

# Data Visualization with Matplotlib Course



AfterWork

# AGENDA

5 MIN Learning Outcomes

10 MIN What, Why and When?

15 MIN Reading + Quiz

60 MIN Practice Session

5 MIN Next Steps

# Learning Outcomes

- **Recall** and describe the fundamental types of plots, such as line plots, scatter plots, bar charts, and histograms, that can be created using Matplotlib.
- **Apply** Matplotlib concepts to explore and analyze datasets visually, effectively using various types of plots to identify data patterns, trends, and outliers
- **Analyze** complex data by creating multi-panel figures and subplots in Matplotlib, facilitating comparisons and presentations of data from different perspectives.

# What is Matplotlib?



**Matplotlib** is a widely-used Python library for creating static, animated, and interactive visualizations. It plays a vital role in data visualization by offering:

- A flexible and extensive set of plotting functions.
- Compatibility with various data formats and libraries.
- Customization options for creating publication-quality visuals.
- Integration with data analysis workflows.

# Why use Matplotlib?

- Matplotlib has been around for a long time (2003) and has a stable and well-tested codebase. It is a **mature library** that has been used in countless projects, ensuring reliability.
- It's widely adopted in the scientific and data analysis communities. This means there is a **wealth of documentation**, tutorials, and community support available, making it easier to learn and troubleshoot.
- It **seamlessly integrates with other data science and numerical computing libraries** in Python, such as NumPy, Pandas, and SciPy.

# When to use Matplotlib?

- **Embed plots in scientific or data analysis workflows:** When we need to integrate data visualization seamlessly into your scientific or data analysis workflows, especially when working with libraries like NumPy and Pandas.
- **Create static dashboards:** When building static dashboards or visualizations that don't require real-time interactivity.
- **Quickly visualize data:** When we want to quickly visualize data for exploratory purposes within Jupyter notebooks or Python scripts.

## Reading and Quiz (15 Min)

**Resources**  
AfterWork Platform

Data Visualization with Matplotlib



# Practice Session

## Resources

AfterWork Platform

Data Visualization with Matplotlib





## Next Steps

Complete the project and  
get a certification from **AfterWork**.