

```
In [1]: import matplotlib.pyplot as plt
from mpl_toolkits.mplot3d import Axes3D
import pandas as pd
import numpy as np
```

```
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
```

C:\Users\samil\anaconda3\lib\site-packages\scipy__init__.py:138: UserWarning: A NumPy version >=1.16.5 and <1.23.0 is required for this version of SciPy (detected version 1.24.4)
warnings.warn(f"A NumPy version >={np_minversion} and <{np_maxversion} is required for this version of "

```
In [2]: pip install geopandas
```

```
Requirement already satisfied: geopandas in c:\users\samil\anaconda3\lib\site-packages (0.13.2)
Requirement already satisfied: pandas>=1.1.0 in c:\users\samil\anaconda3\lib\site-packages (from geopandas) (1.2.4)
Requirement already satisfied: packaging in c:\users\samil\anaconda3\lib\site-packages (from geopandas) (20.9)
Requirement already satisfied: fiona>=1.8.19 in c:\users\samil\anaconda3\lib\site-packages (from geopandas) (1.9.4.post1)
Requirement already satisfied: pyproj>=3.0.1 in c:\users\samil\anaconda3\lib\site-packages (from geopandas) (3.5.0)
Requirement already satisfied: shapely>=1.7.1 in c:\users\samil\anaconda3\lib\site-packages (from geopandas) (2.0.1)
Requirement already satisfied: importlib-metadata in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (3.10.0)
Requirement already satisfied: attrs>=19.2.0 in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (20.3.0)
Requirement already satisfied: click-plugins>=1.0 in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (1.1.1)
Requirement already satisfied: certifi in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (2020.12.5)
Requirement already satisfied: six in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (1.15.0)
Requirement already satisfied: cligj>=0.5 in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (0.7.2)
Requirement already satisfied: click~=8.0 in c:\users\samil\anaconda3\lib\site-packages (from fiona>=1.8.19->geopandas) (8.1.5)
Requirement already satisfied: colorama in c:\users\samil\anaconda3\lib\site-packages (from click~=8.0->fiona>=1.8.19->geopandas) (0.4.4)
Requirement already satisfied: python-dateutil>=2.7.3 in c:\users\samil\anaconda3\lib\site-packages (from pandas>=1.1.0->geopandas) (2.8.1)
Requirement already satisfied: numpy>=1.16.5 in c:\users\samil\anaconda3\lib\site-packages (from pandas>=1.1.0->geopandas) (1.24.4)
Requirement already satisfied: pytz>=2017.3 in c:\users\samil\anaconda3\lib\site-packages (from pandas>=1.1.0->geopandas) (2021.1)
Requirement already satisfied: zipp>=0.5 in c:\users\samil\anaconda3\lib\site-packages (from importlib-metadata->fiona>=1.8.19->geopandas) (3.4.1)
Requirement already satisfied: pyparsing>=2.0.2 in c:\users\samil\anaconda3\lib\site-packages (from packaging->geopandas) (2.4.7)
```

```
In [3]: import geopandas as gpd
```

```
In [4]: raw_dataset=pd.read_csv("LosAngelesAll.csv",sep=",")
```

```
In [5]: LosAngelesAll = raw_dataset.copy()
LosAngelesAll.head()
```

```
Out[5]:
```

