# JRD301: Mini Project in Robotics (Second Semester 2019‐20)

Weekly Progress Report (From: 03/02 /2020 To: 14/02/2020)

I undertake that the following work has been accomplished during the above mentioned period of one week (please write in bulleted points):

In order to reduce sudden variations in centre detection, we started storing the x coordinate of the centre of the road (blue dot) and the heading direction of the car (green dot) in 2 separate arrays of length 200 and 100 respectively.

When there was no sudden deflection in the detected value, we updated the array by adding the new detected value and removing the oldest value in the array. Then we used the average of all the values in both the arrays for control instead of the instantaneous values.

This posed a problem when the points deviated and wrong values were inserted in arrays. As we are taking average, it took a while for the points to be corrected. To solve this, if wrong values are inserted in arrays giving a turning angle of more than 10 degrees instantaneously, we flushed all the values of array to start a new set of values, so that incorrect values are not used for averaging.

**Testing 11**

1. We tested this concept on the car in front of the security room, IIT Delhi. We were able to move the car which was correcting itself on a straight road for 100 meters.
2. The correction was a problem when any person or shadows came on the way. This was because of the extremely slow speed of the car which gave a lot of time for the errors to get accumulated and give wrong corrections.
3. When we increased the car speed, we were able to cover more distance. But because of the limit of the car speed in the real world, we are planning to test and debug further in the Gazebo simulator.

A car parked on the side of a road

Description automatically generated

*Fig 5.9 Mahindra e2o car live testing*

# Submitted by (student’s name with signature) Endorsed by:

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