

Matrix Multiplication part 1

A

$$\begin{bmatrix} 2 & -3 \\ 7 & 5 \end{bmatrix}$$

B

$$\begin{bmatrix} 10 & -8 \\ 12 & -2 \end{bmatrix}$$

$$A+B=B+A$$

A.B not always = B.A
order or Dimention is
matter here

$$A \times B = \begin{bmatrix} a & b \\ c & d \end{bmatrix} \times \begin{bmatrix} e & f \\ g & h \end{bmatrix}$$

$$A \times B = \begin{bmatrix} (a.e+b.g) & (a.f+b.h) \\ (c.e+d.g) & (c.f+d.h) \end{bmatrix}$$

$$A \times B = \begin{bmatrix} (2.10+3.12) & (2.-8+3.-2) \\ (7.10+5.12) & (7.-8+5.-2) \end{bmatrix}$$

$$A \times B = \begin{bmatrix} (2.10+3.12) & (2.-8+3.-2) \\ (7.10+5.12) & (7.-8+5.-2) \end{bmatrix} = \begin{bmatrix} -16 & -10 \\ 130 & -66 \end{bmatrix}$$



Matrix Multiplication part 1

$$A \times B = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \times \begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix} = \begin{bmatrix} 1.5+2.7 & 1.6+2.8 \\ 3.5+4.7 & 3.6+4.8 \end{bmatrix} = \begin{bmatrix} 19 & 22 \\ 43 & 50 \end{bmatrix}$$
$$B \times A = \begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix} \times \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} = \begin{bmatrix} 5.1+6.3 & 5.2+6.4 \\ 7.1+8.3 & 7.2+8.4 \end{bmatrix} = \begin{bmatrix} 23 & 34 \\ 31 & 46 \end{bmatrix}$$

A \times B is Not equal to B \times A



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