Logistic Regression Intuition

Logistic Regression

Linear Regression:

- **Simple:**

$$y = b_0 + b_1 * x$$

Logistic Regression

Linear Regression:

- **Simple:**

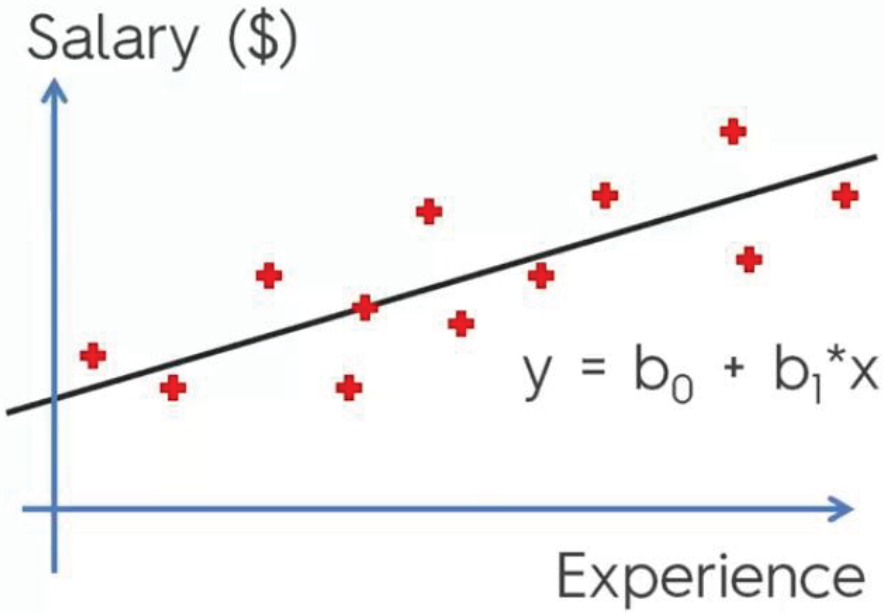
$$y = b_0 + b_1 * x$$

- **Multiple:**

$$y = b_0 + b_1 * x_1 + \ldots + b_n * x_n$$

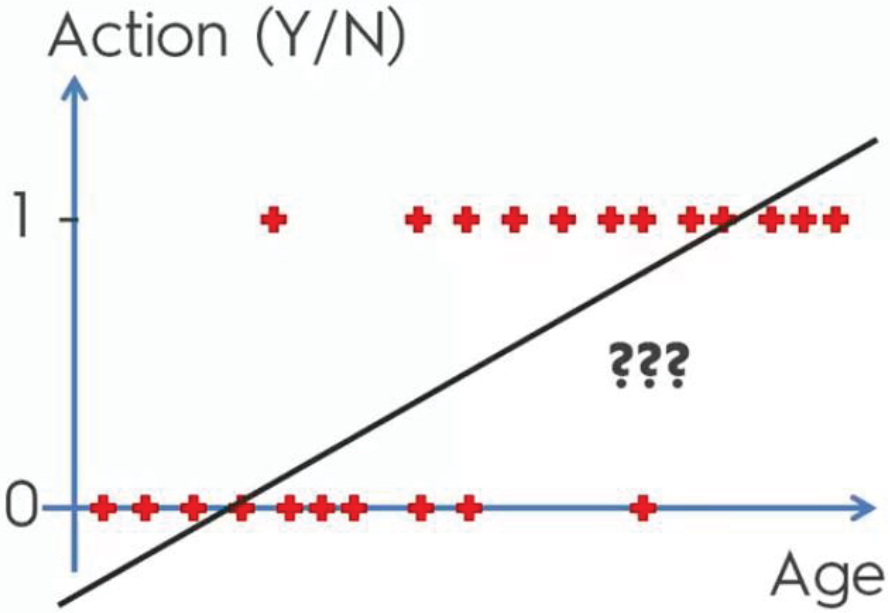
Logistic Regression

We know this:

