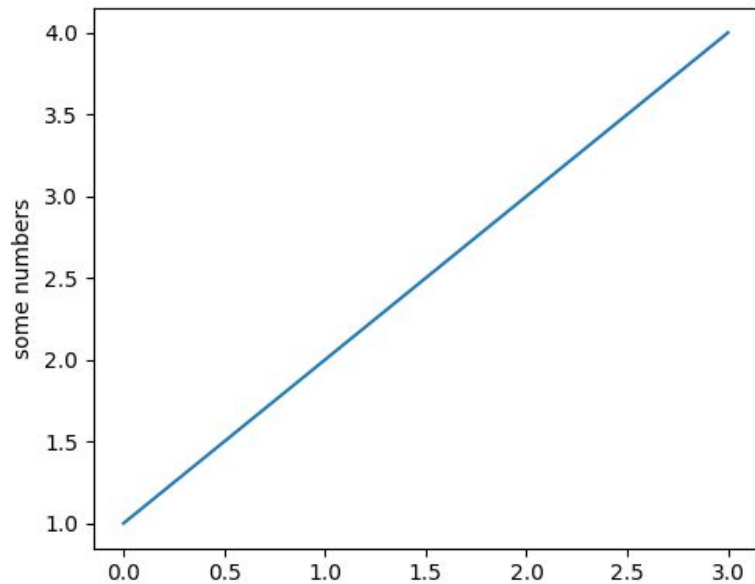# matplotlib, seaborn, plotly introduction

Husein zolkepli

matplotlib introduction

Matplotlib is a 2D and 3D graphics library for generating scientific figures.

