

The path generation of this model simply uses spline to smooth out the 5 anchor points as shown in the project walkthrough. For lane changing I made 3 boxes, one for each lane, that are close to the car, so that when other car's s and d values match the boxes it will mark the boxes as occupied. When the car needs to change lanes it will check the status of these boxes and make a lane change. If the neighboring lanes are occupied then it will slow down and wait for opportunities for passing. The result is the car is able to drive for at least 5 miles without an incident.

