

ROBOTICS CLUB

LA-ROBOLIGA

Freshers Exclusive Event



Welcome to the world of Autonomous Vehicles! Be ready to drive your own vehicle in an artificial world. The environment is set in middle of a football field, where your target is to hit goals avoiding it from the goal keeper.

MISSION

There are two environments set up to show your driving skills. In the first environment, you need to have a good control of steering wheel, and must drive your car between the two lanes of a narrow road. The second environment is set in the middle of an football field where you are being tested on your shooting capabilities. Gear up your vehicles and not forget to put your seat-belts!

ARENA DESCRIPTION

The first arena consists of a single lane road with outer boundaries. Your bot, must complete the track while not crossing the outer boundaries. The second arena consists of a football field with four goalpost and four different colour goalkeepers, there will be four different balls with the same colour as of the goalkeepers placed in the field. Your aim is to shoot the balls into the goalpost without being in-contact of the goalkeepers.

Problem Statement - 1

Your task is to make the Husky move inside the track and complete one lap of the track, without crossing lane boundaries.

The player must use precise movements to complete the task within a given time frame. The challenge lies in balancing the speed and accuracy of the movements by finding the optimal PID gains and processing the camera feed using OpenCV.

Problem Statement - 2

Get Ready for some RoboLeague, In this problem statement, you have to Score Goals using Husky. There are a total of 4 balls and their designated goalpost and a goalkeeper is standing between you and Victory.

make the husky navigate the field grab the balls one at a time and shoot them inside the goalpost while making sure that the ball does NOT hit the goalkeeper, as this will result in a Penalty. The challenge is to complete this task within a specified time with the highest possible accuracy.

Judging Criteria

PS1

The time starts when the car starts to move from the start position and ends when one Lap around the track is completed.

- You will have a total of 5 min (300 sec). The points will be equal to 300 - time to completion of the track(sec)
- There is a penalty if a wheel of husky crosses the track boundary

PS2

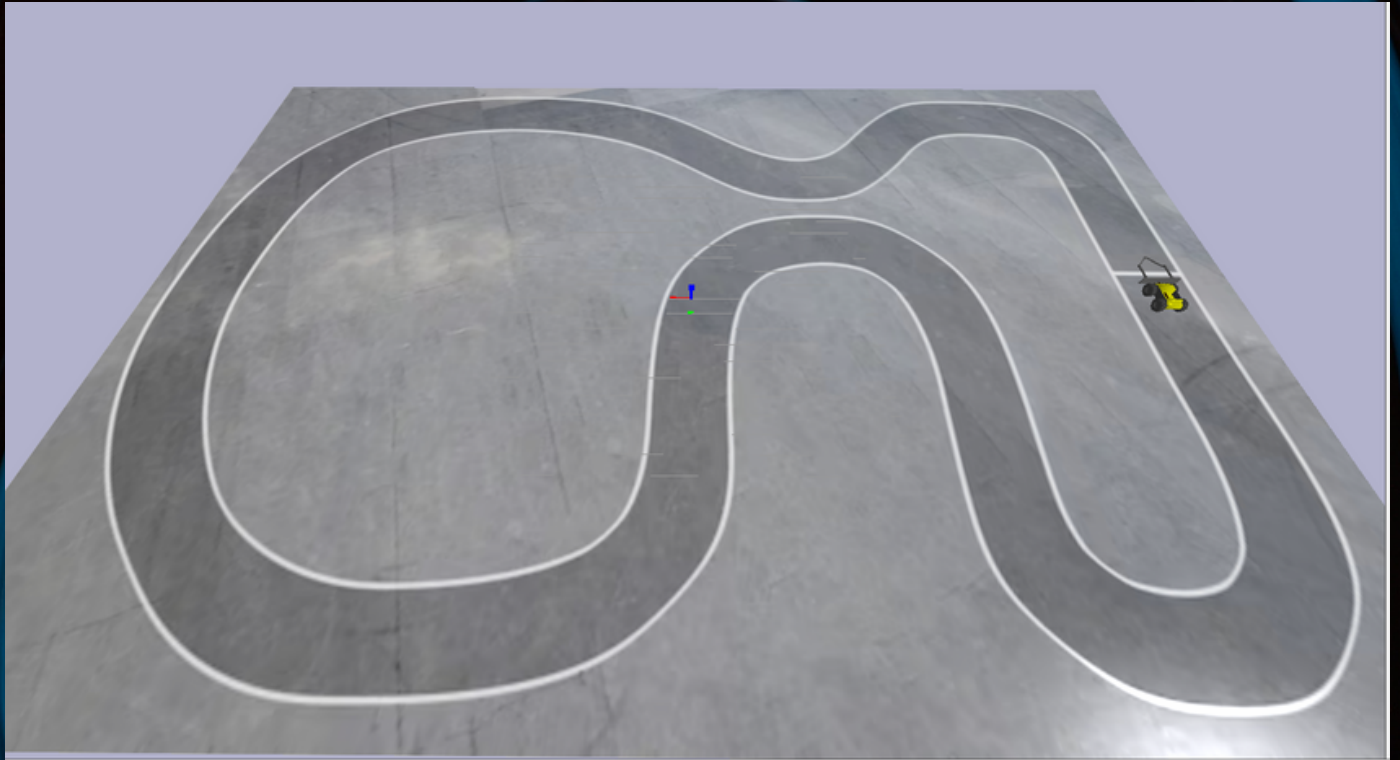
The time starts when the car starts to move from the start position and ends when every ball is inside the designated goalpost.

- Successful pickup of the ball - 50 points
- Successfully shooting the ball in the Goalpost without hitting the Goalkeeper- 100 points
- 25 points will be deducted for every goalkeeper shot.

There is a Bonus configuration of balls, and successful completion in that configuration - 100 points Bonus

***Final points will be awarded after summing the points of both the tasks.**

Arena of PS1



Arena of PS2

