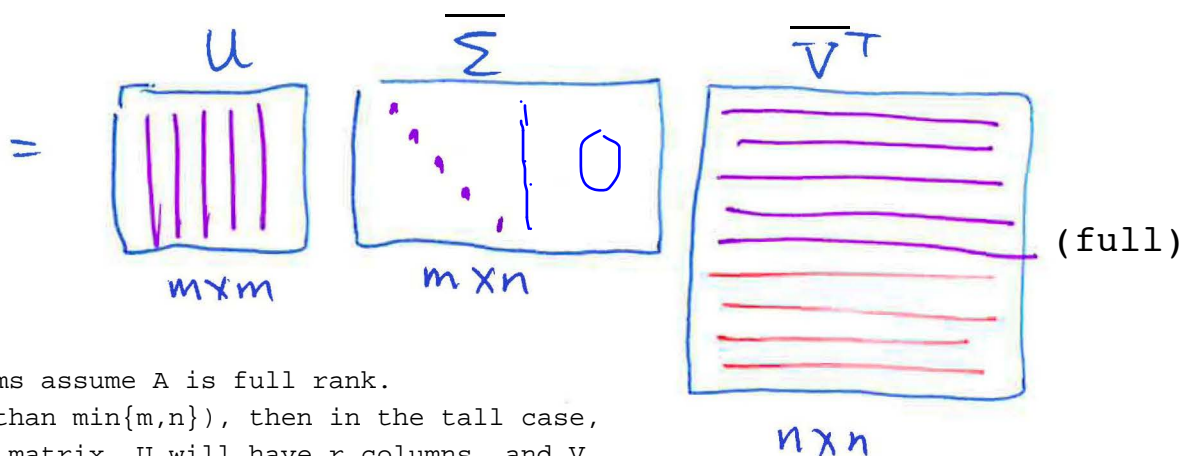
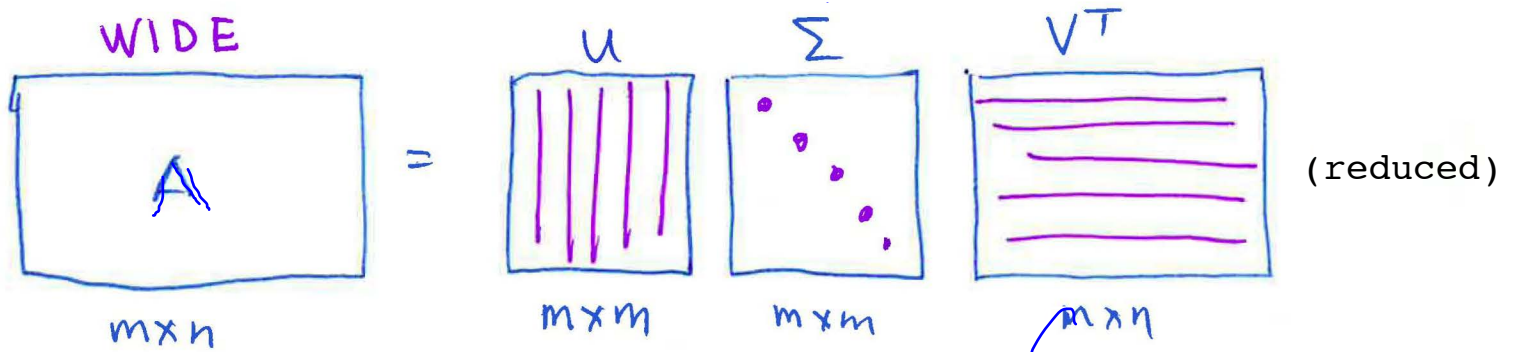
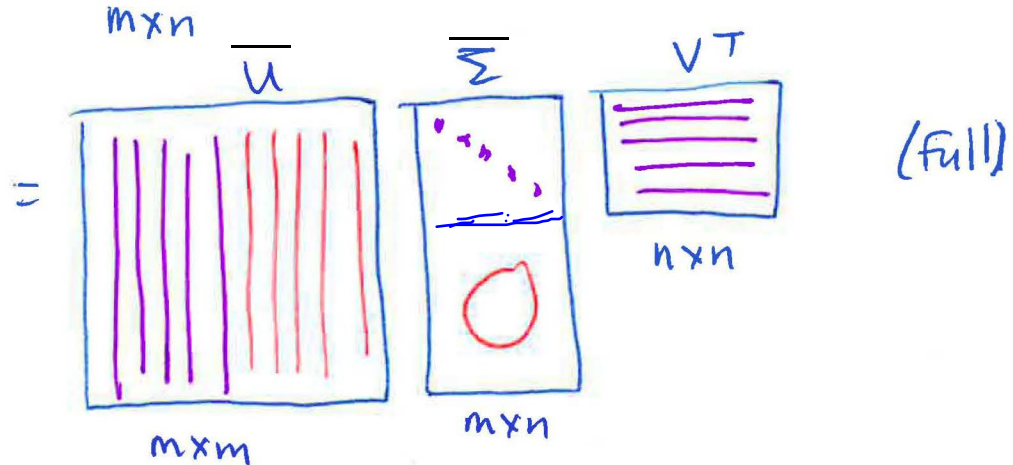
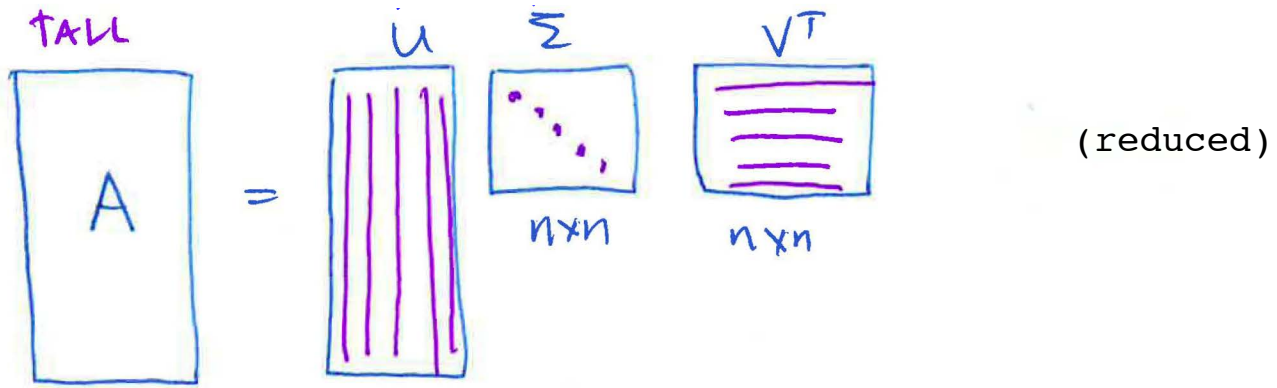


$$A: \mathbb{R}^n \rightarrow \mathbb{R}^m$$



Note: the above diagrams assume A is full rank.

If A has rank r (less than $\min\{m, n\}$), then in the tall case, Σ will be an $r \times r$ matrix, U will have r columns, and V will have r rows. For the full SVD, the diagonal part of Σ -bar will have r nonzero elements and $\min\{m, n\} - r$ zeros.