

$$\begin{array}{c}
 L_i \begin{bmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & & \vdots \\ a_{i1} & \cdots & a_{in} \\ \vdots & & \vdots \\ a_{n1} & \cdots & a_{nn} \end{bmatrix}
 \end{array}
 \begin{array}{c}
 \begin{bmatrix} b_{11} & \cdots & b_{1j} & \cdots & b_{1n} \\ \vdots & & \vdots & & \vdots \\ b_{n1} & \cdots & b_{nj} & \cdots & b_{nn} \end{bmatrix}
 \end{array}
 \begin{array}{c}
 C_j \\
 \begin{bmatrix} \vdots \\ \vdots \\ c_{ij} \end{bmatrix}
 \end{array}$$

The diagram illustrates the relationship between three matrices: L_i , C_j , and a matrix of elements b_{ij} . The matrix L_i is shown on the left, with its i -th row highlighted in pink. The matrix C_j is shown on the right, with its j -th column highlighted in pink. The matrix of elements b_{ij} is shown in the middle, with its j -th column highlighted in pink. A curved arrow points from the i -th row of L_i to the j -th column of C_j , indicating a relationship between the two matrices.