Ex01 algorithm assignment

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Linear Regression is a well-established and widely used machine learning algorithm that, like the Perceptron algorithm, is not as definitive as +1 or -1 in its output but can take real numbers. However, as the name Linear implies, basically the data must be able to be classified in a straight line, just like Perceptron.

The primary goal of Linear Regression is to return results with a minimized error rate. The blue line in Figure 1 represents the difference (error) between the actual data and the expected result. If this is minimized, the result is good.

グラフ, 散布図

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Figure1 Regression line

<https://ja.wikipedia.org/wiki/%E3%83%95%E3%82%A1%E3%82%A4%E3%83%AB:Normdist_regression.png>

When f(x) as model function,

Find f(x) to be the minimum.

f(x) … model function

y … data points

yi – f(x) … distance between f(x) and y

(yi-f(x))^2 … The result obtained by the above formula with the processing to remove the difference due to the absolute value.

ダイアグラム

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