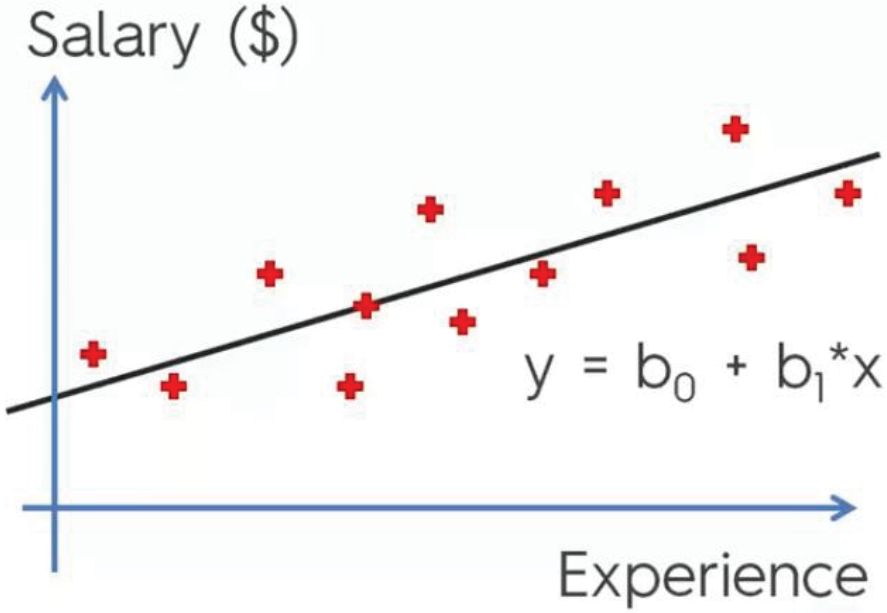


Logistic Regression

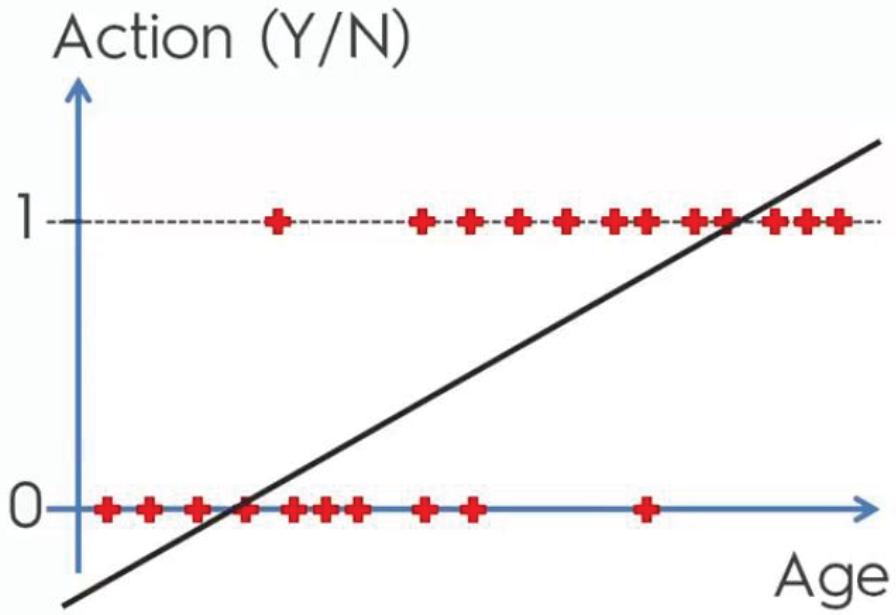
This is new:



