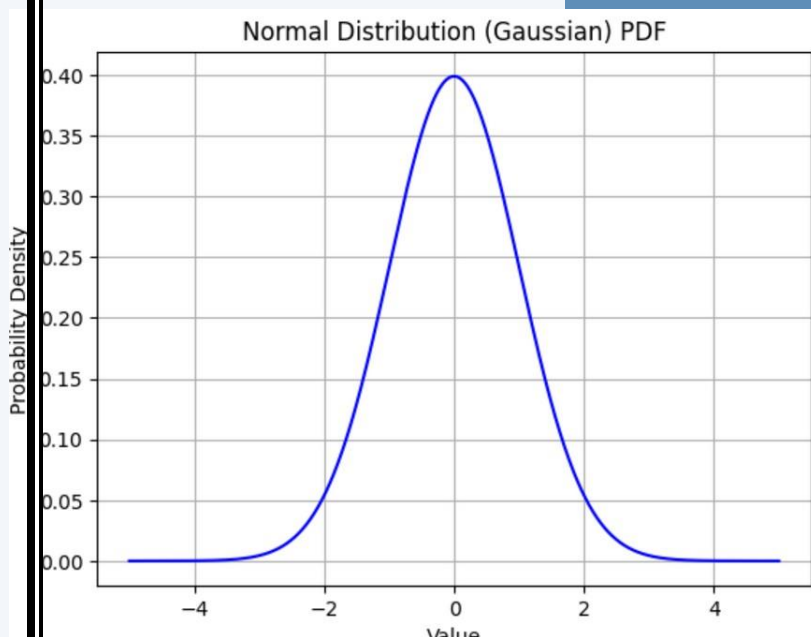# TOP 10 DATA DISTRIBUTION USED IN MACHINE LEARNING

01

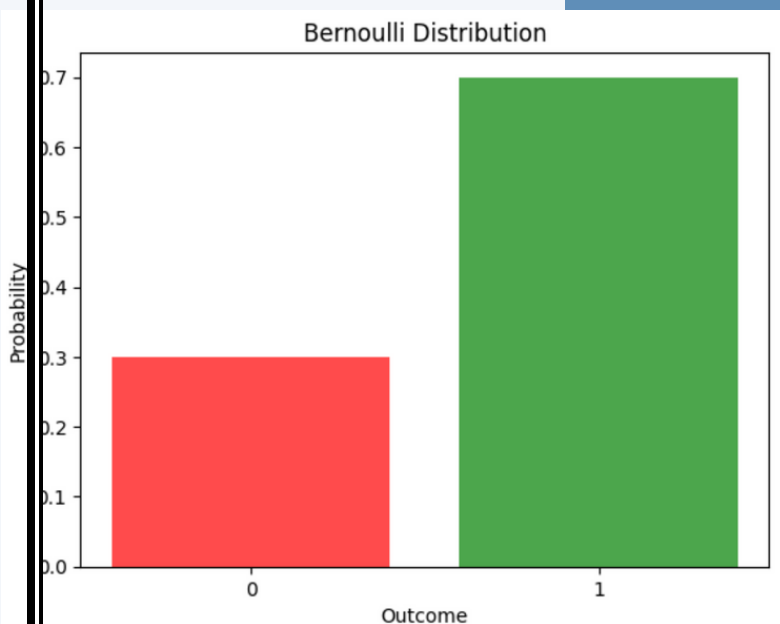# Normal Distribution (Gaussian Distribution)

A symmetric bell-shaped distribution widely used to model continuous data, making it a fundamental assumption in many statistical and machine learning models.

Normal Distribution (Gaussian) PDF

02

Bernoulli Distribution:

A discrete distribution with two possible outcomes (usually 0 and 1), used to model binary events or trials with a fixed probability of success.

Bernoulli Distribution

03

Binomial Distribution

A discrete distribution that describes the number of successes in a fixed number of independent Bernoulli trials, often used in scenarios with binary outcomes.

