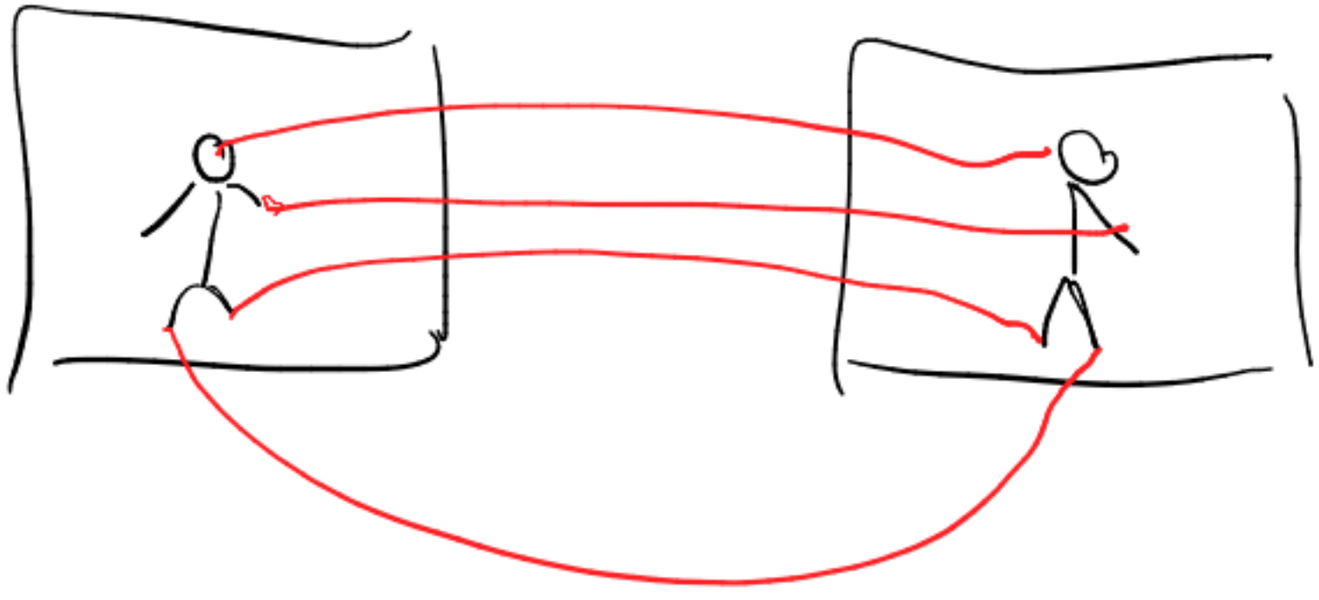
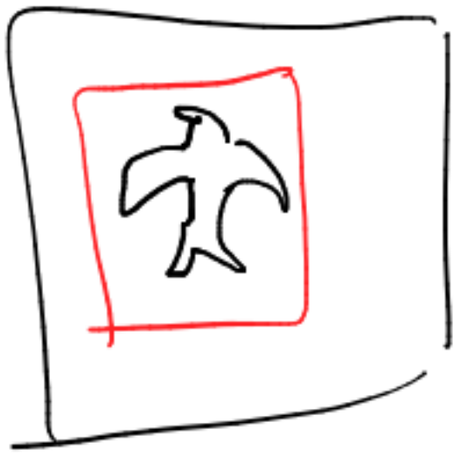




