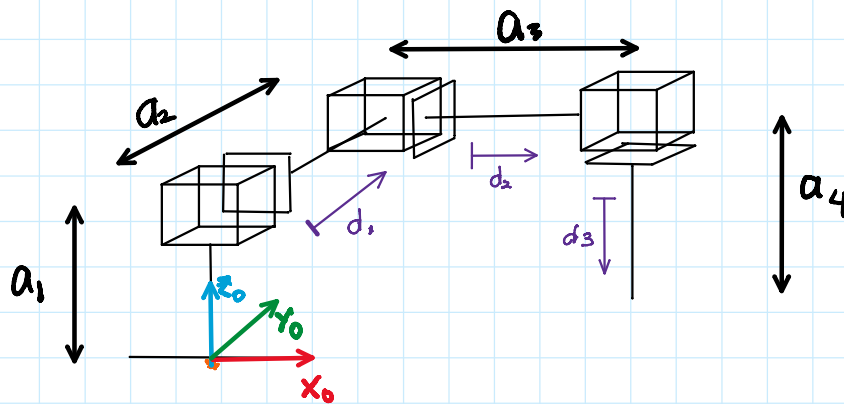


Inverse Kinematics of Cartesian Manipulator - 3201

Thursday, September 9, 2021 • 8:10 PM

5. Coordinate / Cartesian

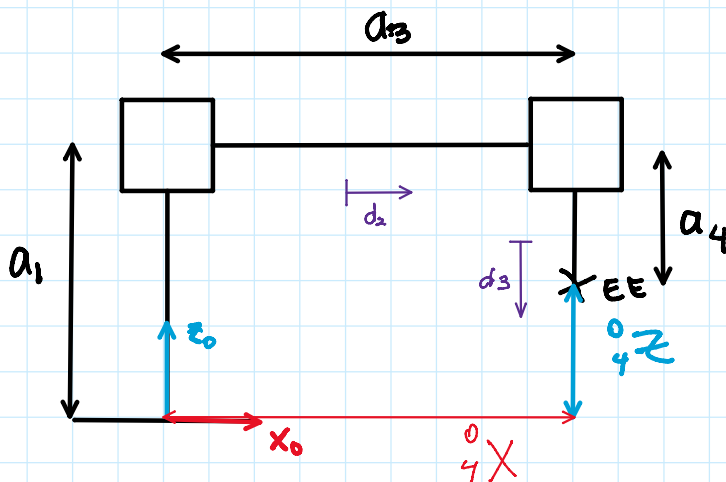


$$\begin{aligned} d_1 &= \uparrow \\ d_2 &= \rightarrow \\ d_3 &= \rightarrow \end{aligned}$$

Given:

a_1	0_4X
a_2	0_4Y
a_3	0_4Z
a_4	0_4Z

Front View



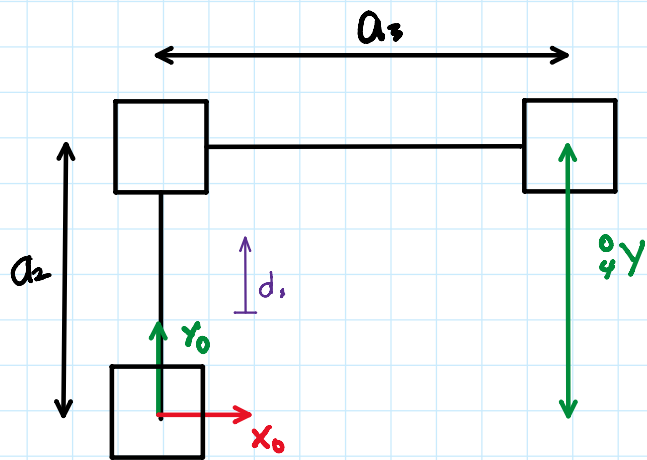
$${}^0_4X = a_3 + d_2$$

$$\boxed{d_2 = {}^0_4X - a_3} \quad (1)$$

$${}^0_4Z = a_1 - a_4 - d_3$$

$$\boxed{d_3 = a_1 - a_4 - {}^0_4Z} \quad (2)$$

Top View



$${}^0y = a_2 + d_1$$

$$d_1 = {}^0y - a_2 \quad (3)$$