

rastervisionTest

June 1, 2023

```
[1]: !pip install rastervision
      !pip install --upgrade numpy
```

Defaulting to user installation because normal site-packages is not writeable

Collecting rastervision

 Downloading rastervision-0.20.2-py3-none-any.whl (4.1 kB)

Collecting rastervision-core==0.20.2

 Downloading rastervision_core-0.20.2-py3-none-any.whl (153 kB)

153.5/153.5

KB 1.6 MB/s eta 0:00:00a 0:00:01

Collecting rastervision-pipeline==0.20.2

 Downloading rastervision_pipeline-0.20.2-py3-none-any.whl (35 kB)

Collecting rastervision-aws-s3==0.20.2

 Downloading rastervision_aws_s3-0.20.2-py3-none-any.whl (4.7 kB)

Collecting rastervision-pytorch-learner==0.20.2

 Downloading rastervision_pytorch_learner-0.20.2-py3-none-any.whl (80 kB)

80.3/80.3 KB

12.3 MB/s eta 0:00:00

Collecting rastervision-aws-batch==0.20.2

 Downloading rastervision_aws_batch-0.20.2-py3-none-any.whl (3.8 kB)

Collecting rastervision-pytorch-backend==0.20.2

 Downloading rastervision_pytorch_backend-0.20.2-py3-none-any.whl (43 kB)

43.3/43.3 KB

8.3 MB/s eta 0:00:00

Collecting boto3==1.24.89

 Downloading boto3-1.24.89-py3-none-any.whl (132 kB)

132.5/132.5

KB 5.5 MB/s eta 0:00:00

Collecting awscli==1.25.90

 Downloading awscli-1.25.90-py3-none-any.whl (3.9 MB)

3.9/3.9 MB

5.9 MB/s eta 0:00:00a 0:00:01m

Collecting tqdm==4.64.1

 Downloading tqdm-4.64.1-py2.py3-none-any.whl (78 kB)