- resembles IDL or MATLAB-style procedure interface
- High-quality output in many formats, including PNG, PDF, SVG, EPS, and PGF
- Great control of every element in a figure, including figure size and DPI
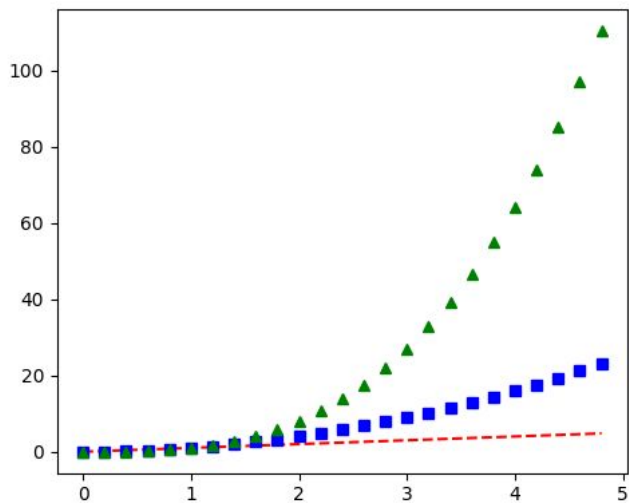- Integrates well with Jupyter notebooks
- open-source
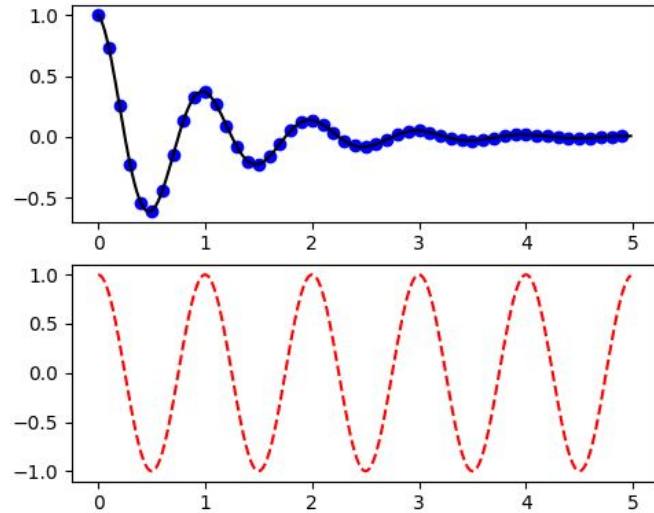
Matplotlib line plot
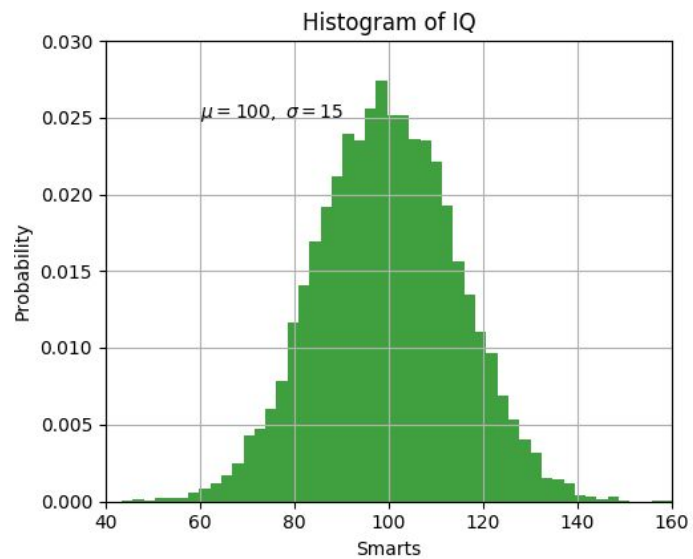
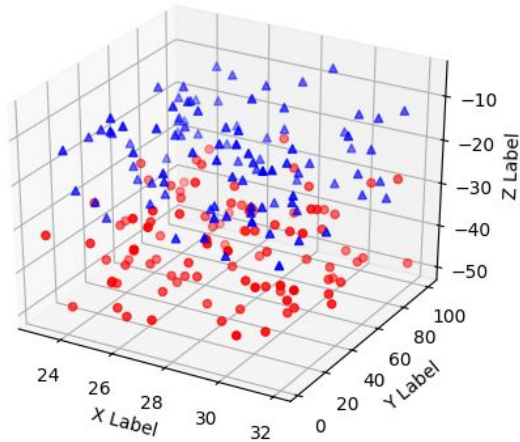# Matplotlib scatter plot