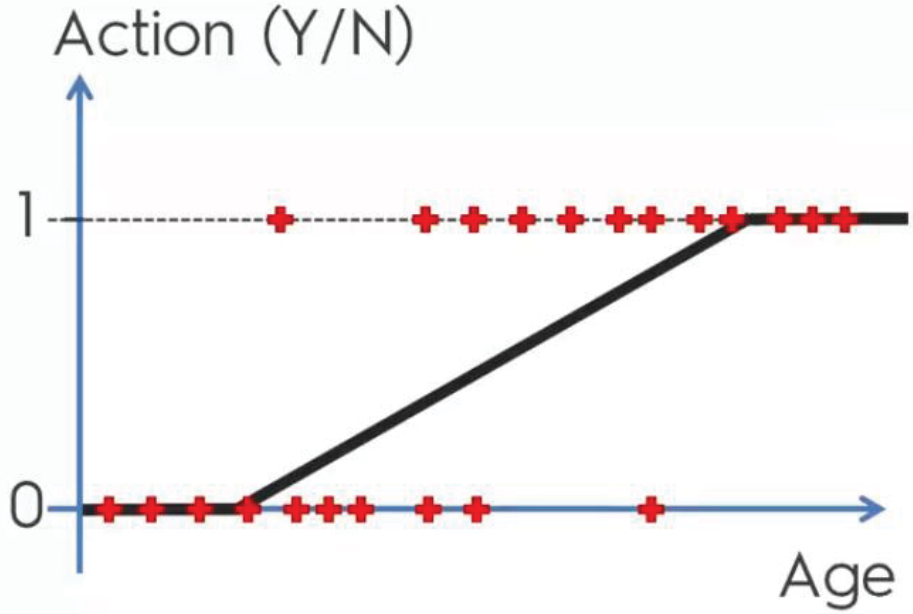
We know this:



