1 General info

Linear regression is a supervised learning approach The **goal** is to predict the value dependent value based on one independent variable. The more dependent the variables, the more precise is the prediction

2 Formula

A linear prediction function is used

$$\hat{y} = b_0 + b_1 * x \tag{1}$$

2.1 Variable definition

$\hat{y}$: The predicted value for the dependent variable
b_0: The y interception
b_1: The gradient
x: The independent value

2.1.1 Variable calculation b_1

1. Calculate mean of x and y
2. Calculate the distance of given data points to mean x and y
3. $$\frac{\sum(x_i - \bar{x}) * (y_i - \bar{y})}{\sum(x_i - \bar{x})^2} \tag{2}$$

2.1.2 Variable calculation b_0

1. Calculate mean of x and y
2. $b_0 = meany - b_1 * meanx$