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Github:- https://github.com/dxg397/EECS-476/tree/master/PS4

I faced many problems with my Gazebo simulator. It didn't function correctly for a long time, but when it did, the lidar sensor readings were not realistic. Due to this problem, the robot couldn't detect the obstacle so it didn't stop sometimes or stops sometimes but hits the object.

After stopping when the object is removed from its front it considers that point as the initial starting point and gain starts the trajectory from start as can be seen in the video.

In pub_dest_state.cpp I did the following changes:

1. I added a call function to the lidar alarm.
2. Then in estopServiceCallback, I subscribe to the lidar alarm code,and added a condition that switch the e-stop trigger if the alarm is working.

In the trajectory builder code, I edited the braking trajectory such that the speed decreases from speed_max to 0 in a distance of 0.45 meters (hit and trial method) .

Observations:-

- The robot doesn’t not follow the staright line path, its kind of curved while moving.
- After stopping when the object is removed from its front it considers that point as the initial starting point and gain starts the trajectory from start as can be seen in the video.