

$$\begin{matrix} & A \\ m & \begin{array}{|c|} \hline \text{Red Rectangle} \\ \hline \end{array} \\ & n \end{matrix} = \begin{matrix} & U \\ \begin{array}{|c|} \hline \text{Blue Square} \\ \hline \end{array} \end{matrix} \times \begin{matrix} & D \\ \begin{array}{|c|} \hline \begin{array}{|c|} \hline \text{Green Square with Diagonal and Zeros} \\ \hline \end{array} \\ \hline \end{array} \end{matrix} \times \begin{matrix} & V^T \\ \begin{array}{|c|} \hline \text{Purple Square} \\ \hline \end{array} \end{matrix}$$

The diagram illustrates the Singular Value Decomposition (SVD) of a matrix A . Matrix A is a red rectangle with dimensions m (rows) and n (columns). It is equal to the product of three matrices: U (a blue square), D (a green square with a diagonal line and zeros), and V^T (a purple square). The matrix D is divided into four quadrants by a horizontal and vertical line. The top-left quadrant contains a diagonal line, the top-right quadrant contains a '0', the bottom-left quadrant contains a '0', and the bottom-right quadrant contains a '0'.