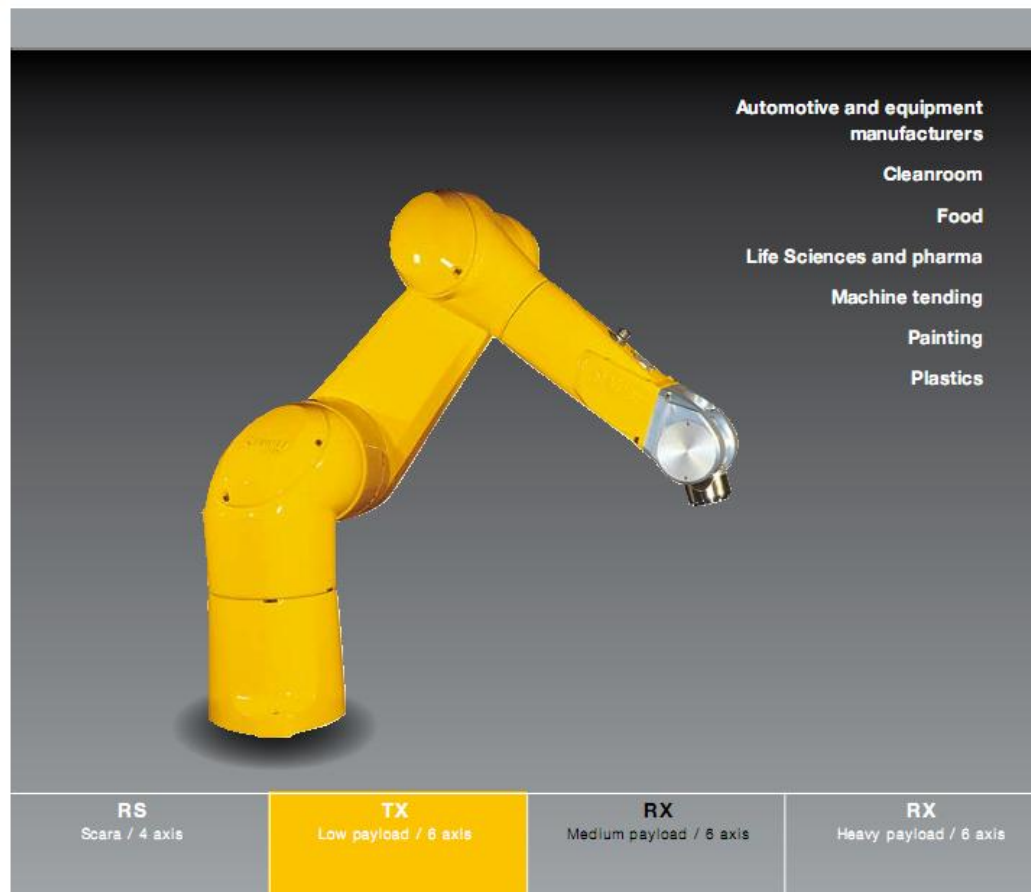


ASSIGNMENT

Staubli TX90 robot

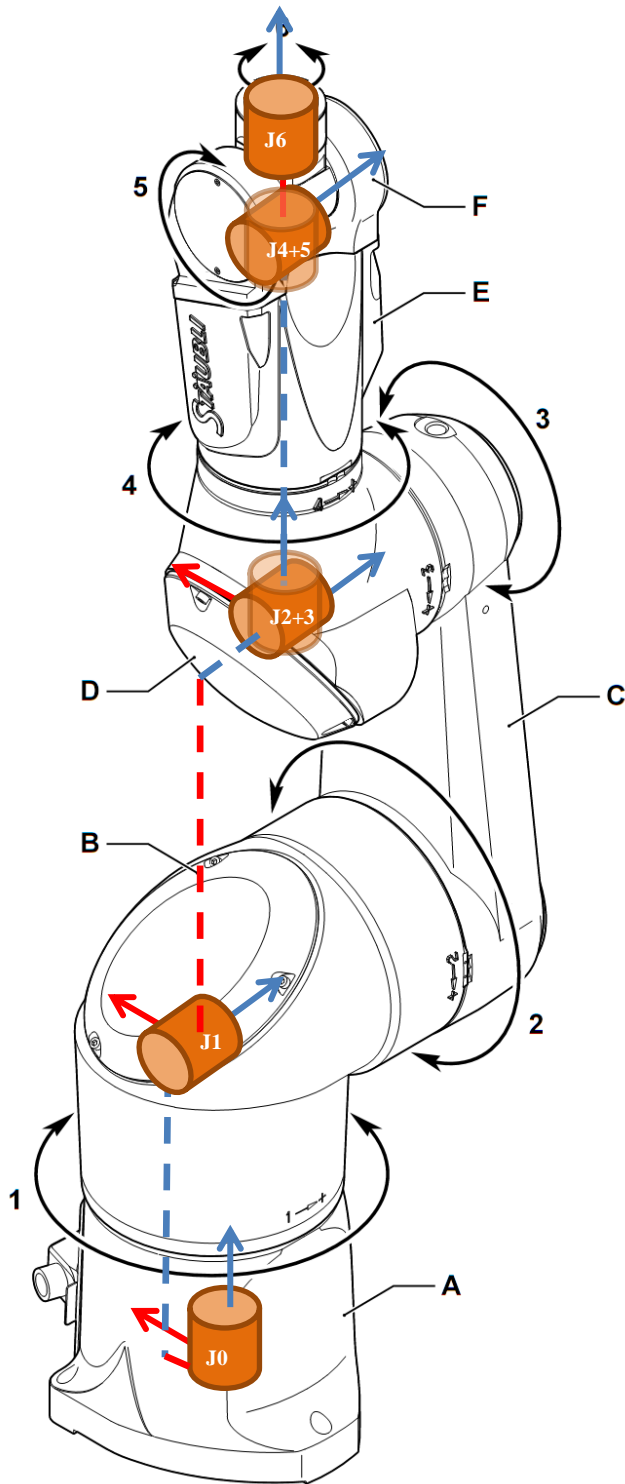
TX90 series industrial robots

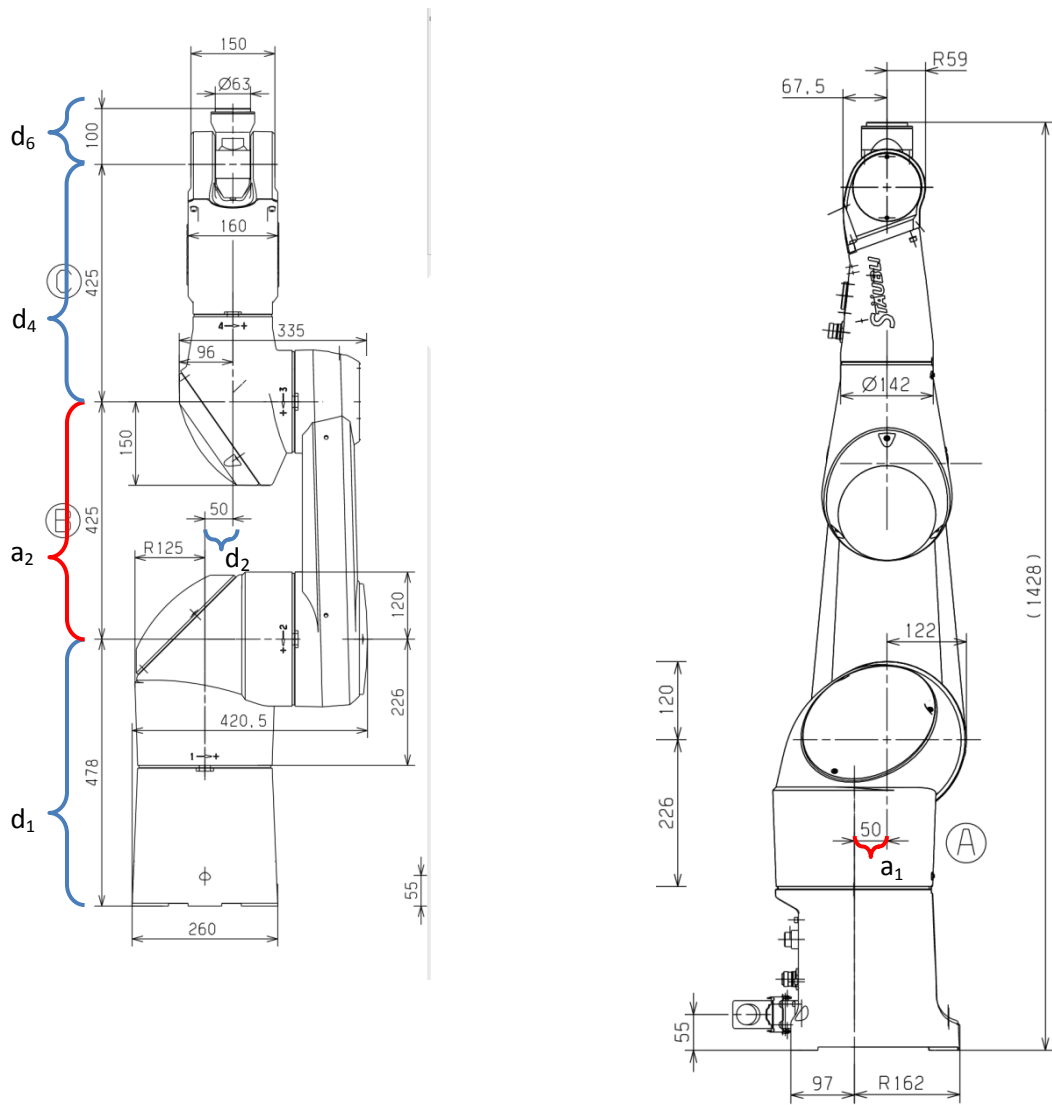


This assignment is only for educational purposes. Thanks to Nathan Payne for making his study public.

The TX90 is an articulated arm with 6 revolute joints (RRRRRR).

1. Obtain the Denavit Hartenberg parameters of the robot shown below. Parameters are $a_1, a_2, d_1, d_2, d_4, d_6$
2. Obtain the homogeneous transformation matrix of the robot.
3. Find the position of the end effector in term of joint angles,





DH Matrix Table

	α_i	a_i	d_i	Θ_i	Transformation
j_1 Shoulder	90°	50mm	478mm	Θ_1	T_{01}
j_2 Arm	0°	425mm	50mm	Θ_2	T_{12}
j_3 Elbow	90°	0mm	0mm	Θ_3	T_{21}
j_4 Forearm	90°	0mm	425mm	Θ_4	T_{23}
j_5 Wrist	90°	0mm	0mm	Θ_5	T_{34}
j_6 Tool Flange	90°	0mm	100mm	Θ_6	T_{35}