpt-21.index'),
 PosixPath('/content/training/ckpt-22.index'),
 PosixPath('/content/training/ckpt-23.index'),
 PosixPath('/content/training/ckpt-24.index')]
```

[32]: #map labels for inference decoding

```

label_map_path = configs['eval_input_config'].label_map_path
label_map = label_map_util.load_labelmap(label_map_path)
categories = label_map_util.convert_label_map_to_categories(
    label_map,
    max_num_classes=label_map_util.get_max_label_map_index(label_map),
    use_display_name=True)
category_index = label_map_util.create_category_index(categories)
label_map_dict = label_map_util.get_label_map_dict(label_map, ↴
    use_display_name=True)

```

[36]: #run detector on test image
 #it takes a little longer on the first run and then runs at normal speed.

```

import glob
import random

```

```

TEST_IMAGE_PATHS = glob.glob('/content/test/test/rgb_1010_png.rf.
    ↪73e98054f17c842af915625b6b64071f.jpg')
image_path = random.choice(TEST_IMAGE_PATHS)
image_np = load_image_into_numpy_array(image_path)

# Things to try:
# Flip horizontally
# image_np = np.fliplr(image_np).copy()

# Convert image to grayscale
# image_np = np.tile(
#     np.mean(image_np, 2, keepdims=True), (1, 1, 3)).astype(np.uint8)

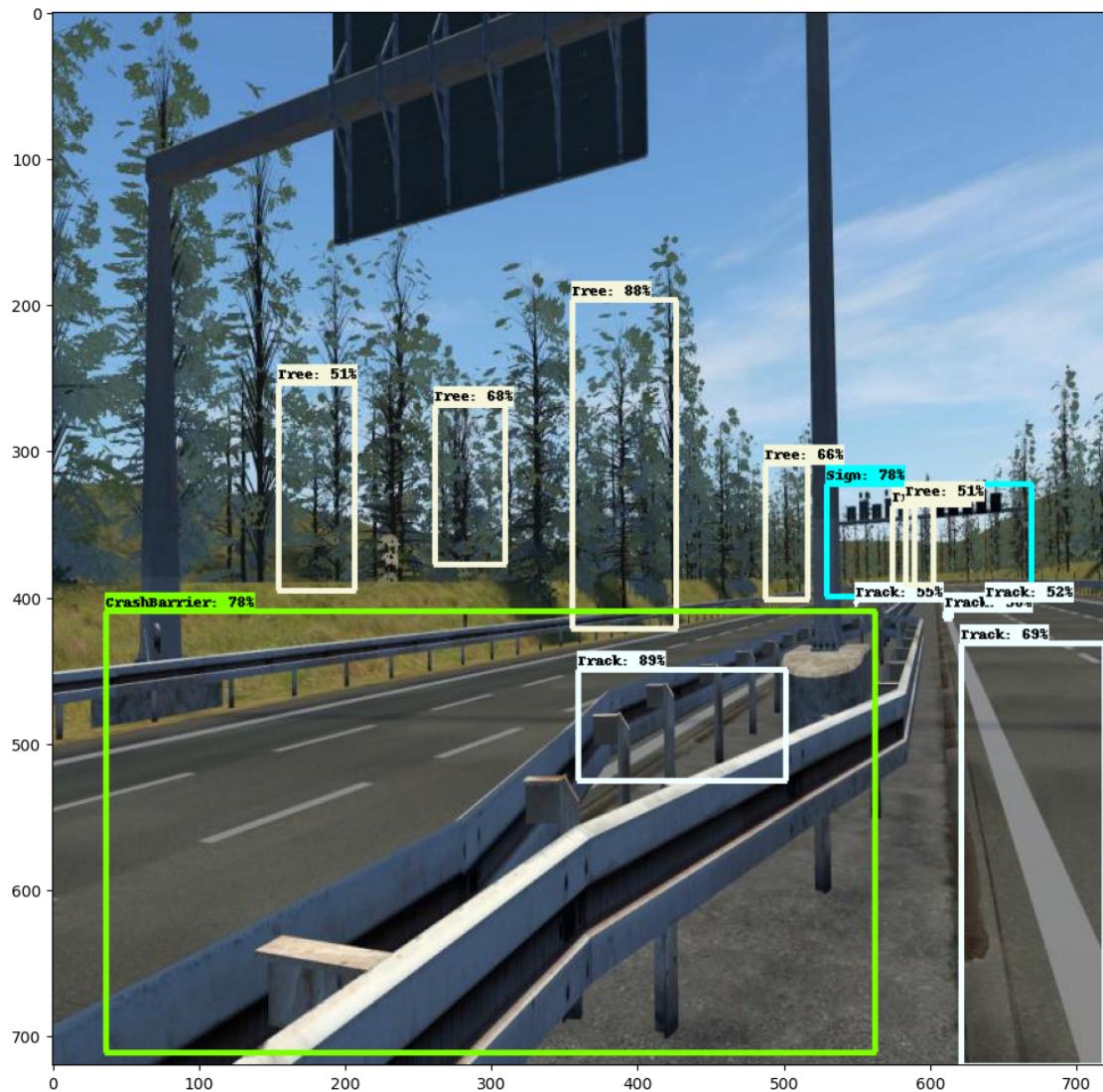
input_tensor = tf.convert_to_tensor(
    np.expand_dims(image_np, 0), dtype=tf.float32)
detections, predictions_dict, shapes = detect_fn(input_tensor)

