Univariate Analysis

Types of Data and Analysis Techniques

Types of Data

In data analytics, data variables can be classified into two different types based on their nature and characteristics:

Categorical Data
Numerical Data

Categorical Data

Categorical variables represent data that can be divided into categories or groups.
Examples: **Gender, Ethnicity, type of car.**

Numerical Data

Numerical variables represent data that can be measured on a numerical scale. They can be further classified into:

Discrete Data
Continuous Data

Discrete Data: Discrete variables are numeric variables that can only take on whole numbers or integer values.
Examples: **Number of cars in a parking lot, the number of students in a class, number of books on a shelf.**

Continuous Data: Continuous variables are numeric variables that can take on any value within a certain range.
Examples: **Height, weight, time, temperature.**

Understanding the different types of data variables is important because they require different types of analysis and visualization techniques.

Analysis Techniques

In data analytics, there are different types of analysis that can be used to explore and understand data. The types of analysis that will be discussed in this course are:

Univariate Analysis
Bivariate Analysis

Univariate Analysis

Univariate analysis involves analyzing a single variable, without considering any relationships or dependencies with other variables. Univariate analysis techniques are used to summarize and describe the distribution, central tendency, and variability of a single variable.
Examples of univariate analysis techniques include **frequency distributions, histograms, density plot, box plots, and summary statistics such as mean, median, and mode.**

Bivariate Analysis

Bivariate analysis techniques are used to analyze the relationship between two variables. This type of analysis can help identify any correlation or causality between two variables.
Examples of bivariate analysis techniques include **scatterplots, correlation analysis, and regression analysis**.