Activation Functions

 Romeo Kienzler

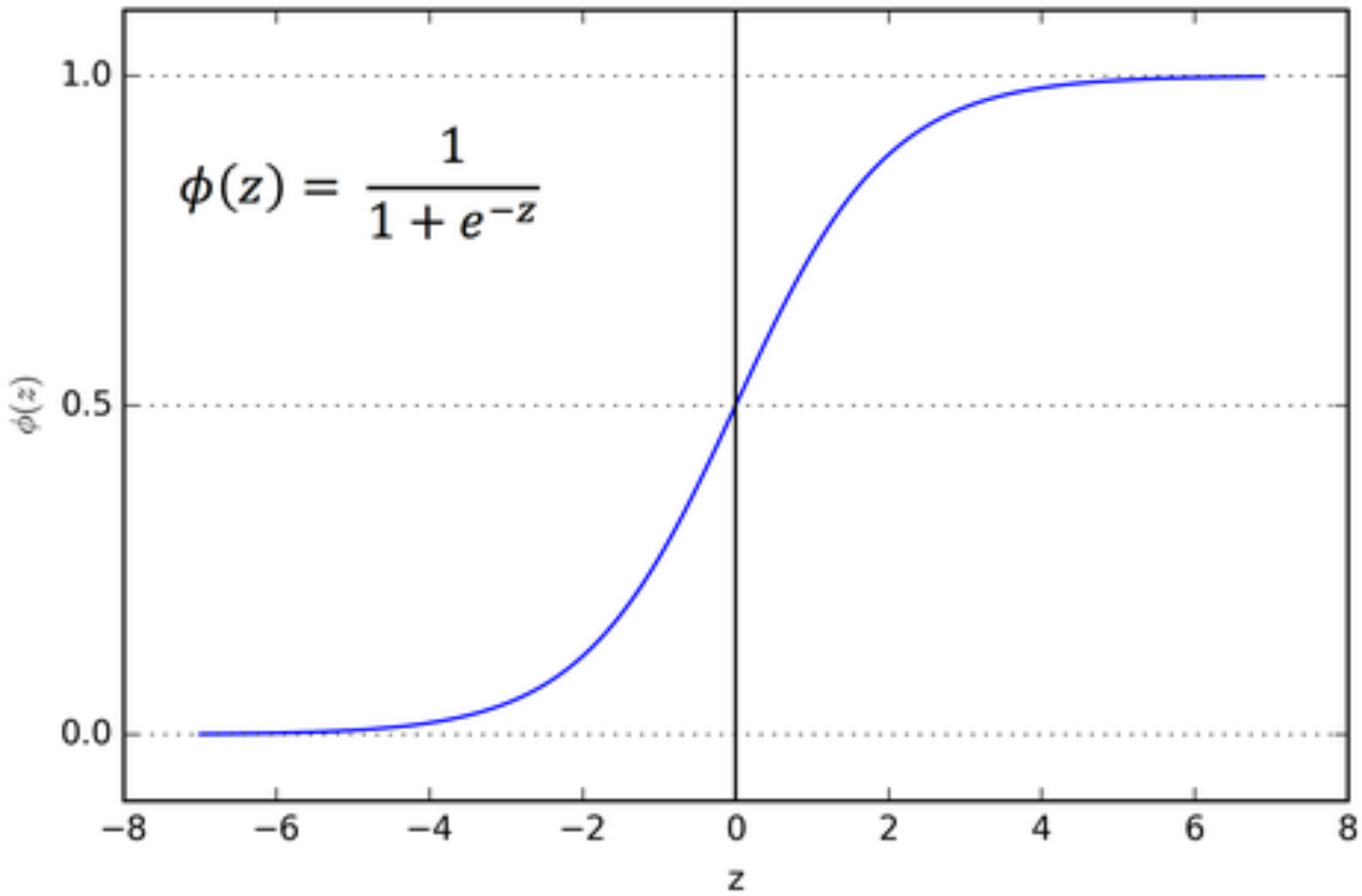
$$f(x) = sigmoid(x)$$

$$z_2 = XW_1$$

$$a_2 = f(z_2)$$

