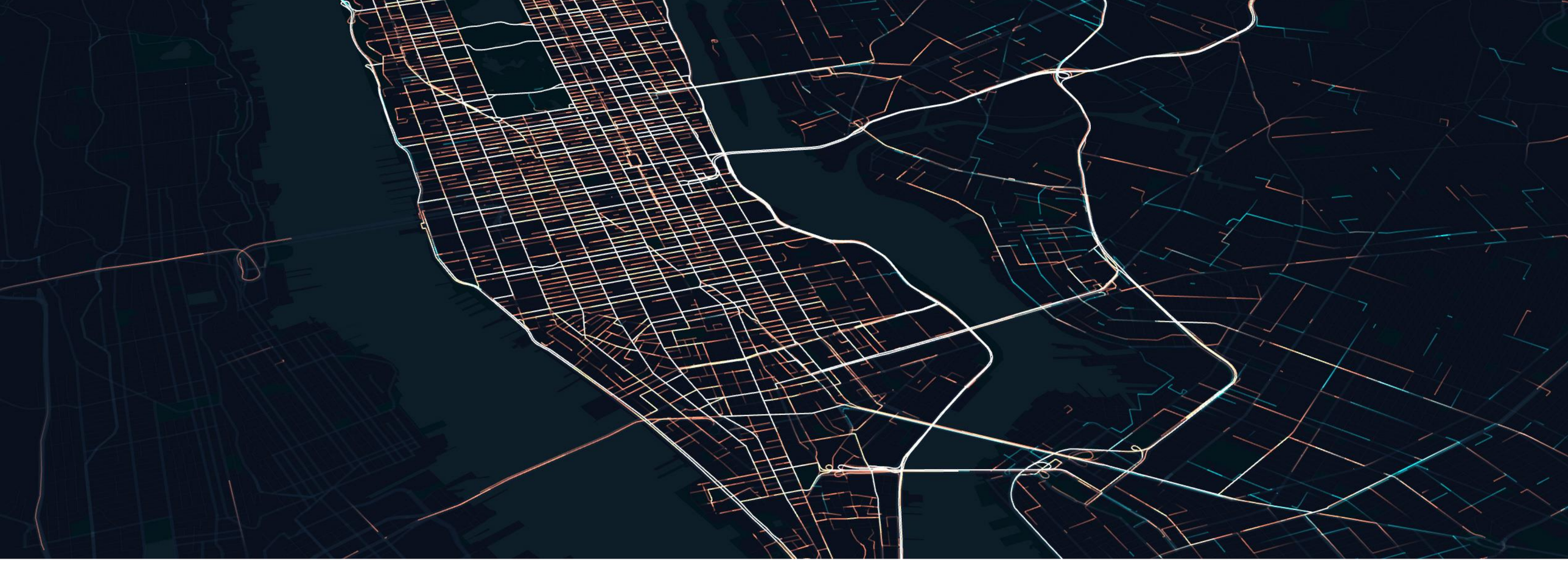


Source: https://classic.yarnpkg.com/en/package/deck.gl

Advanced Topics, Other Tools and Assignment II

ENVS456 – week 9

Gabriele Filomena

Agenda

- Assignment I…
- Towards Assignment II
- Other Visualisation tools
- Animation and GPS Tracks -> Lab

Bokeh. A visualization library

- Data visualisation.
- Versatile, high-performance rendering capabilities over large datasets or real-time data streams.
- Variety of output formats (HTML, notebook, etc.).
- Designed to generate interactive plots, dashboards, and data applications.

- Strengths: customizable, great for creating complex and interactive visualizations.
- Use Case: Ideal when you need detailed control over interaction capabilities or when working with web-based dashboards.

HoloViews

- Built on top of Bokeh and Matplotlib.

- Strengths: Highly abstract and lets you build complex visualizations easily. It automatically handles the plotting backend it uses (like Bokeh, Matplotlib).
- Use Case: Perfect for exploratory data analysis where you want to create informative visualizations rapidly with less focus on the minute details of plot appearance.

GeoViews

- Built on top HoloViews designed to make it easier to explore and visualize geographical datasets
- Geographic data handling.

- Strengths: Integrates seamlessly with the HoloViews workflow for plotting geographical data effectively.

