

Diagram (a) illustrates the SVD decomposition of a matrix  $\mathbf{A}_{m \times n}$  where  $m < n$ . The matrix  $\mathbf{A}_{m \times n}$  (green box) is equal to the product of three matrices:  $\mathbf{U}_{m \times m}$  (blue box),  $\Sigma_{m \times n}$  (white box with a diagonal of colored squares), and  $\mathbf{V}_{n \times n}^T$  (purple box).

(a) ( $m < n$ )

Diagram (b) illustrates the SVD decomposition of a matrix  $\mathbf{A}_{m \times n}$  where  $m > n$ . The matrix  $\mathbf{A}_{m \times n}$  (green box) is equal to the product of three matrices:  $\mathbf{U}_{m \times m}$  (blue box),  $\Sigma_{m \times n}$  (white box with a diagonal of colored squares), and  $\mathbf{V}_{n \times n}^T$  (purple box).

(b) ( $m > n$ )