Logistic Regression

$\left\{\begin{array}{l} \text{• Linear Model} \\ \text{• For all values of } x \quad y \in [0, 1] \\ \text{• } \underline{\text{Reason:}} \text{ want to predict binary value } (0/1) \end{array}\right.$

(e.g., spam, malware, attack $\rightarrow$ {yes, no})

large values

$\hat{y} = \sigma(mx + b)$

sigmoid

1

negative values may make no sense

Sigmoid Function $\sigma(x) = \dfrac{1}{1 + e^{-x}}$