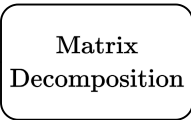
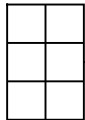
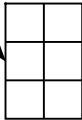
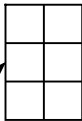


$$X \in \mathbb{R}^{m \times n}$$

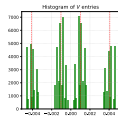
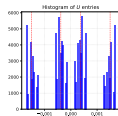


$$X \approx U + \hat{V}$$

$$U \in \mathbb{R}^{m \times n}$$

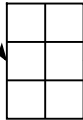
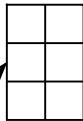


$$V = Q_1^T \hat{V} Q_2 \in \mathbb{R}^{m \times n}$$



Clustering

$$U^q$$



$$\hat{V}^q = Q_1 V^q Q_2^T$$

$$X^q \approx U^q + \hat{V}^q$$

