

Define the following:

1. Least Squared Method

The least-squares method is a form of mathematical regression analysis used to determine the line of best fit for a set of data, providing a visual demonstration of the relationship between the data points. Each point of data represents the relationship between a known independent variable and an unknown dependent variable.

2. Max Likelihood

Maximum Likelihood Estimation is a probabilistic framework for solving the problem of density estimation. It involves maximizing a likelihood function in order to find the probability distribution and parameters that best explain the observed data.

3. S-shape Function

This function is also called a squashing function as its domain is the set of all real numbers, and its range is $(0,1)$. Hence, if the input to the function is either a very large negative number or a very large positive number, the output is always between 0 and 1.