

IMD0905 - Data Science I

Lesson #14 - Folium

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Agenda

- Folium
- Maps styles, markers, color and icon types
- Marker clusters
- Heatmap
- Popups

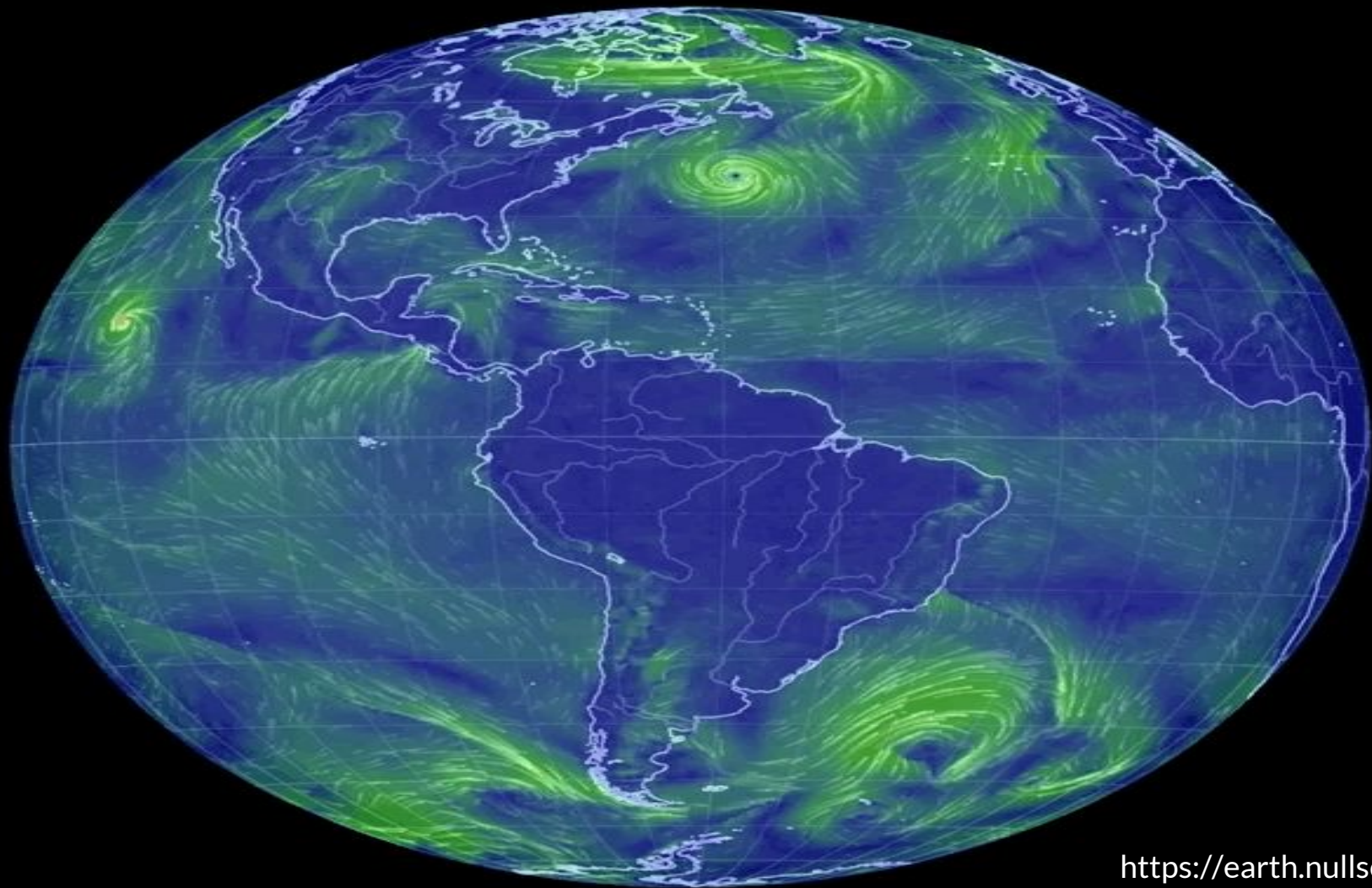
Update the repository

```
git clone https://github.com/ivanovitchm/IMD0905_datascience_one.git
```

Or

```
git pull
```

motivation



Folium



Folium builds on the data wrangling strengths of the Python ecosystem and the mapping strengths of the Leaflet.js library. Manipulate your data in Python, then visualize it in on a Leaflet map via Folium.

