

#internship day 5-6 (14-15/5/2020)

14 May 2020 09:15 AM

Today I have did the required changes in v-rep file to match calculation and reality other than that as the verified k_p , k_i , k_d didn't worked with v-rep model i have rechecked my model calculations and code also in the code till now we were trying to give feed back to velocity of motor that's why gains were not matching but then we have tried to give input in terms of torque on disc using the function `sim.addForceandTorque()` but we were facing trouble for using this function. The mistake we were doing was that we were making torque table variable with reference of disk's own frame but the function applies torque and force with respect to world frame so i have detected that error by simulating some diffrent experimental scenes in v-rep. And then i have debugged my script accordingly during the simulation and verification of script i have found one more mistake that was in derivation in PID controller where by mistake dt was wrong or we can say diffrent from simulation parameters so also corrected that error than.

Then during recheck of mathematical calculation i have detected some error there of sign and i have retuned my controllers parameters in matlab but the derived gains were not worked as expected. So we are working o tunning portion now and reverifying all things to find errors if any.

Moments of meeting(15/5/20)

Agenda:

May team was targeted to show two working and well tuned model of inverted pendulum with reaction wheel one with pivot at the bottom and 2nd was without pivot (line contact with ground).

As we were unable to tune both of them we have demonstrated the problem we were facing and mentor commented us that we are on right track and to keep trying so we are now re checking all the things and trying to find problems / mistakes

Action Plans till next meeting:

We have to tune our controller and also to complete this on cycle bot.

We have to find examples for provided topic to make tutorials on it.