label_id_offset = 1
image_np_with_detections = image_np.copy()

viz_utils.visualize_boxes_and_labels_on_image_array(
    image_np_with_detections,
    detections['detection_boxes'][0].numpy(),
    (detections['detection_classes'][0].numpy() + label_id_offset).
    ↪astype(int),
    detections['detection_scores'][0].numpy(),
    category_index,
    use_normalized_coordinates=True,
    max_boxes_to_draw=200,
    min_score_thresh=.5,
    agnostic_mode=False,
)

plt.figure(figsize=(12,16))
plt.imshow(image_np_with_detections)
plt.show()

```



```
[37]: #run detector on test image
#it takes a little longer on the first run and then runs at normal speed.
import glob
import random

TEST_IMAGE_PATHS = glob.glob('/content/test/test/rgb_1068_png.rf.
                            ↴09be594f3ff116dbb0b78c75c9267e06.jpg')
image_path = random.choice(TEST_IMAGE_PATHS)
image_np = load_image_into_numpy_array(image_path)

# Things to try:
# Flip horizontally
# image_np = np.fliplr(image_np).copy()
```

```

# Convert image to grayscale
# image_np = np.tile(
#     np.mean(image_np, 2, keepdims=True), (1, 1, 3)).astype(np.uint8)

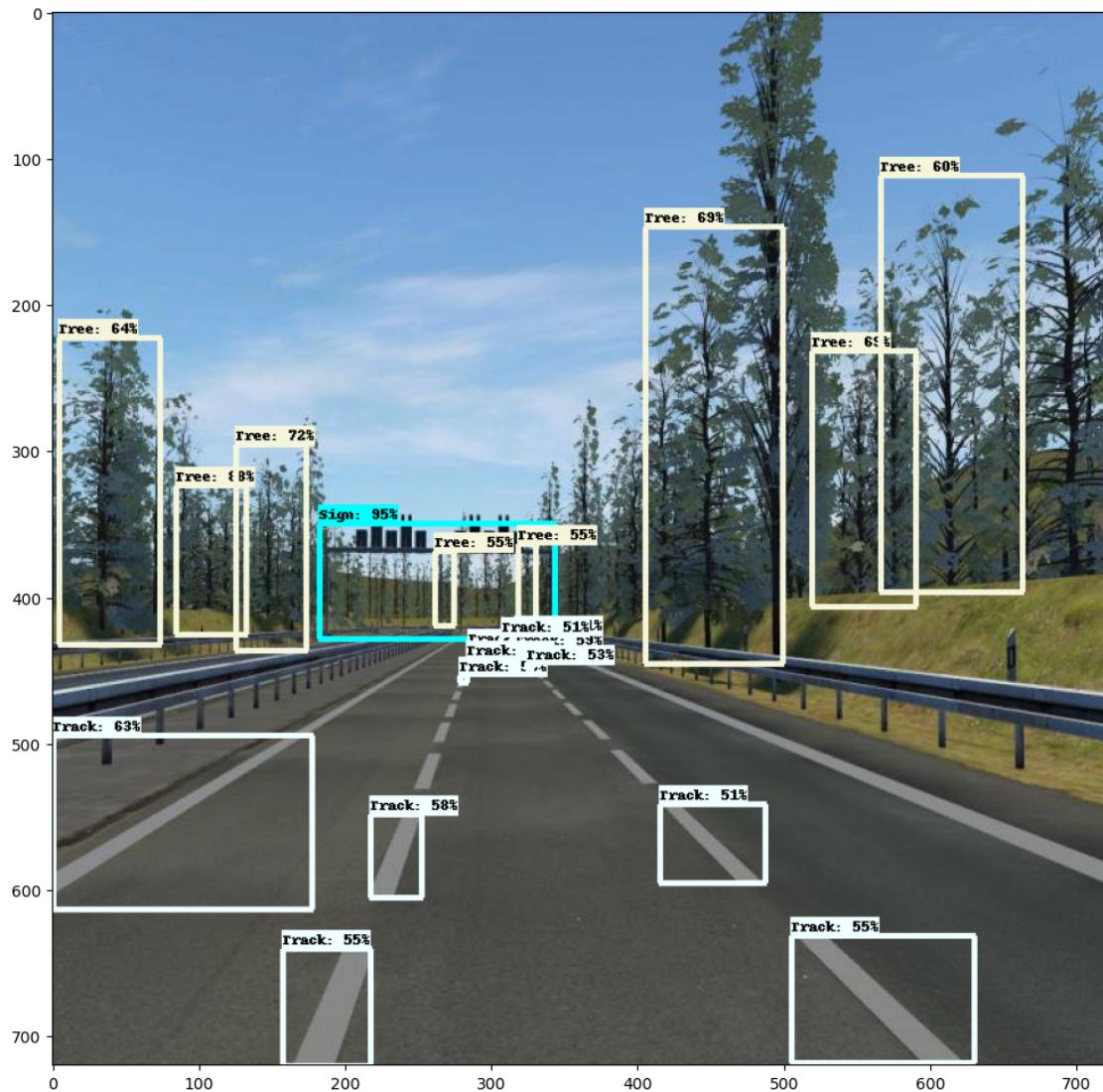
input_tensor = tf.convert_to_tensor(