78.5/78.5 KB

19.2 MB/s eta 0:00:00

Collecting pillow==9.3.0

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Downloading Pillow-9.3.0-cp310-cp310-manylinux_2_28_x86_64.whl (3.3 MB)
3.3/3.3 MB
37.0 MB/s eta 0:00:0000:0100:01
Collecting shapely==1.8.4
  Downloading
Shapely-1.8.4-cp310-cp310-manylinux_2_12_x86_64.manylinux2010_x86_64.whl (2.0
MB)
2.0/2.0 MB
5.9 MB/s eta 0:00:00a 0:00:01m
Collecting pyproj==3.4.0
  Downloading
pyproj-3.4.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (7.7 MB)
7.7/7.7 MB
5.8 MB/s eta 0:00:0000:0100:01m
Collecting opencv-python==4.6.0.66
  Downloading
opencv_python-4.6.0.66-cp36-abi3-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(60.9 MB)
60.9/60.9 MB
19.1 MB/s eta 0:00:0000:0100:01
Collecting pygeos==0.13
  Downloading
pygeos-0.13-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (2.2 MB)
2.2/2.2 MB
5.7 MB/s eta 0:00:00ta 0:00:01
Collecting numpy==1.23.3
  Downloading
numpy-1.23.3-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.1
MB)
17.1/17.1 MB
4.4 MB/s eta 0:00:0000:0100:01
Collecting opencv-python-headless==4.6.0.66
  Downloading opencv_python_headless-4.6.0.66-cp36-abi3-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (48.3 MB)
48.3/48.3 MB
23.4 MB/s eta 0:00:0000:0100:01
Collecting scikit-learn==1.1.2
  Downloading
scikit_learn-1.1.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(30.5 MB)
30.5/30.5 MB
4.9 MB/s eta 0:00:0000:0100:01
Collecting geopandas==0.12.0
  Downloading geopandas-0.12.0-py3-none-any.whl (1.1 MB)
1.1/1.1 MB
6.8 MB/s eta 0:00:00:00:01
Collecting pystac==1.6.1
  Downloading pystac-1.6.1-py3-none-any.whl (146 kB)
```

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146.0/146.0
KB 8.8 MB/s eta 0:00:00
Collecting imageio==2.22.1
  Downloading imageio-2.22.1-py3-none-any.whl (3.4 MB)
3.4/3.4 MB
9.8 MB/s eta 0:00:00a 0:00:01m
Collecting scipy==1.9.2
  Downloading
scipy-1.9.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (33.7 MB)
33.7/33.7 MB
2.8 MB/s eta 0:00:0000:0100:01
Collecting rasterio==1.3.2
  Downloading
rasterio-1.3.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (20.9
MB)
20.9/20.9 MB
3.6 MB/s eta 0:00:0000:0100:01
Collecting typing-extensions==4.4.0
  Downloading typing_extensions-4.4.0-py3-none-any.whl (26 kB)
Collecting everett==1.0.3
  Downloading everett-1.0.3-py2.py3-none-any.whl (31 kB)
Collecting click==8.1.3
  Downloading click-8.1.3-py3-none-any.whl (96 kB)
96.6/96.6 KB
11.1 MB/s eta 0:00:00
Collecting pydantic==1.10.2
  Downloading
pydantic-1.10.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (12.8
MB)
12.8/12.8 MB
44.9 MB/s eta 0:00:0000:0100:01
Requirement already satisfied: six==1.16.* in /usr/lib/python3/dist-
packages (from rastervision-pipeline==0.20.2->rastervision) (1.16.0)
Collecting alumentations==1.3.0
  Downloading alumentations-1.3.0-py3-none-any.whl (123 kB)
123.5/123.5 KB
13.6 MB/s eta 0:00:00
Collecting tensorboard==2.10.1
  Downloading tensorboard-2.10.1-py3-none-any.whl (5.9 MB)
5.9/5.9 MB
46.6 MB/s eta 0:00:0000:0100:01
Collecting torchvision==0.13.1
  Downloading torchvision-0.13.1-cp310-cp310-manylinux1_x86_64.whl (19.1 MB)
19.1/19.1 MB
4.7 MB/s eta 0:00:0000:0100:01
Collecting triangle==20220202
  Downloading
```

```

triangle-20220202-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(2.0 MB)
                2.0/2.0 MB
3.3 MB/s eta 0:00:0000:010:00:01
Collecting cython==0.29.32
  Downloading Cython-0.29.32-cp310-cp310-
manylinux_2_17_x86_64.manylinux2014_x86_64.manylinux_2_24_x86_64.whl (1.9 MB)
                1.9/1.9 MB
11.6 MB/s eta 0:00:00 0:00:01m
Collecting torch==1.12.1
  Downloading torch-1.12.1-cp310-cp310-manylinux1_x86_64.whl (776.3 MB)
