



DH Algorithm - Examples

Lecture 2. 7

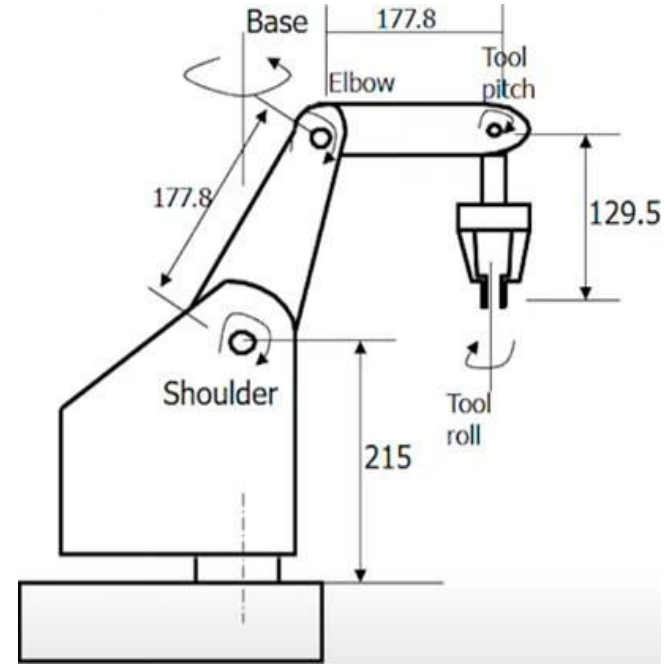
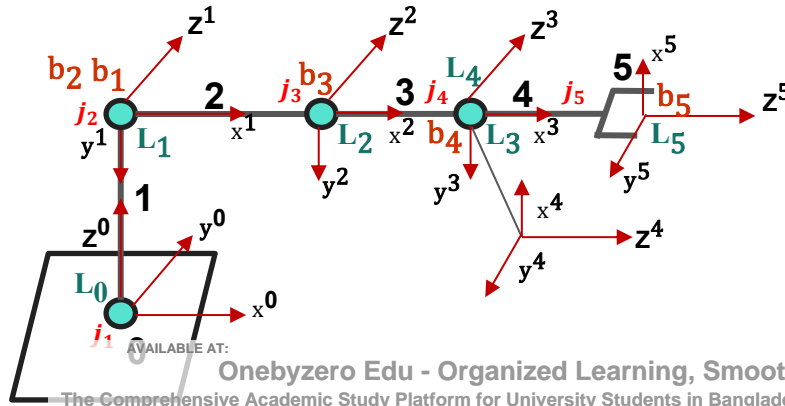
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Example: Assign coordinate frames and determine **kinematic parameters** for a **5-axis articulated Robot, Alpha II**

- Number the links and joints
- Base coordinate frame L_0 .
- For $K=1$, align Z axis, locate origin (**intersection of z^k and Z^{k-1}**) and assign X and Y.
- For $K=K+1$, $K < n$, repeat above step.
- Assign coordinate frame at tooltip (**normal vector- x , sliding vector- y , approach vector - z**).
- For $k=1$ to n , Locate b_k (**intersection of x^k and Z^{k-1}**).
- Get Link and Joint Parameters.



	Theta (θ)	a	d	Alpha (α)
1	$\Theta 1$	0	215	-90
2	$\Theta 2$	177.8	0	0
3	$\Theta 3$	177.8	0	0
4	$\Theta 4$	0	0	-90
5	$\Theta 5$	0	129.5	0

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Here's some notes :

- dk = is the distance between L_0 & $L_k - 1$ & bk measured *along* $zk, zk - 1$
- ak = is the link length between bk to L_k *along* X_k
- α_k = angle of rotation from $zk - 1$ to zk measured with respect to X_k . ($z_0 - z_1$)

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