    np.expand_dims(image_np, 0), dtype=tf.float32)
detections, predictions_dict, shapes = detect_fn(input_tensor)

label_id_offset = 1
image_np_with_detections = image_np.copy()

viz_utils.visualize_boxes_and_labels_on_image_array(
    image_np_with_detections,
    detections['detection_boxes'][0].numpy(),
    (detections['detection_classes'][0].numpy() + label_id_offset).
    astype(int),
    detections['detection_scores'][0].numpy(),
    category_index,
    use_normalized_coordinates=True,
    max_boxes_to_draw=200,
    min_score_thresh=.5,
    agnostic_mode=False,
)

plt.figure(figsize=(12,16))
plt.imshow(image_np_with_detections)
plt.show()

```



```
[52]: #it takes a little longer on the first run and then runs at normal speed.
import glob
import random

TEST_IMAGE_PATHS = glob.glob('/content/test/test/rgb_71.png.rf.
                            ↪1385e7ed7d85c6a50328875c93db6b15.jpg')
image_path = random.choice(TEST_IMAGE_PATHS)
image_np = load_image_into_numpy_array(image_path)

# Things to try:
# Flip horizontally
# image_np = np.fliplr(image_np).copy()
```

```

# Convert image to grayscale
# image_np = np.tile(
#     np.mean(image_np, 2, keepdims=True), (1, 1, 3)).astype(np.uint8)

