In element wise multiplication, corresponding elements of 2 vectors are multiplied to form a new vector of the same dimention.

$$A = \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} \quad B = \begin{bmatrix} 3 \\ 4 \\ 5 \end{bmatrix} \quad A \otimes B = \begin{bmatrix} 3 \\ 8 \\ 15 \end{bmatrix} \rightarrow Dimension$$

Application Data Science

Feature engineering

Product	Cost		Disicount		Discount Price	Final Prince
A	1000	$\otimes$	0.1	=	100	900
B	500	$\otimes$	0.2	=	100	400
C	200	$\otimes$	0.15	=	30	170

Deep Learning: RNN, LSTM, RNN, GRU, RNN

$\otimes \quad \oplus \rightarrow$ forget gate, input gate

$$\begin{bmatrix} 0.5 \\ 0.6 \\ 0.3 \end{bmatrix} \otimes \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix} \rightarrow \begin{bmatrix} 0 \\ 0 \\ 0.3 \end{bmatrix} \rightarrow help \ you \ es \ gatc, \ ellown$$

pass or not information

gate → pass info or not