$$z_3 = a_2 W_2$$

$$\hat{y} = a_3 = f(z_3)$$



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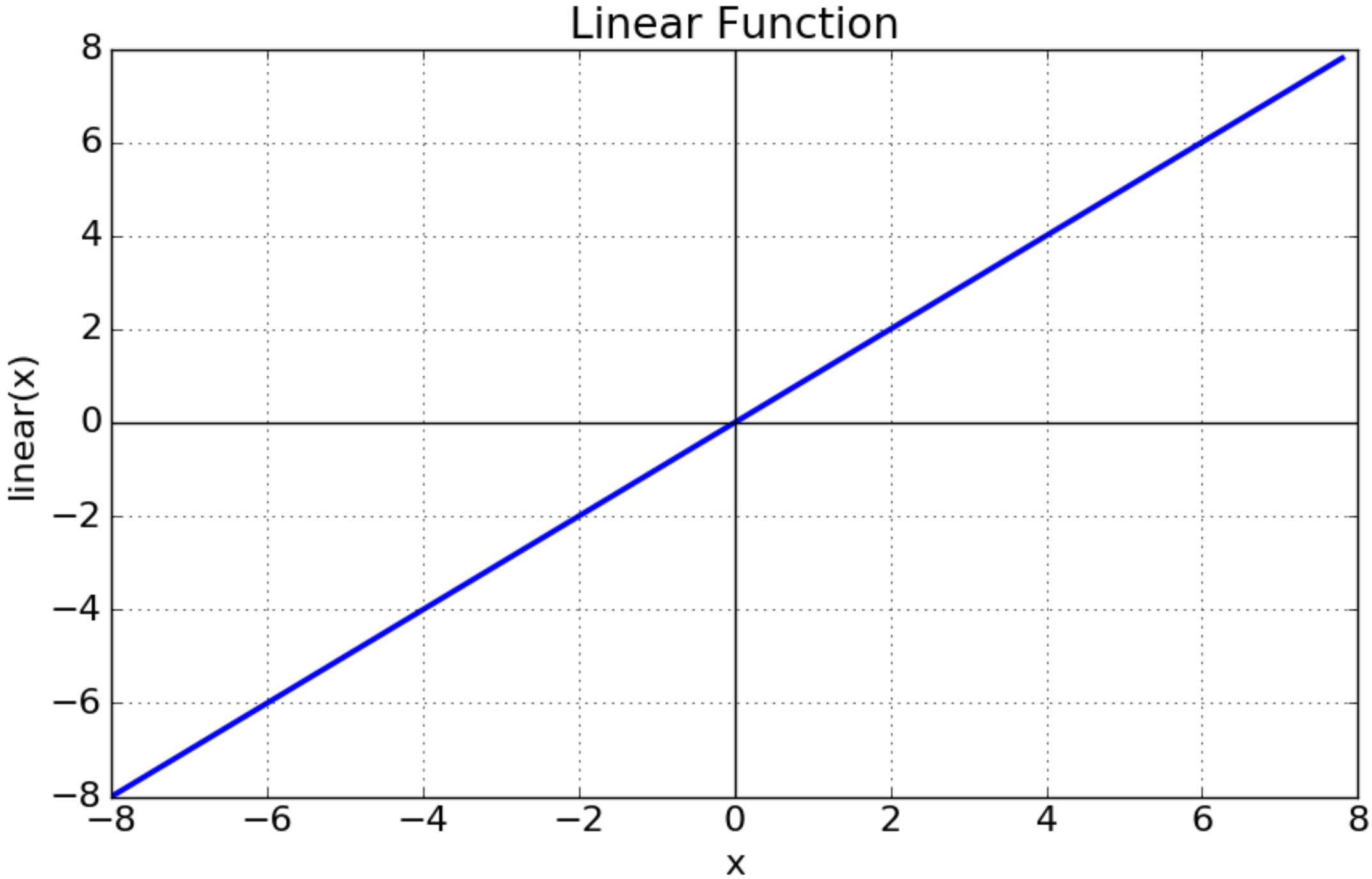

