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## 1 Step by step

1. Choose axis  $z_i$  along the axis of joint  $i + 1$  starting from the base with  $z_0$ 
  - For  $z_n$  as there is no joint  $n + 1$ , if joint  $n$  is revolute, align  $z_n$  with  $z_{n-1}$ , if joint is prismatic chose  $z_n$  arbitrarily
2. Choose axis  $x_i$  along the common normal to axes  $z_{i-1}$  and  $z_i$  with direction from joint  $i$  to joint  $i + 1$ 
  - If  $z_{i-1}$  and  $z_i$  are parallel, then the direction of  $x_i$  is from  $z_{i-1}$  to  $z_i$
  - If  $z_{i-1}$  and  $z_i$  are collinear,  $x_i$  can be chosen arbitrarily
3. Assign angles for the revolute joints, starting with  $q_1$  in  $z_0$  until  $z_{n-1}$
4. Assign variables for prismatic joints

Obs: If the joint is twisting or prismatic, put the frame  $O_i$  with the frame  $O_{i-1}$

## 2 Construct table of parameters

- $\alpha_i$  - angle between  $z_{i-1}$  and  $z_i$  around  $x_i$  axis
- $a_i$  - distance between  $O_{i-1}$  and  $O_i$  about  $x_i$  axis
- $d_i$  - distance between  $O_{i-1}$  and  $O_i$  about  $z_{i-1}$  axis (variable if joint is PRISMATIC)
- $\theta_i$  - angle between  $x_{i-1}$  and  $x_i$  around  $z_{i-1}$  axis (variable if joint is REVOLUTE)