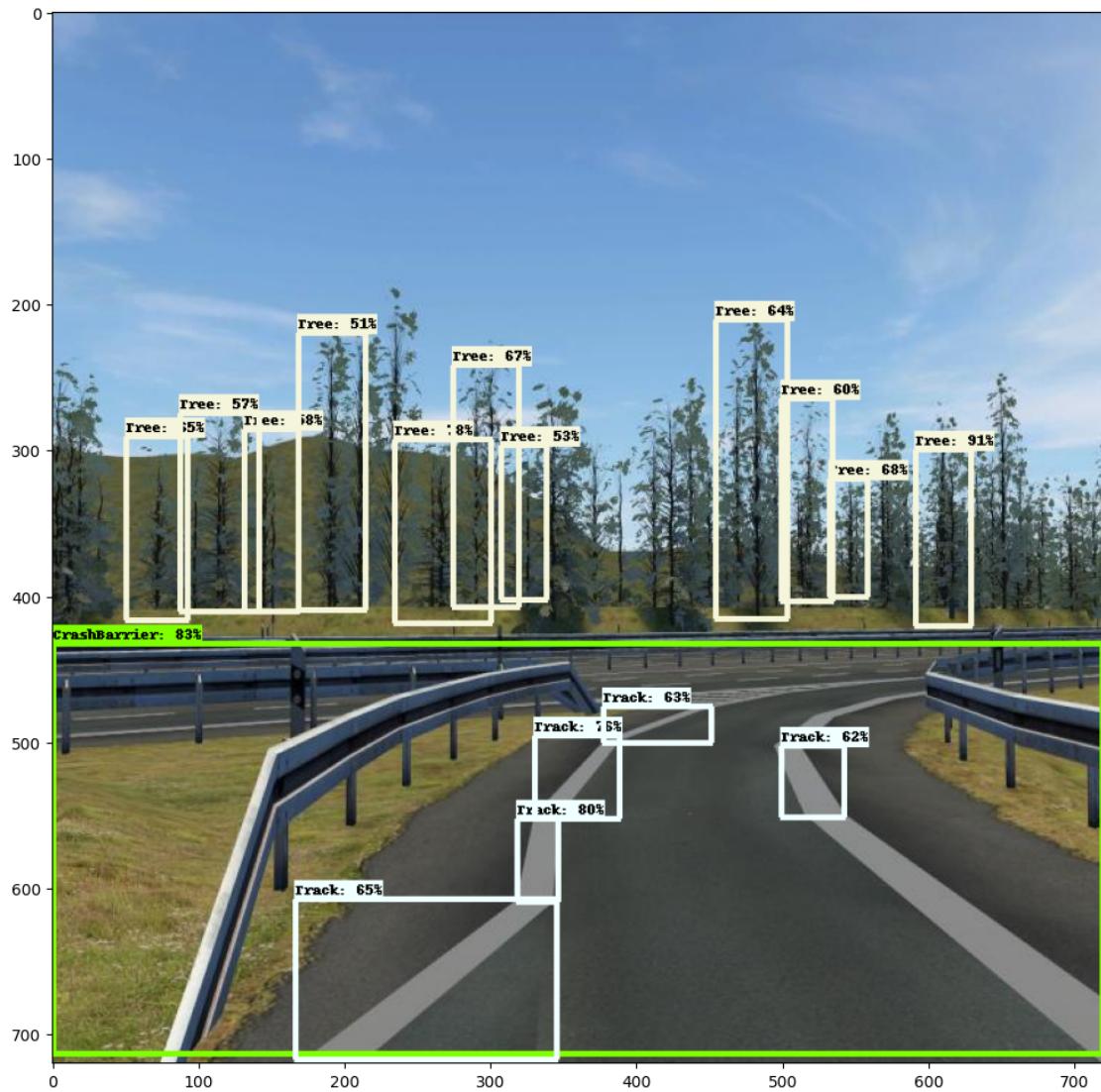
input_tensor = tf.convert_to_tensor(
    np.expand_dims(image_np, 0), dtype=tf.float32)
detections, predictions_dict, shapes = detect_fn(input_tensor)

label_id_offset = 1
image_np_with_detections = image_np.copy()

viz_utils.visualize_boxes_and_labels_on_image_array(
    image_np_with_detections,
    detections['detection_boxes'][0].numpy(),
    (detections['detection_classes'][0].numpy() + label_id_offset).
    astype(int),
    detections['detection_scores'][0].numpy(),
    category_index,
    use_normalized_coordinates=True,
    max_boxes_to_draw=200,
    min_score_thresh=.5,
    agnostic_mode=False,
)

plt.figure(figsize=(12,16))
plt.imshow(image_np_with_detections)
plt.show()

```



```
[41]: #run detector on test image
#it takes a little longer on the first run and then runs at normal speed.
import glob
import random

