

Gaussian normal distribution

The graph of the Gaussian normal distribution is characterized by two parameters:

the mean μ ($=\mu$), which is the maximum of the graph, and the standard deviation σ ($=\sigma$). This determines the amount of dispersion away from the mean. If a dataset follows a normal distribution, then about 68% of the observations will fall within σ of the mean μ , which in this case is the interval $(-\sigma, \sigma)$. About 95% of the observations will fall within two standard deviations of the mean, which is the interval $(-2\sigma, 2\sigma)$ for the standard normal, and about 99.7% of the observations will fall within three standard deviations of the mean, which corresponds to the interval $(-3\sigma, 3\sigma)$ in this case. A small standard deviation (compared with the mean) produces a steep graph, whereas a large standard deviation (again compared with the mean) produces a flat graph.

Check the image below!

