



ML | Linear Regression vs Logistic Regression

Difficulty Level : Easy • Last Updated : 10 Feb, 2020

[Read](#)[Discuss](#)[Courses](#)[Practice](#)[Video](#)

Linear Regression is a machine learning algorithm based on **supervised regression algorithm**. Regression models a target prediction value based on independent variables. It is mostly used for finding out the relationship between variables and forecasting. Different regression models differ based on – the kind of relationship between the dependent and independent variables, they are considering and the

[GfG Job Fair – 2023](#)[DSA](#)[Data Structures](#)[Algorithms](#)[Interview Preparation](#)[Data Science](#)

Logistic regression is basically a **supervised classification algorithm**. In a classification problem, the target variable (or output), y , can take only discrete values for a given set of features (or inputs), X .

Linear Regression	Logistic Regression
Linear Regression is a supervised regression model.	Logistic Regression is a supervised classification model.
In Linear Regression, we predict the value by an integer number.	In Logistic Regression, we predict the value by 1 or 0.
Here no activation function is used.	Here activation function is used to convert a linear regression equation to the logistic regression equation

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).

Got It !

Linear Regression	Logistic Regression
Here no threshold value is needed.	Here a threshold value is added.
Here we calculate Root Mean Square Error(RMSE) to predict the next weight value.	Here we use precision to predict the next weight value.
Here dependent variable should be numeric and the response variable is continuous to value.	Here the dependent variable consists of only two categories. Logistic regression estimates the odds outcome of the dependent variable given a set of quantitative or categorical independent variables.
It is based on the least square estimation.	It is based on maximum likelihood estimation.
Here when we plot the training datasets, a straight line can be drawn that touches maximum plots.	Any change in the coefficient leads to a change in both the direction and the steepness of the logistic function. It means positive slopes result in an S-shaped curve and negative slopes result in a Z-shaped curve.
Linear regression is used to estimate the dependent variable in case of a change in independent variables. For example, predict the price of houses.	Whereas logistic regression is used to calculate the probability of an event. For example, classify if tissue is benign or malignant.
Linear regression assumes the normal or gaussian distribution of the dependent variable.	Logistic regression assumes the binomial distribution of the dependent variable.

Related Articles

We use cookies to ensure you have the best browsing experience on our website. By using our site, you acknowledge that you have read and understood our [Cookie Policy](#) & [Privacy Policy](#).