                776.3/776.3

MB 1.5 MB/s eta 0:00:0000:0100:07
Collecting matplotlib==3.6.1
  Downloading
matplotlib-3.6.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(11.8 MB)
                11.8/11.8 MB
5.1 MB/s eta 0:00:0000:0100:01
Collecting psutil==5.9.3
  Downloading psutil-5.9.3-cp310-cp310-
manylinux_2_12_x86_64.manylinux2010_x86_64.manylinux_2_17_x86_64.manylinux2014_x
86_64.whl (292 kB)
                292.3/292.3 KB
33.5 MB/s eta 0:00:00
Collecting pycocotools==2.0.5
  Downloading pycocotools-2.0.5.tar.gz (24 kB)
  Installing build dependencies ... done
  Getting requirements to build wheel ... done
  Preparing metadata (pyproject.toml) ... done
Collecting qudida>=0.0.4
  Downloading qudida-0.0.4-py3-none-any.whl (3.5 kB)
Collecting scikit-image>=0.16.1
  Downloading
scikit_image-0.20.0-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(13.2 MB)
                13.2/13.2 MB
30.7 MB/s eta 0:00:0000:0100:01
Requirement already satisfied: PyYAML in /usr/lib/python3/dist-packages
(from alumentations==1.3.0->rastervision-pytorch-learner==0.20.2->rastervision)
(5.4.1)
Requirement already satisfied: colorama<0.4.5,>=0.2.5 in /usr/lib/python3/dist-
packages (from awscli==1.25.90->rastervision-aws-batch==0.20.2->rastervision)
(0.4.4)
Collecting s3transfer<0.7.0,>=0.6.0
  Downloading s3transfer-0.6.1-py3-none-any.whl (79 kB)
                79.8/79.8 KB

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8.7 MB/s eta 0:00:00
Collecting boto==1.27.89
  Downloading boto-1.27.89-py3-none-any.whl (9.2 MB)
      9.2/9.2 MB

2.9 MB/s eta 0:00:0000:0100:01m
Collecting rsa<4.8,>=3.1.2
  Downloading rsa-4.7.2-py3-none-any.whl (34 kB)
Collecting docutils<0.17,>=0.10
  Downloading docutils-0.16-py2.py3-none-any.whl (548 kB)
      548.2/548.2 KB

15.0 MB/s eta 0:00:0000:01
Collecting jmespath<2.0.0,>=0.7.1
  Downloading jmespath-1.0.1-py3-none-any.whl (20 kB)
Collecting configobj
  Downloading configobj-5.0.8-py2.py3-none-any.whl (36 kB)
Collecting fiona>=1.8
  Downloading
Fiona-1.9.4.post1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl
(16.4 MB)
      16.4/16.4 MB

29.5 MB/s eta 0:00:0000:0100:01
Requirement already satisfied: packaging in /usr/lib/python3/dist-packages
(from geopandas==0.12.0->rasterio==0.20.2->rasterio) (21.3)
Collecting pandas>=1.0.0
  Downloading
pandas-2.0.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (12.3
MB)
      12.3/12.3 MB

30.6 MB/s eta 0:00:0000:0100:01
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/lib/python3/dist-
packages (from matplotlib==3.6.1->rasterio-pytorch-
learner==0.20.2->rasterio) (1.3.2)
Requirement already satisfied: pyparsing>=2.2.1 in /usr/lib/python3/dist-
packages (from matplotlib==3.6.1->rasterio-pytorch-
learner==0.20.2->rasterio) (2.4.7)
Requirement already satisfied: cyclor>=0.10 in /usr/lib/python3/dist-packages
(from matplotlib==3.6.1->rasterio-pytorch-learner==0.20.2->rasterio)
(0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in /usr/lib/python3/dist-
packages (from matplotlib==3.6.1->rasterio-pytorch-
learner==0.20.2->rasterio) (4.29.1)
Requirement already satisfied: python-dateutil>=2.7 in
/usr/local/lib/python3.10/dist-packages (from matplotlib==3.6.1->rasterio-
pytorch-learner==0.20.2->rasterio) (2.8.2)
Collecting contourpy>=1.0.1
  Downloading
contourpy-1.0.7-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (300
kB)
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300.3/300.3 KB

21.4 MB/s eta 0:00:00

Requirement already satisfied: certifi in /usr/lib/python3/dist-packages
(from pyproj==3.4.0->rasterio==1.3.2->rasterio) (2020.6.20)
Requirement already satisfied: attrs in /usr/lib/python3/dist-packages (from
