

UBDA Python Example - An example of classification analysis for flower images - Aug 2020

Project Title

An example of classification analysis for flower images

Reference

<https://gogul.dev/software/image-classification-python>

Written by

* **UBDA ** - Mar 4, 2020

Sources

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

Python program(s)

/ubda/apps/examples/python/classification/train_test.py

PBS (control file)

/ubda/apps/examples/python/classification/python.pbs

Data

The datasets are available at www.robots.ox.ac.uk/~vgg/data/flowers/17/.

Create a directory for program and data:

```
cd $HOME
```

```
mkdir classification
```

```
cd classification
```

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After downloading the datasets, there are placed the data in
./classification/dataset/train and ./classification/dataset/test

```
## Executing the program
```

```
cd $HOME
```

```
cd classification
```

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

```
qsub python.pbs
```

```
### Environment setting
```

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

```
module load anaconda3-5.2.0
```

```
source activate demo_py37
```

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

| Name | Version | Build | Channel |
|-----------------|------------|----------------|-------------|
| _libgcc_mutex | 0.1 | main | |
| _tflow_select | 2.3.0 | mk1 | anaconda |
| absl-py | 0.8.0 | py37_0 | anaconda |
| astor | 0.8.0 | py37_0 | anaconda |
| backcall | 0.1.0 | py37_0 | anaconda |
| blas | 1.0 | mk1 | anaconda |
| bzip2 | 1.0.8 | h7b6447c_0 | anaconda |
| c-ares | 1.15.0 | h7b6447c_1001 | anaconda |
| ca-certificates | 2019.10.16 | 0 | anaconda |
| cairo | 1.14.12 | h8948797_3 | anaconda |
| certifi | 2019.9.11 | py37_0 | anaconda |
| cloudpickle | 1.2.2 | py_0 | anaconda |
| cvxopt | 1.2.0 | py37hfa32c7d_0 | anaconda |
| cvxpy | 1.0.25 | py37he1b5a44_1 | conda-forge |

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|------------------|-------------|----------------|-------------|
| cvxpy-base | 1.0.25 | py37he1b5a44_1 | conda-forge |
| cycler | 0.10.0 | py_2 | conda-forge |
| cytoolz | 0.10.0 | py37h7b6447c_0 | anaconda |
| dask-core | 2.6.0 | py_0 | anaconda |
| dbus | 1.13.6 | h746ee38_0 | |
| decorator | 4.4.0 | py37_1 | anaconda |
| dill | 0.3.1.1 | py37_0 | conda-forge |
| ecos | 2.0.7.post1 | py37hc1659b7_0 | conda-forge |
| expat | 2.2.6 | he6710b0_0 | |
| fastcache | 1.1.0 | py37h516909a_0 | conda-forge |
| ffmpeg | 4.0 | hcdf2ecd_0 | anaconda |
| fontconfig | 2.13.0 | h9420a91_0 | anaconda |
| freelut | 3.0.0 | hf484d3e_5 | anaconda |
| freetype | 2.9.1 | h8a8886c_1 | anaconda |
| future | 0.18.1 | py37_0 | conda-forge |
| gast | 0.2.2 | py37_0 | anaconda |
| glib | 2.56.2 | hd408876_0 | anaconda |
| glpk | 4.65 | h3ceedfd_2 | anaconda |
| gmp | 6.1.2 | hb3b607b_0 | anaconda |
| google-pasta | 0.1.7 | py_0 | anaconda |
| graphite2 | 1.3.13 | h23475e2_0 | anaconda |
| grpcio | 1.16.1 | py37hf8bcb03_1 | anaconda |
| gsl | 2.4 | h14c3975_4 | anaconda |
| gst-plugins-base | 1.14.0 | hb8d80ab_1 | |
| gststreamer | 1.14.0 | hb453b48_1 | |
| h5py | 2.8.0 | py37h989c5e5_3 | anaconda |
| harfbuzz | 1.8.8 | hffaf4a1_0 | anaconda |
| hdf5 | 1.10.2 | hba1933b_1 | anaconda |
| icu | 58.2 | h211956c_0 | anaconda |
| imageio | 2.6.1 | py37_0 | anaconda |
| intel-openmp | 2019.5 | 281 | anaconda |
| ipython | 7.8.0 | py37h39e3cac_0 | anaconda |
| ipython_genutils | 0.2.0 | py37_0 | anaconda |
| jasper | 2.0.14 | h07fcd6_1 | anaconda |

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|---------------------|--------------|----------------|-------------|
| jedi | 0.15.1 | py37_0 | anaconda |
| joblib | 0.13.2 | py37_0 | anaconda |
| jpeg | 9b | habf39ab_1 | anaconda |
| keras-applications | 1.0.8 | py_0 | anaconda |
| keras-preprocessing | 1.1.0 | py_1 | anaconda |
| kiwisolver | 1.1.0 | py37hc9558a2_0 | conda-forge |
| libblas | 3.8.0 | 14_mkl | 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 | anaconda |
| libglu | 9.0.0 | hf484d3e_1 | anaconda |
| liblapack | 3.8.0 | 14_mkl | conda-forge |
| libopencv | 3.4.2 | hb342d67_1 | anaconda |
| libopus | 1.3 | h7b6447c_0 | anaconda |
| libpng | 1.6.37 | hbc83047_0 | anaconda |
| libprotobuf | 3.9.2 | hd408876_0 | anaconda |
| libstdcxx-ng | 9.1.0 | hdf63c60_0 | |
| libtiff | 4.0.10 | h2733197_2 | anaconda |
| libuuid | 1.0.3 | h1bed415_2 | anaconda |
| libvpx | 1.7.0 | h439df22_0 | anaconda |
| libxcb | 1.13 | h1bed415_1 | anaconda |
| libxml2 | 2.9.9 | hea5a465_1 | anaconda |
| mahotas | 1.4.8 | py37hb3f55d8_0 | conda-forge |
| markdown | 3.1.1 | py37_0 | anaconda |
| matplotlib | 3.1.1 | py37h5429711_0 | |
| metis | 5.1.0 | hf484d3e_4 | anaconda |
| mkl | 2019.5 | 281 | anaconda |
| mkl-service | 2.3.0 | py37he904b0f_0 | anaconda |
| mkl_fft | 1.0.14 | py37ha843d7b_0 | anaconda |
| mkl_random | 1.1.0 | py37hd6b4f25_0 | anaconda |
| multiprocess | 0.70.9 | py37h516909a_0 | conda-forge |
| ncurses | 6.1 | he6710b0_1 | |
| networkx | 2.4 | py_0 | anaconda |

