Model Preditive Control

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Abstract

This is a description of my implementation of Project 10, Model Predictive Control in the Self Driving Car Engineer Nanodegree

1   Model

Student describes their model in detail. This includes the state, actuators and update equations.

2   Timestep Length and Elapsed Duration (N & dt)

Student discusses the reasoning behind the chosen N (timestep length) and dt (elapsed duration between timesteps) values. Additionally the student details the previous values tried.

3   Polynomial Fitting and MPC Preprocessing

A polynomial is fitted to waypoints.

If the student preprocesses waypoints, the vehicle state, and/or actuators prior to the MPC procedure it is described.

4   Model Predictive Control with Latency

The student implements Model Predictive Control that handles a 100 millisecond latency. Student provides details on how they deal with latency.