Stats

Contents

Probability Distributions

Binomial

The binomial distribution is used to model a situation with a fixed number of independent trials each with a constant probability of success.

You can model X as a binomial distribution if:

- There a fixed number of trials, n
- Each trial must succeed or fail
- There is a fixed probability of success, p
- Each trial is independent

$$\text{If } X \sim \mathrm{B}(n,p), \text{ then } \boxed{P(X=x)=\binom{n}{x}p^x(1-p)^{n-x}} \ (0 \leq x \leq n)$$

Normal

The normal distribution $X \sim \mathrm{N}(\mu, \sigma^2)$ is symmetrical, meaning the mean and median are equal.