TEST_IMAGE_PATHS = glob.glob('/content/test/test/rgb_239_png.rf.
                            ↴94a3081cf35d361ccd919911ab1f6b71.jpg')
image_path = random.choice(TEST_IMAGE_PATHS)
image_np = load_image_into_numpy_array(image_path)

# Things to try:
# Flip horizontally
# image_np = np.fliplr(image_np).copy()
```

```

# Convert image to grayscale
# image_np = np.tile(
#     np.mean(image_np, 2, keepdims=True), (1, 1, 3)).astype(np.uint8)

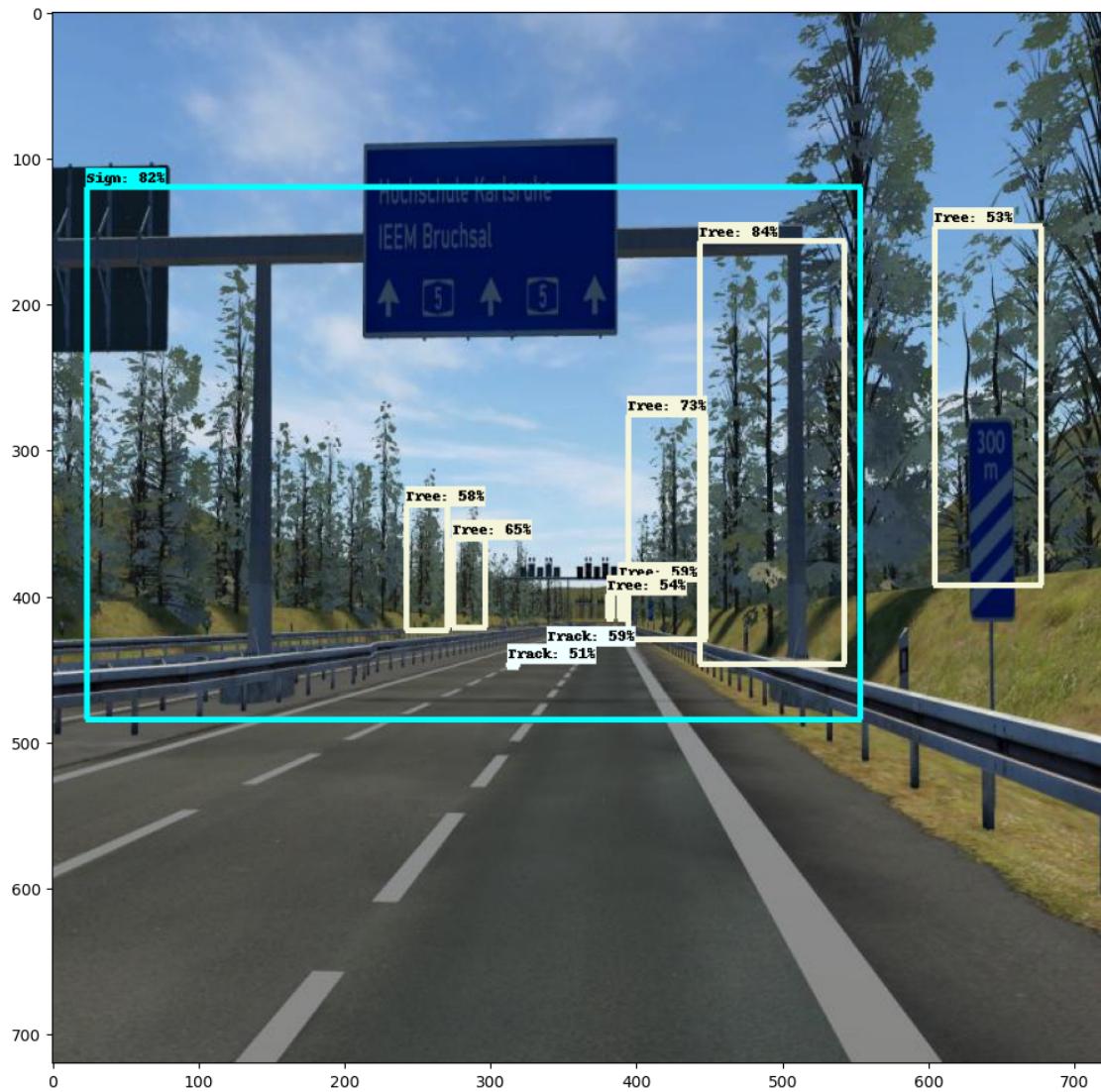
input_tensor = tf.convert_to_tensor(
    np.expand_dims(image_np, 0), dtype=tf.float32)
detections, predictions_dict, shapes = detect_fn(input_tensor)

