U UDACITY

Path Planning

REVIEW
CODE REVIEW
HISTORY

Meets Specifications

Actually, this is a very great attempt as I can see you put a lot of effort to accomplish this project. Hope you enjoyed working on the project.

Cheers, and Keep up the Good Work! 😄

Further Improvement Suggestions

- To expand ones knowledge in this area, it might be good in ones extra time to look at the following materials:
    - Introduction to Robotics #4: Path-Planning
    - http://www.coppeliarobotics.com/helpFiles/en/pathPlanningModule.htm
    - The path planning problem in depth
      https://www.cs.cmu.edu/afs/cs/project/jair/pub/volume9/mazer98a-html/node2.html
    - http://www.roborealm.com/help/Path_Planning.php
    - A discussion on What is the difference between path planning and motion planning?
    - Excellent Tutorial on A* Robot Path Planning
    - Path Planning in Environments of Different Complexity
    - Introduction to robot motion: Robot Motion Planning
    - Introduction to robot motion: Path Planning and Collision Avoidance

Compilation

Code must compile without errors with `cmake` and make.

Given that we've made `CMakeLists.txt` as general as possible, it's recommend that you do not change it unless you can guarantee that your changes will still compile on any platform.

Your code complied without any errors!

Valid Trajectories

The top right screen of the simulator shows the current/best miles driven without incident. Incidents include exceeding acceleration/jerk/speed, collision, and driving outside of the lanes. Each incident case is also listed below in more detail.

The car doesn't drive faster than the speed limit. Also the car isn't driving much slower than speed limit unless obstructed by traffic.

The car does not exceed a total acceleration of 10 m/s^2 and a jerk of 10 m/s^3.

The acceleration of the car was below the maximum acceleration allowed. Well done!

The car must not come into contact with any of the other cars on the road.

Well done! Throughout the simulation the car never collided with any other car on the road. 👍🏼

The car doesn't spend more than a 3 second length out side the lane lanes during changing lanes, and every other time the car stays inside one of the 3 lanes on the right hand side of the road.

The car stays inside one of the 3 lanes on the right-hand side of the road.

The car is able to smoothly change lanes when it makes sense to do so, such as when behind a slower moving car and an adjacent lane is clear of other traffic.

Awesome, the car changes the lane very smoothly throughout the simulation.

Reflection

The code model for generating paths is described in detail. This can be part of the README or a separate doc labeled "Model Documentation".

Nice job! You have discussed all the aspects of how the path planning works, and ways to improve the success rate of completing a simple lap. You may also check the awesome resources below based on path planning.

Resources

Here is another great paper written by our own Sebastian Thrun which discusses the practical search techniques in path planning.

This is another great resource based on "A path planning and obstacle avoidance algorithm for an autonomous robotic vehicle" which you might want to read.

⬇ DOWNLOAD PROJECT

RETURN TO PATH