

Discrete and Normal Distributions

Discrete distribution is a statistical distribution that shows the probabilities of discrete (countable) outcomes such as 1, 2, 3... Overall, the concepts of discrete and continuous probability distributions and the random variables they describe are the underpinning of probability theory and statistical analysis.

A discrete distribution is one in which the data can only take on certain values, for example integers. A continuous distribution is one in

which data can take in any value within a specific range (which may be infinite).

Types of discrete Probability Distributions:

1- Bernoulli Distribution.

This distribution is generated when we perform an experiment once and it has two possible outcomes - success and failure.

2- Binomial Distribution

3- Hypergeometric Distribution

4- Negative Binomial Distribution

Geometric Distribution

Poisson Distribution

7. Multinomial Distribution

For example, every probability p_i is a number between 0 and 1, and the sum of all the probabilities is equal to 1. Discrete random variables include: The number of eggs that a hen lays in a given day (it can't be 2.3). We could be infinitely accurate and use an infinite number of decimal places, therefore making age continuous. However, in everyday appliances, all values under 8 years and above 5 years are called 5 years old. So we use age usually as a discrete variable.

Types of Continuous Probability Distribution:

Beta distribution

- ② Cauchy distribution
- ③ Exponential distribution
- ④ Gamma Distribution
- ⑤ Logistic Distribution
- ⑥ Weibull distribution.

A continuous random variable is a random variable where the data can take infinitely many values. For example, a random variable measuring the time taken for something to be done is continuous since there are an infinite number of possible times that can be taken.