20-11-2024   # Training Day – 46

November 20, Wednesday
- ***Topic:* Customizing Visualizations**
  - Added annotations, adjusted figure sizes, and used advanced legends.
  - Example: Annotated key points in a scatter plot.

A scatter plot uses dots to represent values for two different numeric variables. In Python, we have a library matplotlib in which there is a function called scatter that helps us to create Scatter Plots. Here, we will use matplotlib.pyplot.scatter() method to plot.

Syntax : *matplotlib.pyplot.scatter(x,y)*
Parameters:
- *x and y are float values and are the necessary parameters to create a scatter plot*
- *marker : MarkerStyle, default: rcParams["scatter.marker"] (default: 'o')*
- *cmap : cmapstr or Colormap, default: rcParams["image.cmap"] (default: 'viridis')*
- *linewidths : float or array-like, default: rcParams["lines.linewidth"] (default: 1.5)*
- *alpha : float, default: None → represents the transparency*

Annotation of matplotlib means that we want to place a piece of text next to the scatter. There can be two cases depending on the number of the points we have to annotate :

1. Single point annotation
2. All points annotation

Single Point annotation

In single-point annotation we can use matplotlib.pyplot.text and mention the x coordinate of the scatter point and y coordinate + some factor so that text can be distinctly visible from the plot, and then we have to mention the text.

Syntax: *matplotlib.pyplot.text(x, y, s)*
Parameters:
- *x, y : scalars — The position to place the text. By default, this is in data coordinates. The coordinate system can be changed using the transform parameter.*
- *s : str — The text.*
- *fontsize — It is an optional parameter used to set the size of the font to be displayed.*

Approach:

1. Import libraries.
2. Create data.
3. Make scatter plot.
4. Apply plt.text() method.