Linear Regression

* Is it Supervised/Unsupervised/Reinforcement learning?

Linear regression is supervised. We start with a dataset with a known dependent variable (label), train the model, then apply it later. We are trying to predict a real number, like the price of a house.

* What does the algorithm do?

The main objective of the linear regression algorithm is to find coefficients or estimates by minimizing the error term i.e, the sum of squared errors. This form of analysis estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. Linear regression fits a straight line or surface that minimizes the discrepancies between predicted and actual output values. There are simple linear regression calculators that use a “least squares” method to discover the best-fit line for a set of paired data. You then estimate the value of X (dependent variable) from Y (independent variable).

* In which situations will it be most useful?

Linear-regression models are relatively simple and provide an easy-to-interpret mathematical formula that can generate predictions. Linear regression can be applied to various areas in business and academic study.

We can find that linear regression is used in everything from biological, behavioral, environmental and social sciences to business. Linear-regression models have become a proven way to scientifically and reliably predict the future. Because linear regression is a long-established statistical procedure, the properties of linear-regression models are well understood and can be trained very quickly.