

**Definition (Special Euclidean group  $SE(n)$ ).** The special Euclidean group of order  $n$ , written  $SE(n)$ , is the group of  $(n + 1) \times (n + 1)$  square matrices of the form

$$\begin{pmatrix} \mathbf{R} & \mathbf{t} \\ \mathbf{0} & 1 \end{pmatrix}$$

where  $\mathbf{R} \in SO(n)$  and  $\mathbf{t} \in \mathbb{R}^n$ .