

Probability Distributions

classical probability

Defination - If a random experiment result 'n' exhaustive, mutually exclusive and equally likely outcomes out of which 'm' are favorable to the occurrence of an event A, Then probability of occurrence of A denoted by $P(A)$, is given by.

$$P(A) = \frac{\text{number of favourable outcomes}}{\text{Total number of exhaustive outcomes}}$$

$$P(A) = \frac{m}{n}$$

Remarks

1. As $0 \leq m \leq n$ $0 \leq \frac{m}{n} \leq 1$

i.e. $0 \leq P(A) \leq 1$

Random variable

Defination - Let Ω be a sample space for

A random experiment A function $X: \Omega \rightarrow \mathbb{R}$ which assigns a real number $X(\omega)$ to each element $\omega \in \Omega$ is called a random variable