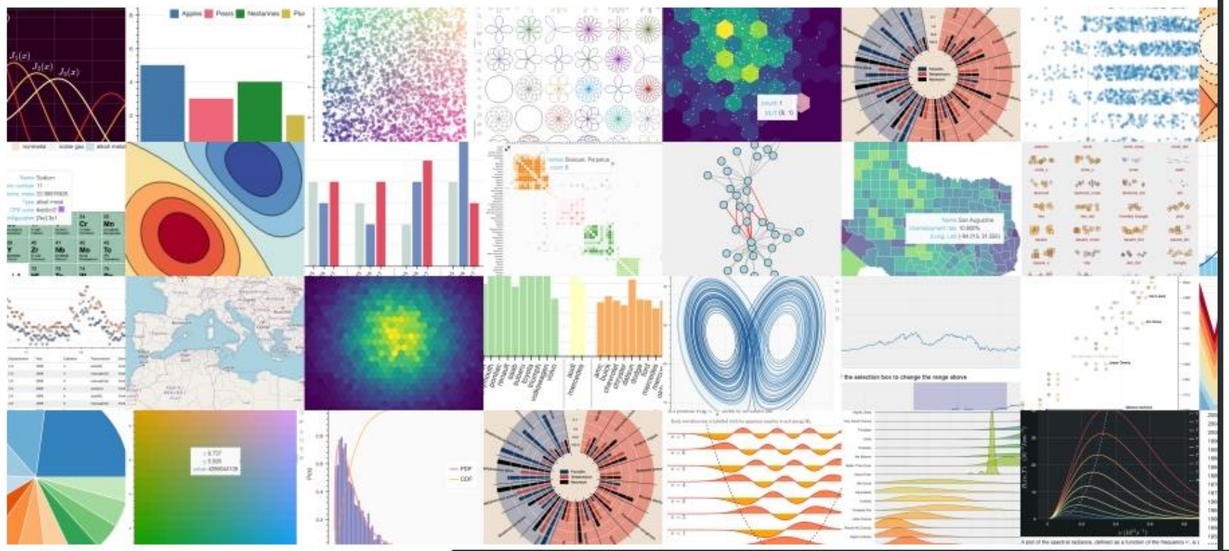
HoloViz-maintained libraries

pydeck

WebGL-powered visualization library designed to display large geospatial datasets. Python wrapper around the JavaScript library Deck.gl

- Rich Layered Visualizations: Supports a variety of layers.
- Interactivity: The library leverages Deck.gl's interactivity features.
- Large Data Handling: Pydeck excels at handling large datasets.
- Customization: Pydeck allows for detailed customization of visual elements.

bokeh Documentation Community Tutorials Demos Blog GitHub Donate



Flexible

Bokeh makes it simple to create common plots, b
also can handle custom or specialized use-cases.

Productive

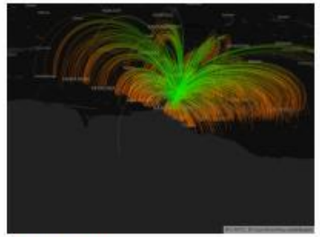
Work in Python close to all the PyData tools you
already familiar with.

pydeck

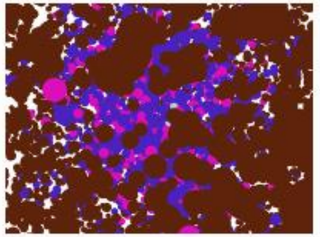
High-scale spatial rendering in Python, powered by deck.gl.

Get started by installing pydeck.

Gallery



ArcLayer



Binary Transport

BitmapLayer

GeoViews

Geographic visualizations for HoloViews

GeoViews is a Python library that makes it easy to explore and visualize geographical, meteorological, and oceanographic datasets, such as those used in weather, climate, and remote sensing research.

GeoViews is built on the HoloViews library for building flexible visualizations of multidimensional data. GeoViews adds a family of geographic plot types based on the Cartopy library, plotted using either the Matplotlib or Bokeh packages. With GeoViews, you can now work easily and naturally with large, multidimensional geographic datasets, instantly visualizing any subset or combination of them, while always being able to access the raw data underlying any plot. Here's a simple example:

```
import geoviews as gv
import geoviews.feature as gf
import xarray as xr
from cartopy import crs

gv.extension('bokeh', 'matplotlib')
```

```
(gf.ocean + gf.land + gf.ocean * gf.land * gf.coastline * gf.borders).opts(
    'Feature', projection=crs.Geostationary(), global_extent=True, height=325)
```