

GeoPython 2019



Muttenz Switzerland
Basel

June 24-26

<http://2019.geopython.net/>

What?

- EO
- Data wrangling
- Plotting
- Time
- Debugging decorators
- FME interaction
- BIM
- Open Source pipelines
- QGIS
- Image analysis
- Machine Learning (and Deep Learning)
- Processing frameworks
- Geology tools

Earth Observation



- Sinergise – the company behind Sentinel Hub - were present:
<https://www.sentinel-hub.com/>



- <https://github.com/sentinel-hub/eo-learn>
 - Docs are here: <https://eo-learn.readthedocs.io/en/latest/>

Data wrangling - GeoPandas



- Demos and examples
- <https://github.com/jorisvandenbossche/geopandas-tutorial>
- Widely used (but no direct QGIS compatibility)
- Doesn't have the frills of Arc etc. (which means you may have to handle more things
 - e.g. with tolerances of points actually in the same location as GeoPandas runs a location to a v. high dp number – need to apply buffers at your threshold for some checks e.g. self-intersects
 - for more on this: <https://shapely.readthedocs.io/en/stable/manual.html>

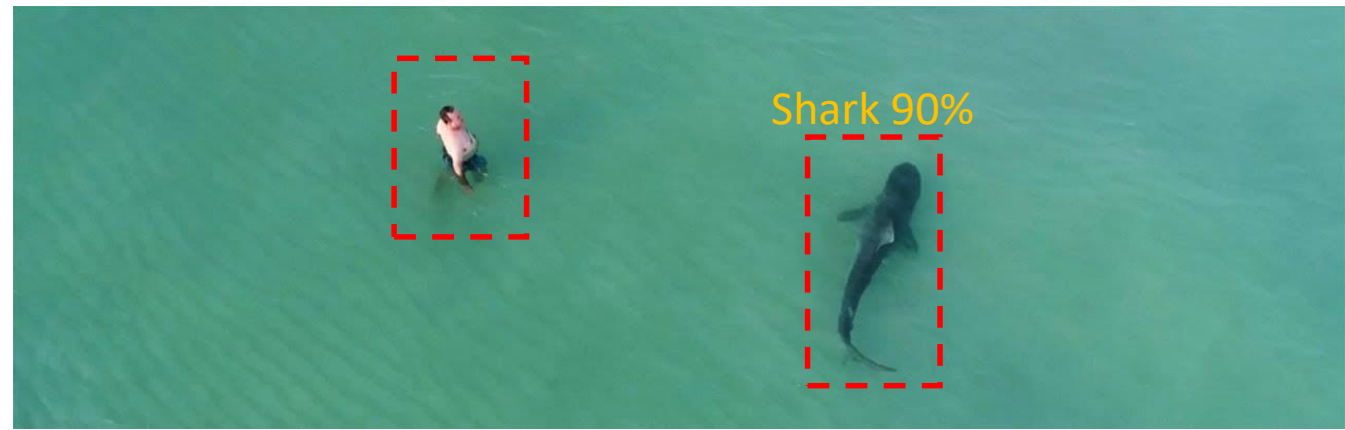
Data analysis

- rasterstats: <https://pythonhosted.org/rasterstats/>

exists solely to extract information from geospatial raster data based on vector geometries

Machine Learning (+ Deep Learning)

- Wide use of [TensorFlow](#)
- Various applications
 - Shark recognition
 - Slides: https://docs.google.com/presentation/d/1RbAGtHVKhspFvXRTmriFZGAQxWh9cmMnqRp2U_drDvs/edit#slide=id.g5c2a762242_0_0
 - Example workflow: <https://github.com/AndrewCarterUK/tf-example-sharks>
 - Wild animal mapping for management based on drone footage

