CS 519
Spring 2020

Team Nautilus: Pure Pursuit lab

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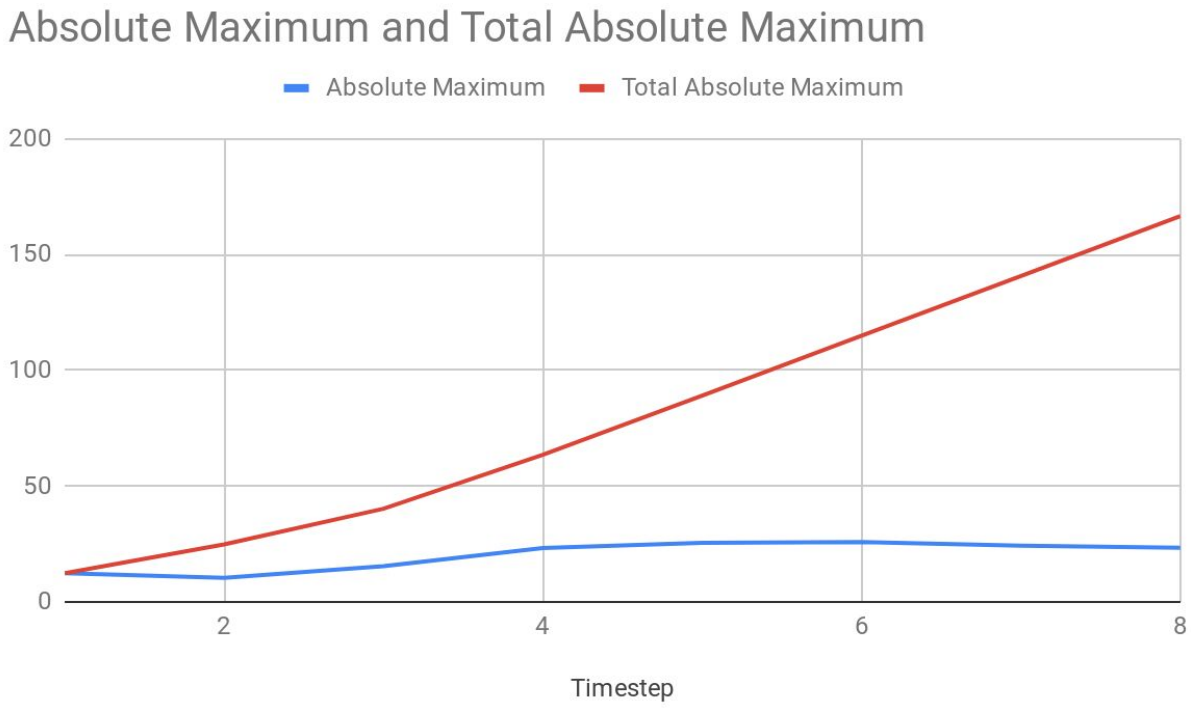
Pure Pursuit

Our implementation of the pure pursuit algorithm is based on the paper “Implementation of the Pure Pursuit Path Tracking Algorithm” by R. Craig Conlter. The pure pursuit algorithm is a tracking algorithm that works by calculating the curvature that will move a vehicle from its current position to some goal position. The purpose of the algorithm is to select a goal position based on a certain distance ahead of the car within a path. The car within the simulation is ‘pursuing’ this determined goal to best follow the desired path. The lookahead distance is altered to account for changes within the road, such as corner turns.

Pure Pursuit Quality

To track the quality of our pure pursuit implementation, we developed a pure_pursuit_quality node that calculates the maximum absolute error between the car’s actual path (as estimated by the particle filter) and the desired path. Below, we have included plots that display the maximum error over time along with the total absolute error of the entire path.



Please see the error_values.csv file generated by the pursuit quality node for absolute max and total absolute max error values over time.