# **Glossary**

## 1. Binomial Distribution

The binomial distribution is the discrete probability distribution of the number of successes in a sequence of n independent yes/no experiments, each of which yields success with probability p.

## 2. Random Variable

A random variable is a variable whose value results from the measurement of a quantity that is subject to variations due to chance.

## 3. Probability Mass Function

A probability mass function (pmf) is a function that gives the probability that a discrete random variable is exactly equal to some value.

## 4. Disjoint events

Disjoint events are events that have no outcomes in common.

## 5. 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.

## 6. Moment Generating Function (mgf)

The 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.

## 7. Cumulants

The Cumulants of a probability distribution are a set of quantities that provide an alternative to the moments of the distribution.

## 8. Fractional

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

# 9. Summation

Summation is the operation of adding a sequence of numbers; the result is their sum or total and is denoted as  $\Sigma$ .

## 10. Meu

The lower-case letter meu ( $\mu$ ) is used as a special symbol in many academic fields. The upper case mu is not used, since it is normally identical to Latin M. Meu represents the population mean or expected value in probability and statistics.

## 11. Bernoulli Distribution

The Bernoulli distribution, named after Swiss scientist Jacob Bernoulli, is a discrete probability distribution, which takes value 1 with success probability and value 0 with failure probability q=1-p.

#### 12. Mode

The mode is the value that occurs most frequently in a data set or a probability distribution.

# 13. Kurtosis

Kurtosis is derived from Greek word kurtos which means bulging. Kurtosis is any measure of the "peakedness" of the probability distribution of a real-valued random variable.

#### 14. Skewness

Skewness is a measure of the asymmetry of the probability distribution of a real-valued random variable. The skewness value can be positive or negative, or even undefined.

#### 15. Coefficient

A coefficient is a number in front of a variable. It is a constant by which a variable is multiplied.