

# Lecture 07 Wide & Deep

## Matrix Multiplication

~~X =~~

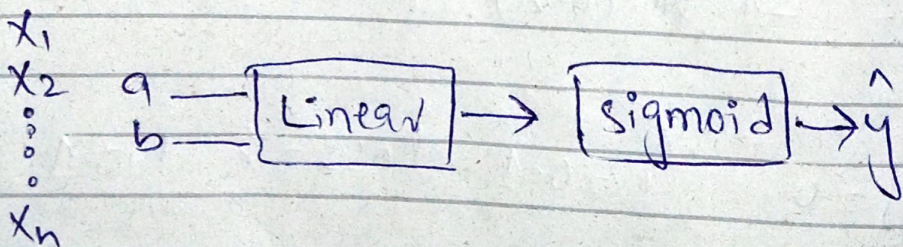
$$X = \begin{bmatrix} [1, 2, 3], \\ [3, 4, 5], \\ [6, 7, 8], \end{bmatrix}$$

$$y = \begin{bmatrix} [1], \\ [0], \\ [1], \end{bmatrix}$$

$$XW = \hat{y}$$

$$\begin{bmatrix} a_1 & b_1 \\ a_2 & b_2 \\ \vdots & \vdots \\ a_n & b_n \end{bmatrix} \begin{bmatrix} w_1 \\ w_2 \end{bmatrix} = \begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix}$$

$$X \quad W \quad = \quad y$$



$$X \quad W$$