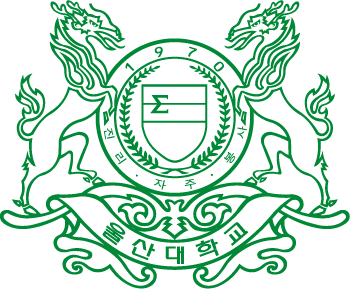
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| **R E P O R T** | |
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La Phuong Ha – ID: 20175308 – Assignment 2: Robot Manipulators

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Problem 3: Program Forward Kinematics for Puma 560 Robots using Matlab

Matlab code:

%Parameter of Manipulator

th1 = pi/4;

th2 = pi/3;

th3 = pi/4;

th4 = pi/3;

th5 = pi/4;

th6 = pi/6;

a2 = 1; a3 = 0.3; d3 = 0.5; d4 = 1;

P6\_T = [0;0;0.2];

%D-H parameters

syms a1 a d th,

T = [cos(th) -sin(th) 0 a;

sin(th)\*cos(a1) cos(th)\*cos(a1) -sin(a1) -sin(a1)\*d;

sin(th)\*sin(a1) cos(th)\*sin(a1) cos(a1) cos(a1)\*d;

0 0 0 1];

T01 = vpa(subs(T,{a1,a,d,th},{[0,0,0,th1]}),2);

T12 = vpa(subs(T,{a1,a,d,th},{[-pi/2,0,0,th2]}),2);

T23 = vpa(subs(T,{a1,a,d,th},{[0,a2,d3,th3]}),2);

T34 = vpa(subs(T,{a1,a,d,th},{[-pi/2,a3,d4,th4]}),2);

T45 = vpa(subs(T,{a1,a,d,th},{[pi/2,0,0,th5]}),2);

T56 = vpa(subs(T,{a1,a,d,th},{[-pi/2,0,0,th6]}),2);

T06 = vpa(T01\*T12\*T23\*T34\*T45\*T56,2)

The output of Matlab: T06

