Glossary

1. Coefficient

A number or symbol multiplied with a variable or an unknown quantity in an algebraic term, as 4 in the term 4x, or x in the term x (a + b).

2. Continuous Random Variable

A continuous random variable maps outcomes to values of an uncountable set (e.g., the real numbers). For a continuous random variable, the probability of any specific value is zero, whereas the probability of some infinite set of values (such as an interval of non-zero length) may be positive.

3. Cumulant

The cumulants κn of a probability distribution are a set of quantities that provide an alternative to the moments of the distribution. The moments determine the cumulants in the sense that any two probability distributions whose moments are identical will have identical cumulants as well, and similarly the cumulants determine the moments.

4. Expected Value

The expected value (or population mean) of a random variable indicates its average or central value. It is a useful summary value (a number) of the variable's distribution. Stating the expected value gives a general impression of the behaviour of some random variable without giving full details of its probability distribution (if it is discrete) or its probability density function (if it is continuous). Two random variables with the same expected value can have very different distributions. The expected value of a random variable X is symbolized by E(X) or μ .

5. Exponential distribution

In probability theory and statistics, the exponential distribution (a.k.a. negative exponential distribution) is a family of continuous probability distributions. It describes the time between events in a Poisson process, i.e. a process in which events occur continuously and independently at a constant average rate. It is the continuous analogue of the geometric distribution.

6. Factorial

The factorial of a non-negative integer n, denoted by n! is the product of all positive integers less than or equal to n. For example,

7. Mean

Mean usually refers to the expectation of a variate, or to the arithmetic mean of a sample used as an estimate of the expectation.

8. Mean Of The Probability Distribution

For a probability distribution, the mean is equal to the sum or integral over every possible value weighted by the probability of that value.

9. Moment Generating Function

Moment-generating function of a random variable is an alternative specification of its probability distribution. Thus, it provides the basis of an alternative route to analytical results compared with working directly with probability density functions or cumulative distribution functions.

10. Parameter

A statistical parameter is a parameter that indexes a family of probability distributions. It can be regarded as a numerical characteristic of a population or a model.

11. Probability Density Function

Probability density function (pdf), or density of a continuous random variable, is a function that describes the relative likelihood for this random variable to take on a given value. The probability for the random variable to fall within a particular region is given by the integral of this variable's density over the region. The probability density function is nonnegative everywhere, and its integral over the entire space is equal to one.

12. Probability Distribution

Probability distribution is a function that gives the probability of all elements in a given space.

13. Random Variable

In probability and statistics, a random variable or stochastic variable is a variable whose value is subject to variations due to chance (i.e. randomness, in a mathematical sense). As opposed to other mathematical variables, a random variable conceptually does not have a single, fixed value rather; it can take on a set of possible different values, each with an associated probability

14. Skewed

Skewed means not symmetrical about the mean or placed or turned to one side; asymmetrical or distorted or biased in meaning or effect.

15. Variance

The variance is a measure of how far a set of numbers is spread out. It is one of several descriptors of a probability distribution, describing how far the numbers lie from the mean (expected value). In particular, the variance is one of the moments of a distribution.