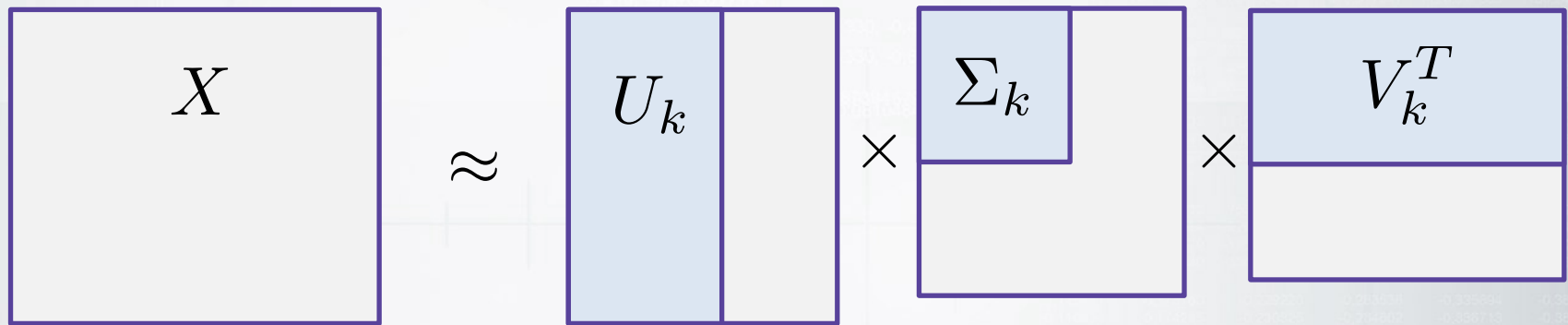


Truncated SVD

Keep only first k components: $\hat{X}_k = U_k \Sigma_k V_k^T$



It's the best approximation of rank k in terms of Frobenius norm:

$$\|X - \hat{X}\|_F = \sqrt{\sum_{i=1}^n \sum_{j=1}^m (x_{ij} - \hat{x}_{ij})^2}$$