



Curtin University

Visualisations

ISYS2001, School of Marketing and Management

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I acknowledge the traditional custodians of the land on which I work and live, and recognise their continuing connection to land, water and community. I pay respect to elders past, present and emerging.

Today

- Describe Visualisation
- Identify the Common Roles
- Use roles to select graph
- List common Python plotting packages
- Develop a visualisation strategy

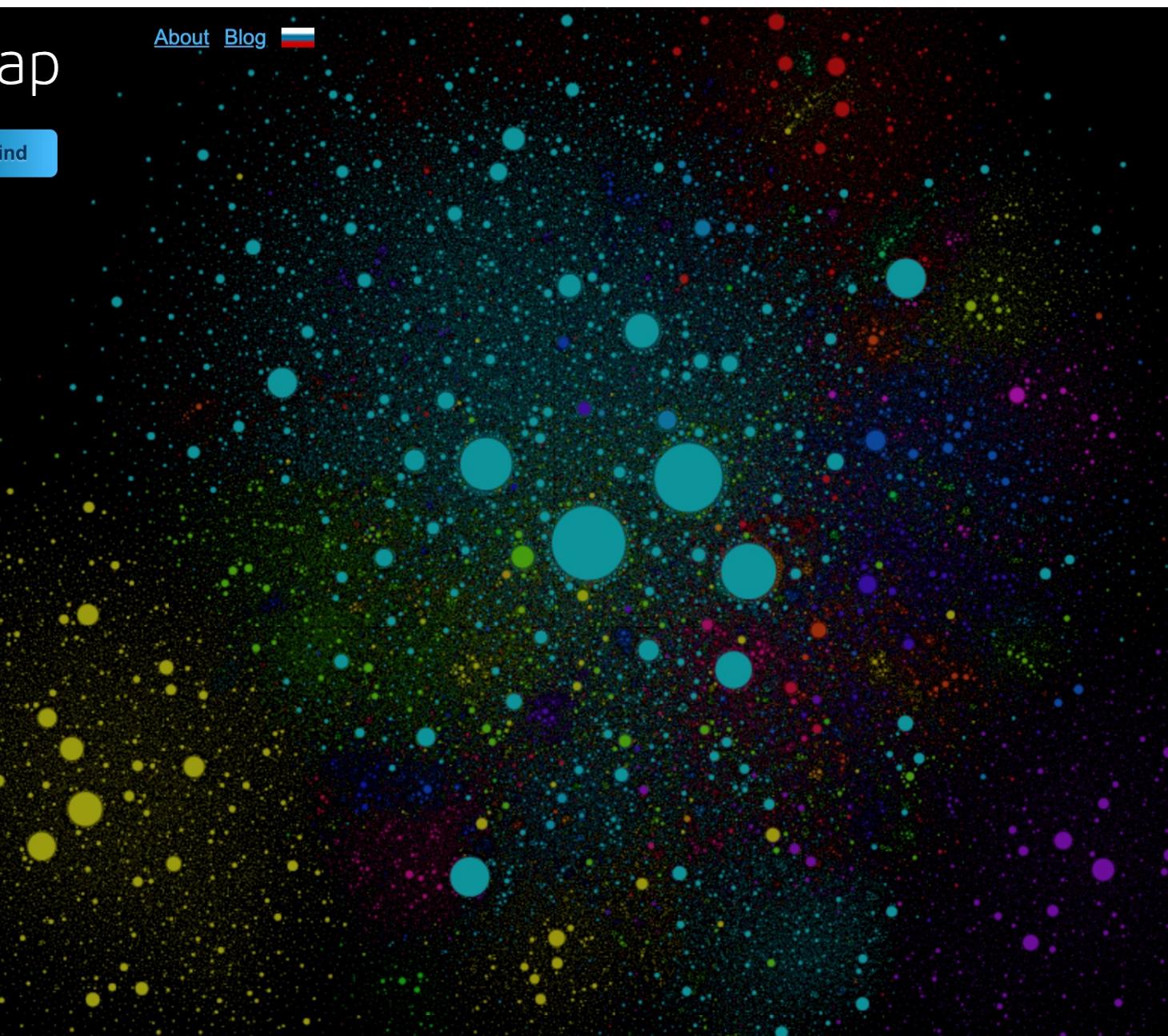
Data visualization is the process of translating large data sets and metrics into charts, graphs and other visuals. The resulting visual representation of data makes it easier to identify and share real-time trends, outliers, and new insights about the information represented in the data. (IBM, 2021)

