

PLOTLY EXPRESS + DASH INTRO

Presenter: ANITA TRAN

Who am I?



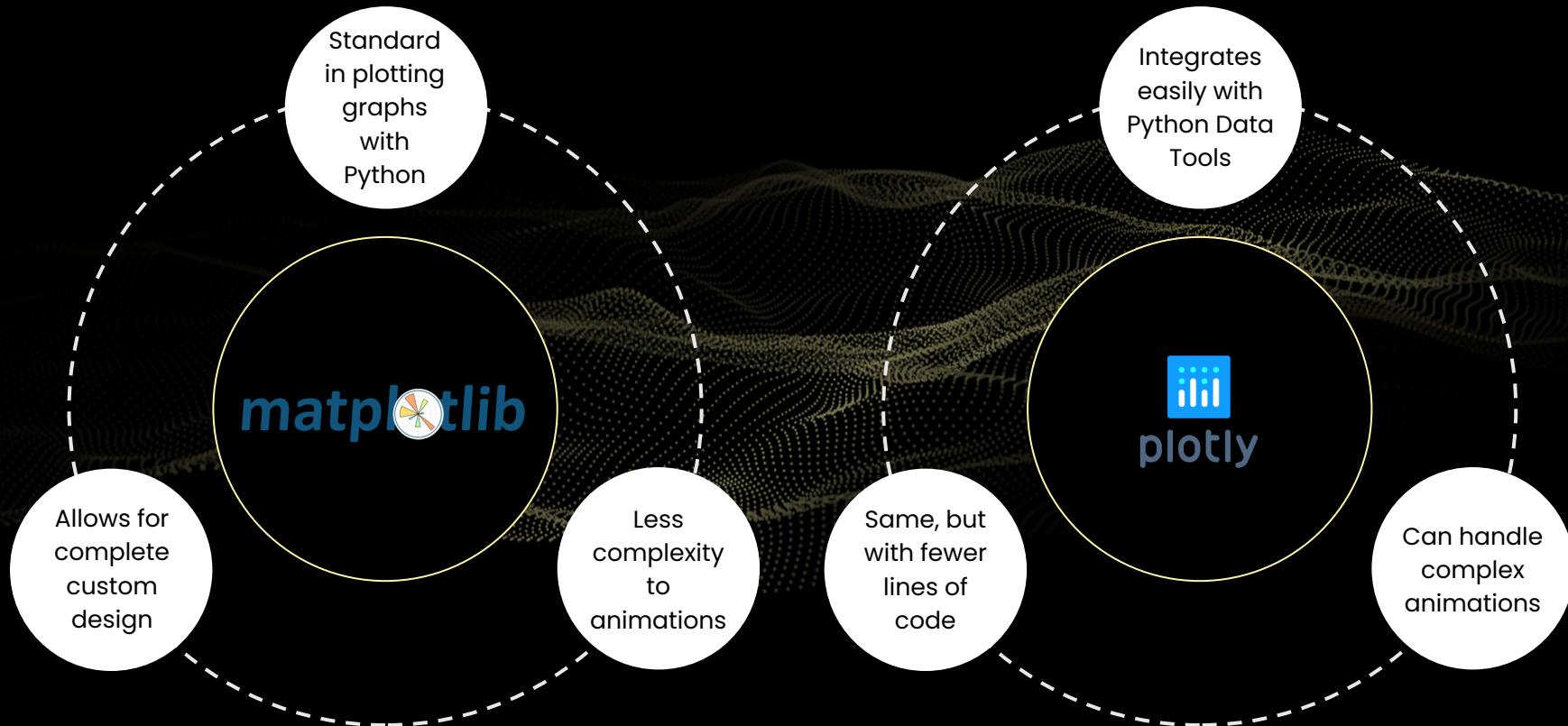
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Bachelor of Applied Science

2+ years of management consulting

Data Science

Matplotlib vs. Plotly



Plotly Express



Library for data visualization with focus on data exploration through rapid iteration

<https://plotly.express>

pip install plotly_express

Dash



Framework for creating analytical web applications in Python: no Javascript required