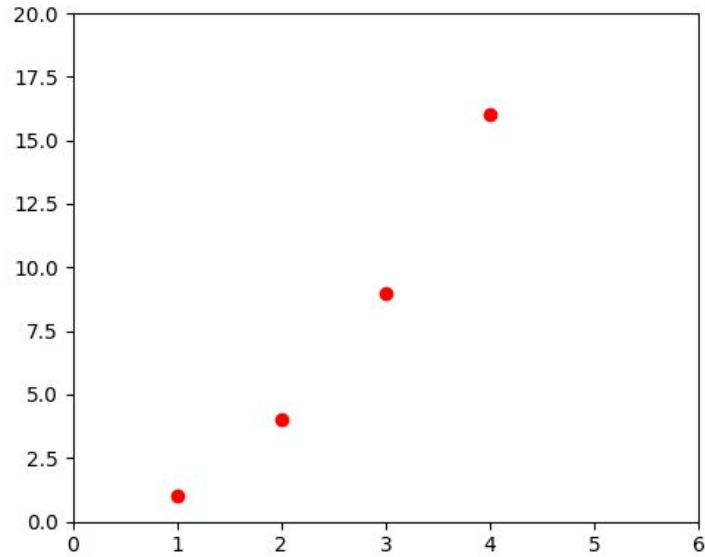
Matplotlib custom scatter plot
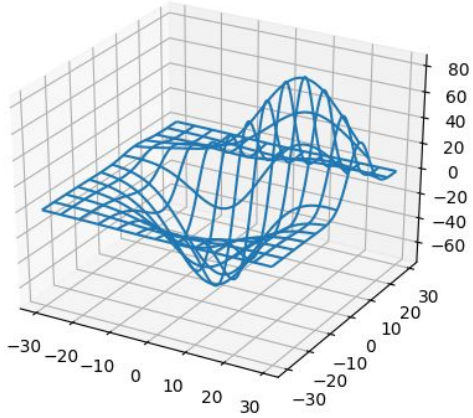
Matplotlib multiple figures and axes
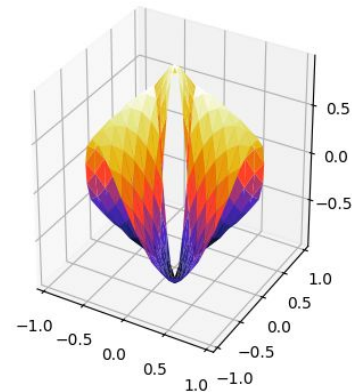
Matplotlib bar plot
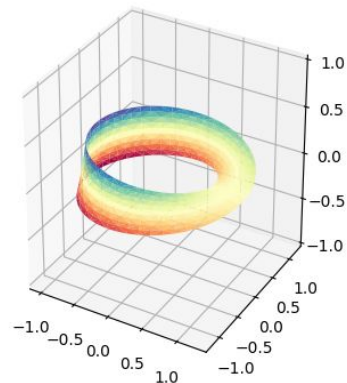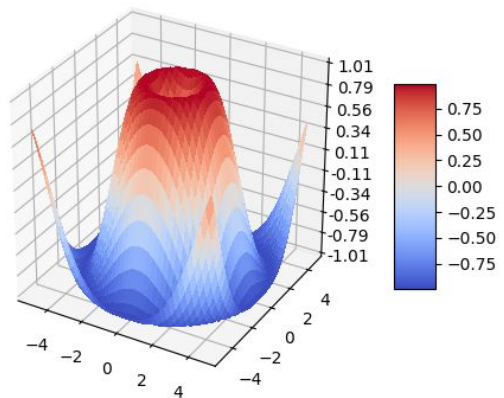
Matplotlib 3d scatter plot
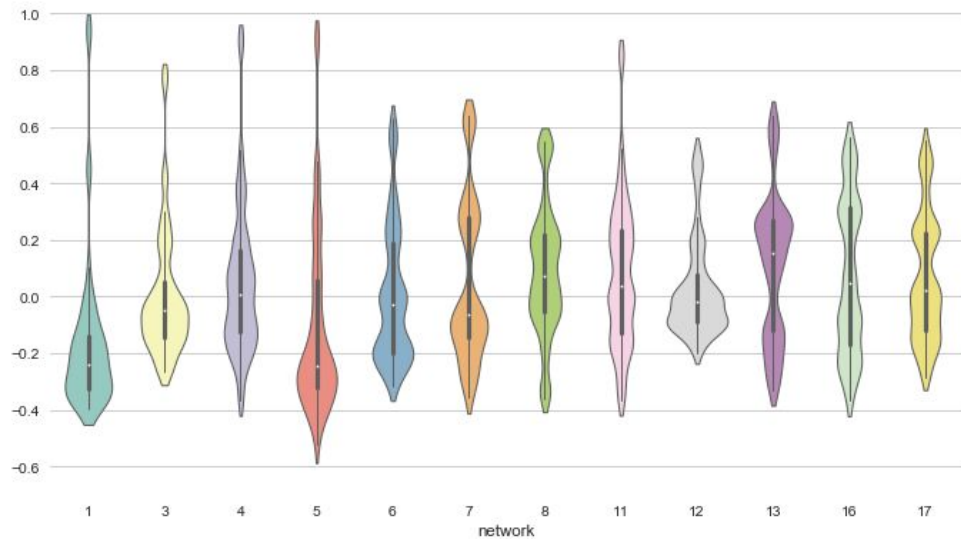
Matplotlib 3d wireframe
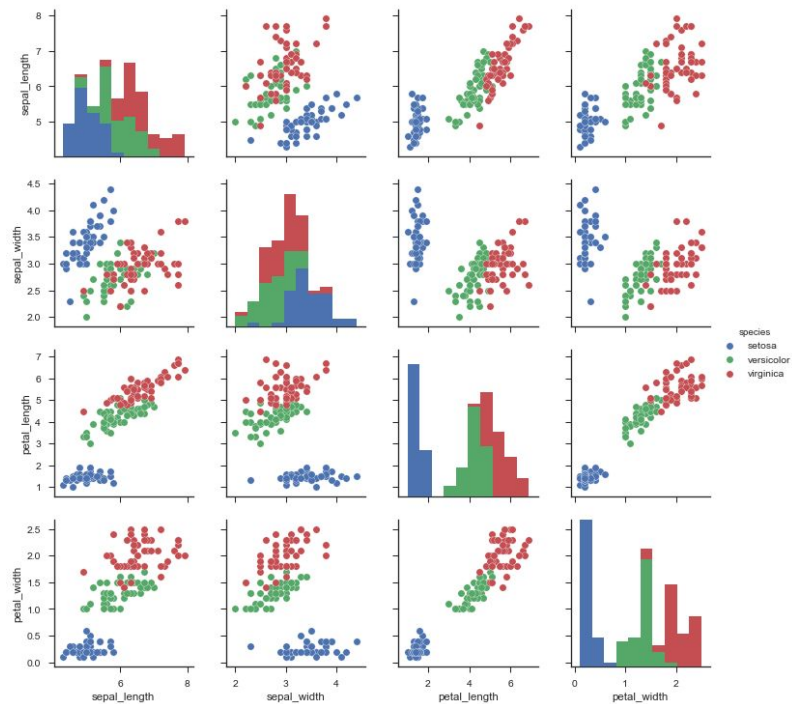
Matplotlib surface plot