The Internet map

[About](#) [Blog](#) 

Site address or country

Find



<http://internet-map.net/>

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Common Visualisation Roles

- Showing change over time
- Showing a part-to-whole composition
- Looking at how data is distributed
- Comparing values between groups
- Observing relationships between variables
- Looking at geographical data

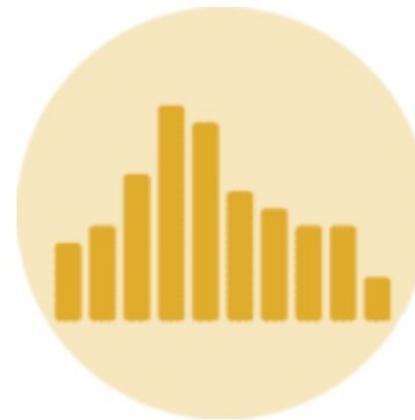
Distribution



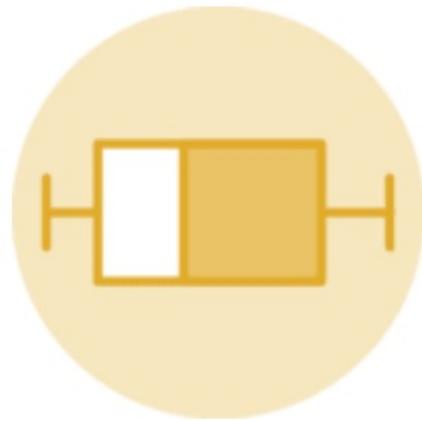
Violin



Density



Histogram



Boxplot



Ridgeline

<https://python-graph-gallery.com/>

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Correlation



Scatterplot



Heatmap



Correlogram



Bubble



Connected Scatter



2D Density

<https://python-graph-gallery.com/>

Ranking



Barplot



Spider / Radar



Wordcloud



Parallel



Lollipop



Circular Barplot

<https://python-graph-gallery.com/>

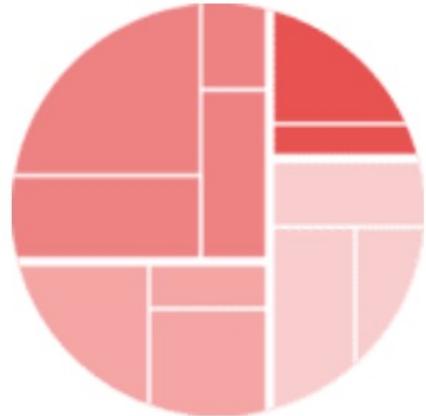
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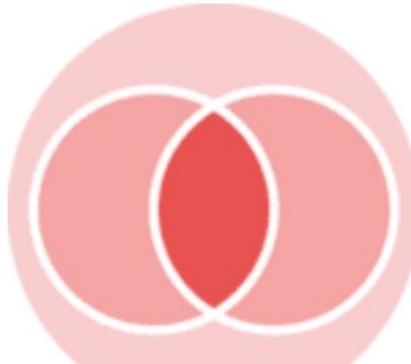


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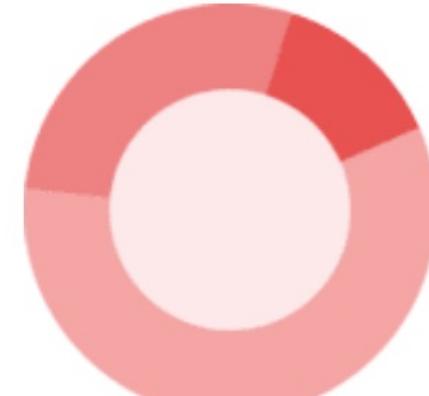
Part of Whole