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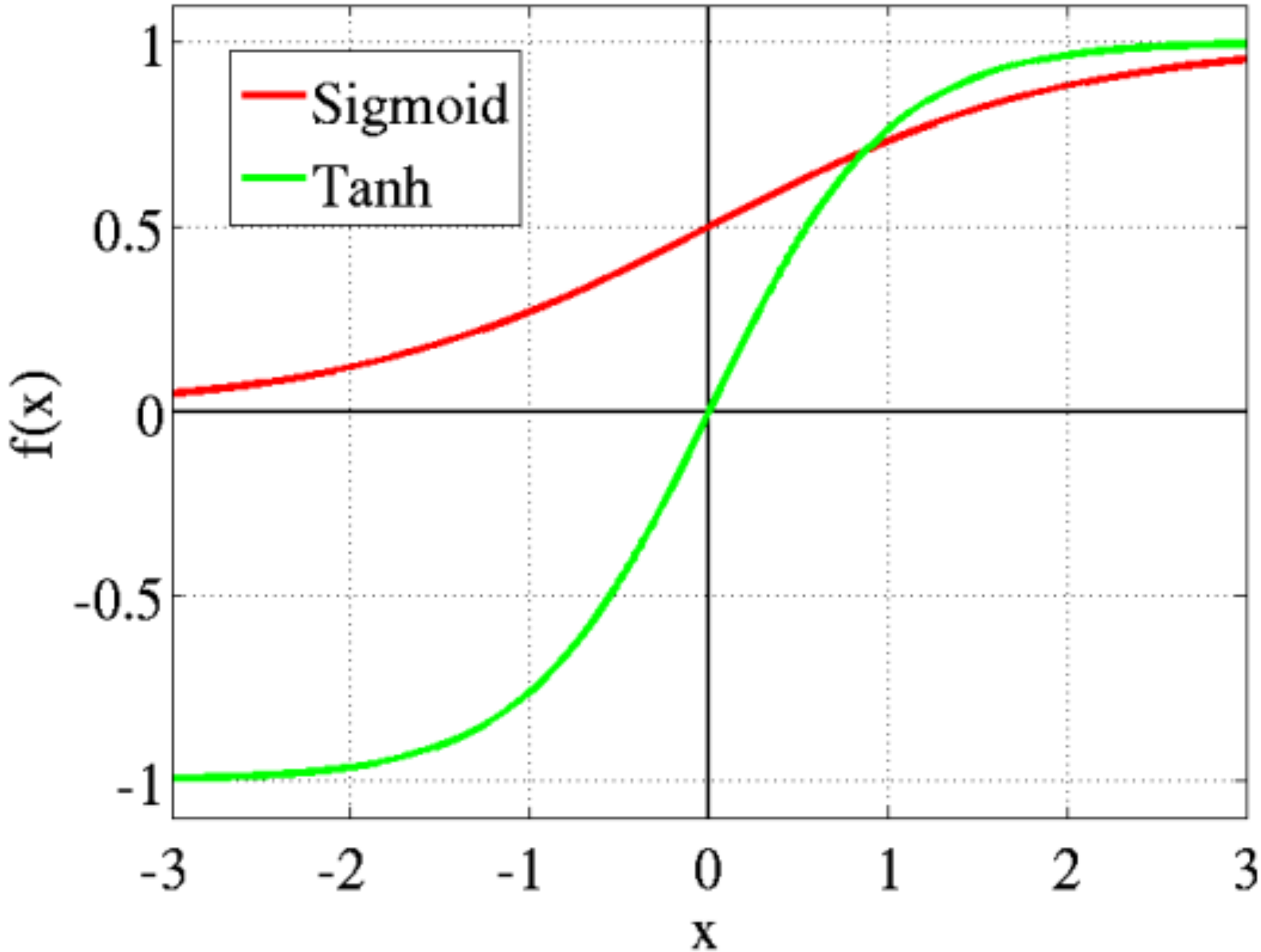

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$$\sigma : \mathbb{R}^K \to [0,1]^K$$

$$\sigma(\mathbf{z})_j = \frac{e^{z_j}}{\sum_{k=1}^{K} e^{z_k}} \quad \text{for } j = 1, \ldots, K.$$

