Report Linear Regression

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Regression analysis is one of the most widely used forecasting methods. Linear regression is perhaps the most basic machine learning technique and the starting point for the advanced analytics learning path for budding data scientists.

Linear regression is a linear approximation of causal relationships between two or more variables. The regression model is of great value because it is the most popular way to make inferences and predictions. Apart from that, regression analysis is also used to determine and evaluate factors that influence a particular outcome in a meaningful way.

General Linear Regression Model:

A regression model specifies a relation between a dependent variable Y and certain explanatory variables X1,...,XK. A linear model sets. Where Y is a function of the x variables, and the regression model is a linear approximation of this function.

Equation:

Y = B0 + B1X1 + B2X2 + …. BnXn + E

Here, E is error of estimation

Simple Linear Regression:

The easiest regression model is Simple Regression Model. This model uses only one dependent variable.

Equation:

Y = B0 + B1X1+ E

Where, Y = estimated/predicted value

B0 = constant estimate

B1 = coefficient of X1

X1 = independent variable/predictor

E = error of estimation

When using regression analysis, the goal is to predict the value of Y, based on the value of x. Linear regression analysis is known for the best fitting line that goes through the data points and minimizes the distance between them.