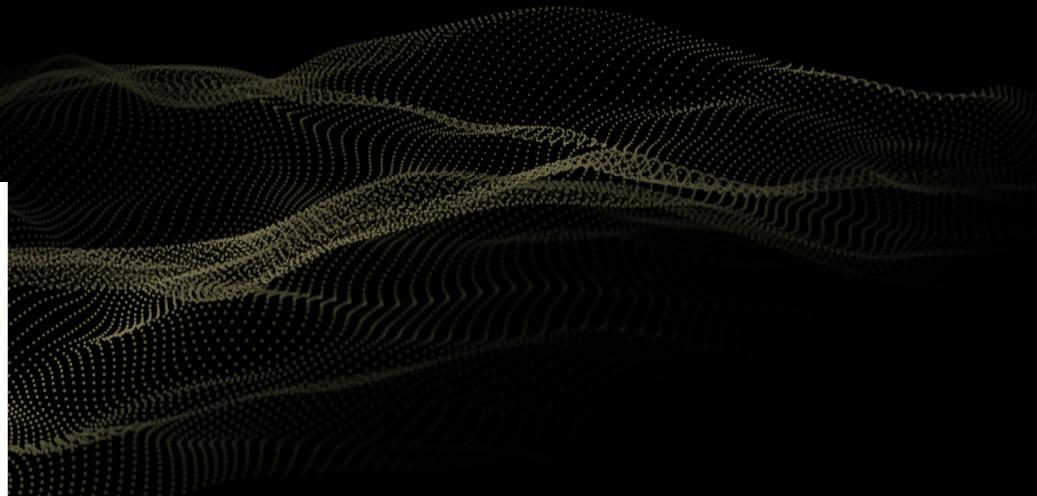
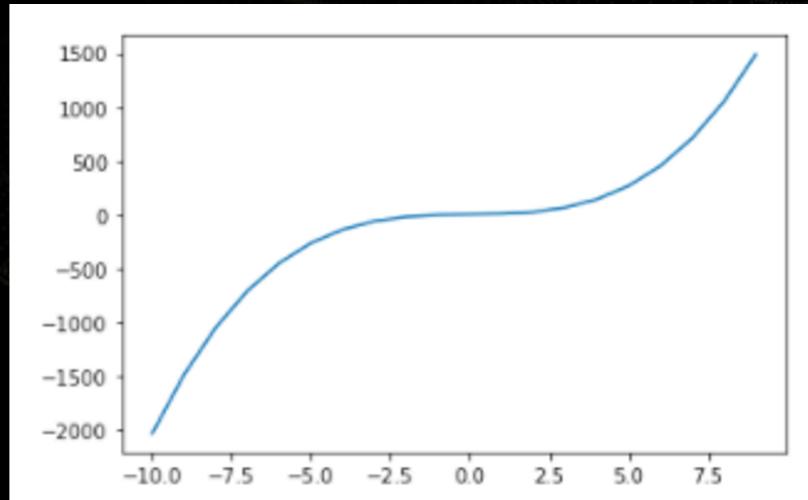
<https://dash.plot.ly>

pip install dash

Both are MIT Licensed: totally free for any purpose

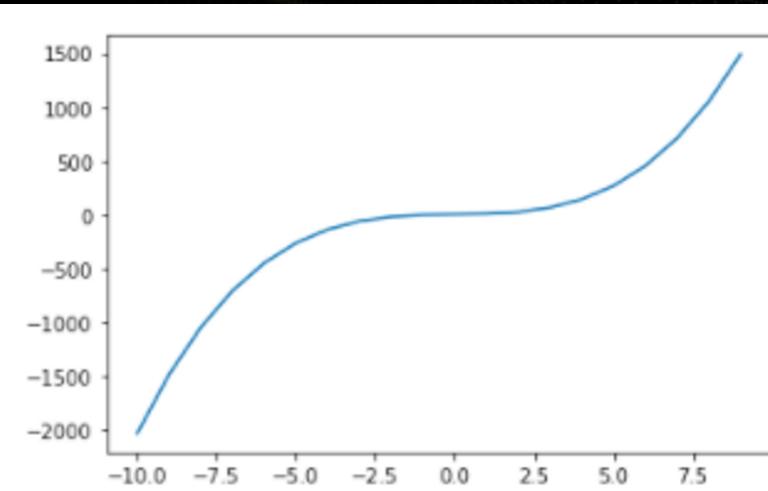
Let's graph a cubic function with Matplotlib

```
1 x = [i for i in range(-10, 10)]
2 y = [2*i**3 + 3*i + 3 for i in x]
3
4
5 import matplotlib.pyplot as plt
6
7 plt.plot(x, y)
```