Binomial Distribution
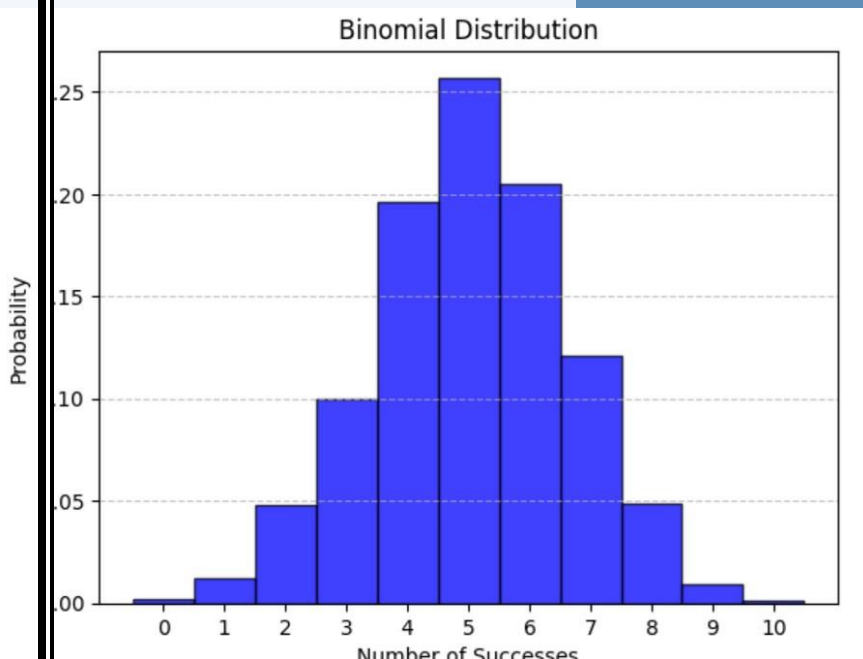
04

Poisson Distribution:

The Poisson distribution models the number of events occurring in a fixed interval of time or space. It's often used for count data, such as the number of phone calls in a call center during a fixed time period.

Poisson Distribution (λ = 3)
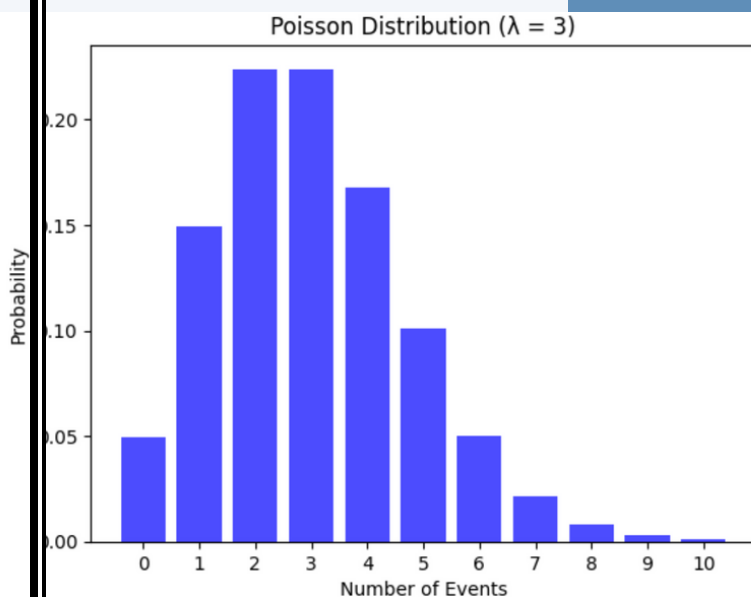
05

Exponential Distribution

The exponential distribution models the time between consecutive events in a Poisson process. It is commonly used in reliability analysis and to model waiting times.

