

PROJECT SPECIFICATION

PID Controller

Compilation

CRITERIA

Your code should compile.

MEETS SPECIFICATIONS

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.

Implementation

CRITERIA

The PID procedure follows what was taught in the lessons.

MEETS SPECIFICATIONS

It's encouraged to be creative, particularly around hyperparameter tuning/optimization. However, the base algorithm should follow what's presented in the lessons.

Reflection

CRITERIA

Describe the effect each of the P, I, D components had in your implementation.

MEETS SPECIFICATIONS

Student describes the effect of the P, I, D component of the PID algorithm in their implementation. Is it what you expected?

Visual aids are encouraged, i.e. record of a small video of the car in the simulator and describe what each component is set to.

Describe how the final hyperparameters were chosen.

Student discusses how they chose the final hyperparameters (P, I, D coefficients). This could be have been done through manual tuning, twiddle, SGD, or something else, or a combination!

Simulation

CRITERIA

The vehicle must successfully drive a lap around the track.

MEETS SPECIFICATIONS

No tire may leave the drivable portion of the track surface. The car may not pop up onto ledges or roll over any surfaces that would otherwise be considered unsafe (if humans were in the vehicle).