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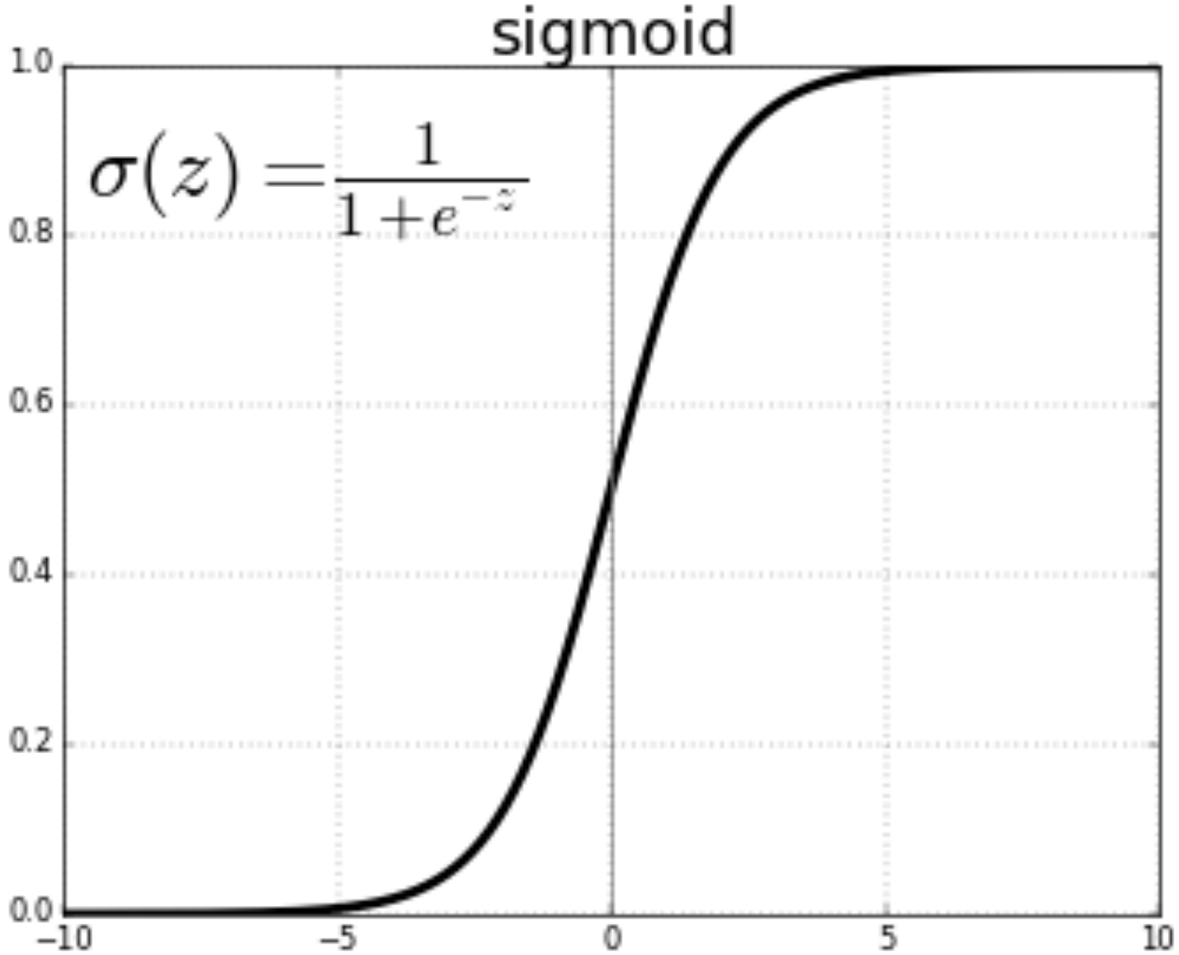