label_id_offset = 1
image_np_with_detections = image_np.copy()

viz_utils.visualize_boxes_and_labels_on_image_array(
    image_np_with_detections,
    detections['detection_boxes'][0].numpy(),
    (detections['detection_classes'][0].numpy() + label_id_offset).
    astype(int),
    detections['detection_scores'][0].numpy(),
    category_index,
    use_normalized_coordinates=True,
    max_boxes_to_draw=200,
    min_score_thresh=.5,
    agnostic_mode=False,
)

plt.figure(figsize=(12,16))
plt.imshow(image_np_with_detections)
plt.show()

```



```
[39]: %ls '/content/fine_tuned_model/saved_model/'
```

```
assets/ saved_model.pb variables/
```

1.1 5. Convert Model to TensorFlow Lite

Alright! Our model is all trained up and ready to be used for detecting objects. First, we need to export the model graph (a file that contains information about the architecture and weights) to a TensorFlow Lite-compatible format. We'll do this using the `export_tflite_graph_tf2.py` script.

```
[40]: # Make a directory to store the trained TFLite model
!mkdir /content/custom_model_lite
output_directory = '/content/custom_model_lite'
```

```

# Path to training directory (the conversion script automatically chooses the
# highest checkpoint file)
last_model_path = '/content/training'

!python /content/models/research/object_detection/export_tflite_graph_tf2.py \
--trained_checkpoint_dir {last_model_path} \
--output_directory {output_directory} \
--pipeline_config_path {pipeline_file}

```

```

/usr/local/lib/python3.10/dist-packages/tensorflow_io/python/ops/__init__.py:98:
UserWarning: unable to load libtensorflow_io_plugins.so: unable to open file:
libtensorflow_io_plugins.so, from paths: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so']
caused by: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io_plugins.so: undefined symbol:
_ZN3tsl5mutexC1Ev']
    warnings.warn(f"unable to load libtensorflow_io_plugins.so: {e}")
/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/__init__.py:104: UserWarning: file system
plugins are not loaded: unable to open file: libtensorflow_io.so, from paths:
['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io.so']
caused by: ['/usr/local/lib/python3.10/dist-
packages/tensorflow_io/python/ops/libtensorflow_io.so: undefined symbol: _ZNK10t
ensorflow4data11DatasetBase8FinalizeEPNS_15OpKernelContextESt8functionIFN3tsl8St
atusOrINS5_4core11RefCountPtrIS1_EEEEvEE']
    warnings.warn(f"file system plugins are not loaded: {e}")
2023-11-15 17:45:33.608673: W
tensorflow/core/common_runtime/gpu/gpu_bfc_allocator.cc:39] Overriding
allow_growth setting because the TF_FORCE_GPU_ALLOW_GROWTH environment variable
is set. Original config value was 0.
I1115 17:45:33.615819 132701584273408
ssd_efficientnet_bifpn_feature_extractor.py:161] EfficientDet EfficientNet
backbone version: efficientnet-b0
I1115 17:45:33.615986 132701584273408
ssd_efficientnet_bifpn_feature_extractor.py:163] EfficientDet BiFPN num filters:
64
I1115 17:45:33.616061 132701584273408
ssd_efficientnet_bifpn_feature_extractor.py:164] EfficientDet BiFPN num
iterations: 3
I1115 17:45:33.620649 132701584273408 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 17:45:33.642164 132701584273408 efficientnet_model.py:144] round_filter
input=32 output=32
I1115 17:45:33.642279 132701584273408 efficientnet_model.py:144] round_filter
input=16 output=16
I1115 17:45:33.697169 132701584273408 efficientnet_model.py:144] round_filter

```

