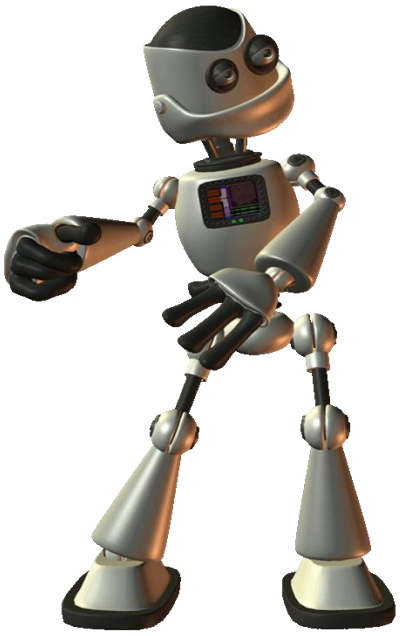
UNIVERSIDAD POLITECNICA DE LA ZONA METROPOLITANA DE GUADALAJARA

CINEMATICA DE ROBOTS



INGENIERIA MECATRONICA 8°B

PRACTICA #1

MAESTRO:

CARLOS ENRIQUE MORAN GARABITO

ALUMNO:

ALEXIS ISRAEL VIORATO ARAMBULA

MATRICES DE MI ROBOT

T1 =

[cos(theta1), -sin(theta1), 0, 0]

[0, 0, -1, 0]

[sin(theta1), cos(theta1), 0, 0]

[0, 0, 0, 1]

T2 =

[cos(theta2), -sin(theta2), 0, L1]

[sin(theta2), cos(theta2), 0, 0]

[0, 0, 1, d1]

[0, 0, 0, 1]

T3 =

[cos(theta3), -sin(theta3), 0, L2]

[sin(theta3), cos(theta3), 0, 0]

[0, 0, 1, d2]

[0, 0, 0, 1]

[cos(theta3)*(cos(theta1)*cos(theta2) - sin(theta1)*sin(theta2)) - sin(theta3)*(cos(theta1)*sin(theta2) + cos(theta2)*sin(theta1)), -cos(theta3)*(cos(theta1)*sin(theta2) + cos(theta2)*sin(theta1)) - sin(theta3)*(cos(theta1)*cos(theta2) - sin(theta1)*sin(theta2)), 0, L2*(cos(theta1)*cos(theta2) - sin(theta1)*sin(theta2)) + L1*cos(theta1)]

[0, 0, -1, - d1 - d2]

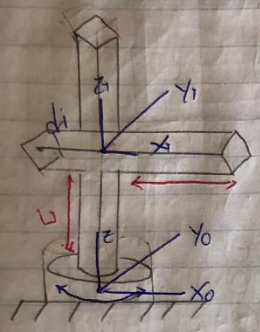
[cos(theta3)*(cos(theta1)*sin(theta2) + cos(theta2)*sin(theta1)) + sin(theta3)*(cos(theta1)*cos(theta2) - sin(theta1)*sin(theta2)), cos(theta3)*(cos(theta1)*cos(theta2) - sin(theta1)*sin(theta2)) - sin(theta3)*(cos(theta1)*sin(theta2) + cos(theta2)*sin(theta1)), 0, L2*(cos(theta1)*sin(theta2) + cos(theta2)*sin(theta1)) + L1*sin(theta1)]

[0, 0, 0, 1]

TEMA

Alexis Israel Viorato Arambula

FECHA 19/Febrero/2019



i	ai-1	αi-1	di	θi
1	0	90°	0	θ1
2	L1	0	d1	θ2
3			d2	θ3

$$T_1^0 \begin{bmatrix} C\theta_1 & -S\theta_1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ S\theta_1 & C\theta_1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$T_2^1 \begin{bmatrix} C\theta_2 & -S\theta_2 & 0 & L_1 \\ S\theta_2 & C\theta_2 & 0 & 0 \\ 0 & 0 & 1 & d_1 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$T_3^2 \begin{bmatrix} C\theta_3 & -S\theta_3 & 0 & L_2 \\ S\theta_3 & C\theta_3 & 0 & 0 \\ 0 & 0 & 1 & d_2 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

[C(θ3)*((C(θ1)*C(θ2)-S(θ2)-S(θ3)*((C(θ1)*S(θ2)+C(θ2)*S(θ1)),-C(θ3)*(C(θ1)*S(θ2)+C(θ2)*S(θ1)-S(θ3)*C(θ1)-S(θ3)*(C(θ1)*(C(θ2)-S(θ1)*S(θ2)),0, L2*(C(θ1)*(C(θ2)-S(θ2)-S(θ1)S(θ2)+L1*C(θ1)]

[0, 0, -1, -d1 -d2]

[C(θ3)*(C(θ1*Sθ2+C(θ2*Sθ1+Sθ3*C(θ1*(θ1*(θ2-S(θ1*Sθ2, C(θ3*(C(θ1*C(θ2-Sθ1*Sθ2-Sθ3*(C(θ1)*Sθ2+C(θ2*Sθ1, 0 L2*C(θ1*Sθ2+C(θ2*Sθ1+L1*Sθ1]

[0, 0, 0, 1]