seaborn introduction

- Interface library built on top of matplotlib
- Able to generate complex visualization just with a single line in python, but required dense lines for matplotlib
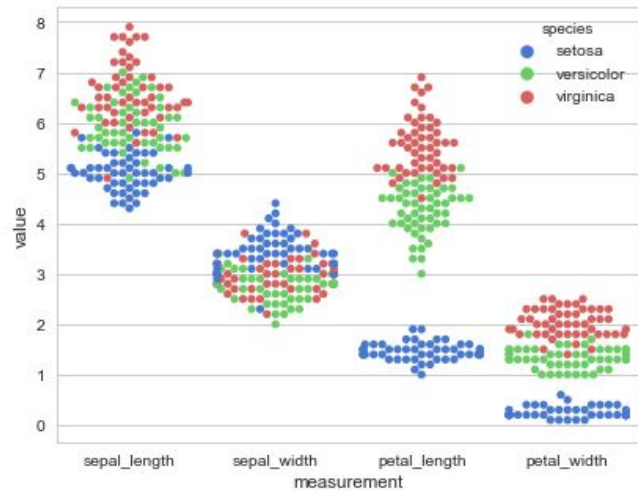- Nice color palettes and fonts
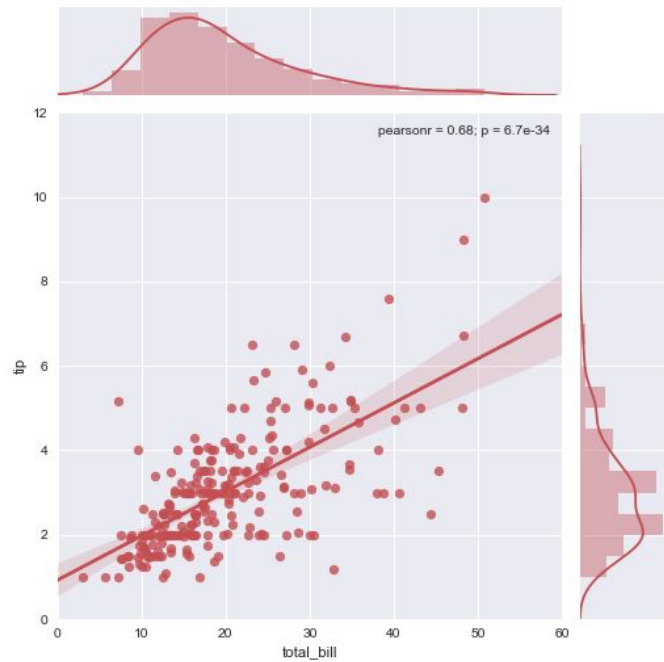- open-source