```
input=16 output=16
I1115 17:45:33.697289 132701584273408 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 17:45:33.842223 132701584273408 efficientnet_model.py:144] round_filter
input=24 output=24
I1115 17:45:33.842412 132701584273408 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 17:45:33.994970 132701584273408 efficientnet_model.py:144] round_filter
input=40 output=40
I1115 17:45:33.995134 132701584273408 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 17:45:34.222752 132701584273408 efficientnet_model.py:144] round_filter
input=80 output=80
I1115 17:45:34.222945 132701584273408 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 17:45:34.454852 132701584273408 efficientnet_model.py:144] round_filter
input=112 output=112
I1115 17:45:34.455018 132701584273408 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 17:45:34.896434 132701584273408 efficientnet_model.py:144] round_filter
input=192 output=192
I1115 17:45:34.896597 132701584273408 efficientnet_model.py:144] round_filter
input=320 output=320
I1115 17:45:34.962045 132701584273408 efficientnet_model.py:144] round_filter
input=1280 output=1280
I1115 17:45:34.990154 132701584273408 efficientnet_model.py:454] Building model
efficientnet with params ModelConfig(width_coefficient=1.0,
depth_coefficient=1.0, resolution=224, dropout_rate=0.2,
blocks=(BlockConfig(input_filters=32, output_filters=16, kernel_size=3,
num_repeat=1, expand_ratio=1, strides=(1, 1), se_ratio=0.25, id_skip=True,
fused_conv=False, conv_type='depthwise'), BlockConfig(input_filters=16,
output_filters=24, kernel_size=3, num_repeat=2, expand_ratio=6, strides=(2, 2),
se_ratio=0.25, id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=24, output_filters=40, kernel_size=5, num_repeat=2,
expand_ratio=6, strides=(2, 2), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=40, output_filters=80,
kernel_size=3, num_repeat=3, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=80, output_filters=112, kernel_size=5, num_repeat=3,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise'), BlockConfig(input_filters=112, output_filters=192,
kernel_size=5, num_repeat=4, expand_ratio=6, strides=(2, 2), se_ratio=0.25,
id_skip=True, fused_conv=False, conv_type='depthwise'),
BlockConfig(input_filters=192, output_filters=320, kernel_size=3, num_repeat=1,
expand_ratio=6, strides=(1, 1), se_ratio=0.25, id_skip=True, fused_conv=False,
conv_type='depthwise')), stem_base_filters=32, top_base_filters=1280,
activation='simple_swish', batch_norm='default', bn_momentum=0.99,
bn_epsilon=0.001, weight_decay=5e-06, drop_connect_rate=0.2, depth_divisor=8,
```


2 6. Test TensorFlow Lite Model

```
[43]: # Script to run custom TFLite model on test images to detect objects
# Source: https://github.com/EdgeElectronics/
    ↪TensorFlow-Lite-Object-Detection-on-Android-and-Raspberry-Pi/blob/master/
    ↪TFLite_detection_image.py

# Import packages
import os
import cv2
import numpy as np
import sys
import glob
import random
import importlib.util
from tensorflow.lite.python.interpreter import Interpreter

import matplotlib
import matplotlib.pyplot as plt

%matplotlib inline

### Define function for inferencing with TFLite model and displaying results

def tflite_detect_images(modelpath, imgpath, lblpath, min_conf=0.5, ▾
    ↪num_test_images=10, savepath='/content/results', txt_only=False):

    # Grab filenames of all images in test folder
    images = glob.glob(imgpath + '/*.jpg') + glob.glob(imgpath + '/*.JPG') + glob.
    ↪glob(imgpath + '/*.png') + glob.glob(imgpath + '/*.bmp')

    # Load the label map into memory
    with open(lblpath, 'r') as f:
        labels = [line.strip() for line in f.readlines()]

    # Load the Tensorflow Lite model into memory
    interpreter = Interpreter(model_path=modelpath)
    interpreter.allocate_tensors()

    # Get model details
    input_details = interpreter.get_input_details()
    output_details = interpreter.get_output_details()
    height = input_details[0]['shape'][1]
    width = input_details[0]['shape'][2]

    float_input = (input_details[0]['dtype'] == np.float32)
```

```

input_mean = 127.5
input_std = 127.5

# Randomly select test images
images_to_test = random.sample(images, num_test_images)

# Loop over every image and perform detection
for image_path in images_to_test:

    # Load image and resize to expected shape [1xHxWx3]
    image = cv2.imread(image_path)
    image_rgb = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
    imH, imW, _ = image.shape
    image_resized = cv2.resize(image_rgb, (width, height))
    input_data = np.expand_dims(image_resized, axis=0)

