

UBDA Python Example - An example of deep learning using traffic sign images - Aug 2020

Project Title

An example of deep learning using traffic sign images

Reference

<https://www.datacamp.com/community/tutorials/tensorflow-tutorial>

Written by

* **UBDA ** - Mar 4, 2020

* **UBDA ** - Aug 23, 2021 Updated

Sources

All the program(s), control file and data are available at
/ubda/apps/examples/python/TF.

Python program(s)

/ubda/apps/examples/python/TF/tf1.py

PBS (control file)

/ubda/apps/examples/python/TF/ray.pbs

Data

The datasets are available at btsd.ethz.ch/shareddata/

Create a directory for the program and data:

```
cd $HOME
```

```
mkdir TF
```

```
cd TF
```

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After downloading the datasets, there are placed the data in
./TF/BelgiumTSC_Testing and ./TF/BelgiumTSC_Training

```
/ubda/apps/examples/python/TF/BelgiumTSC_Testing
```

```
/ubda/apps/examples/python/TF/BelgiumTSC_Training
```

```
## Executing the program
```

```
cd $HOME
```

```
cd TF
```

```
cp -pr /ubda/apps/examples/python/TF/* .
```

```
qsub ray.pbs
```

```
### Environment setting
```

The ray.pbs is include the proper environment settings, including:

```
module load anaconda3-5.2.0
```

```
source activate demo_py36
```

```
** packages in environment **
```

| Name | Version | Build | Channel |
|-----------------|------------|---------------|----------|
| _libgcc_mutex | 0.1 | main | |
| _tflow_select | 2.1.0 | gpu | |
| absl-py | 0.8.0 | py36_0 | |
| astor | 0.8.0 | py36_0 | |
| blas | 1.0 | mk1 | |
| c-ares | 1.15.0 | h7b6447c_1001 | |
| ca-certificates | 2019.10.16 | 0 | anaconda |
| certifi | 2019.9.11 | py36_0 | anaconda |
| cloudpickle | 1.2.2 | py_0 | anaconda |
| datatoolkit | 9.0 | h13b8566_0 | |
| cuda9.0 | 7.6.0 | cuda9.0_0 | |
| cupti | 9.0.176 | 0 | |

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| | | | |
|------------------|--------------|----------------|-------------|
| cycler | 0.10.0 | py_2 | conda-forge |
| cytoolz | 0.10.0 | py36h7b6447c_0 | anaconda |
| dask-core | 2.6.0 | py_0 | anaconda |
| dbus | 1.13.6 | he372182_0 | conda-forge |
| decorator | 4.4.0 | py36_1 | anaconda |
| expat | 2.2.5 | he1b5a44_1004 | conda-forge |
| fontconfig | 2.13.1 | he4413a7_1000 | conda-forge |
| freetype | 2.10.0 | he983fc9_1 | conda-forge |
| gast | 0.3.2 | py_0 | |
| gettext | 0.19.8.1 | hc5be6a0_1002 | conda-forge |
| glib | 2.58.3 | h6f030ca_1002 | conda-forge |
| grpcio | 1.16.1 | py36hf8bcb03_1 | |
| gst-plugins-base | 1.14.5 | h0935bb2_0 | conda-forge |
| gststreamer | 1.14.5 | h36ae1b5_0 | conda-forge |
| icu | 58.2 | hf484d3e_1000 | conda-forge |
| imageio | 2.6.1 | py36_0 | anaconda |
| intel-openmp | 2019.4 | 243 | |
| joblib | 0.14.0 | py_0 | anaconda |
| jpeg | 9c | h14c3975_1001 | conda-forge |
| kiwisolver | 1.1.0 | py36hc9558a2_0 | conda-forge |
| libedit | 3.1.20181209 | hc058e9b_0 | |
| libffi | 3.2.1 | hd88cf55_4 | |
| libgcc-ng | 9.1.0 | hdf63c60_0 | |
| libgfortran-ng | 7.3.0 | hdf63c60_0 | |
| libiconv | 1.15 | h516909a_1005 | conda-forge |
| libpng | 1.6.37 | hed695b0_0 | conda-forge |
| libprotobuf | 3.9.2 | hd408876_0 | |
| libstdcxx-ng | 9.1.0 | hdf63c60_0 | |
| libtiff | 4.0.10 | h2733197_2 | anaconda |
| libuuid | 2.32.1 | h14c3975_1000 | conda-forge |
| libxcb | 1.13 | h14c3975_1002 | conda-forge |
| libxml2 | 2.9.9 | h13577e0_2 | conda-forge |
| markdown | 3.1.1 | py36_0 | |
| matplotlib | 3.1.1 | py36h5429711_0 | |