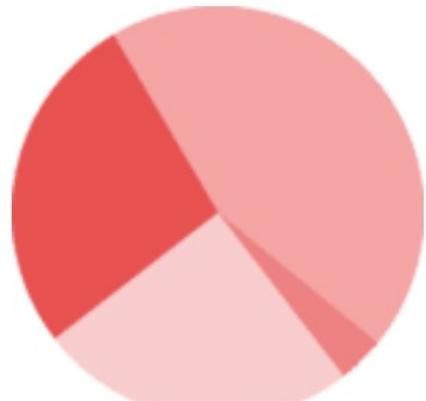
Treemap



Venn Diagram



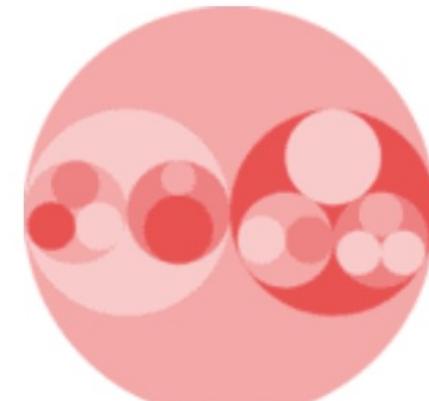
Donut



Pie Chart



Dendrogram



Circular Packing

<https://python-graph-gallery.com/>

Evolution



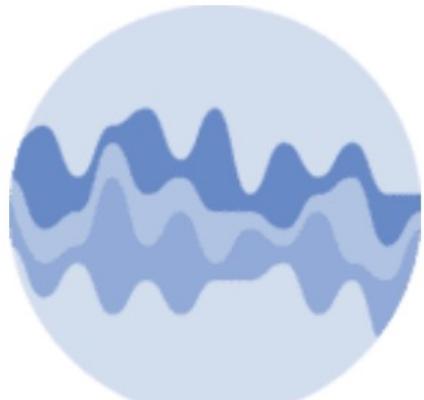
Line chart



Area chart



Stacked Area



Streamgraph



Timeseries

<https://python-graph-gallery.com/>

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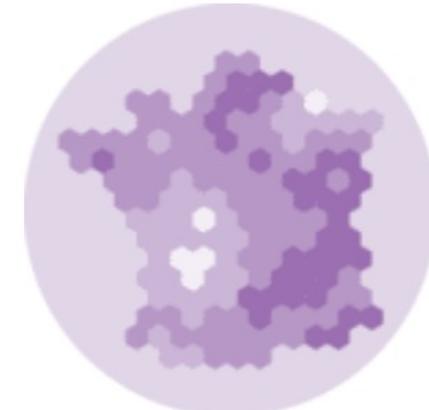
Map



Map



Choropleth



Hexbin



Cartogram



Connection



Bubble

<https://python-graph-gallery.com/>

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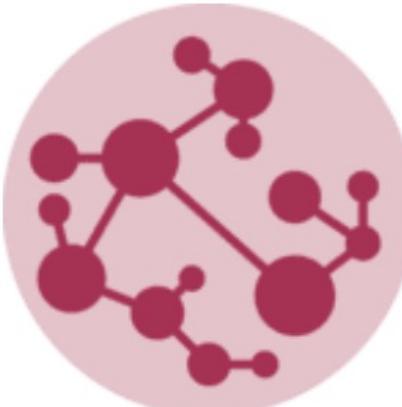