	time	Altitude	Longitude	Deptm_km	Magnitude	
2023-08-02T05:38:08	620	NaN	33.186000	-115.573500	3.11	4.12
2023-07-02T09:29:49	230	NaN	33.827000	-118.881000	10.73	3.72
2023-06-19T06:49:11	580	NaN	35.498000	-118.145000	6.81	3.57
2023-05-30T20:24:52	680	NaN	34.021833	-119.124833	13.56	3.56
2023-05-15T00:13:39	290	NaN	32.467167	-115.956667	1.00	3.63

```
In [6]: LosAngelesAll.shape
```

```
Out[6]: (3639, 5)
```

```
In [7]: x= LosAngelesAll.iloc[:, 2].values
```

```
In [8]: y=LosAngelesAll.iloc[:, 1].values
```

```
In [9]: z = LosAngelesAll.iloc[:, 3].values
```

```
In [10]: colors= LosAngelesAll.iloc[:, 4].values
```

```
In [39]: sizes = LosAngelesAll.iloc[:, 4].values * 40
```

```
In [40]: x
```

```
Out[40]: array([-115.5735, -118.881 , -118.145 , ..., -118.215 , -116.375 ,  
              -116.77  ])
```

```
In [41]: y
```

```
Out[41]: array([33.186, 33.827, 35.498, ..., 35.225, 33.255, 33.653])
```

```
In [42]: colors
```

```
Out[42]: array([4.12, 3.72, 3.57, ..., 4.01, 3.55, 3.64])
```

```
In [43]: sizes
```

```
Out[43]: array([164.8, 148.8, 142.8, ..., 160.4, 142. , 145.6])
```

```
In [44]: # 3D scatter plot oluşturun

fig = plt.figure(figsize=(25, 15))
ax = fig.add_subplot(111, projection='3d')

ax.scatter(x, y, z, c=colors, s=sizes, cmap='jet')

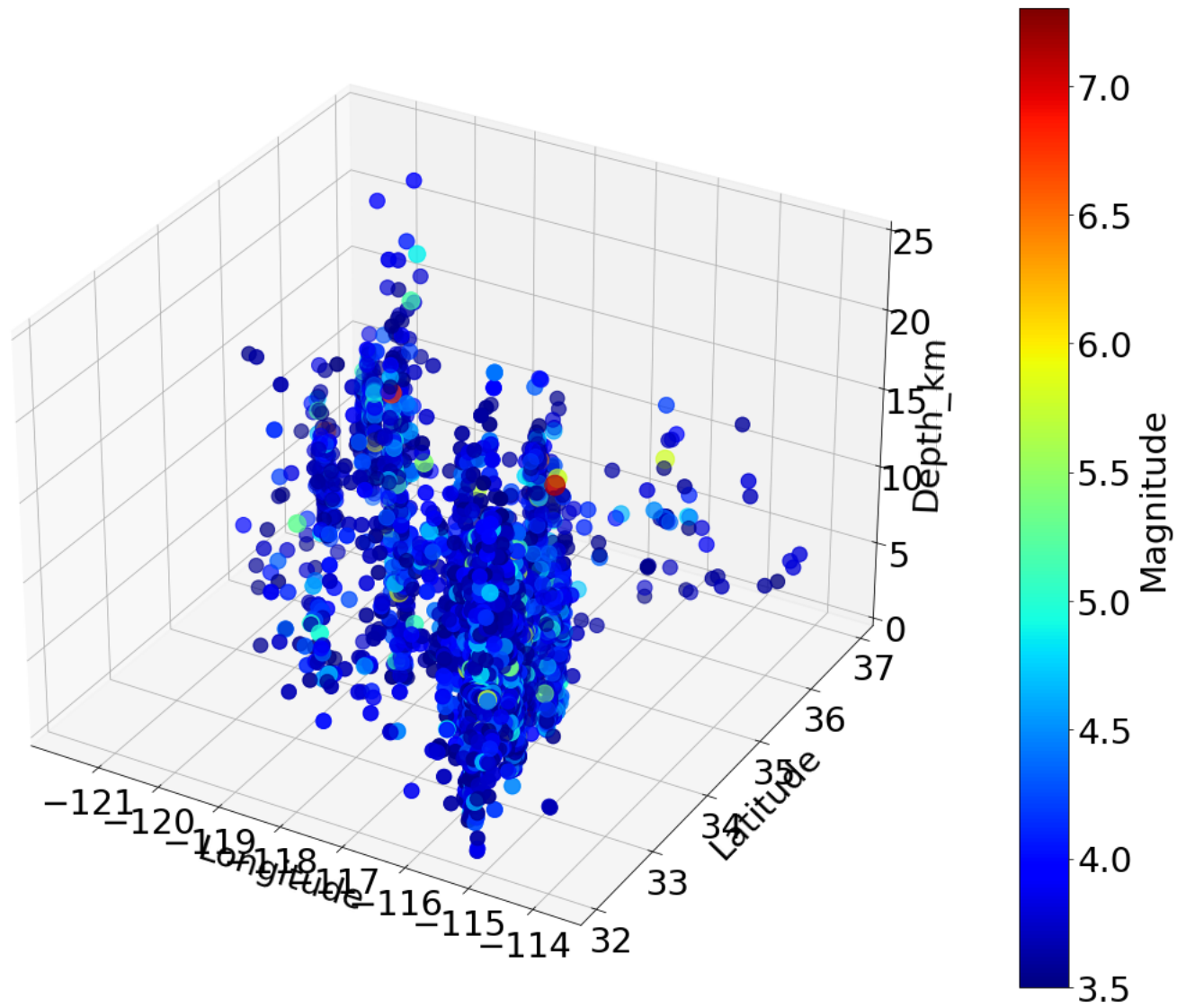
# Renk çubuğunu ekleyin
cbar = plt.colorbar(ax.scatter(x, y, z, c=colors, s=sizes, cmap='jet'))
