Matrizenmultiplikation

- $(m \times n)$-Matrix $\boldsymbol{A}$
- $(n \times p)$-Matrix $\boldsymbol{B}$

$$\boldsymbol{A}\boldsymbol{B} = \boldsymbol{C} \tag{1}$$

$$c_{ij} = \sum_{s=1}^{n} a_{is} b_{sj} \tag{2}$$

- Ergebnis: $(m \times p)$-Matrix $\boldsymbol{C}$
- Falksches Schema

$$\begin{array}{c|ccccc}
\boldsymbol{A}\boldsymbol{B} = \boldsymbol{C} & b_{11} & \cdots & b_{1j} & \cdots & b_{1p} \\
 & \vdots & & \ddots & & \vdots \\
 & b_{s1} & \cdots & b_{sj} & \cdots & b_{sp} \\
 & \vdots & & \ddots & & \vdots \\
 & b_{n1} & \cdots & b_{nj} & \cdots & b_{np} \\
\hline
a_{11} \cdots a_{1s} \cdots a_{1n} & c_{11} & \cdots & c_{1j} & \cdots & c_{1p} \\
\vdots \quad \ddots \quad \vdots & \vdots & & \ddots & & \vdots \\
a_{i1} \cdots a_{is} \cdots a_{in} & c_{i1} & \cdots & c_{ij} & \cdots & c_{ip} \\
\vdots \quad \ddots \quad \vdots & \vdots & & \ddots & & \vdots \\
a_{m1} \cdots a_{ms} \cdots a_{mn} & c_{m1} & \cdots & c_{mj} & \cdots & c_{mp}
\end{array} \tag{3}$$