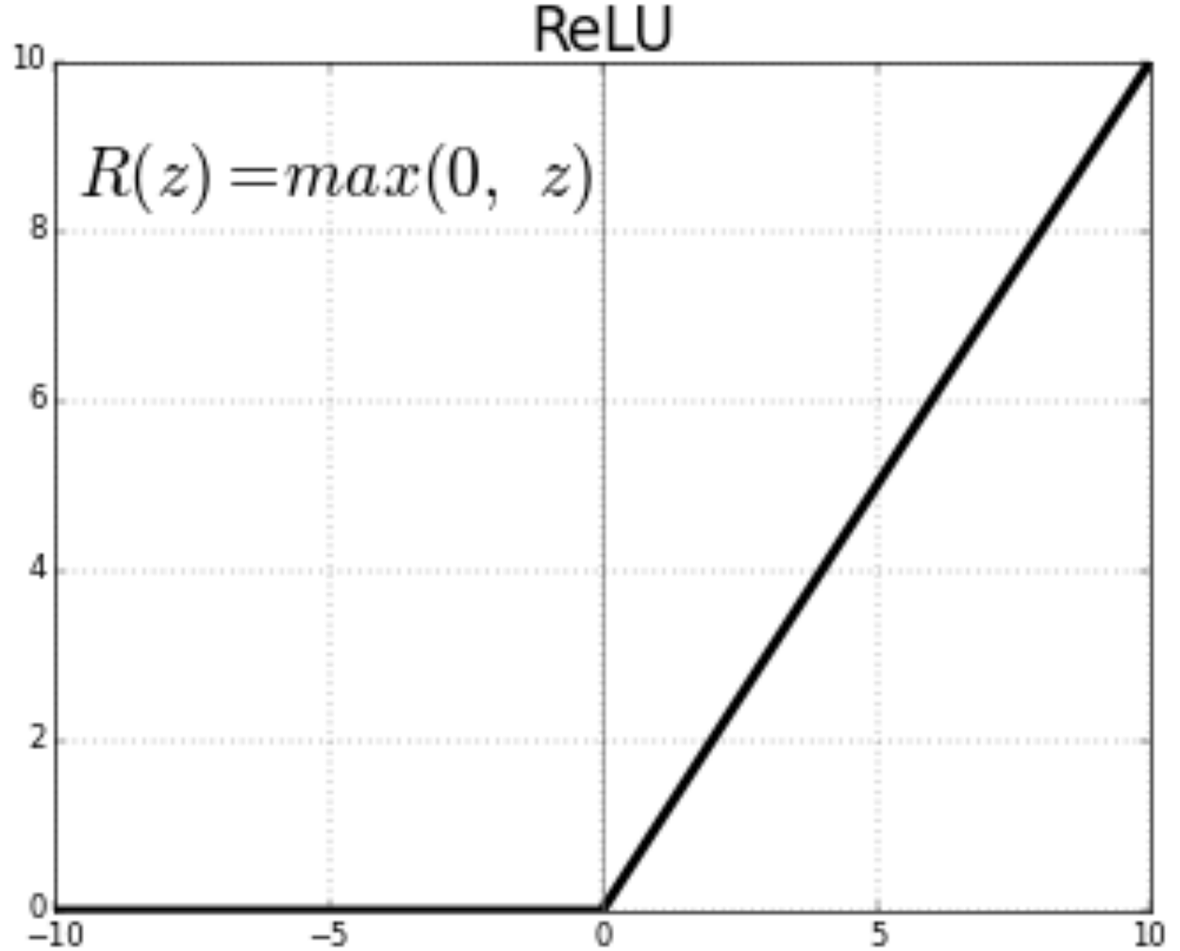