Seaborn violinplot

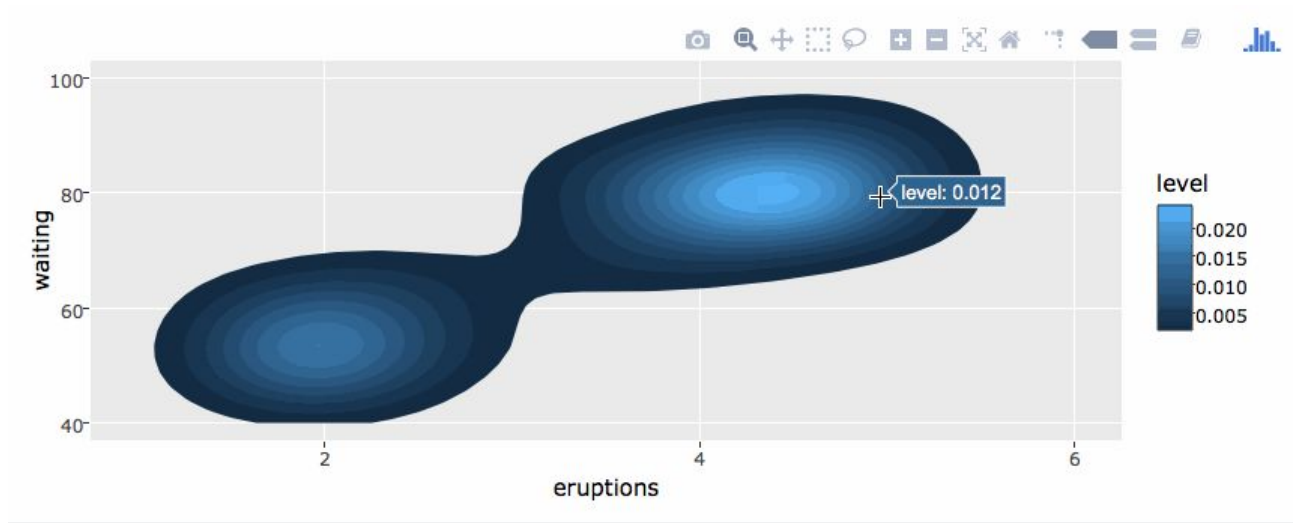# Seaborn pairplot

Seaborn swarmplot
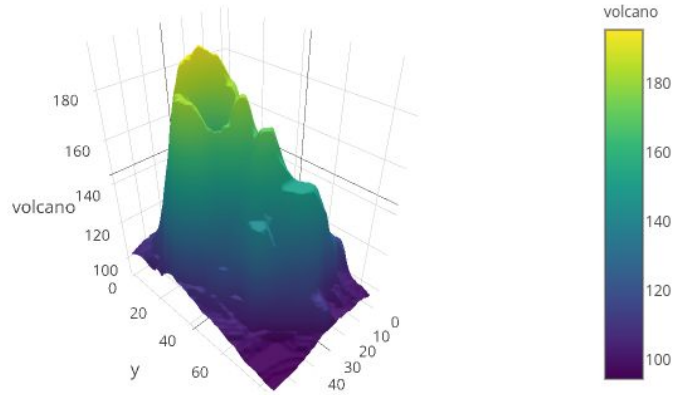
Seaborn jointplot

Plotly introduction

- Web-based graphic library, SVG based
- Interactable with mouse and keyboard (hover, zoom, pan, save)
- Support 2d and 3d visualization
- Dynamic interaction with clients
- Integrated with jupyter notebook
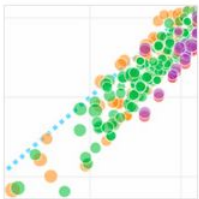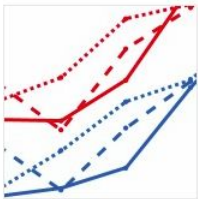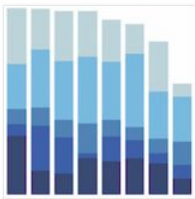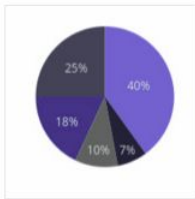- open-source

Plotly Density plot
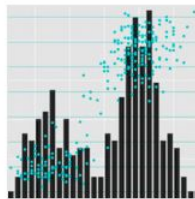
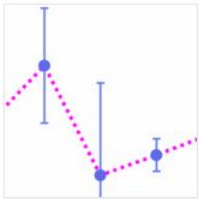# Plotly 3d density plot
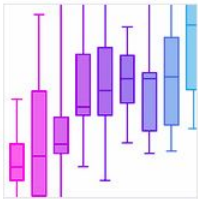
Scatter Plots
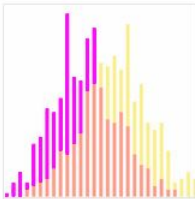

Line Charts

Bar Charts

Pie Charts
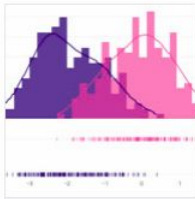

More Basic Charts

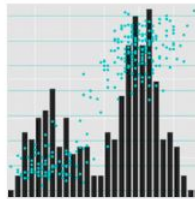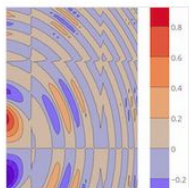## Statistical and Seaborn-style Charts 🔗
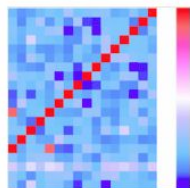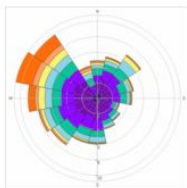

