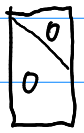
Singular value decomposition/SVD

$A = U \Sigma V^T$ $\quad A$ $m \times n$

U: $n \times n$ orthogonal

Σ: $m \times n$  entries on diagonal ≥ 0, sorted in desc. order.

V^T: $m \times m$ orthogonal

columns of V: right singular vector

values on diagonal of Σ: singular values

columns of U: left singular vectors

Assume: A square

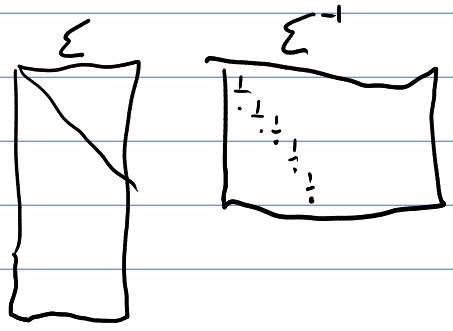
$A A^{-1} = I$

$(U \Sigma V^T) A^{-1} =$

$\Sigma V^T A^{-1} = U^T$

$V^T A^{-1} = (\Sigma^{-1}) U^T$

$A^{-1} = V \Sigma^{-1} U^T$



pseudo-inverse