TUTORIAL FOR TESTING INVERSE KINEMATICS AND JACOBIAN

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Loading ARTE Package:

Open Matlab-> Go to the ARTE-master folder-> run init\_lib.m

Inverse Kinematics:

Example code:

robot=load\_robot('UNIMATE', 'puma560Left');

q = [0 0 0 0 0 0];

% If you enter values in degrees use the below function to convert to %radians

q = deg2radm(q);

choice=''; - You can give choice as geometric, circ, hfang

T = directkinematic(robot, q);

%Call the inversekinematic for this robot

qinv = inversekinematic(robot, T, choice);

qop=rad2degm(qinv)

%check that all of them are feasible solutions!

%and every Ti equals T

for i=1:8,

Ti = directkinematic(robot, qinv(:,i))

end

for i=1:8

drawrobot3d(robot, qinv(:,i))

pause(1);

end

The Source Code Location

Go to robots -> UNIMATE -> puma560Left.

It has the code for inverse kinematics. The testing and demo files for the inverse kinematics and Jacobian will be updated shortly for required no. of iterations.

Jacobian:

Example code:

robot=load\_robot('UNIMATE', 'puma560Left');

q = [0 0 0 0 0 0];

% If you enter values in degrees use the below function to convert to %radians

q = deg2radm(q);

J0=jacob0(robot,q);

Jn=jacobn(robot,q);

The Source Code Location

Go to lib -> kinematics -> jacob0 & jacobn are the required files.

It has the code for inverse kinematics. The testing and demo files for the inverse kinematics and Jacobian will be updated shortly for required no. of iterations.