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| | | | |
|-----------------|--------|----------------|-------------|
| mk1 | 2019.4 | 243 | |
| mk1-service | 2.3.0 | py36he904b0f_0 | |
| mk1_fft | 1.0.14 | py36ha843d7b_0 | |
| mk1_random | 1.1.0 | py36hd6b4f25_0 | |
| ncurses | 6.1 | he6710b0_1 | |
| networkx | 2.4 | py_0 | anaconda |
| nltk | 3.4.5 | py36_0 | anaconda |
| numpy | 1.17.2 | py36haad9e8e_0 | |
| numpy-base | 1.17.2 | py36hde5b4d6_0 | |
| olefile | 0.46 | py36_0 | anaconda |
| openssl | 1.1.1 | h7b6447c_0 | anaconda |
| pandas | 0.25.2 | py36he6710b0_0 | anaconda |
| patsy | 0.5.1 | py36_0 | anaconda |
| pcre | 8.43 | he1b5a44_0 | conda-forge |
| pillow | 6.2.0 | py36h34e0f95_0 | anaconda |
| pip | 19.3.1 | py36_0 | |
| protobuf | 3.9.2 | py36he6710b0_0 | |
| pthread-stubs | 0.4 | h14c3975_1001 | conda-forge |
| pyparsing | 2.4.2 | py_0 | conda-forge |
| pyqt | 5.9.2 | py36hcca6a23_4 | conda-forge |
| python | 3.6.9 | h265db76_0 | |
| python-dateutil | 2.8.0 | py_0 | conda-forge |
| pytz | 2019.3 | py_0 | conda-forge |
| pywavelets | 1.1.1 | py36h7b6447c_0 | anaconda |
| qt | 5.9.7 | h52cfd70_2 | conda-forge |
| readline | 7.0 | h7b6447c_5 | |
| scikit-image | 0.15.0 | py36he6710b0_0 | anaconda |
| scikit-learn | 0.21.3 | py36hd81dba3_0 | anaconda |
| scipy | 1.3.1 | py36h7c811a0_0 | anaconda |
| seaborn | 0.9.0 | py36_0 | anaconda |
| setuptools | 41.4.0 | py36_0 | |
| sip | 4.19.8 | py36hf484d3e_0 | |
| six | 1.12.0 | py36_0 | |
| sqlite | 3.30.1 | h7b6447c_0 | |

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| | | | |
|-----------------|-----------|--------------------|-------------|
| statsmodels | 0.10.1 | py36hdd07704_0 | anaconda |
| stop-words | 2018.7.23 | pypi_0 | pypi |
| tensorboard | 1.9.0 | py36hf484d3e_0 | |
| tensorflow | 1.9.0 | gpu_py36h02c5d5e_1 | |
| tensorflow-base | 1.9.0 | gpu_py36h6ecc378_0 | |
| tensorflow-gpu | 1.9.0 | hf154084_0 | |
| termcolor | 1.1.0 | py36_1 | |
| tk | 8.6.8 | hbc83047_0 | |
| toolz | 0.10.0 | py_0 | anaconda |
| tornado | 6.0.3 | py36h516909a_0 | conda-forge |
| werkzeug | 0.16.0 | py_0 | |
| wheel | 0.33.6 | py36_0 | |
| xorg-libxau | 1.0.9 | h14c3975_0 | conda-forge |
| xorg-libxdmcp | 1.1.3 | h516909a_0 | conda-forge |
| xz | 5.2.4 | h14c3975_4 | |
| zlib | 1.2.11 | h7b6447c_3 | |
| zstd | 1.3.7 | h0b5b093_0 | anaconda |