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|-----------------|--------|----------------|-------------|
| nltk | 3.4.5 | py37_0 | anaconda |
| numpy | 1.17.2 | py37haad9e8e_0 | anaconda |
| numpy-base | 1.17.2 | py37hde5b4d6_0 | anaconda |
| olefile | 0.46 | py37_0 | anaconda |
| opencv | 3.4.2 | py37h6fd60c2_1 | anaconda |
| openssl | 1.1.1 | h7b6447c_0 | anaconda |
| opt_einsum | 3.1.0 | py_0 | anaconda |
| osqp | 0.6.1 | py37hb3f55d8_1 | conda-forge |
| pandas | 0.25.2 | py37he6710b0_0 | anaconda |
| parso | 0.5.1 | py_0 | anaconda |
| patsy | 0.5.1 | py37_0 | anaconda |
| pcre | 8.43 | he6710b0_0 | anaconda |
| pexpect | 4.7.0 | py37_0 | anaconda |
| pickleshare | 0.7.5 | py37_0 | anaconda |
| pillow | 6.2.0 | py37h34e0f95_0 | anaconda |
| pip | 19.3.1 | py37_0 | |
| pixman | 0.38.0 | h7b6447c_0 | anaconda |
| prompt_toolkit | 2.0.10 | py_0 | anaconda |
| protobuf | 3.9.2 | py37he6710b0_0 | anaconda |
| ptyprocess | 0.6.0 | py37_0 | anaconda |
| py-opencv | 3.4.2 | py37hb342d67_1 | anaconda |
| py4j | 0.10.7 | py37_0 | anaconda |
| pydotplus | 2.0.2 | py37_1 | anaconda |
| pygments | 2.4.2 | py_0 | anaconda |
| pyparsing | 2.4.2 | py_0 | conda-forge |
| pyqt | 5.9.2 | py37hcca6a23_4 | conda-forge |
| pyspark | 2.4.4 | py_0 | anaconda |
| python | 3.7.4 | h265db76_1 | |
| python-dateutil | 2.8.0 | py_0 | conda-forge |
| pytz | 2019.3 | py_0 | conda-forge |
| pywavelets | 1.1.1 | py37h7b6447c_0 | anaconda |
| qt | 5.9.7 | h5867ecd_1 | |
| readline | 7.0 | h7b6447c_5 | |
| scikit-image | 0.15.0 | py37he6710b0_0 | anaconda |

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|----------------------|-----------|--------------------|-------------|
| scikit-learn | 0.21.3 | py37hd81dba3_0 | anaconda |
| scipy | 1.3.1 | py37h7c811a0_0 | anaconda |
| scs | 2.1.1.2 | py37h4ff444d_3 | conda-forge |
| seaborn | 0.9.0 | py37_0 | anaconda |
| setuptools | 41.4.0 | py37_0 | |
| sip | 4.19.8 | py37hf484d3e_0 | |
| six | 1.12.0 | py37_0 | anaconda |
| sqlite | 3.30.0 | h7b6447c_0 | |
| statsmodels | 0.10.1 | py37hdd07704_0 | anaconda |
| stop-words | 2018.7.23 | pypi_0 | pypi |
| suitesparse | 5.2.0 | h9e4a6bb_0 | anaconda |
| tbb | 2019.8 | hfd86e86_0 | anaconda |
| tensorboard | 2.0.0 | pyhb230dea_0 | anaconda |
| tensorflow | 2.0.0 | mk1_py37h66b46cc_0 | anaconda |
| tensorflow-base | 2.0.0 | mk1_py37h9204916_0 | anaconda |
| tensorflow-estimator | 2.0.0 | pyh2649769_0 | anaconda |
| termcolor | 1.1.0 | py37_1 | anaconda |
| tk | 8.6.8 | hbc83047_0 | |
| toolz | 0.10.0 | py_0 | anaconda |
| tornado | 6.0.3 | py37h516909a_0 | conda-forge |
| traitlets | 4.3.3 | py37_0 | anaconda |
| wcwidth | 0.1.7 | py37_0 | anaconda |
| webencodings | 0.5.1 | py37_1 | anaconda |
| werkzeug | 0.16.0 | py_0 | anaconda |
| wheel | 0.33.6 | py37_0 | |
| wrapt | 1.11.2 | py37h7b6447c_0 | anaconda |
| xz | 5.2.4 | h14c3975_4 | |
| zlib | 1.2.11 | h7b6447c_3 | |
| zstd | 1.3.7 | h0b5b093_0 | anaconda |