Logistic Regression

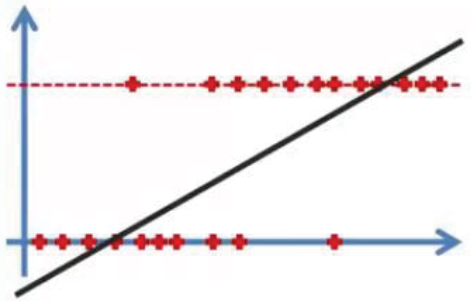


Logistic Regression



Logistic Regression

$$y = b_0 + b_1 * x$$

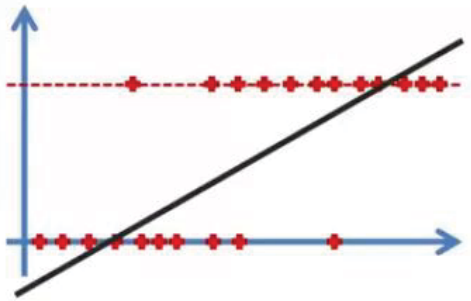


Logistic Regression

$$y = b_0 + b_1 * x$$

Sigmoid Function

$$p = \frac{1}{1 + e^{-y}}$$



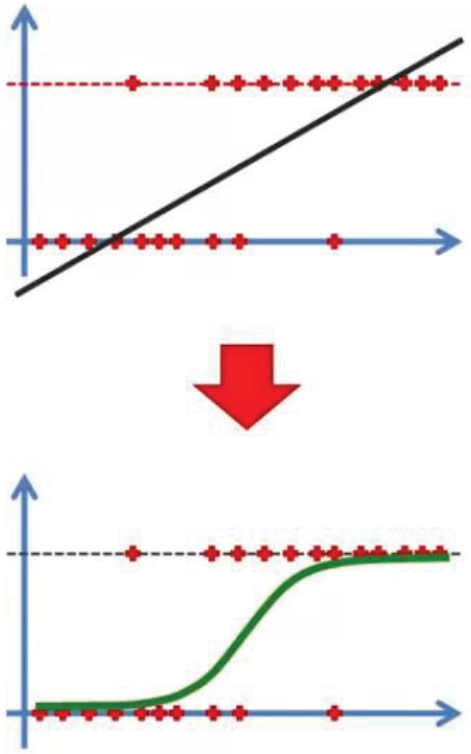
Logistic Regression

$$y = b_0 + b_1 * x$$

Sigmoid Function

$$p = \frac{1}{1 + e^{-y}}$$

$$\ln\left(\frac{p}{1-p}\right) = b_0 + b_1 * x$$



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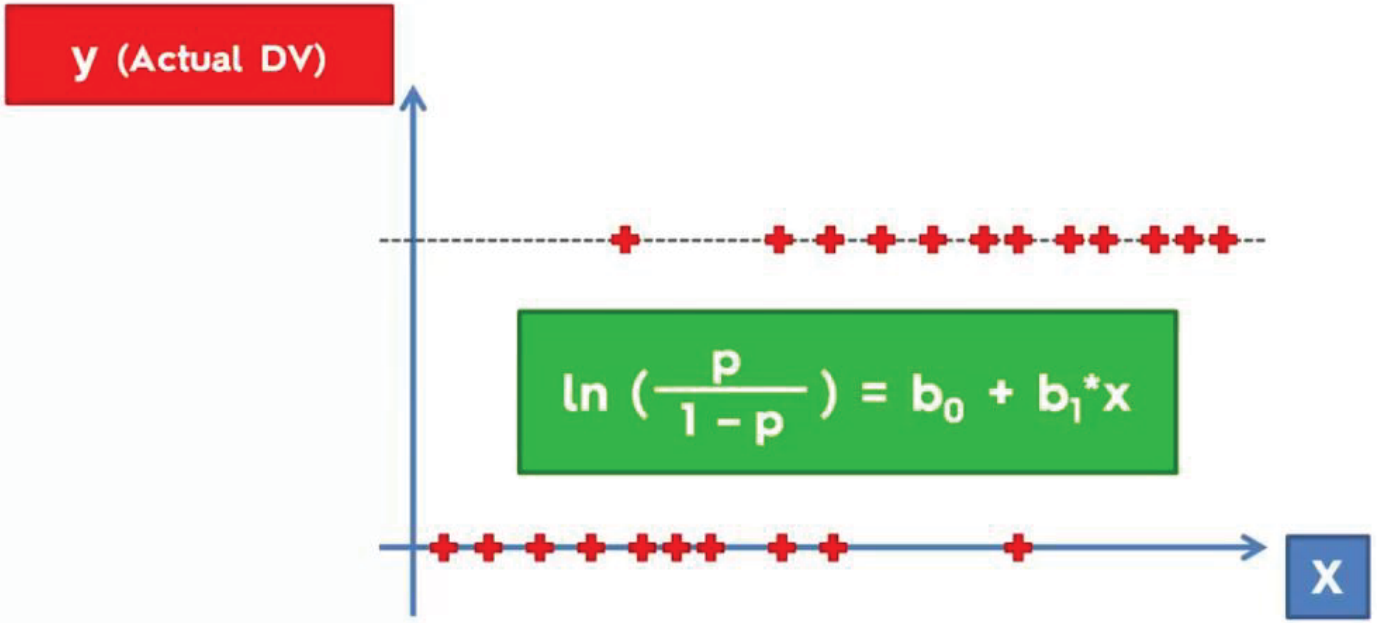
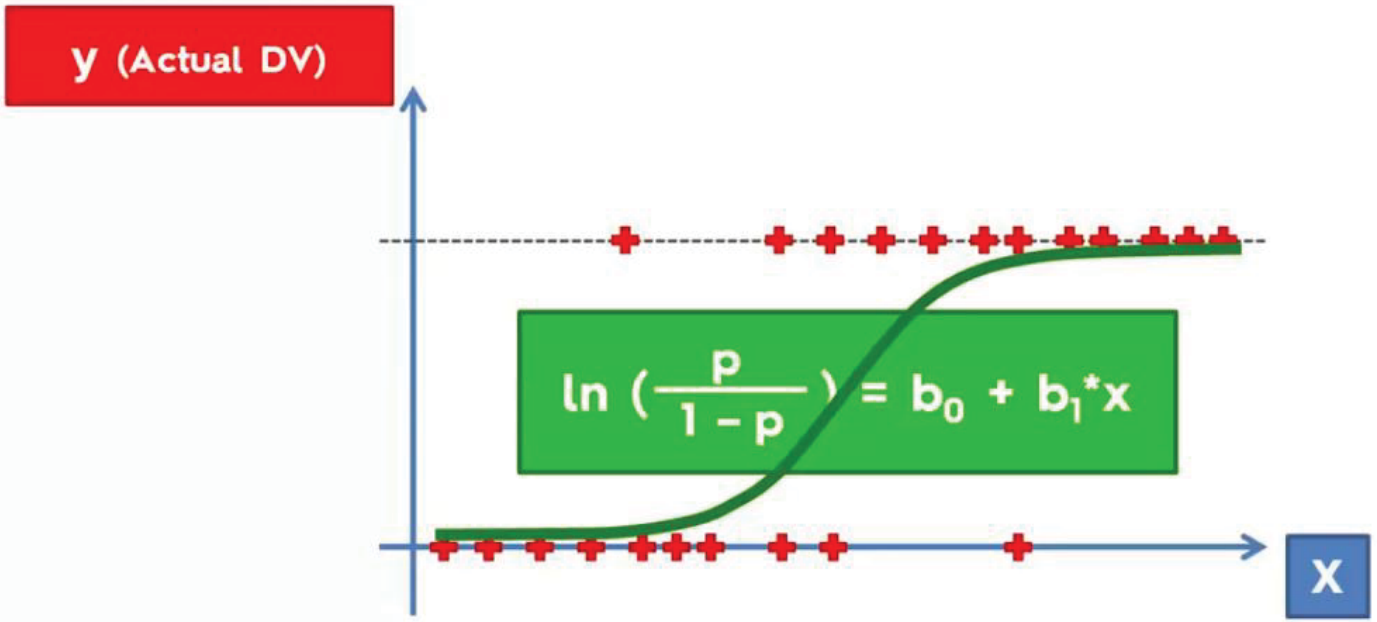


