Barra – Linear Regression From Scratch

Linear Regression is a statistical technique used to find the relationship between variables. In an ML context, linear regression finds the relationship between features and a label.

$$Y = a + bX$$

- $Y = Dependent\ Variable$
- $X = Independent\ Variable$
- $a = Intercept$
- $b = Slope$

$$b = \frac{\Sigma(X_i - \bar{X})(Y_i - \bar{Y})}{\Sigma(X_i - \bar{X})^2}$$

$$a = \bar{Y} - b\bar{X}$$

- $\bar{X} = Mean\ X$
- $\bar{Y} = Mean\ Y$
- $X_i, Y_i = Data\ i$

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