

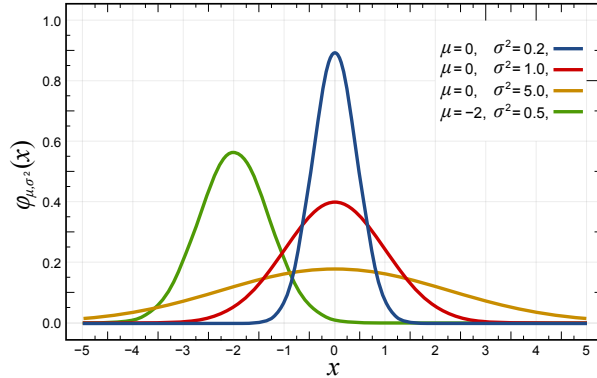
Normal distribution

Wikipedia, the free encyclopedia

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1 Introduction

In probability theory, the normal distribution is a very common continuous probability distribution. Normal distributions are important in statistics and are often used in the natural and social sciences to represent real-valued random variables whose distributions are not known. A random variable with a Gaussian distribution is said to be normally distributed and is called a normal deviate.



The probability density of the normal distribution is

$$f(x|\mu, \sigma) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}} \quad (1)$$

where

- μ is the mean of the distribution
- σ is the standard deviation