Logistic Regression



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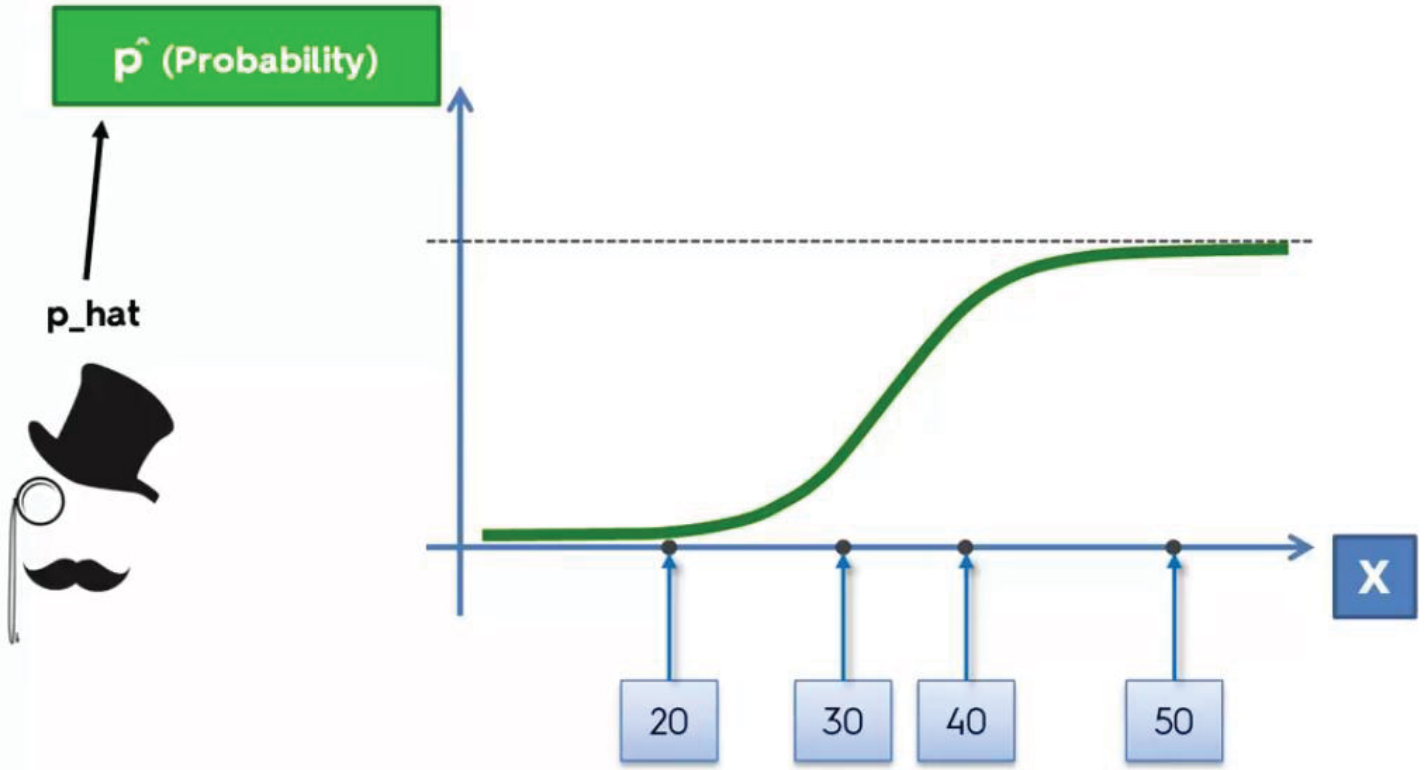