rasterio==1.3.2->rasterio) (21.2.0)

Collecting snuggs>=1.4.1

Downloading snuggs-1.4.7-py3-none-any.whl (5.4 kB)

Collecting cligj>=0.5

Downloading cligj-0.7.2-py3-none-any.whl (7.1 kB)

Collecting click-plugins

Downloading click_plugins-1.1.1-py2.py3-none-any.whl (7.5 kB)

Collecting affine

Downloading affine-2.4.0-py3-none-any.whl (15 kB)

Requirement already satisfied: setuptools in /usr/lib/python3/dist-packages
(from rasterio==1.3.2->rasterio) (59.6.0)

Collecting threadpoolctl>=2.0.0

Downloading threadpoolctl-3.1.0-py3-none-any.whl (14 kB)

Collecting joblib>=1.0.0

Downloading joblib-1.2.0-py3-none-any.whl (297 kB)

298.0/298.0

KB 9.9 MB/s eta 0:00:00

Collecting grpcio>=1.24.3

Downloading

grpcio-1.54.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (5.1
MB)

5.1/5.1 MB

32.9 MB/s eta 0:00:0000:0100:01

Collecting markdown>=2.6.8

Downloading Markdown-3.4.3-py3-none-any.whl (93 kB)

93.9/93.9 KB

5.2 MB/s eta 0:00:00

Collecting absl-py>=0.4

Downloading absl_py-1.4.0-py3-none-any.whl (126 kB)

126.5/126.5

KB 3.9 MB/s eta 0:00:00

Collecting tensorboard-plugin-wit>=1.6.0

Downloading tensorboard_plugin_wit-1.8.1-py3-none-any.whl (781 kB)

781.3/781.3 KB

16.9 MB/s eta 0:00:0000:01

Requirement already satisfied: requests<3,>=2.21.0 in
/usr/local/lib/python3.10/dist-packages (from tensorboard==2.10.1->rasterio-
pytorch-learner==0.20.2->rasterio) (2.28.2)

Collecting tensorboard-data-server<0.7.0,>=0.6.0

Downloading tensorboard_data_server-0.6.1-py3-none-manylinux2010_x86_64.whl
(4.9 MB)

4.9/4.9 MB

30.5 MB/s eta 0:00:0000:0100:01

Requirement already satisfied: google-auth<3,>=1.6.3 in /usr/local/lib/python3.10/dist-packages (from tensorboard==2.10.1->rastervision-pytorch-learner==0.20.2->rastervision) (2.17.3)

Collecting werkzeug>=1.0.1

Downloading Werkzeug-2.3.4-py3-none-any.whl (242 kB)

242.5/242.5 KB

13.2 MB/s eta 0:00:00

Collecting protobuf<3.20,>=3.9.2

Downloading

protobuf-3.19.6-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (1.1 MB)

1.1/1.1 MB

32.1 MB/s eta 0:00:00

Collecting google-auth-oauthlib<0.5,>=0.4.1

Downloading google_auth_oauthlib-0.4.6-py2.py3-none-any.whl (18 kB)

Requirement already satisfied: wheel>=0.26 in /usr/lib/python3/dist-packages (from tensorboard==2.10.1->rastervision-pytorch-learner==0.20.2->rastervision) (0.37.1)

Requirement already satisfied: urllib3<1.27,>=1.25.4 in /usr/lib/python3/dist-packages (from botocore==1.27.89->awscli==1.25.90->rastervision-aws-batch==0.20.2->rastervision) (1.26.5)

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==2.10.1->rastervision-pytorch-learner==0.20.2->rastervision) (5.3.0)

Requirement already satisfied: pyasn1-modules>=0.2.1 in /usr/local/lib/python3.10/dist-packages (from google-auth<3,>=1.6.3->tensorboard==2.10.1->rastervision-pytorch-learner==0.20.2->rastervision) (0.2.8)

Collecting requests-oauthlib>=0.7.0

Downloading requests_oauthlib-1.3.1-py2.py3-none-any.whl (23 kB)

Collecting tzdata>=2022.1

Downloading tzdata-2023.3-py2.py3-none-any.whl (341 kB)

341.8/341.8 KB

20.4 MB/s eta 0:00:00

Requirement already satisfied: pytz>=2020.1 in /usr/lib/python3/dist-packages (from pandas>=1.0.0->geopandas==0.12.0->rastervision-core==0.20.2->rastervision) (2022.1)

Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2.21.0->tensorboard==2.10.1->rastervision-pytorch-learner==0.20.2->rastervision) (3.1.0)

Requirement already satisfied: idna<4,>=2.5 in /usr/lib/python3/dist-packages (from requests<3,>=2.21.0->tensorboard==2.10.1->rastervision-pytorch-learner==0.20.2->rastervision) (3.3)

Requirement already satisfied: pyasn1>=0.1.3 in /usr/local/lib/python3.10/dist-