Exponential Distribution
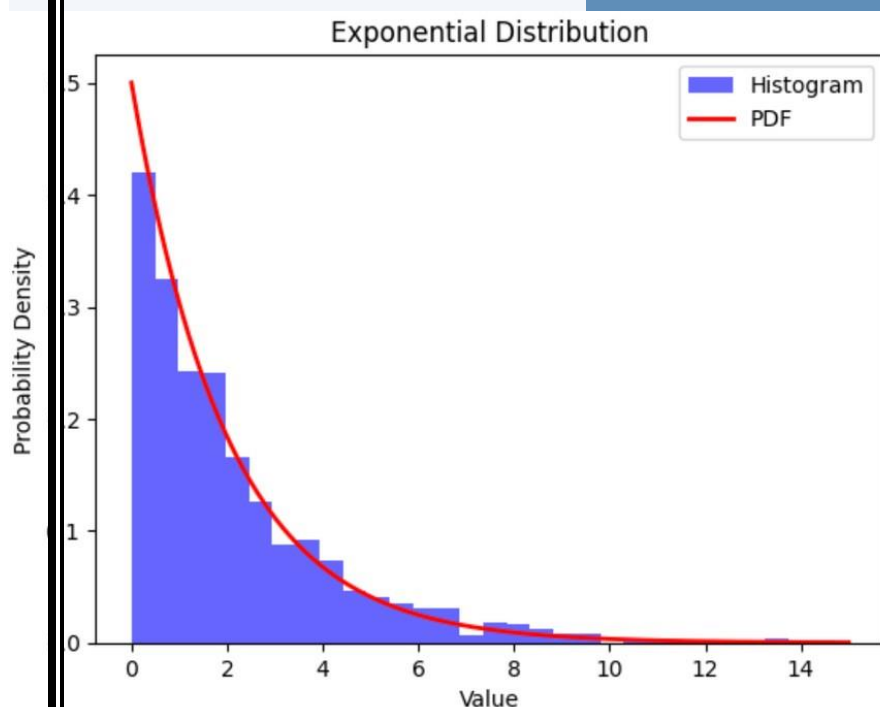
06

Uniform Distribution

The uniform distribution assigns equal probability to all values within a specified range. It's often used for generating random numbers with equal likelihood across the range.

Uniform Distribution
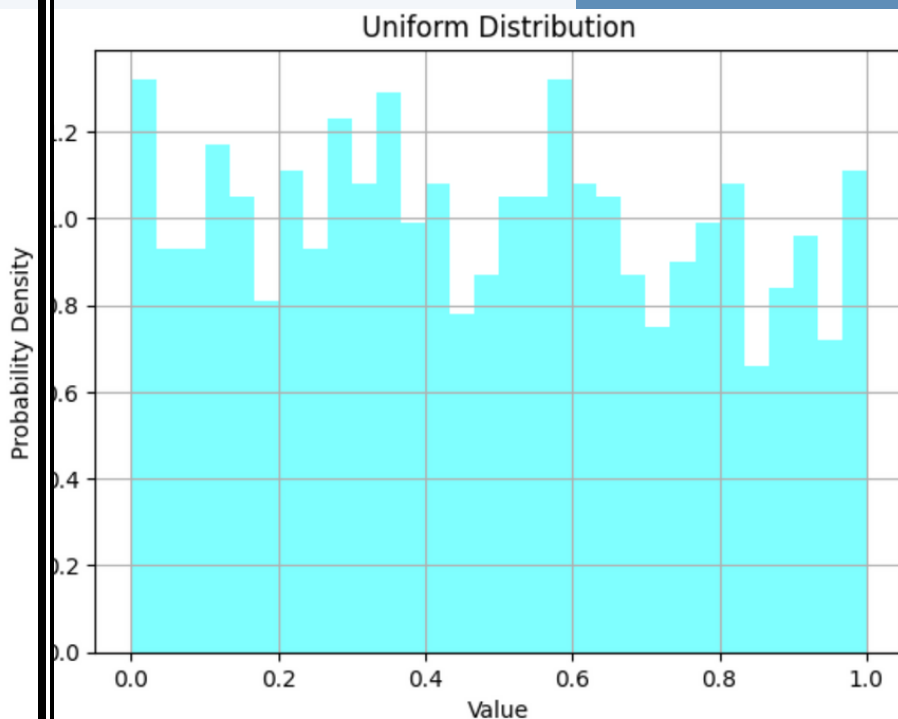
07

Gamma Distribution:

The gamma distribution is a versatile continuous probability distribution used for modeling positive-valued data. It generalizes other distributions like the exponential and chi-squared distributions.