    # Normalize pixel values if using a floating model (i.e. if model is
    non-quantized)
    if float_input:
        input_data = (np.float32(input_data) - input_mean) / input_std

    # Perform the actual detection by running the model with the image as
    input
    interpreter.set_tensor(input_details[0]['index'],input_data)
    interpreter.invoke()

    # Retrieve detection results
    boxes = interpreter.get_tensor(output_details[1]['index'])[0] # Bounding
    box coordinates of detected objects
    classes = interpreter.get_tensor(output_details[3]['index'])[0] # Class
    index of detected objects
    scores = interpreter.get_tensor(output_details[0]['index'])[0] #
    Confidence of detected objects

    detections = []

    # Loop over all detections and draw detection box if confidence is above
    minimum threshold
    for i in range(len(scores)):
        if ((scores[i] > min_conf) and (scores[i] <= 1.0)):

            # Get bounding box coordinates and draw box
            # Interpreter can return coordinates that are outside of image
            dimensions, need to force them to be within image using max() and min()
            ymin = int(max(1,(boxes[i][0] * imH)))
            xmin = int(max(1,(boxes[i][1] * imW)))

```

```

        ymax = int(min(imH,(boxes[i][2] * imH)))
        xmax = int(min(imW,(boxes[i][3] * imW)))

        cv2.rectangle(image, (xmin,ymin), (xmax,ymax), (10, 255, 0), 2)

        # Draw label
        object_name = labels[int(classes[i])] # Look up object name from
        ↵ "labels" array using class index
        label = '%s: %d%%' % (object_name, int(scores[i]*100)) # Example:
        ↵ 'person: 72%'
        labelSize, baseLine = cv2.getTextSize(label, cv2.
        ↵ FONT_HERSHEY_SIMPLEX, 0.7, 2) # Get font size
        label_ymin = max(ymin, labelSize[1] + 10) # Make sure not to draw
        ↵ label too close to top of window
        cv2.rectangle(image, (xmin, label_ymin-labelSize[1]-10), ↵
        ↵ (xmin+labelSize[0], label_ymin+baseLine-10), (255, 255, 255), cv2.FILLED) # ↵
        ↵ Draw white box to put label text in
        cv2.putText(image, label, (xmin, label_ymin-7), cv2.
        ↵ FONT_HERSHEY_SIMPLEX, 0.7, (0, 0, 0), 2) # Draw label text

        detections.append([object_name, scores[i], xmin, ymin, xmax, ↵
        ↵ ymax])

    # All the results have been drawn on the image, now display the image
    if txt_only == False: # "text_only" controls whether we want to display
    ↵ the image results or just save them in .txt files
        image = cv2.cvtColor(image, cv2.COLOR_BGR2RGB)
        plt.figure(figsize=(12,16))
        plt.imshow(image)
        plt.show()

    # Save detection results in .txt files (for calculating mAP)
    elif txt_only == True:

        # Get filenames and paths
        image_fn = os.path.basename(image_path)
        base_fn, ext = os.path.splitext(image_fn)
        txt_result_fn = base_fn + '.txt'
        txt_savepath = os.path.join(savepath, txt_result_fn)

        # Write results to text file
        # (Using format defined by https://github.com/Cartucho/mAP, which will
        ↵ make it easy to calculate mAP)
        with open(txt_savepath, 'w') as f:
            for detection in detections:

```

```
f.write('%s %.4f %d %d %d %d\n' % (detection[0], detection[1],  
detection[2], detection[3], detection[4], detection[5]))  
  
return
```

```
[45]: # Set up variables for running user's model  
PATH_TO_IMAGES='/content/test/test'    # Path to test images folder  
PATH_TO_MODEL='/content/custom_model_lite/detect.tflite'    # Path to .tflite  
model file  
PATH_TO_LABELS='/content/labelmap.txt'    # Path to labelmap.txt file  
min_conf_threshold=0.01    # Confidence threshold (try changing this to 0.01 if  
you don't see any detection results)  
images_to_test = 10    # Number of images to run detection on  
  
# Run inferencing function!  
tflite_detect_images(PATH_TO_MODEL, PATH_TO_IMAGES, PATH_TO_LABELS,  
min_conf_threshold, images_to_test)
```

