

# Condition Number

If we have

$$\sigma_1 \geq \sigma_2 \geq \cdots \geq \sigma_n$$

Then,

$$\text{condition number} = \frac{\sigma_1}{\sigma_n}$$

Remember  $\sigma_i = \sqrt{\lambda_i}$  where  $\lambda_i$  is the eigenvalue of  $A^T A$ .