Creating a world map



```
import folium
m = folium.Map()
m.save('index.html')
m
```

Creating a map of Brazil



```
m = folium.Map(  
    location=[-15.765379, -47.968776],  
    zoom_start=4  
)
```


Maps styles

```
m = folium.Map(  
    location=[-15.765379, -47.968776],  
    tiles='Stamen Toner',  
    zoom_start=4  
)
```



Leaflet Custom Tileset

```
m = folium.Map(  
    location=[-15.765379, -47.968776],  
    zoom_start=12,  
    tiles='https://api.mapbox.com/styles/v1/mapbox/outdoors-v10/tiles/256/{z}/{x}/{y}?access_token=y  
our_token',  
    attr='Imagery © <a href="http://mapbox.com">MapBox</a>'
```



Maps with markers

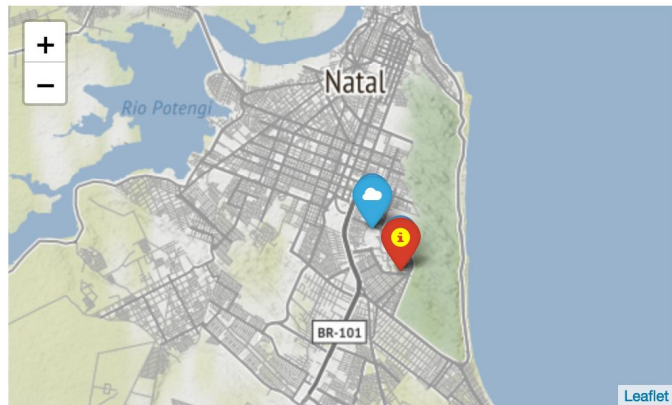
```
m = folium.Map(  
    location=[-5.826592, -35.212558],  
    zoom_start=12,  
    tiles='Stamen Terrain',  
    width='50%',  
    height='50%'
```

```
)  
folium.Marker([-5.832187, -35.205432], popup='<i>Instituto Metr pole Digital</i>').add_to(m)  
folium.Marker([-5.842942, -35.198001], popup='<b>Centro Tecnol gico</b>').add_to(m)
```



Color and icon types

```
folium.Marker([-5.832187, -35.205432],  
              popup='<i>Instituto Metr pole Digital</i>',  
              icon=folium.Icon(icon='cloud')).add_to(m)  
folium.Marker([-5.842942, -35.198001],  
              popup='<b>Centro Tecnol gico</b>',  
              icon=folium.Icon(color='red',  
                                icon_color='yellow',  
                                icon='info-sign')).add_to(m)
```



Marker clusters



```
# Create a map
m = folium.Map(
    location=[-5.826592, -35.212558],
    zoom_start=12,
    tiles='Stamen Terrain',
    width='75%',
    height='75%'
)

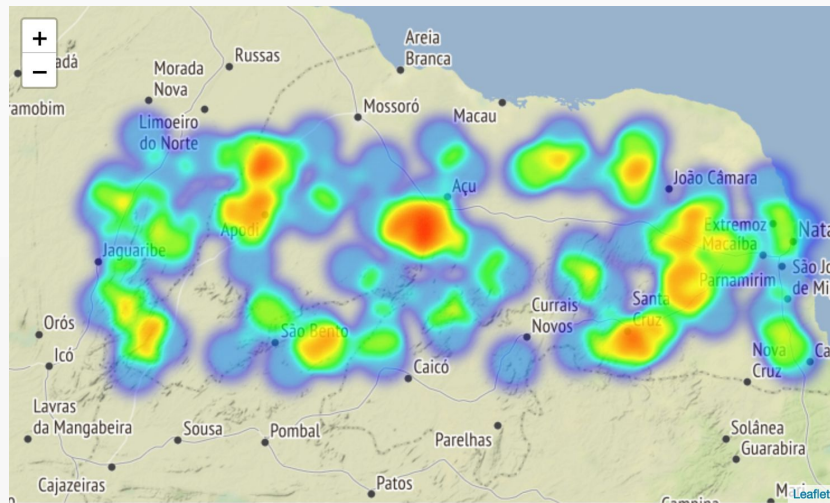
# Make a cluster
plugins.MarkerCluster(data).add_to(m)
```

Heatmap

Create a map

```
m = folium.Map(
    location=[-5.826592, -35.212558],
    zoom_start=12,
    tiles='Stamen Terrain',
    width='75%',
    height='75%'
)
```

data : list of points of the form [lat, lng] or [lat, lng, weight]
 HeatMap(data).add_to(m)



Create popups

```
# Create an object popup and adding a graph for it  
popup = folium.Popup(max_width=650)  
folium.Vega(scatter_chart, height=350, width=650).add_to(popup)  
  
# Print a icon on map  
folium.Marker([-5.832187, -35.205432],  
              icon=folium.Icon(icon='cloud'),  
              popup=popup).add_to(m)
```

