

$$\begin{array}{c}
 \begin{array}{c}
 \mathbf{u}_1 \quad \mathbf{u}_r \quad \mathbf{u}_{r+1} \quad \mathbf{u}_m \\
 \left(\begin{array}{c} \text{[vertical bar]} \quad \text{[vertical bar]} \quad \text{[vertical bar]} \quad \text{[vertical bar]} \\ \vdots \quad \vdots \quad \vdots \quad \vdots \\ \text{[vertical bar]} \quad \text{[vertical bar]} \quad \text{[vertical bar]} \quad \text{[vertical bar]} \end{array} \right) \\
 \underbrace{\hspace{1.5cm}}_{\text{col}(A)} \quad \underbrace{\hspace{1.5cm}}_{\text{null}(A^T)}
 \end{array}
 \quad
 \begin{array}{c}
 \left(\begin{array}{c} \sigma_1 \quad \cdot \quad \cdot \quad \cdot \\ \quad \sigma_r \\ \quad \quad 0 \quad \cdot \quad \cdot \quad \cdot \\ \quad \quad \quad 0 \end{array} \right)
 \end{array}
 \quad
 \begin{array}{c}
 \left(\begin{array}{c} \text{[horizontal bar]} \\ \vdots \\ \text{[horizontal bar]} \\ \text{[horizontal bar]} \\ \vdots \\ \text{[horizontal bar]} \end{array} \right)
 \begin{array}{l}
 \mathbf{v}_1^T \\
 \vdots \\
 \mathbf{v}_r^T \\
 \mathbf{v}_{r+1}^T \\
 \vdots \\
 \mathbf{v}_n^T
 \end{array}
 \end{array}
 \begin{array}{l}
 \left. \begin{array}{c} \mathbf{v}_1^T \\ \vdots \\ \mathbf{v}_r^T \end{array} \right\} \text{row}(A) \\
 \left. \begin{array}{c} \mathbf{v}_{r+1}^T \\ \vdots \\ \mathbf{v}_n^T \end{array} \right\} \text{null}(A)
 \end{array}
 \end{array}$$