Gamma Distribution
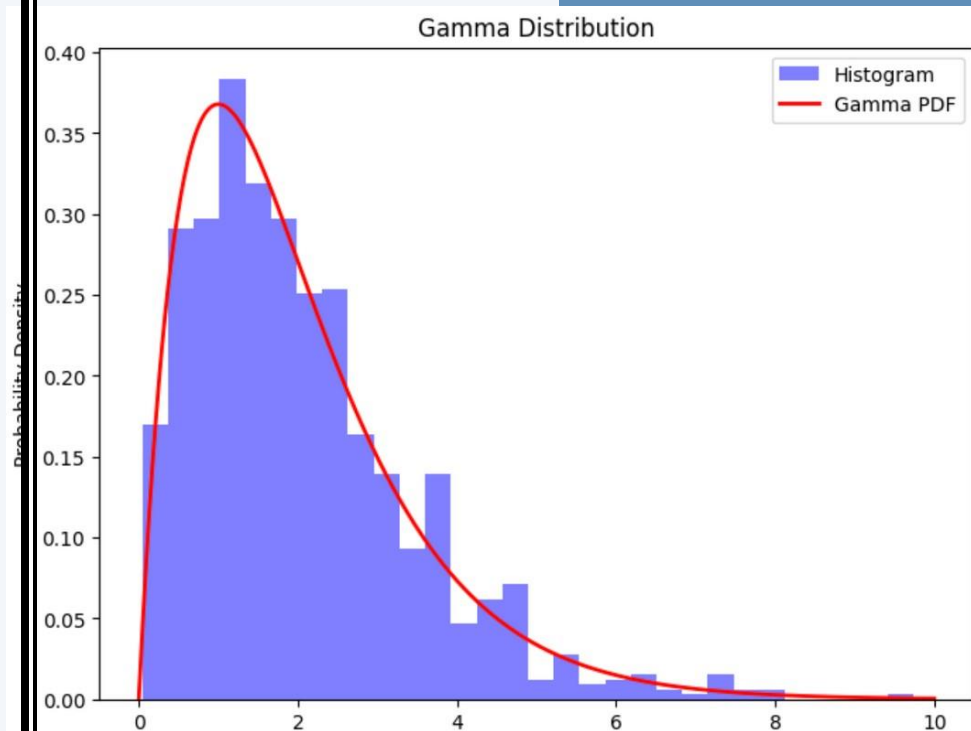
08

F Distribution

The F-distribution is commonly used in statistical tests, such as ANOVA (Analysis of Variance) and regression analysis, to compare variances or test hypotheses about population variances.
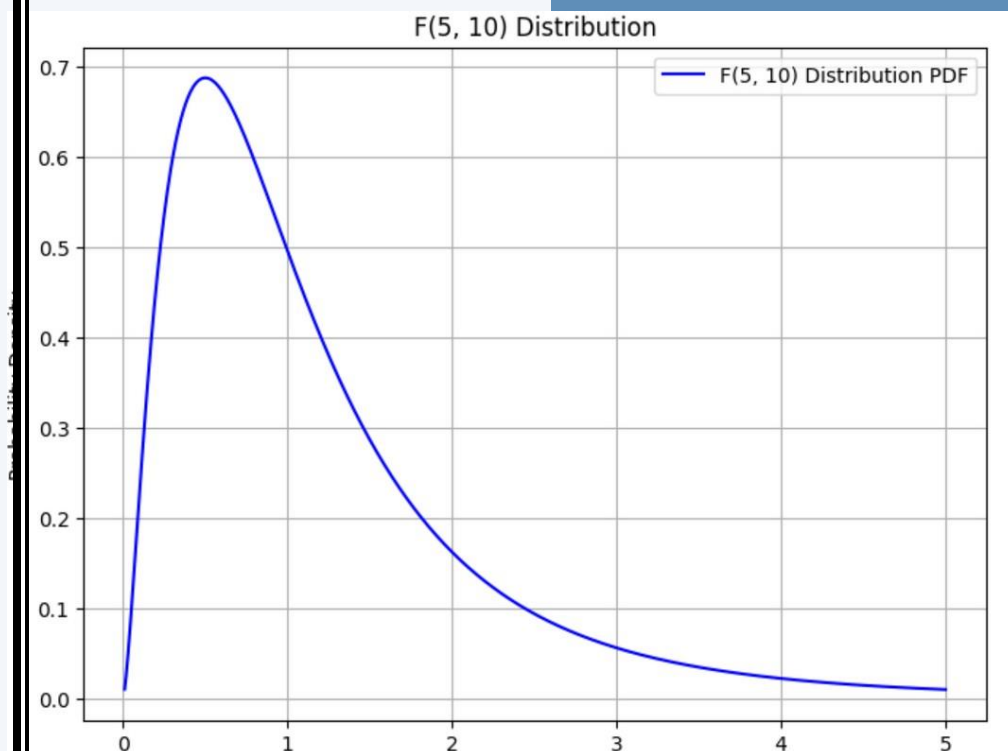
F(5, 10) Distribution

09

Beta Distribution

The beta distribution is a flexible family of continuous probability distributions defined