$$\mathcal{W} = [w_1 \; - \; - \; - \; w_n, b] \in \mathbb{R}^{n+1}$$

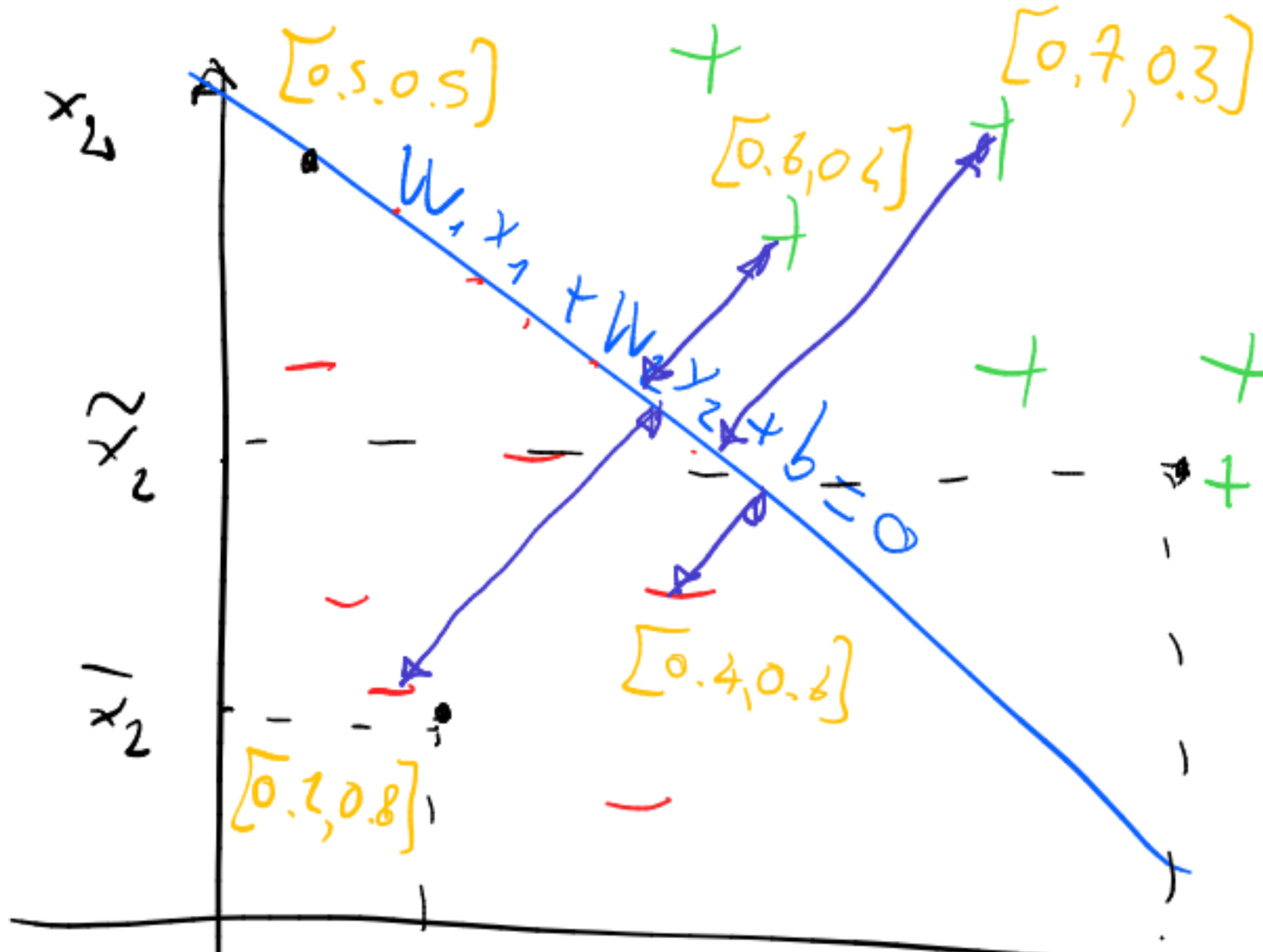
$$x \in \mathbb{R}^n$$

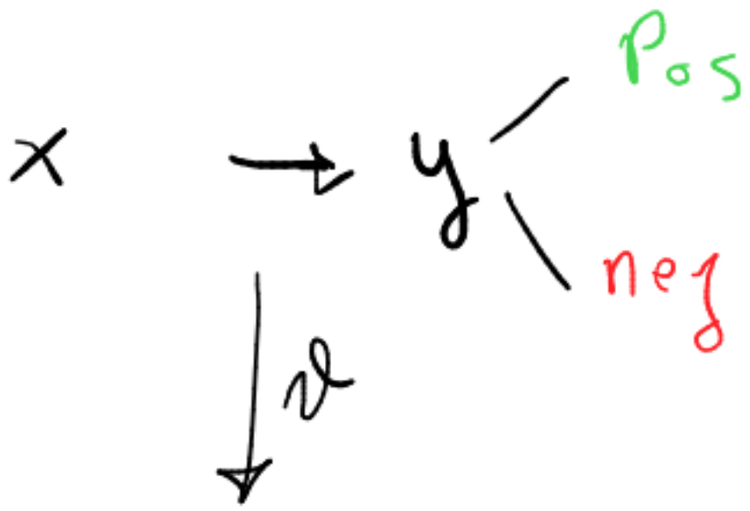
$$f(x, \mathcal{W}) = f_{\mathcal{W}}(x) = \mathbb{I}\left[ w^T x + b \right]$$

$$\mathbb{I}[z] = \begin{cases} 1 & \text{se } z \geq 0 \\ 0 & \text{viceversa} \end{cases}$$