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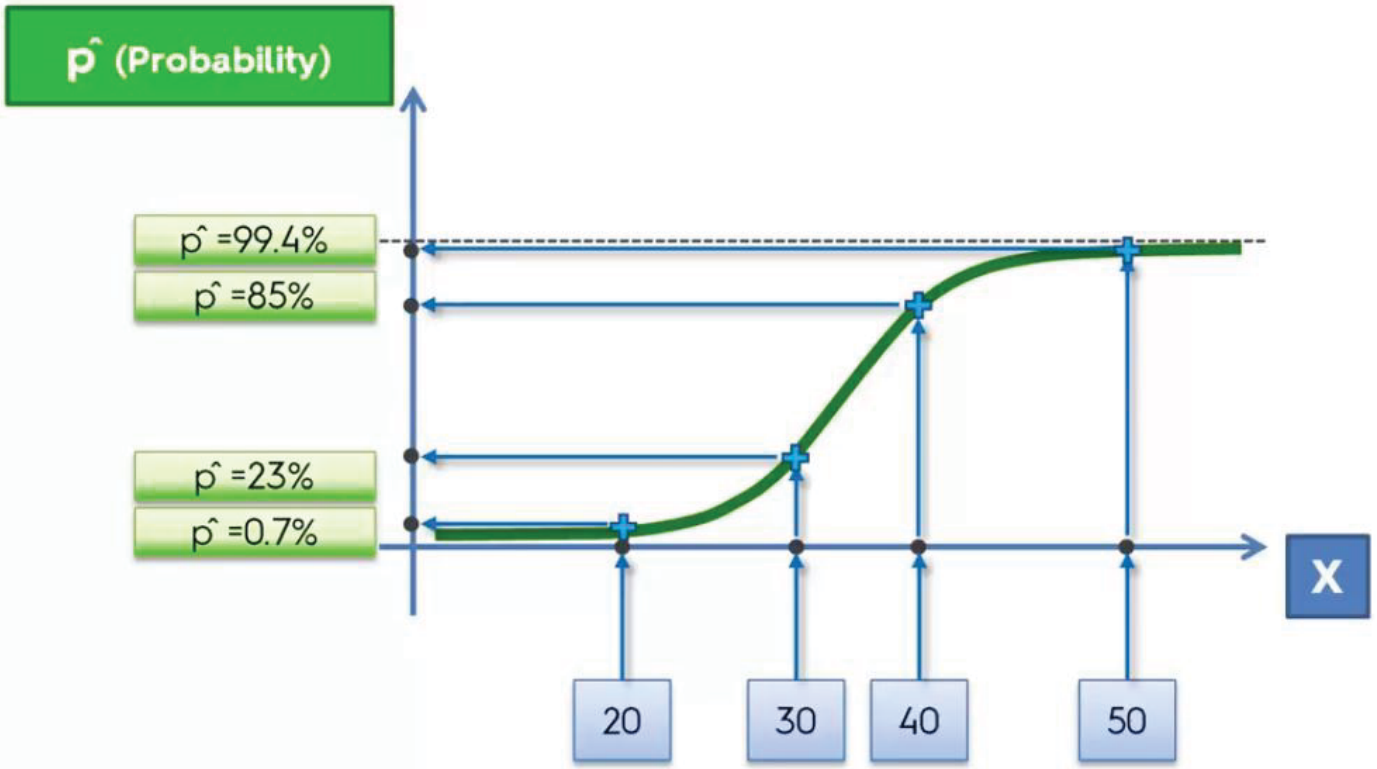

