

Descriptive Statistics

Mean

The mean \bar{x} is the most commonly used average for a set of numbers.

$$\text{Mean} = \frac{\sum x_i}{n}$$

where x_i are the data points and n is the number of data points.

Median

⊢ The median is the middle value when the data is ordered. If there is an even number of values, it is the mean of the two middle values.

Mode

The mode is the value that appears most frequently in the dataset.

Range

The range is the difference between the maximum and minimum values.

$$\text{Range} = \max(x) - \min(x)$$

Percentile

The n th percentile is the value that is higher than $n\%$ of the data. The median is the 50th percentile.

Inter-Quartile Range

The inter-quartile range (IQR) is the difference between the 75th percentile and the 25th percentile.

Variance

Variance measures the spread of the data from the mean.

$$\text{Variance} = \frac{\sum (x_i - \bar{x})^2}{n}$$

Standard Deviation

Standard deviation is the square root of the variance.

$$\text{Standard Deviation} = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n}}$$