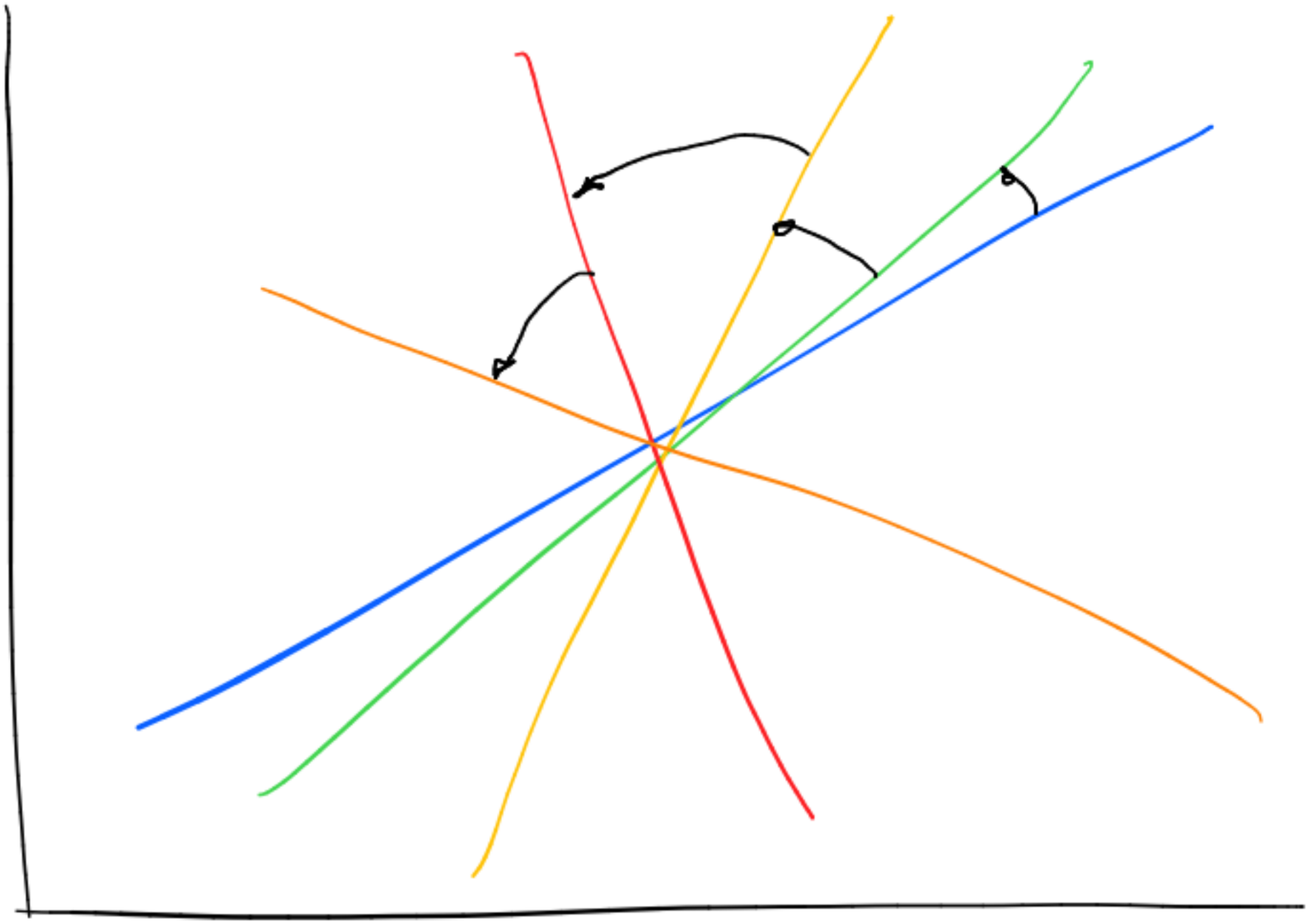
2

$$w = [w_1, w_2, b]$$






$$P_r(\hat{y}=y \mid x, w) = \begin{cases} P_r(\text{Pos} \mid x, w) = \dfrac{1}{1+\exp(-w^T x - b)} \\ P_r(\text{neg} \mid x, w) = 1 - \dfrac{1}{1+\exp(-w^T x - b)} \end{cases}$$



$$f(x) \approx f(x_0) + f'(x_0)(x - x_0)$$

$$\Downarrow$$

$$f(\vec{x}) = f(\vec{x_0}) + \nabla f(\vec{x_0})^T (\vec{x} - \vec{x_0})$$