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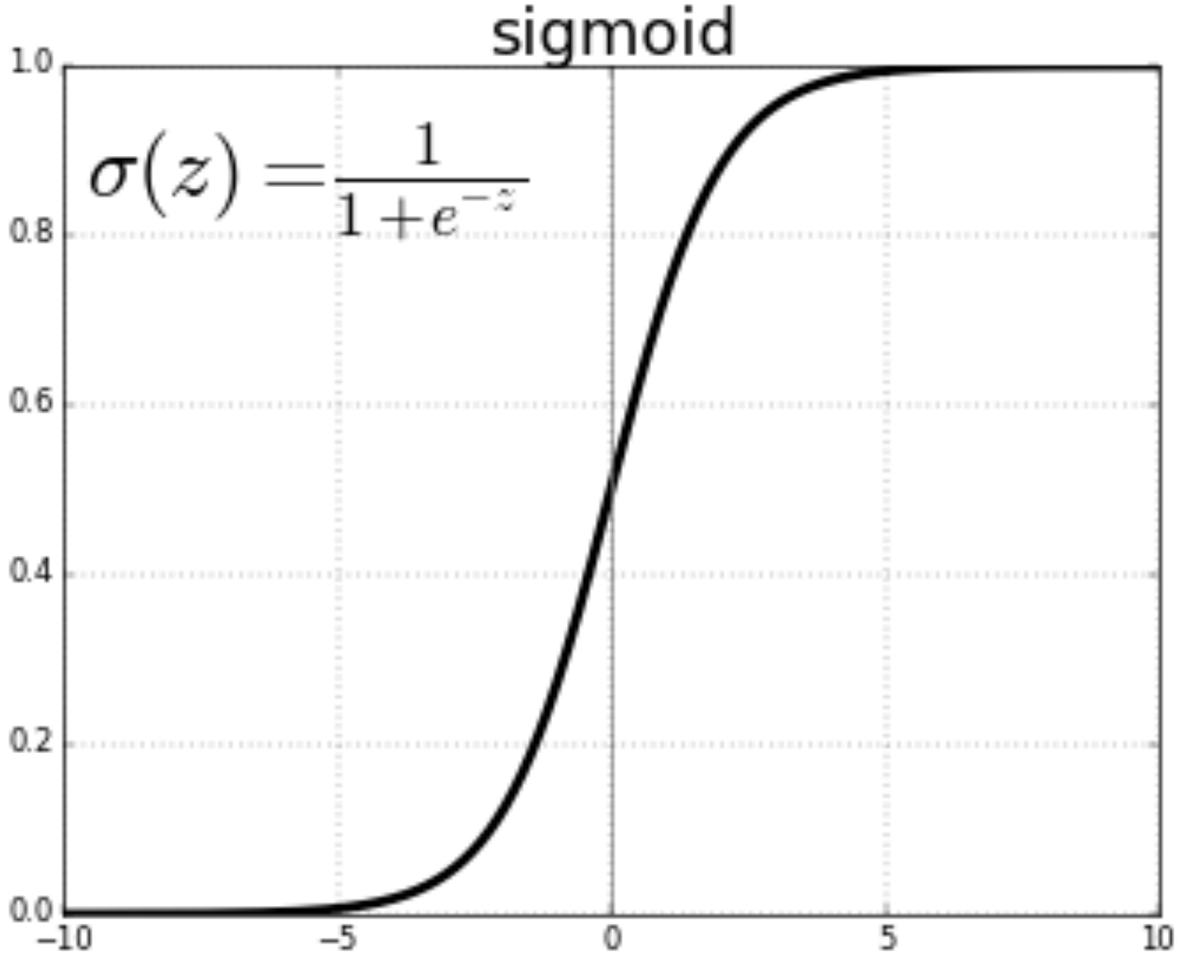