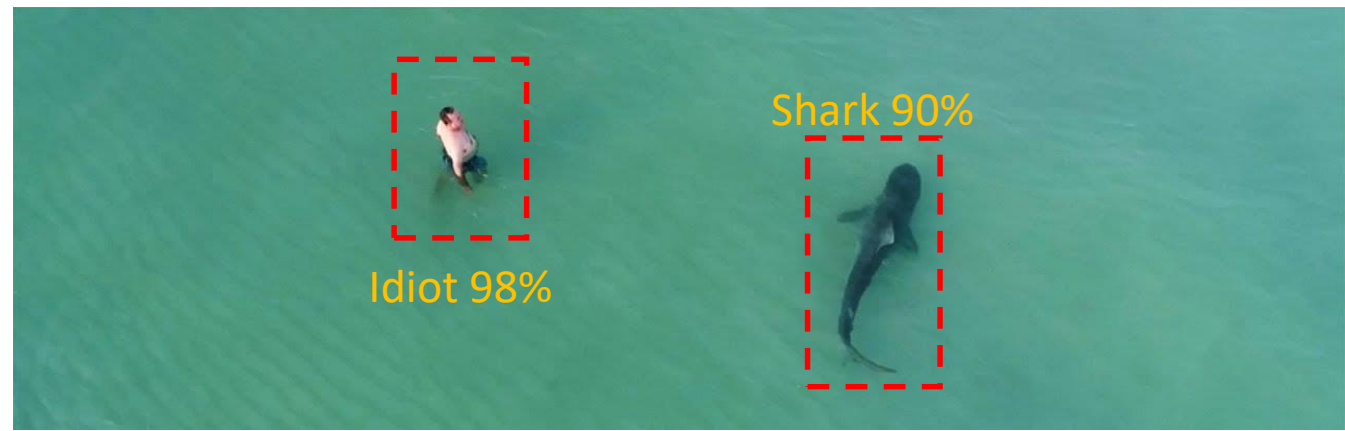


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TensorFlow





- New PyQGIS API docs out: <https://qgis.org/api/>
 - Cheat sheet
https://docs.qgis.org/testing/en/docs/pyqgis_developer_cookbook/cheat_sheet.html
 - Cookbook https://docs.qgis.org/3.4/en/docs/pyqgis_developer_cookbook/
- Function decorators now available to make your funcs QGIS compatible
- Good point made last week at the digital workshop about how it would be good to give to open source (as much as take)....

Time

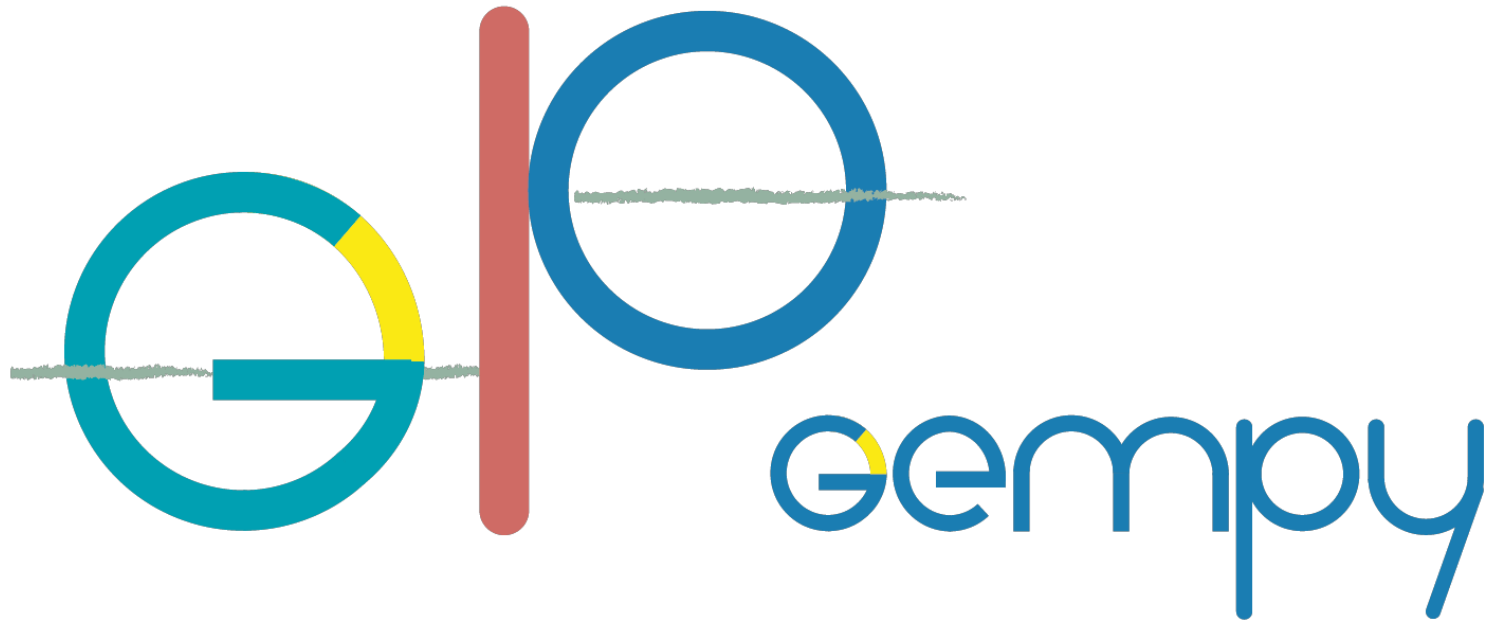
- [pytz: https://pypi.org/project/pytz/](https://pypi.org/project/pytz/)

Here's [reddit](#)'s take on this (a solid and trusted source of info):

- *pytz does timezone-related stuff better*
- *Python built-in code relies on the operating system to provide that info [which makes your] code operating-system dependent*
- *Important because different OSs treat time differently*
- *If your ultimate goal is consistency and correctness, then pytz is a good choice.*
- *If you can live with inconsistencies caused by discrepancies in OS handling of timezone-related info, then you don't need it.*

Geology

- GemPy
 - <https://github.com/cgre-aachen/gempy>
 - <https://gempy.readthedocs.io/>



Debugging with PySnooper

- <https://github.com/cool-RR/PySnooper>

Plotting with PyCharts (js)

- <https://pyecharts.org/>
- <https://github.com/pyecharts/pyecharts>

Finally... presentations with Jupyter

- Did you know you can make presentations directly from Jupyter notebooks?
 - <https://dzone.com/articles/creating-presentations-with-jupyter-notebook>