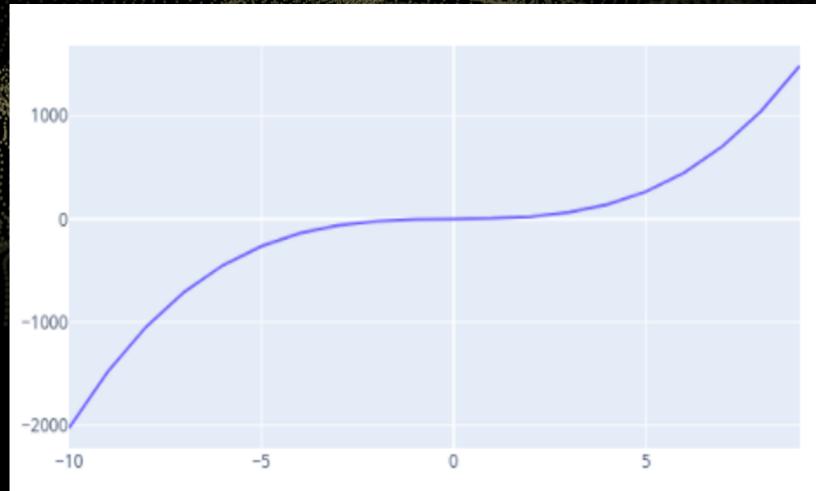


Plotly has great aesthetics

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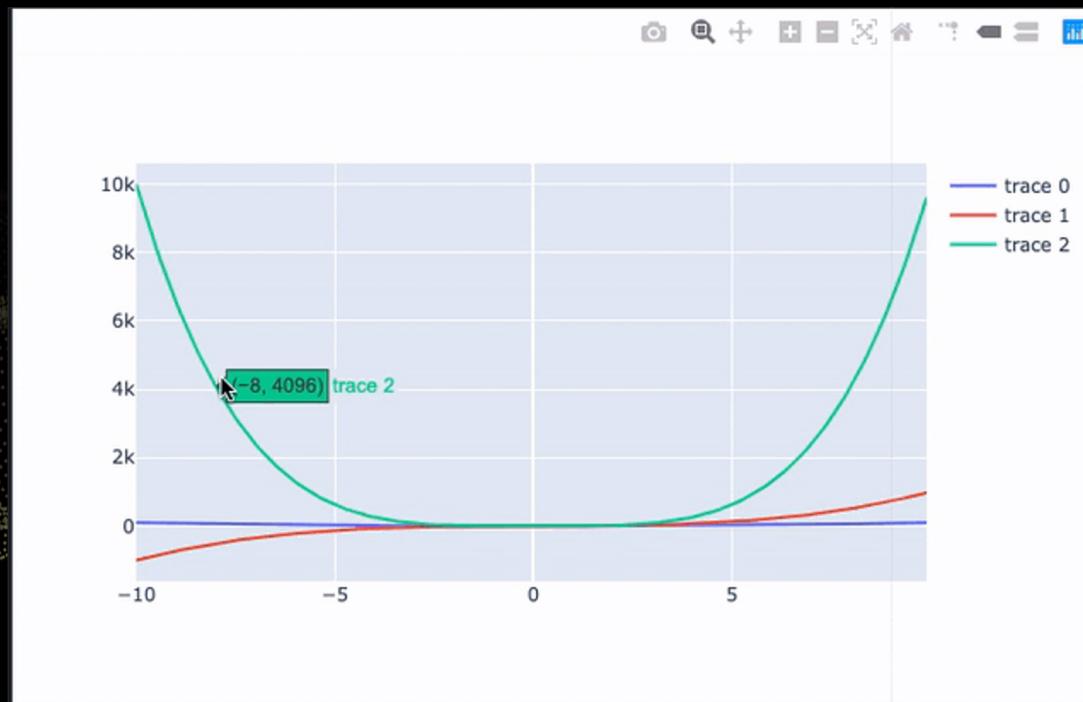


```
1 import plotly.graph_objects as go  
2  
3 fig = go.Figure(data=[go.Scatter(x=x, y=y)])  
4 fig.show()
```



