• The most important h(x): Gaussian

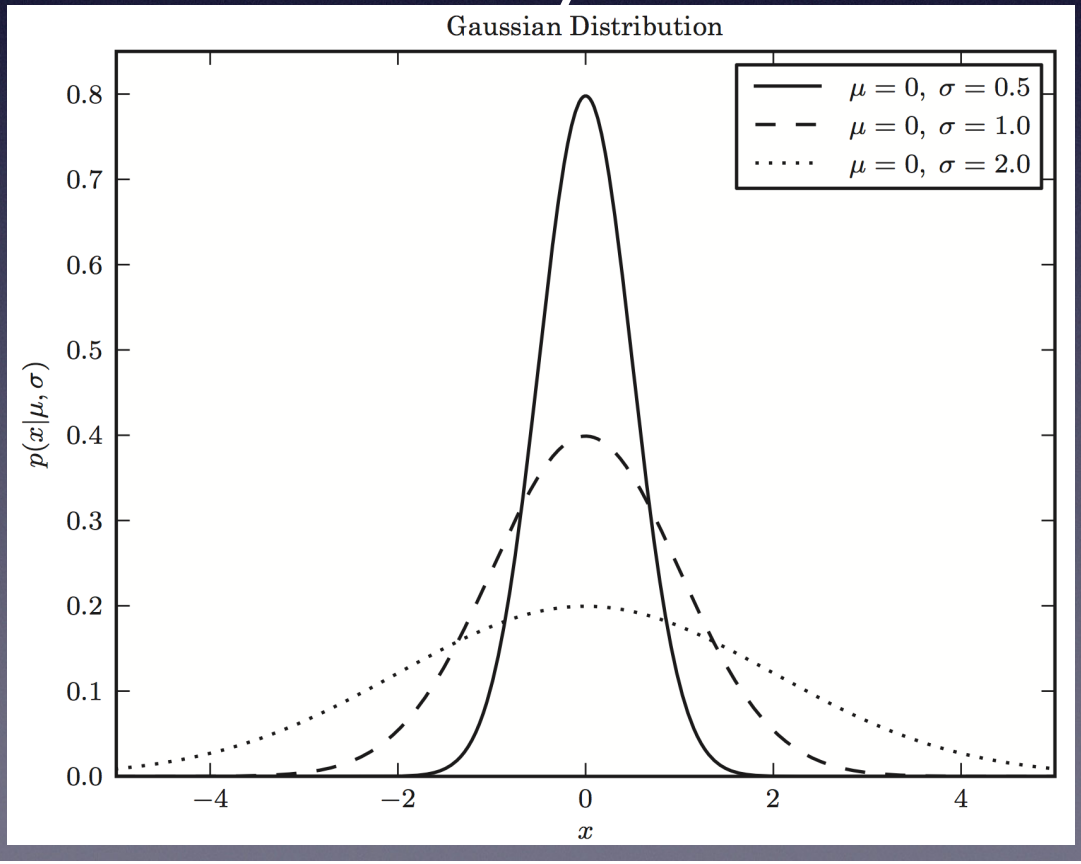
o Gaussian distribution is described by

a.k.a. Normal Distribution

$$p(x|\mu,\sigma) = \frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x-\mu)^2}{2\sigma^2}\right)$$

$$\mathcal{N}(\mu,\sigma)$$

where | is pronounced "given". So, "given location parameter μ and scale parameter σ", p(x | μ, σ) gives the probability that a randomly drawn value will be between x and x+dx.



The integral of p over all possible values of x is unity and evaluated using the "Gauss error function" (which is not analytic):

$$\mathrm{erf}(z) = \frac{2}{\sqrt{\pi}} \int_0^z \exp\left(-t^2\right) dt$$