

Multiplicação de matrizes

$$a = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$b = \begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$$

$$a \cdot b = \begin{bmatrix} \boxed{1 \ 2} \\ \boxed{3 \ 4} \end{bmatrix} \cdot \begin{bmatrix} \boxed{5} \ \boxed{6} \\ \boxed{7} \ \boxed{8} \end{bmatrix} = \begin{bmatrix} \boxed{1 \cdot 5 + 2 \cdot 7} & 1 \cdot 6 + 2 \cdot 8 \\ 3 \cdot 5 + 4 \cdot 7 & \boxed{3 \cdot 6 + 4 \cdot 8} \end{bmatrix}$$

$(1,1)$ $(2,2)$

$$a \cdot b = \begin{bmatrix} 19 & 22 \\ 43 & 50 \end{bmatrix}$$

exemplo:

$$A = \begin{matrix} & \begin{matrix} K=0 & K=1 & K=2 \end{matrix} \\ & \begin{matrix} \downarrow & \downarrow & \downarrow \end{matrix} \\ \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} & B = \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix} \end{matrix}$$

$$A_{2 \times 3} \cdot B_{3 \times 2} = C_{2 \times 2}$$

$n^\circ \text{colunas } A = n^\circ \text{linhas } B$

$$C = [] \rightarrow n^\circ \text{linhas} = n^\circ \text{linhas de } A$$

$$C = [[]]$$

$$C = [[\square]]$$

variável K "percorre" sobre a linha de A
e ao mesmo tempo na coluna de B

$$K=0 \rightarrow 1-1 ; C = [[1]]$$

$$K=1 \rightarrow 2-3 ; C = [[1+6]]$$

$$K=2 \rightarrow 3-5 ; C = [[1+6+15]] \Rightarrow C = [[22]]$$

$$C = [[22, \square]]$$

$$K=0 \rightarrow 1.2 \quad C = \begin{bmatrix} 22, 2 \end{bmatrix}$$

$$K=1 \rightarrow 2.4 \quad C = \begin{bmatrix} 22, 10 \end{bmatrix}$$

$$K=2 \rightarrow 3.6 \quad C = \begin{bmatrix} 22, 28 \end{bmatrix}$$

$$C = \begin{bmatrix} 22, 28, \end{bmatrix}$$

$$K=0 \rightarrow 4.1 \quad C = \begin{bmatrix} 22, 28, 4 \end{bmatrix}$$

$$K=1 \rightarrow 5.3 \quad C = \begin{bmatrix} 22, 28, 19 \end{bmatrix}$$

$$K=2 \rightarrow 6.5 \quad C = \begin{bmatrix} 22, 28, 49 \end{bmatrix}$$

Retorna ao 1º for

$$C = \begin{bmatrix} 22, 28, 49, 8 \end{bmatrix}$$

$$K=0 \rightarrow 4.2 \quad C = \begin{bmatrix} 22, 28, 49, 8 \end{bmatrix}$$

$$K=1 \rightarrow 5.4 \quad C = \begin{bmatrix} 22, 28, 49, 28 \end{bmatrix}$$

$$K=2 \rightarrow 6.6 \quad C = \begin{bmatrix} 22, 28, 49, 64 \end{bmatrix}$$

$$C = \begin{bmatrix} 22 & 28 \\ 49 & 64 \end{bmatrix}$$