

# The Jacobian (of $p$ w.r.t. $\theta$ )

$$J_{ij} = \frac{\partial p_i}{\partial \theta_j}$$

**Example for two segment arm**

$$J = \begin{bmatrix} \frac{\partial p_z}{\partial \theta_1} & \frac{\partial p_z}{\partial \theta_2} \\ \frac{\partial p_x}{\partial \theta_1} & \frac{\partial p_x}{\partial \theta_2} \end{bmatrix}$$