on the interval [0, 1]. It's often used to model probabilities and is commonly employed in Bayesian statistics.
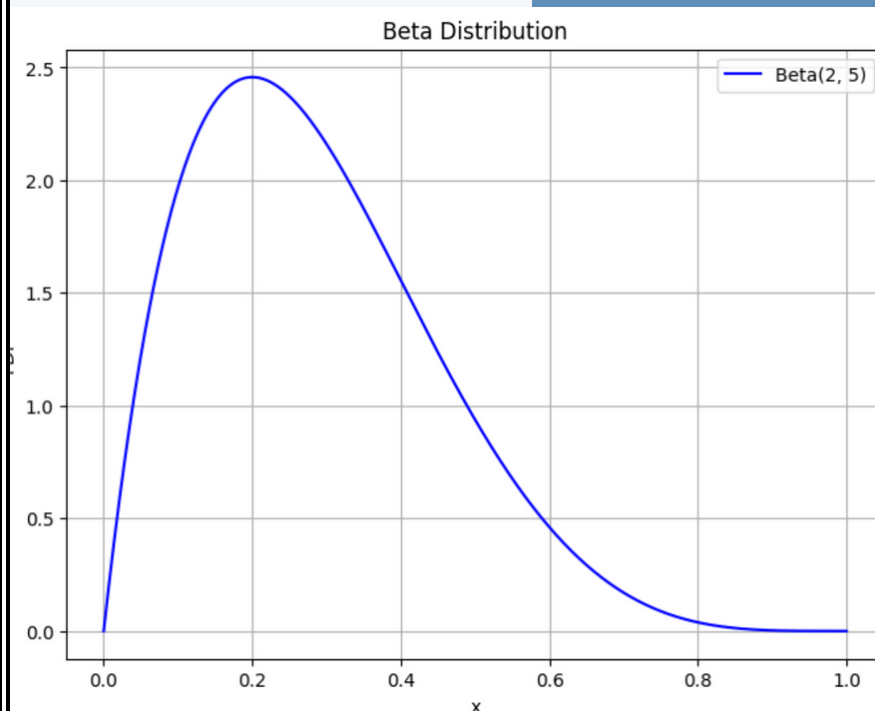
Beta Distribution

10

Multinomial Distribution

The multinomial distribution is a generalization of the binomial distribution to more than two categories. It is used for modeling categorical data with multiple outcomes, where each outcome has a specified probability.

Multinomial Distribution