cbar.set_label('Magnitude')

# Eksen etiketlerini ayarlayın
ax.set_xlabel('Longitude')
ax.set_ylabel('Latitude')
ax.set_zlabel('Depth_km')

dpi = 100
font_size = 12

ax.set_zlim(0, 25)

# Grafiği gösterin
plt.show()
```



```
In [49]: import matplotlib.pyplot as plt

fig = plt.figure(figsize=(40, 20))
my_cmap = plt.get_cmap('jet')

plt.rcParams.update({'font.size': 29})

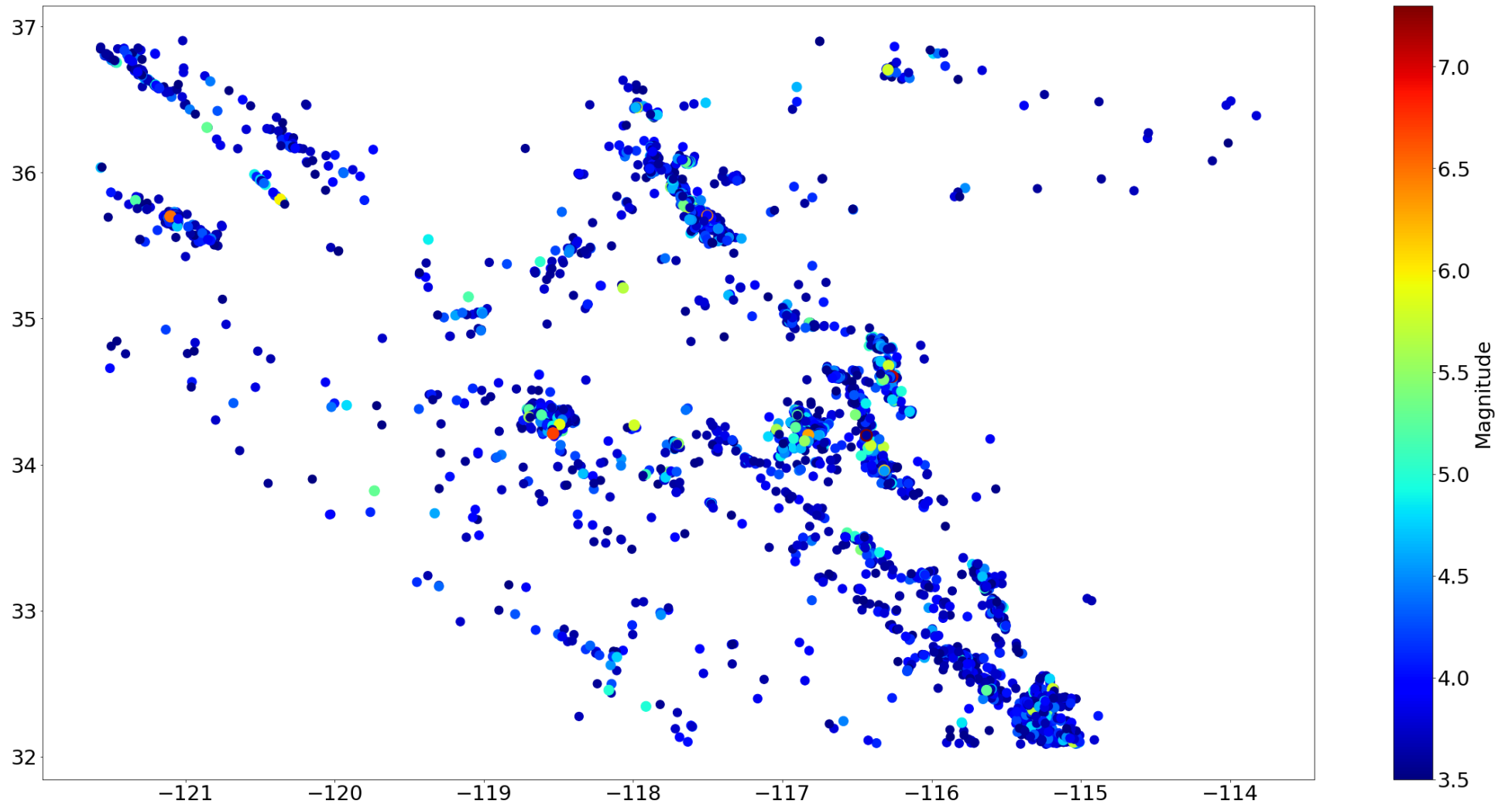
plt.scatter(x, y, c=colors, s=sizes, cmap= 'jet')

ax.scatter(x, y, z, c=colors, s=sizes, cmap='jet')
cbar = plt.colorbar(ax.scatter(x, y, z, c=colors, s=sizes, cmap='jet'))

ax.set_xlabel('Longitude')
ax.set_ylabel('Latitude')
cbar.set_label('Magnitude')
ax.set_zlabel('Depth_km')

dpi = 300

plt.show()
```