Error Bars

Box Plots
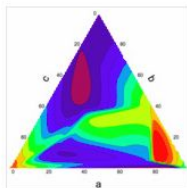

Histograms
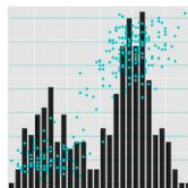

Distplots

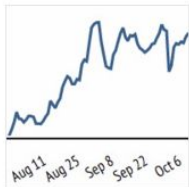

More Statistical Charts

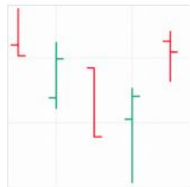Contour Plots

Heatmaps

Wind Rose Charts

Ternary Plots
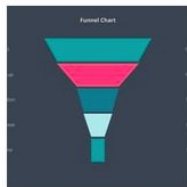

More Scientific Charts

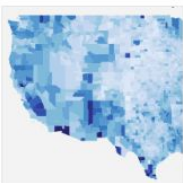## Financial Charts 🔗

Time Series

OHLC Charts

Candlestick Charts

Funnel Charts
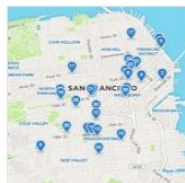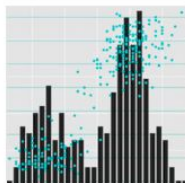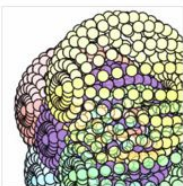
USA County Choropleth Maps

Bubble Maps

Lines on Maps

Scatter Plots on Mapbox
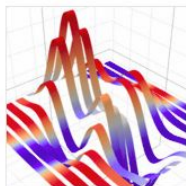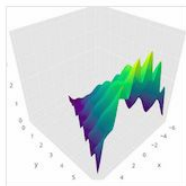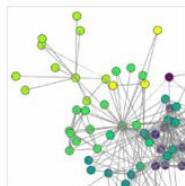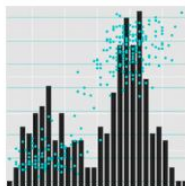

More Maps

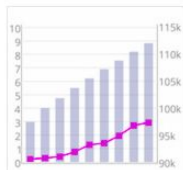## 3D Charts 🔗

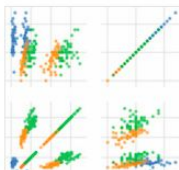3D Scatter Plots

Ribbon Plots
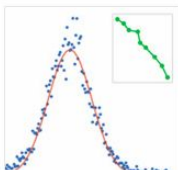

3D Surface Plots

3D Network Graphs

More 3D Charts

Multiple Axes, Subplots, and Insets 🔗

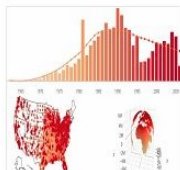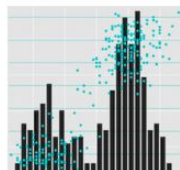**Multiple Axes**

Subplots

Inset Plots

Mixed Subplots

More Subplots

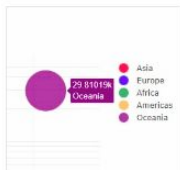## Transforms 🔗

Filter
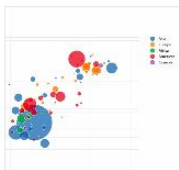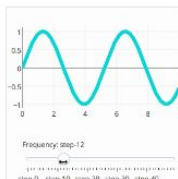

Group By

Aggregations
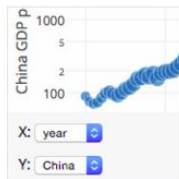

Multiple Transforms
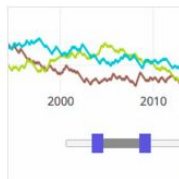
Dash - Controls with Python Callbacks (NEW!)

Custom Buttons

Sliders
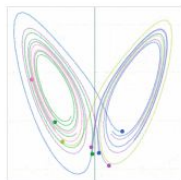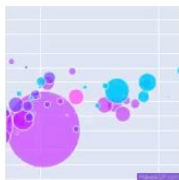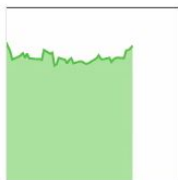

Dropdown Menus

Range Slider and Selector
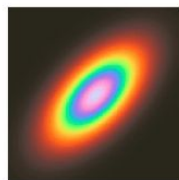
Animations 🔗

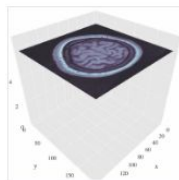Intro to Animations

Adding Sliders to Animations

Filled-Area Animation

Heatmap Animation

Visualizing MRI Volume Slices