



聚类：k-means、GMM

- 一维高斯分布

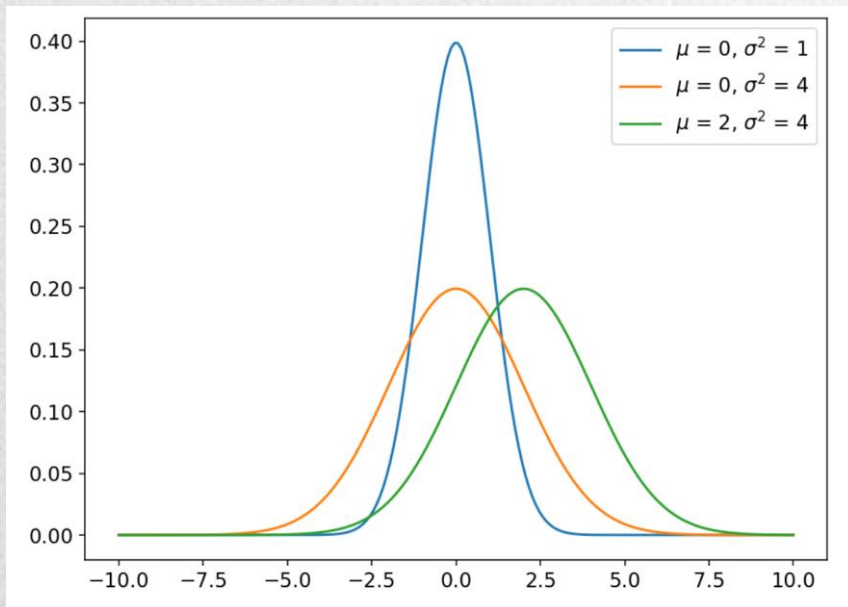
$$N(x \mid \mu, \sigma) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x - \mu)^2}{2\sigma^2}}$$



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<http://ethen8181.github.io/machine-learning/clustering/GMM/GMM.html>



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 - D表示d维

$$N(x \mid \mu, \Sigma) = \frac{1}{(2\pi)^{d/2} \sqrt{|\Sigma|}} \exp\left(-\frac{1}{2}(x - \mu)^T \Sigma^{-1}(x - \mu)\right)$$

$$N \left[\begin{pmatrix} \mu_1 \\ \mu_2 \end{pmatrix}, \begin{pmatrix} \sigma_1^2 & \sigma_{12} \\ \sigma_{21} & \sigma_2^2 \end{pmatrix} \right]$$

Σ 即 $\begin{pmatrix} \sigma_1^2 & \sigma_{12} \\ \sigma_{21} & \sigma_2^2 \end{pmatrix}$
 Σ^{-1} 为矩阵的逆矩阵
 $|\Sigma|$ 为矩阵的行列式

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