In []:

In [46]: `pip install plotly`

Requirement already satisfied: plotly in c:\users\samil\anaconda3\lib\site-packages (5.15.0)Note: you may need to restart the kernel to use updated packages.

Requirement already satisfied: packaging in c:\users\samil\anaconda3\lib\site-packages (from plotly) (20.9)

Requirement already satisfied: tenacity>=6.2.0 in c:\users\samil\anaconda3\lib\site-packages (from plotly) (8.2.2)

Requirement already satisfied: pyparsing>=2.0.2 in c:\users\samil\anaconda3\lib\site-packages (from packaging->plotly) (2.4.7)

```
In [52]: import plotly.graph_objects as go

# Yüksek çözünürlüklü dünya haritası verilerini çevrimiçi olarak alın
fig = go.Figure(go.Choroplethmapbox(
    geojson="https://raw.githubusercontent.com/johan/world.geo.json/master/countries.geo.json",
    locations=["Canada", "CAN", "RUS", "CHN"], # Örnek ülke kodları (ABD, Kanada, Meksika, Rusya, Çin)
    z=[1, 1, 1, 1, 1], # Ülkelere atanacak değerler (hepsi 1 olarak ayarlanmıştır)
    colorscale='jet', # Renk skalası adı (Viridis, YlGnBu, Jet vb.)
    zmin=3,
    zmax=8,
    marker_opacity=0.5, # Ülke sınırlarının opaklığı
    marker_line_width=0, # Ülke sınırlarının kenarlık kalınlığı
))

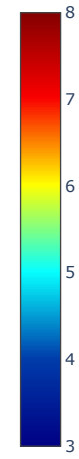
# Örnek deprem verilerini oluşturun
deprem_verileri = {
    'Longitude': x,
    'Latitude': y,
    'Magnitude': colors,
}

# Scatter plot ile deprem verilerini ekleyin
fig.add_trace(go.Scattermapbox(
    lat=deprem_verileri['Latitude'],
    lon=deprem_verileri['Longitude'],
    mode='markers',
    marker=dict(
        size=deprem_verileri['Magnitude'] * 1.5, # Magnitude değerine göre nokta boyutlarını belirleme
        color=deprem_verileri['Magnitude'], # Magnitude değerine göre renk skalasını belirleme
        colorscale='jet', # Renk skalası adı (Viridis, YlGnBu, Jet vb.)
    ),
))

# Harita düzenini ve stilini belirleyin
fig.update_layout(
    mapbox_style="open-street-map", # Harita stilini belirleme (diğer stiller için: "open-street-map", "stamen-terrain" vb.)
    mapbox_zoom=3, # Harita yakınlaştırma düzeyini belirleme
    mapbox_center={"lat": 30.000, "lon": 30.0000}, # Harita merkezini belirleme (ABD'nin merkezi)
)

font_size = 700

dpi = (5000)
font_size = 1000
# Grafiği görüntüleyin
fig.show()
```



In []:


```
In [48]: import plotly.graph_objects as go

# Yüksek çözünürlüklü dünya haritası verilerini çevrimiçi olarak alın
fig = go.Figure(go.Choroplethmapbox(
    geojson="https://raw.githubusercontent.com/johan/world.geo.json/master/countries.geo.json",
    locations=["Canada"], # Örnek ülke kodları (ABD, Kanada, Meksika, Rusya, Çin)
    z=[1, 1, 1, 1, 1], # Ülkelere atanacak değerler (hepsi 1 olarak ayarlanmıştır)
    colorscale='jet', # Renk skalası adı (Viridis, YlGnBu, Jet vb.)
    zmin=3,
    zmax=8,
    marker_opacity=0.1, # Ülke sınırlarının opaklığı
    marker_line_width=1, # Ülke sınırlarının kenarlık kalınlığı
))

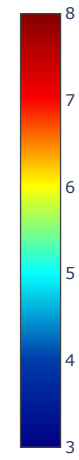
# Örnek deprem verilerini oluşturun
deprem_verileri = {
    'Longitude': x,
    'Latitude': y,
    'Magnitude': colors,
    'Location': ['Deprem 1', 'Deprem 2', 'Deprem 3', 'Deprem 4', 'Deprem 5', 'Deprem 6']
}

# Scatter plot ile deprem verilerini ekleyin
fig.add_trace(go.Scattermapbox(
    lat=deprem_verileri['Latitude'],
    lon=deprem_verileri['Longitude'],
    mode='markers',
    marker=dict(
        size=deprem_verileri['Magnitude']*2, # Magnitude değerine göre nokta boyutlarını belirleme
        color=deprem_verileri['Magnitude'], # Magnitude değerine göre renk skalasını belirleme
        colorscale='jet', # Renk skalası adı (Viridis, YlGnBu, Jet vb.)
        # Renk skalası başlığı
    ),
    text=deprem_verileri['Location'], # Deprem isimlerini göstermek için metin listesi
))

# Harita düzenini ve stilini belirleyin
fig.update_layout(
    mapbox_style="carto-positron", # Harita stilini belirleme (diğer stiller için: "open-street-map", "stamen-terrain" vb.)
    mapbox_zoom=3, # Harita yakınlaştırma düzeyini belirleme
    mapbox_center={"lat": 37.0902, "lon": -95.7129}, # Harita merkezini belirleme (ABD'nin merkezi)
)

# Grafiği görüntüleyin
fig.show()
```

(34.144°, -116.995°) trace 1



In []: