
```
function [traj,gripper_state]=  
    TrajectoryGenerator(T_se,T_sc_ini,T_sc_fi,T_ce_g,T_ce_stand,dt)
```

Start of the function

```
N = 201;  
  
% Standoff position relative to {s} above initial cube  
T_se_stand_ini = T_sc_ini*T_ce_stand;  
  
% Grasp position relative to {s} at initial cube  
T_se_g_ini = T_sc_ini*T_ce_g;  
  
% Standoff position relative to {s} above final cube  
T_se_stand_fi = T_sc_fi*T_ce_stand;  
  
% Grasp position relative to {s} at final cube  
T_se_g_fi = T_sc_fi*T_ce_g;  
  
% Trajectory of each segment:  
% Moving from initial configuration to standoff  
[traj1,gripper_state1] =  
    ScrewTrajectory_modified(T_se,T_se_stand_ini,N ,dt,'open',3);  
% Moving to grasping position at initial cube position and grap the cube  
[traj2,gripper_state2] =  
    ScrewTrajectory_modified(T_se_stand_ini,T_se_g_ini,N ,dt,'open',3);  
% Moving back to standoff  
[traj3,gripper_state3] =  
    ScrewTrajectory_modified(T_se_g_ini,T_se_stand_ini,N,dt,'close',3);  
% Moving to final standoff position  
[traj4,gripper_state4] =  
    ScrewTrajectory_modified(T_se_stand_ini,T_se_stand_fi,N,dt,'close',3);  
% Moving to final cube position and release the cube  
[traj5,gripper_state5] =  
    ScrewTrajectory_modified(T_se_stand_fi,T_se_g_fi,N,dt,'close',3);  
% Moving back to final standoff  
[traj6,gripper_state6] =  
    ScrewTrajectory_modified(T_se_g_fi,T_se_stand_fi,N,dt,'open',3);  
traj = [traj1,traj2,traj3,traj4,traj5,traj6];  
  
% Gripper State 0 for open and 1 for close for indicig  
gripper_state =  
    [gripper_state1,gripper_state2,gripper_state3,gripper_state4,gripper_state5,gripper_state6];  
end
```

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Link to video

https://drive.google.com/file/d/1yn39ydB5XkGHV_X-rc2e0TmbfUoEBghf/view?usp=sharing

