- What is Visualization in machine learning

→ Visualization in machine learning involves using graphical representations and charts to explore, understand, and communicate patterns, relationships, and insights within data. It plays a key role in various stages of the machine learning process, from data exploration and preprocessing to model evaluation and interpretation. Visualization helps make complex information more accessible and aids in gaining valuable insights from the data.

- Data visualization technique in machine learning

1. Line plot : A line plot is a type of data visualization that uses points connected by straight lines to represent the values of a variable over a continuous domain, often time. It is particularly useful for showing trends, patterns, or relationships in data, with the line connecting the points providing a visual representation of the data's continuity and changes.

2. Bar plot : A bar plot is a data visualization that uses rectangular bars to represent the values of different categories or groups. The length of each bar corresponds to the magnitude of the data it represents. Bar plots are effective for comparing the values of discrete categories, making it easy to identify trends, variations, or differences between groups. They are commonly used to display categorical data, such as comparing sales figures for different products or showing the distribution of a variable across various groups.

3. Histograms : A histogram is a data visualization that displays the distribution of a continuous dataset. It consists of bars that represent the frequency or

count of data points within predefined intervals, known as bins, along the horizontal axis. The height of each bar corresponds to the number of data points falling within that interval. Histograms are particularly useful for visualizing the shape and central tendency of a dataset, helping to identify patterns, outliers, and the overall distribution of values.

4. Pie char : A pie chart is a circular statistical graphic that is divided into slices to illustrate numerical proportions. Each slice represents a proportionate part of the whole, and the size of each slice corresponds to the percentage or fraction it represents. Pie charts are commonly used to show the distribution of a set of categories as parts of a whole, making it easy to visualize the relative contributions of different components. They are effective for conveying simple proportional relationships but may become less suitable when dealing with a large number of categories or when precise comparisons are needed.

5. Network diagrams : A network diagram is a visual representation of interconnected nodes or entities and the relationships or connections between them. Nodes are often used to represent individual elements, such as computers, devices, people, or processes, while edges or links depict the relationships between these elements. Network diagrams are widely used in various fields, including computer science, telecommunications, project management, and social network analysis.