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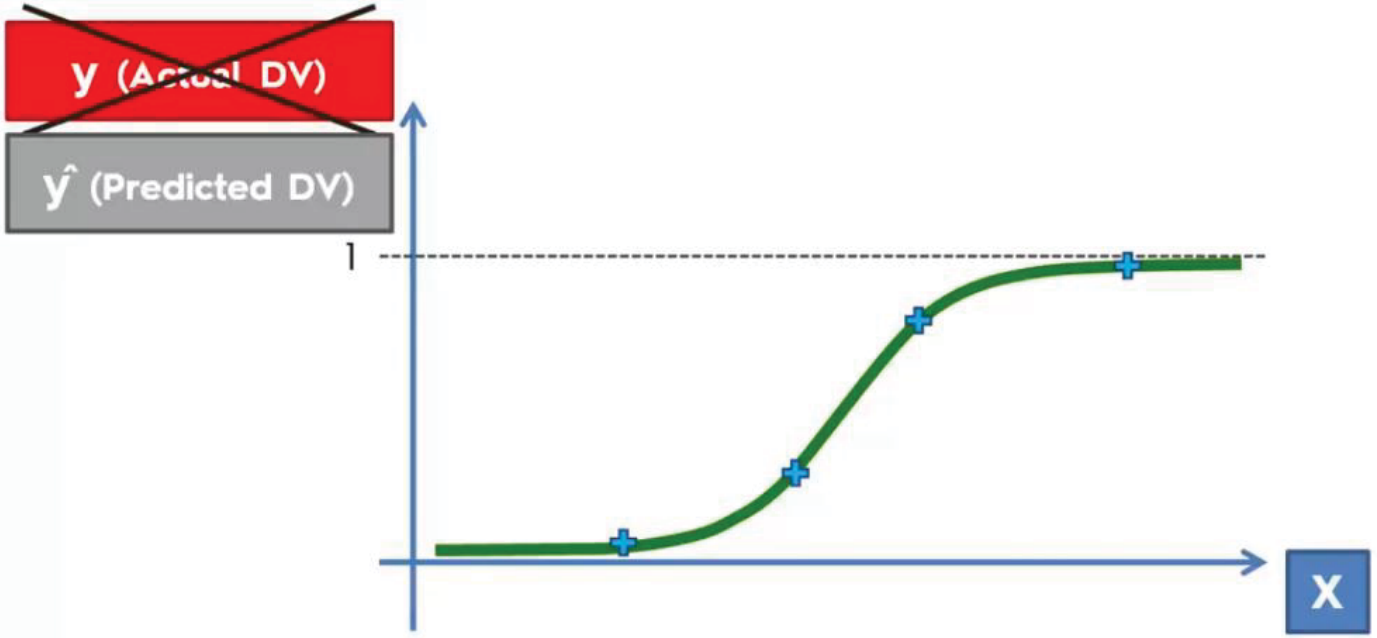

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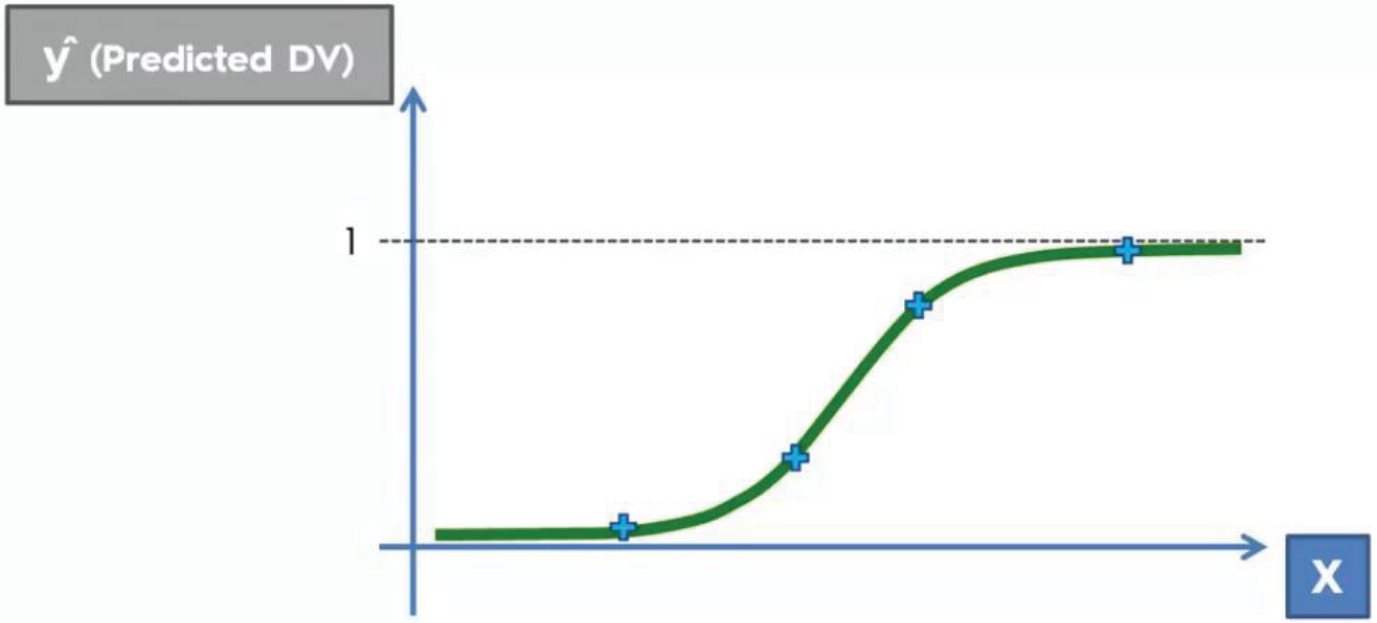