```

packages (from rsa<4.8,>=3.1.2->awscli==1.25.90->rastervision-aws-
batch==0.20.2->rastervision) (0.4.8)
Collecting PyWavelets>=1.1.1
  Downloading
PyWavelets-1.4.1-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (6.8
MB)
                                     6.8/6.8 MB
31.8 MB/s eta 0:00:0000:0100:01
Collecting lazy_loader>=0.1
  Downloading lazy_loader-0.2-py3-none-any.whl (8.6 kB)
Collecting tiffiffle>=2019.7.26
  Downloading tiffiffle-2023.4.12-py3-none-any.whl (219 kB)
                                     219.4/219.4 KB
12.0 MB/s eta 0:00:00
Collecting networkx>=2.8
  Downloading networkx-3.1-py3-none-any.whl (2.1 MB)
                                     2.1/2.1 MB
29.7 MB/s eta 0:00:0000:0100:01
Collecting MarkupSafe>=2.1.1
  Downloading
MarkupSafe-2.1.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (25
kB)
Requirement already satisfied: oauthlib>=3.0.0 in /usr/lib/python3/dist-packages
(from requests-oauthlib>=0.7.0->google-auth-
oauthlib<0.5,>=0.4.1->tensorboard==2.10.1->rastervision-pytorch-
learner==0.20.2->rastervision) (3.2.0)
Building wheels for collected packages: pycocotools
  Building wheel for pycocotools (pyproject.toml) ... done
  Created wheel for pycocotools:
filename=pycocotools-2.0.5-cp310-cp310-linux_x86_64.whl size=333296
sha256=3e11977b167a26e6486604076ae8829c961ed154e27e8cfa8790189aca7ddac4
  Stored in directory: /home/andre/.cache/pip/wheels/d3/4a/98/7d5d35bf7390f5a219
09a6d742cccd42ae9aff6f1ed5d6bef7
Successfully built pycocotools
Installing collected packages: tensorboard-plugin-wit, everett, tzdata, typing-
extensions, tqdm, threadpoolctl, tensorboard-data-server, shapely, rsa, pyproj,
psutil, protobuf, pillow, numpy, networkx, MarkupSafe, markdown, lazy_loader,
joblib, jmespath, grpcio, docutils, cython, configobj, click, affine, absl-py,
werkzeug, triangle, torch, tiffiffle, snuggs, scipy, requests-oauthlib,
PyWavelets, pystac, pygeos, pydantic, pandas, opencv-python-headless, opencv-
python, imageio, contourpy, cligj, click-plugins, botocore, torchvision, scikit-
learn, scikit-image, s3transfer, rastervision-pipeline, rasterio, matplotlib,
google-auth-oauthlib, fiona, tensorboard, qudida, pycocotools, geopandas, boto3,
awscli, rastervision-core, rastervision-aws-s3, rastervision-aws-batch,
albumations, rastervision-pytorch-learner, rastervision-pytorch-backend,
rastervision

```


WARNING: The script tqdm is installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The scripts pyrsa-decrypt, pyrsa-encrypt, pyrsa-keygen, pyrsa-priv2pub, pyrsa-sign and pyrsa-verify are installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The script pyproj is installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The scripts f2py, f2py3 and f2py3.10 are installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The script markdown_py is installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The scripts cygdb, cython and cythonize are installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The scripts convert-caffe2-to-onnx, convert-onnx-to-caffe2 and torchrun are installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The scripts lsm2bin, tiff2fsspec, tiffcomment and tiff file are installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

WARNING: The scripts imageio_download_bin and imageio_remove_bin are installed in '/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this

affine-2.4.0 albumentations-1.3.0 awscli-1.25.90 boto3-1.24.89 botocore-1.27.89
click-8.1.3 click-plugins-1.1.1 cligj-0.7.2 configobj-5.0.8 contourpy-1.0.7
cython-0.29.32 docutils-0.16 everett-1.0.3 fiona-1.9.4.post1 geopandas-0.12.0
google-auth-oauthlib-0.4.6 grpcio-1.54.2 imageio-2.22.1 jmespath-1.0.1
joblib-1.2.0 lazy_loader-0.2 markdown-3.4.3 matplotlib-3.6.1 networkx-3.1
numpy-1.23.3 opencv-python-4.6.0.66 opencv-python-headless-4.6.0.66 pandas-2.0.2
pillow-9.3.0 protobuf-3.19.6 psutil-5.9.3 pycocotools-2.0.5 pydantic-1.10.2
pygeos-0.13 pyproj-3.4.0 pystac-1.6.1 qudida-0.0.4 rasterio-1.3.2
rastervision-0.20.2 rastervision-aws-batch-0.20.2 rastervision-aws-s3-0.20.2
rastervision-core-0.20.2 rastervision-pipeline-0.20.2 rastervision-pytorch-
backend-0.20.2 rastervision-pytorch-learner-0.20.2 requests-oauthlib-1.3.1
rsa-4.7.2 s3transfer-0.6.1 scikit-image-0.20.0 scikit-learn-1.1.2 scipy-1.9.2
shapely-1.8.4 snuggs-1.4.7 tensorboard-2.10.1 tensorboard-data-server-0.6.1
tensorboard-plugin-wit-1.8.1 threadpoolctl-3.1.0 tiffio-2023.4.12 torch-1.12.1
torchvision-0.13.1 tqdm-4.64.1 triangle-20220202 typing-extensions-4.4.0
tzdata-2023.3 werkzeug-2.3.4

Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: numpy in /home/andre/.local/lib/python3.10/site-
packages (1.23.3)

Collecting numpy

Downloading

numpy-1.24.3-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.3
MB)

17.3/17.3 MB

36.6 MB/s eta 0:00:0000:0100:01

Installing collected packages: numpy

Attempting uninstall: numpy

Found existing installation: numpy 1.23.3

Uninstalling numpy-1.23.3:

Successfully uninstalled numpy-1.23.3

WARNING: The scripts f2py, f2py3 and f2py3.10 are installed in
'/home/andre/.local/bin' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this
warning, use --no-warn-script-location.

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.

rastervision-pytorch-learner 0.20.2 requires numpy==1.23.3, but you have numpy
1.24.3 which is incompatible.

rastervision-core 0.20.2 requires numpy==1.23.3, but you have numpy 1.24.3 which
is incompatible.

Successfully installed numpy-1.24.3