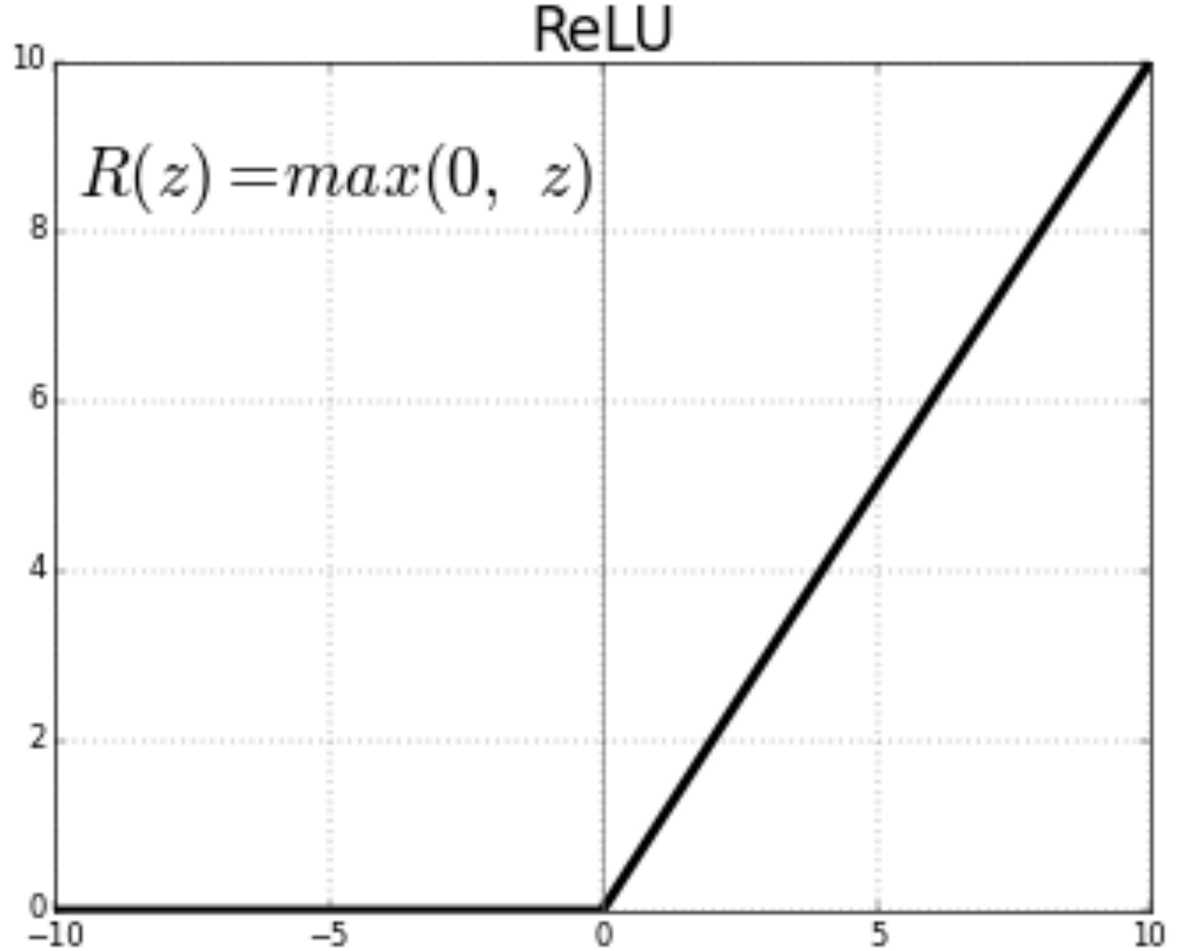

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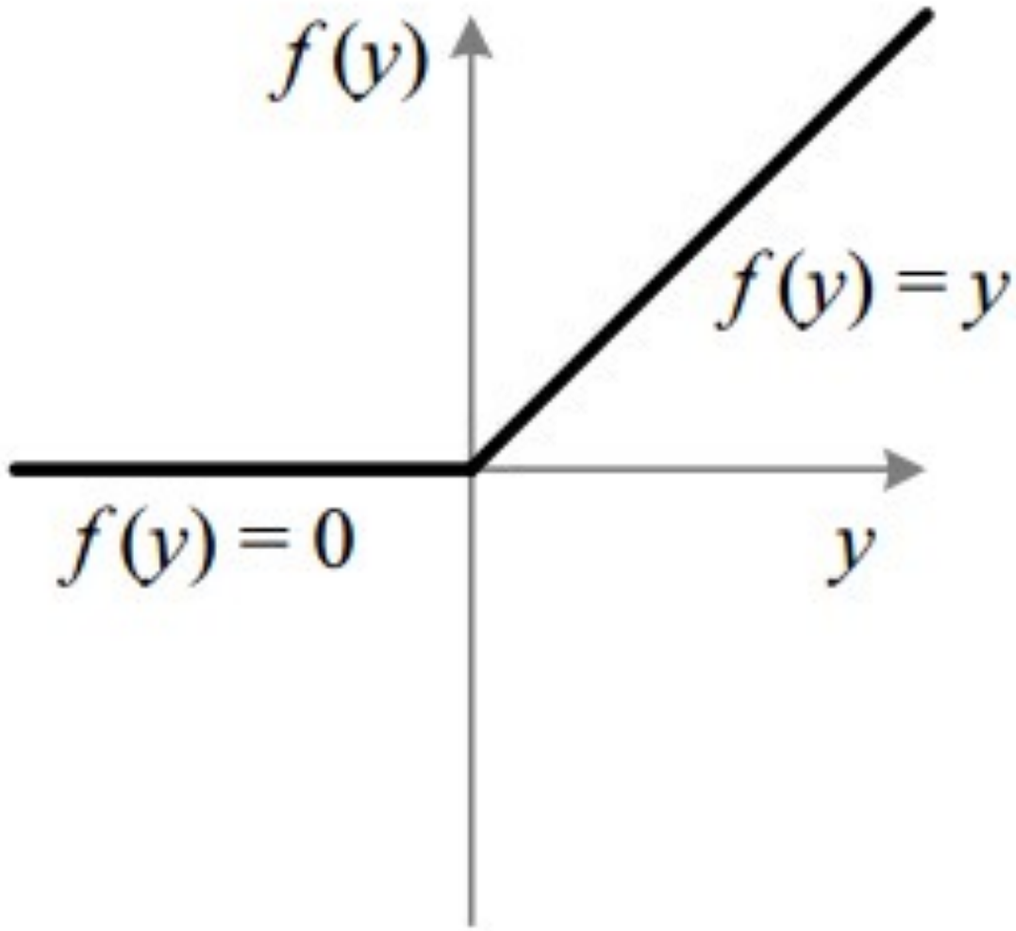