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Flow



Chord Diagram



Network



Sankey



Arc Diagram



Edge Bundling

<https://python-graph-gallery.com/>

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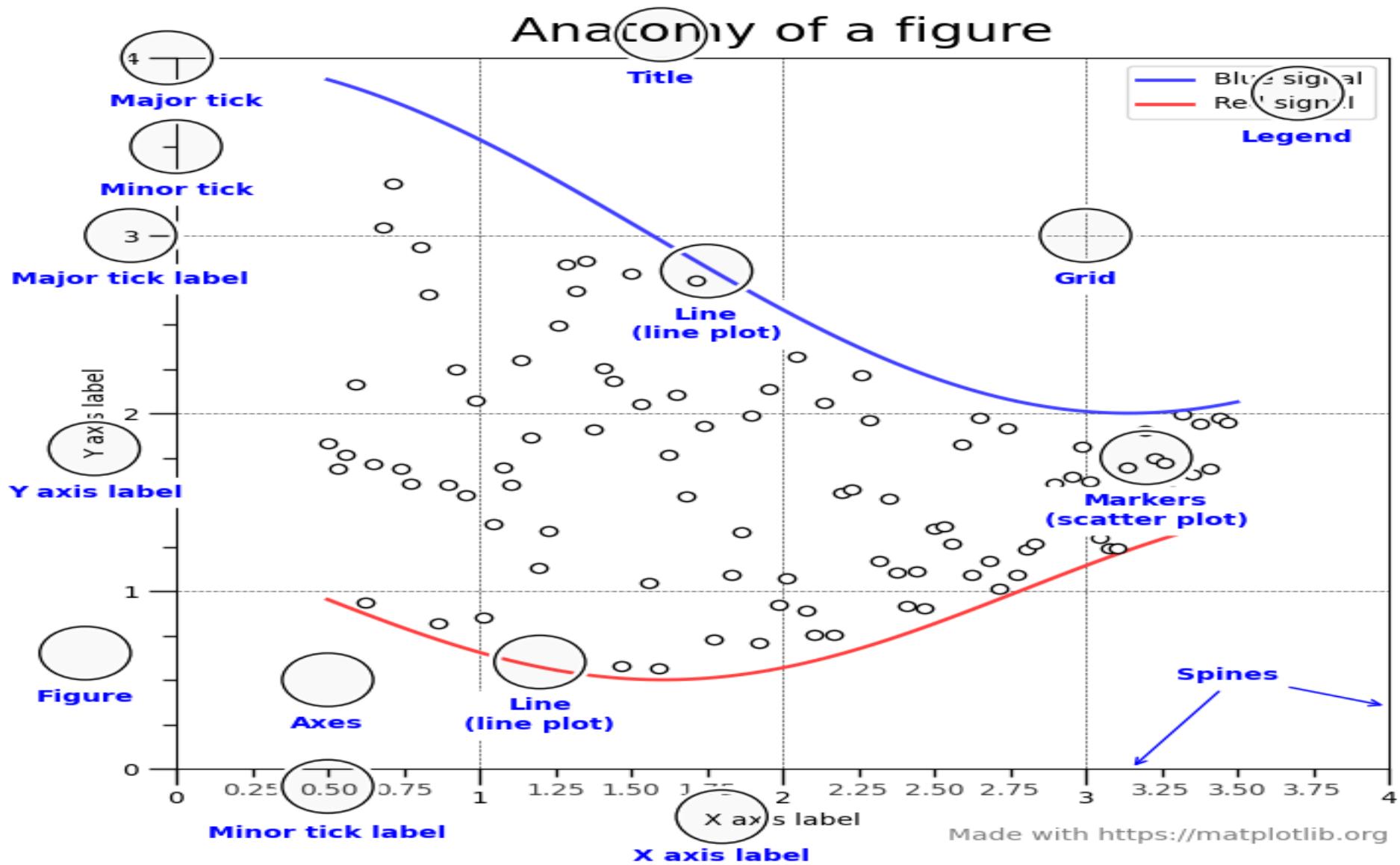
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Python Plotting Libraries

- Matplotlib (some interactivity)
- Pandas (basic)
- **Seaborn**
- Ggplot (Copy of famous ‘R’ package)
- Plotly (interactive)
- Bokeh (Interactive)



<https://matplotlib.org/3.5.0/gallery/showcase/anatomy.html>

Python Graph Gallery

■ Plot + Code



```
# libraries
import matplotlib.pyplot as plt
import numpy as np

# create data
values=np.cumsum(np.random.randn(1000,1))

# use the plot function
plt.plot(values)
```

<https://python-graph-gallery.com/line-chart/>

Python Dashboards

- Dash
- Anvil
- Atoti
- Streamlit
- Panel
- Explainer Dashboard

Dashboards



How to Guide

- Find the data you want
- What story do you want to tell
- Pick from the Python Graph Gallery
- Revisit Python lessons
 - How to get data (upload, wget, etc)
 - Google Packages
- Implement in notebook (or script)

Can you?

- Describe Visualisation
- Identify the Common Roles
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