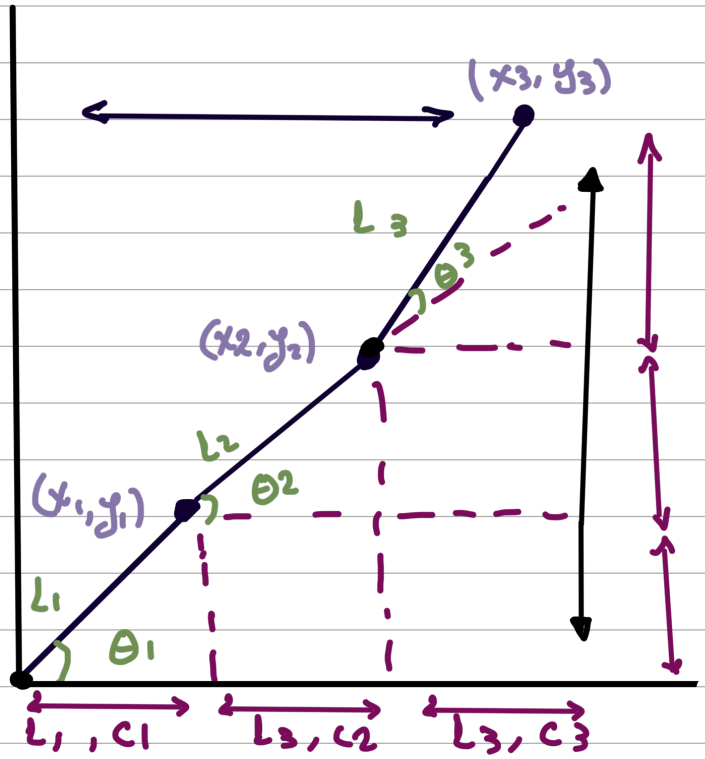
Fordword Inverse Kinematics For 3 dorf arm



Forward kin:

$x = l_1 \cos\theta_1 + l_2 \cos(\theta_1 + \theta_2) + l_3 \cos(\theta_1 + \theta_2 + \theta_3)$

$y = l_1 \sin\theta_1 + l_2 \sin(\theta_1 + \theta_2) + l_3 \sin(\theta_1 + \theta_2 + \theta_3)$

$\theta = \theta_1 + \theta_2 + \theta_3$

Inverse kin

$x_2 = x_3 - L_3 \, C\theta$

$y_2 = y_3 - L_3 \, S\theta$

$\cos\theta = x_2^2 + y_2^2 - l_1^2 - l_2^2 / 2 l_1 l_2$

$\theta_3 = \theta - (\theta_1 + \theta_2)$