Difference between Standard deviation & Variance

Standard deviation and variance are two different fundamentals that are used to describe a spread of data in a dataset. They both have distinct characteristics and purposes. Standard Deviation is a statistical measure that shows the number of variations in a set of data points. It measures the average deviation or distance of data points from the mean of a dataset. Variance is a statistical measure that shows the average of squared differences between each data point and the mean. It provides information about the spread of data points around the mean. Standard deviation is the square root of variance, which means it has the same unit of measurement as the original data, while variance is in squared units. Standard deviation provides a more creative measure of a spread compared to variance. Variance, due to its squared nature, amplifies the influence of extreme values in the dataset. Standard deviation is often preferred when communicating results to non-technical audiences or when the focus is on understanding the practical implications of data variability. Variance is frequently used in mathematical and statistical calculations, such as in the analysis of probability distributions. standard deviation and variance are complementary statistical measures used to assess data variability. While they are derived from the same basic concept of calculating deviations from the mean, their units of measurement and ease of interpretation differ. The choice between using standard deviation or variance depends on the specific needs of the analysis and the audience for whom the results are intended. Variance is often used in mathematical calculations and statistical analysis. It's useful for certain mathematical operations. Standard deviation is more commonly used in practice for interpretation and communication. It tells you how much, on average, each data point deviates from the mean.