Project: Unscented Kalman Filter Highway Project

Submission Results

Submission Date: August 02, 2019

Submission Passed

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Feedback Details

Specification Review | Code Review

Reviewer Note

Hi, This is a very good submission. Well done. Please keep up the good work.

- I'd like to invite you to look at this link to this documents on UKF. I personally use it a lot in order to better understand these filters. https://www.seas.harvard.edu/courses/cs281/papers/unscented.pdf

Compiling and Testing

The submission must compile.

Reviewer Note

Excellent work, your code compiles successfully with no mistake.

The project code must compile without errors using [redacted] and [redacted].

Code Efficiency

The methods in the code should avoid unnecessary calculations.

Reviewer Note

Well done, there's is no unnecessary loop that runs too many times, and no unnecessary control flow checks.

Your code does not need to sacrifice comprehension, stability, or robustness for speed. However, you should maintain good and efficient coding practices when writing your functions.

Here are some things to avoid. This is not a complete list, but there are a few examples of inefficiencies.

- Running the exact same calculation repeatedly when you can run it once, store the value and then reuse the value later.
- Loops that run too many times.
- Creating unnecessarily complex data structures when simpler structures work equivalently.
- Unnecessary control flow checks.

Accuracy

px, py, vx, vy output coordinates must have an RMSE <= [0.30, 0.16, 0.95, 0.70] after running for longer than 1 second.

Reviewer Note

Great job here, your px, py, vx, and vy RMSE is less than the ground truth. When I run it, these are the results I obtained.

The simulation collects the position and velocity values that your algorithm outputs and they are compare to the ground truth data. Your px, py, vx, and vy RMSE should be less than or equal to the values [0.30, 0.16, 0.95, 0.70] after the simulator has ran for longer than 1 second. The simulator will also display if RMSE values surpass the threshold.

Follows the Correct Algorithm

Your Sensor Fusion algorithm follows the general processing flow as taught in the preceding lessons.

Reviewer Note

Well done, all the steps required to implement a Kalman Filter has been well defined and correctly implemented

While you may be creative with your implementation, there is a well-defined set of steps that must take place in order to successfully build a Kalman Filter. As such, your project should follow the algorithm as described in the preceding lesson.