Perceptron - Multi linear regression

$$\text{bias} \rightarrow \begin{bmatrix} 1 \\ X_1 \\ X_2 \end{bmatrix} \begin{array}{l} \leftarrow \text{feature 1} \\ \leftarrow \text{feature 2} \end{array}$$

$$\frac{1}{1-e^{-x}}$$

$$y = W_0 * 1 + W_1 X_1 + W_2 X_2$$

$$= W_0 + W_1 X_1 + W_2 X_2$$

$$\nearrow \text{Intercept} \qquad \underset{\text{coef}}{\vee}$$

$$y = ax + b$$

$$a = \frac{\dfrac{-W_0}{W_2} - 0}{0 - \left(\dfrac{-W_0}{W_1}\right)} = \frac{-W_0}{W_2} \Big/ \frac{W_0}{W_1}$$

$$-X_1 = \frac{W_0 - W_2 X_2}{W_1} \Big/ -1$$

$$X_1 = -\frac{(W_0 - W_2 X_2)}{W_1}$$

$$X_2 =: 0$$

$$-X_2 = \frac{W_0 - W_1 X_1}{W_2} \Big/ -1$$

$$X_2 = -\frac{(W_0 - W_1 X_1)}{W_2}$$

$$X_1 = ? 0$$

$$y = \left(\frac{-W_0}{W_2}\right) \Big/ \frac{W_0}{W_1}\right) X + \left(-\frac{W_0}{W_2}\right)$$

$$\boxed{X_1 = -\frac{(W_0)}{W_1}}$$

$$\boxed{X_2 = -\frac{(W_0)}{W_2}}$$

$$\boxed{\begin{array}{l} P_1 = \left(\dfrac{-W_0}{W_1}, 0\right) \\ P_2 = \left(0, \dfrac{-W_0}{W_2}\right) \end{array}}$$