```
[1]: import os
import random
import rasterio
import numpy as np
```

```
[2]: from rastervision.pipeline.runner import *
from rastervision.core.rv_pipeline import *
from rastervision.core.data import *
from rastervision.pytorch_backend import *
from rastervision.pytorch_learner import *
```

2023-06-01 11:17:24:rastervision.pipeline.rv_config: WARNING - Root temporary directory cannot be used: /opt/data/tmp. Using root: /tmp/tmptjshfv_z

```
[10]: # SPLITTING THE DATA 80/20 TRAINING/VALIDAITON

with rasterio.open('/home/andre/storage4/andre_folder/050W_10S_040W_00N.tiff') as src:
    array = src.read(1) # read the band into a numpy array
    height, width = array.shape

    # Compute the split index
    split_row = int(height * 0.8)

    # Write the training data to a new file
    with rasterio.open('train.tif', 'w', driver='GTiff', height=split_row,
    width=width, count=1, dtype=array.dtype) as train_dst:
        train_dst.write(array[:split_row, :], 1)

    # Write the validation data to a new file
    with rasterio.open('val.tif', 'w', driver='GTiff', height=height-split_row,
    width=width, count=1, dtype=array.dtype) as val_dst:
        val_dst.write(array[split_row:, :], 1)
```

```
[11]: # EXTRACTING SALIENT POLYGONS AND VECTORIZATION
```

```
[12]: class_config = ClassConfig(names=['no risk', 'low risk', 'medium risk', 'high_
    risk', 'recent risk'], colors=['white', 'tan', 'orange', 'red', 'cyan'])
```

```
[13]: # Define scene configurations
train_scene = SceneConfig(
    id='train_scene',
    raster_source=RasterioSourceConfig(uris=['train.tif']),
    label_source=RasterioSourceConfig(uris=['train.tif']),
)

val_scene = SceneConfig(
```

```

    id='val_scene',
    raster_source=RasterioSourceConfig(uris=['val.tif']),
    label_source=RasterioSourceConfig(uris=['val.tif']),
)

```

```

-----
ValidationError                                Traceback (most recent call last)
/tmp/ipykernel_3639988/3979025468.py in <module>
      1 # Define scene configurations
----> 2 train_scene = SceneConfig(
      3     id='train_scene',
      4     raster_source=RasterioSourceConfig(uris=['train.tif']),
      5     label_source=RasterioSourceConfig(uris=['train.tif']),

~/local/lib/python3.10/site-packages/pydantic/main.cpython-310-x86_64-linux-gn...
↳so in pydantic.main.BaseModel.__init__()

ValidationError: 6 validation errors for SceneConfig
label_source -> type_hint
  unexpected value; permitted: 'label_source' (type=value_error.const;
↳given=rasterio_source; permitted=('label_source',))
label_source -> allow_streaming
  extra fields not permitted (type=value_error.extra)
label_source -> channel_order
  extra fields not permitted (type=value_error.extra)
label_source -> extent
  extra fields not permitted (type=value_error.extra)
label_source -> transformers
  extra fields not permitted (type=value_error.extra)
label_source -> uris
  extra fields not permitted (type=value_error.extra)

```

```

[ ]: # Define dataset configuration
dataset_config = DatasetConfig(
    class_config=class_config,
    train_scenes=[train_scene],
    validation_scenes=[val_scene]
)

```

```

[ ]: # Define model and solver configurations
# Note: This depends on your specific task and model, and you may need to
↳adjust it.
model_config = SemanticSegmentationModelConfig(backbone=Backbone.resnet50)
solver_config = SolverConfig(lr=1e-4, num_epochs=10, batch_sz=16)

```

```
[ ]: # Define backend configuration
backend_config = PyTorchSemanticSegmentationConfig(
    model=model_config,
    solver=solver_config,
    log_tensorboard=True,
    run_tensorboard=False
)
```

```
[ ]: # Define pipeline configuration
pipeline_config = SemanticSegmentationConfig(
    root_uri='./output',
    dataset=dataset_config,
    backend=backend_config,
    train_chip_sz=256, # Adjust as needed
    predict_chip_sz=256 # Adjust as needed
)
```

```
[ ]: # Run the pipeline
rv_pipeline = SemanticSegmentation(pipeline_config)
rv_pipeline.run()
```