

Abstract

Often in the real world one expects to find linear relationships between variables. The Method of Least Squares is a procedure to determine the best fit line to data; the proof uses simple calculus and linear algebra. The basic problem is to find the best fit straight line $y = ax + b$ given that, for $n \in \mathbb{N}$, the pairs (x_n, y_n) are observed.

The method easily generalizes to finding the best fit of the form

$$y = a_1 f_1(x) + \dots + a_k f_k(x) ; \quad (1)$$

it is not necessary for the functions f_k to be linearly in x – all that is needed is that y is to be a linear combination of these functions.

In this research we present the method with its types and properties in details then gave an application to illustrate the importance and necessary of method.