603 Experiment Report Arm Implementation

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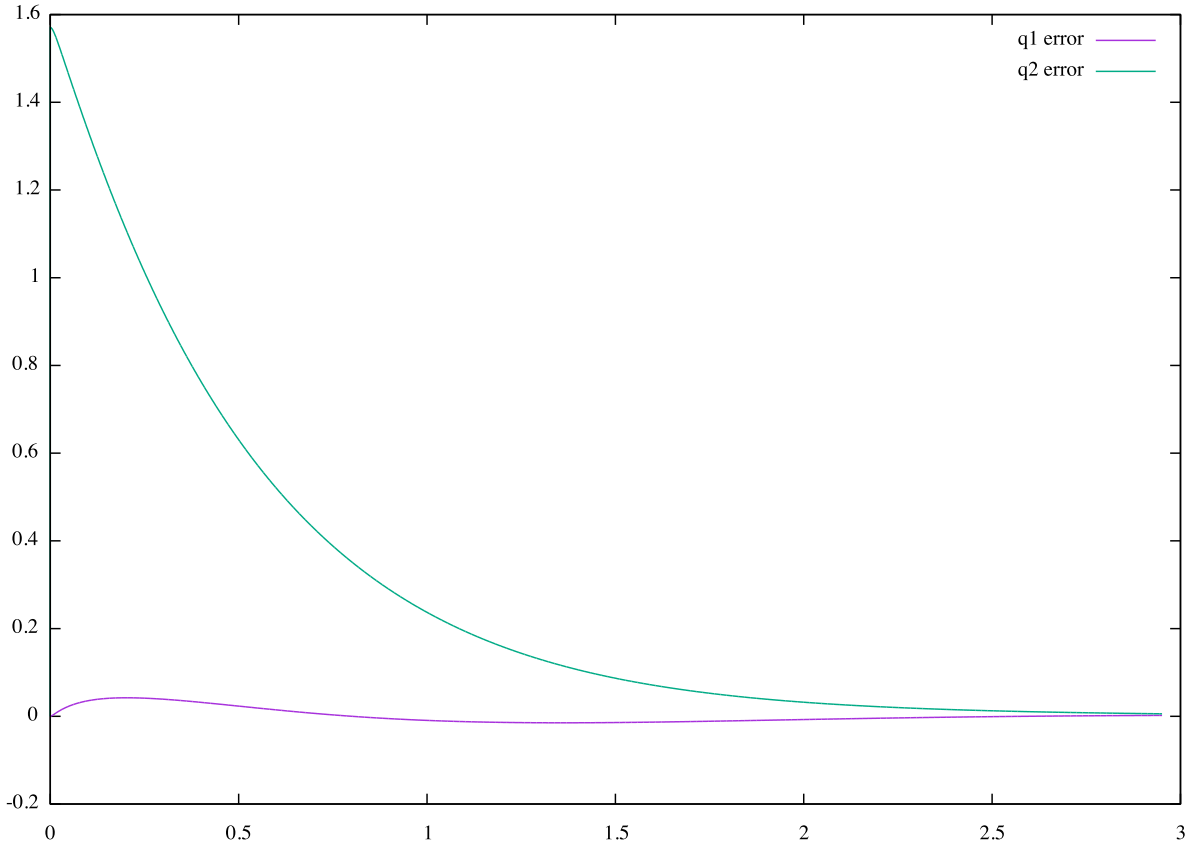
There is a outside looping through left arm and right arm. And the inner looping loops through 2 sections of a single arm. The 'while' checks the target theta and makes true they are in range $[-\pi, \pi]$. Then $arm\_torque[i][j]$ computes the torque.



In this figure, the y axis represents radian and the x axis represents time.The purple line is the upper arm and the green one is for forearm.

The gains are a little bit tricky for arms. It seems larger damping factor would make arms move so slowly while it still seems to be smaller than critical damping. For faster arm speed, I picked

8 and damping to be 0.8 to start with. However, even if I increased the damping factor all the way to 4, the responses of arms were still unsatisfiable. Showing from the plot, arms took pretty long time to move to the target angle and the angle error dropped a little bit below zero and kept dropping until it stopped at a negative error. I understand I am supposed to explain things in this report. But I really have no idea what's going on.