



DH Parameters:

i	$\alpha_{i-1}$	$a_{i-1}$	$d_i$	$\theta_i$
1	0	0	0	$\theta_1$
2	$-90^\circ$	0	0	$\theta_2$
3	0	$a_2$	0	$\theta_3$
4	$-90^\circ$	0	0	$\theta_4$
5	$90^\circ$	0	$d_5$	$\theta_5$
6	$-90^\circ$	0	0	$\theta_6$

$${}^0T_1 = \begin{bmatrix} \cos\theta_1 & -\sin\theta_1 & 0 & 0 \\ \sin\theta_1 & \cos\theta_1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$R_{z, \theta_1}$

$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \times \begin{bmatrix} \cos\theta_2 & -\sin\theta_2 & 0 & 0 \\ \sin\theta_2 & \cos\theta_2 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \Rightarrow {}^1T_2 = \begin{bmatrix} \cos\theta_2 & -\sin\theta_2 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ -\sin\theta_2 & -\cos\theta_2 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$R_{x, -\pi/2}$        $R_{z, \theta_2}$

$${}^2T_3 = \begin{bmatrix} \cos\theta_3 & -\sin\theta_3 & 0 & a_2 \\ \sin\theta_3 & \cos\theta_3 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$R_{z, \theta_3}$

$$\begin{array}{c} R_{x, -\pi/2} \\ \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right] \end{array} \times \begin{array}{c} R_{z, \theta_4} \\ \left[ \begin{array}{cccc} \cos \theta_4 & -\sin \theta_4 & 0 & 0 \\ \sin \theta_4 & \cos \theta_4 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right] \end{array} \Rightarrow {}^3T_4 = \left[ \begin{array}{ccc|c} \cos \theta_4 & -\sin \theta_4 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ -\sin \theta_4 & -\cos \theta_4 & 0 & 0 \\ \hline 0 & 0 & 0 & 1 \end{array} \right]$$

$$\begin{array}{c} R_{x, \pi/2} \\ \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right] \end{array} \times \begin{array}{c} R_{z, \theta_5} \\ \left[ \begin{array}{cccc} \cos \theta_5 & -\sin \theta_5 & 0 & 0 \\ \sin \theta_5 & \cos \theta_5 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right] \end{array} \Rightarrow {}^4T_5 = \left[ \begin{array}{ccc|c} \cos \theta_5 & -\sin \theta_5 & 0 & 0 \\ 0 & 0 & -1 & d_5 \\ \sin \theta_5 & \cos \theta_5 & 0 & 0 \\ \hline 0 & 0 & 0 & 1 \end{array} \right]$$

$$\begin{array}{c} R_{x, -\pi/2} \\ \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right] \end{array} \times \begin{array}{c} R_{z, \theta_6} \\ \left[ \begin{array}{cccc} \cos \theta_6 & -\sin \theta_6 & 0 & 0 \\ \sin \theta_6 & \cos \theta_6 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right] \end{array} \Rightarrow {}^5T_6 = \left[ \begin{array}{ccc|c} \cos \theta_6 & -\sin \theta_6 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ -\sin \theta_6 & \cos \theta_6 & 0 & 0 \\ \hline 0 & 0 & 0 & 1 \end{array} \right]$$

$${}^0T_6 = {}^0T_1 \times {}^1T_2 \times {}^2T_3 \times {}^3T_4 \times {}^4T_5 \times {}^5T_6$$