Plotly is interactive by default

- Shown on-hover
- Save as PNG
- Zoom in and out
- Data comparison

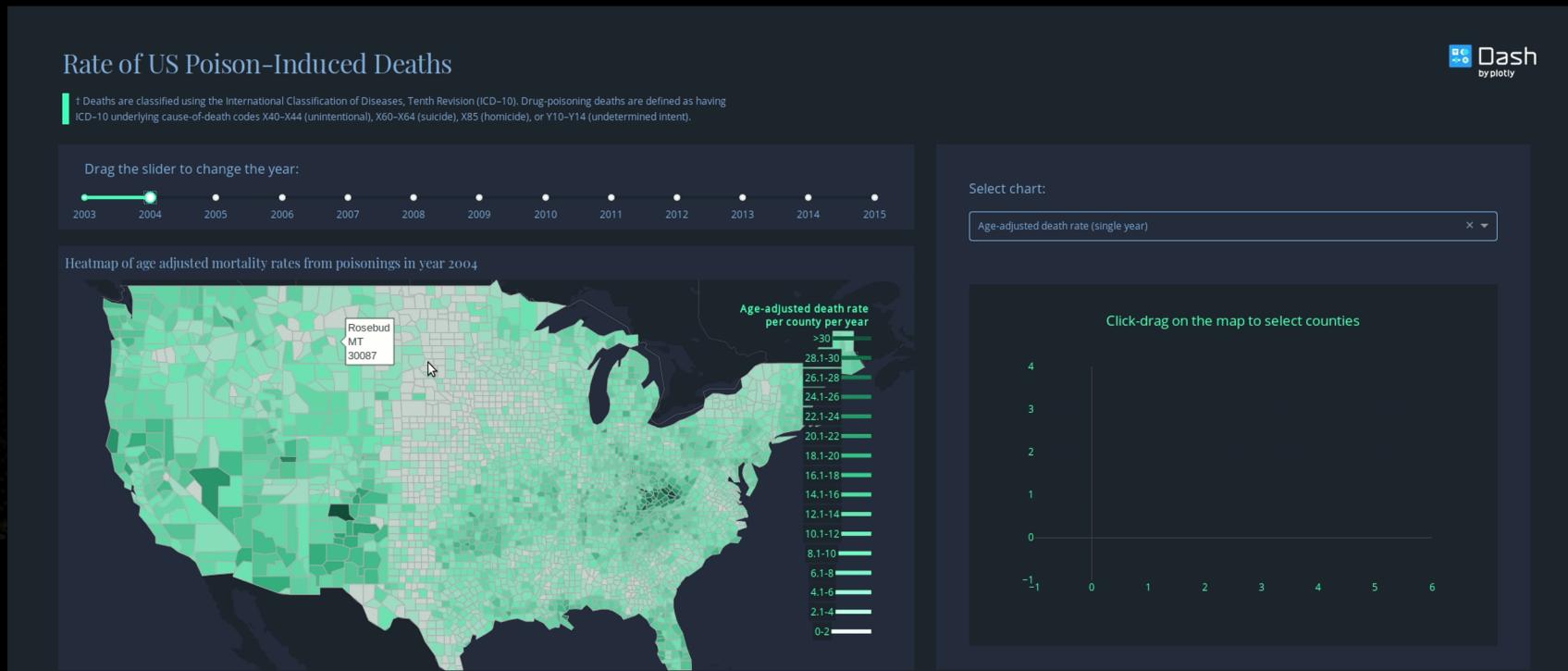


Other capabilities of Plotly Express

- 2D, 3D, polar ternary, maps , animations, facetting, trendlines, marginals
- Export to various formats: PNG, SVG, HTML, PDF
- GUI Editor for figure JSON in Jupyter Lab
- Built-in and user defined themes



Complex dash app examples



Source: <https://dash-gallery.plotly.host/dash-opioid-epidemic/>