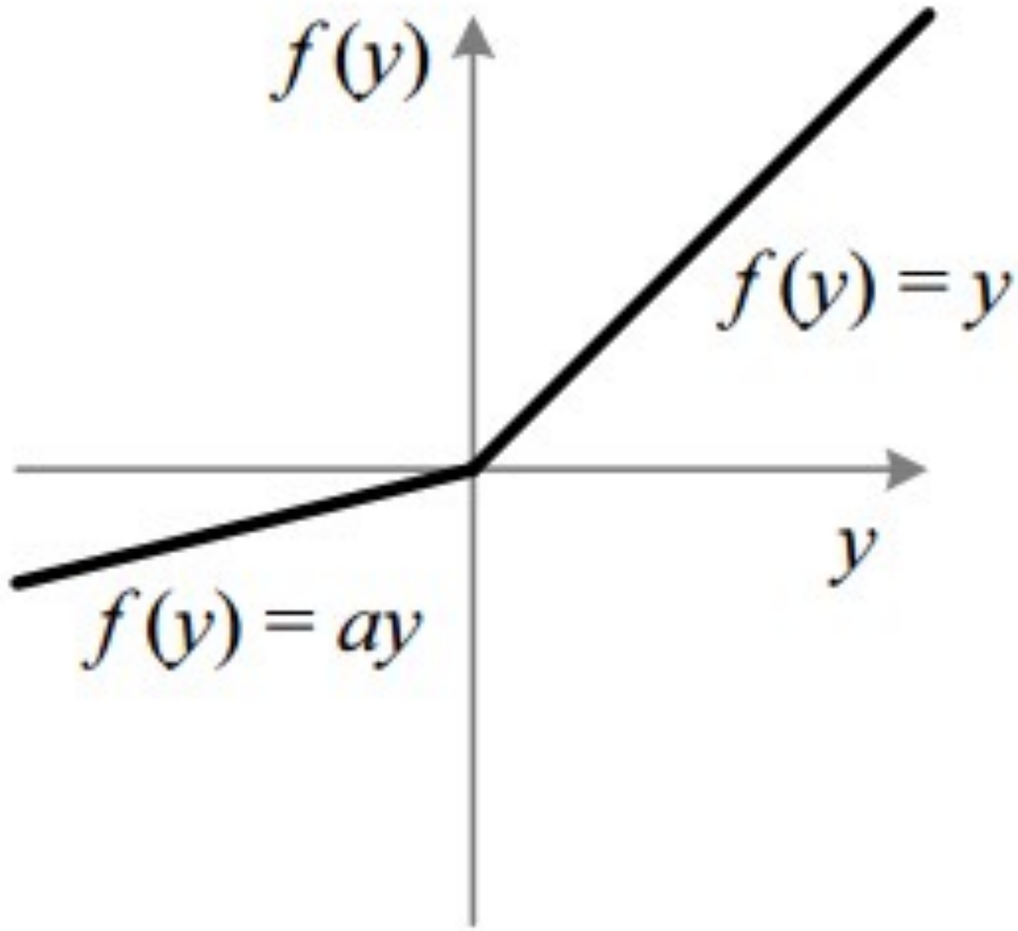

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Summary

Bias-Variance Tradeoff

 Romeo Kienzler