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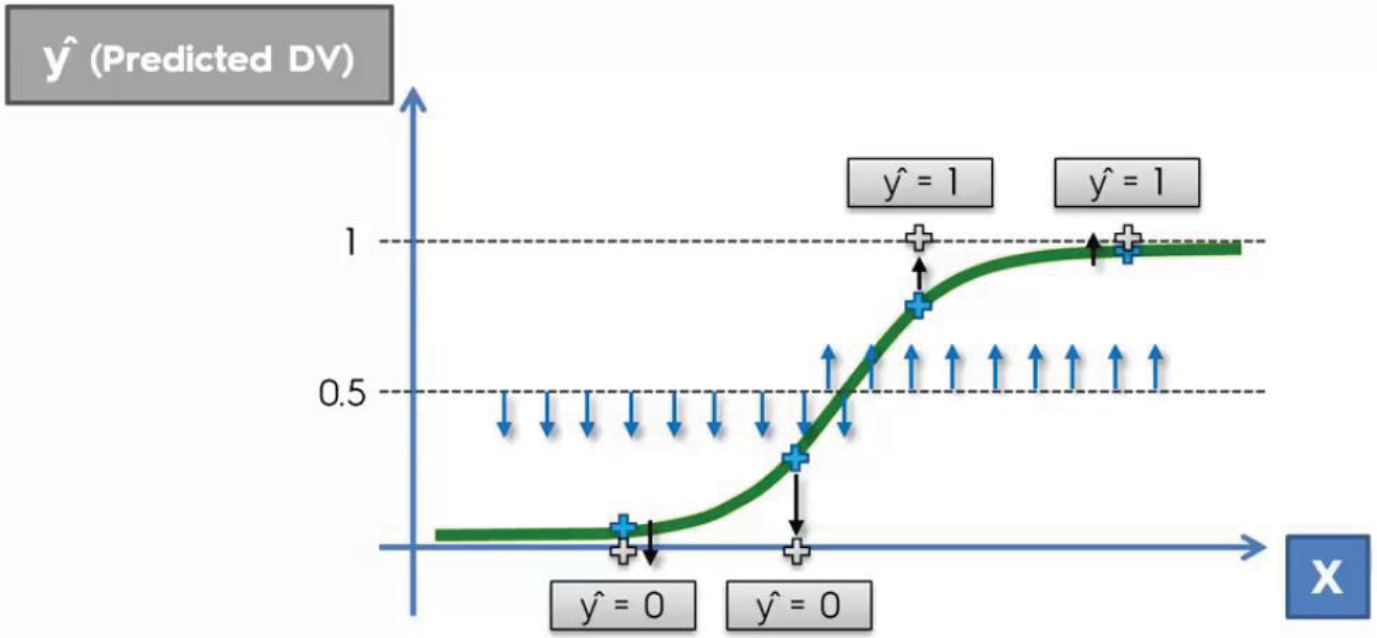

Fin.