

Project Writeup

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1. Effects of P, I and D components on steering angle

1.1. *P component*

The P component seems to have the greatest influence on our steering angle. However, as we observed in the class too, the **CTE** does not go down all the way to 0. Thus my observation is that when there is a sudden large **CTE** the car cannot handle it very smoothly, example, the car goes off track when it encounters sharp turns.

1.2. *D component*

The D component had the least effect individually. The car goes in random orientations each run. Although when added to the PID controller, I observe some sort of a smoothing. Although I had a **Kd** value of 0.0 for my final parameter set.

1.3. *I Component*

I can very clearly observe the effect of the I component as the car is further along the run. This make sense as we expect the I component to act more as we accumulate more error. So, the car initially goes off track but it follows the curvature of the track.

1.4. *conclusion*

Having observed the effects, it is very easy to see that the right combination of the three components will give us better performance than any of the 3 components individually