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DISCUSS ON STUDENT HUB

Extended Kalman Filters

REVIEW
CODE REVIEW
HISTORY

Meets Specifications

Excellent submission! Your Extended Kalman Filter performs as expected. Your code is really well structured and clean. I was able to follow all your implementation steps. Great job there! You have demonstrated mastery of the subject. Keep up the good work and good luck with the rest of the Nanodegree!

Compiling

Code must compile without errors with `cmake` and `make` .

Given that we've made CMakeLists.txt as general as possible, it's recommended that you do not change it unless you can guarantee that your changes will still compile on any platform.

Accuracy

Your algorithm will be run against Dataset 1 in the simulator which is the same as "data/obj_pose-laser-radar-synthetic-input.txt" in the repository. We'll collect the positions that your algorithm outputs and compare them to ground truth data. Your px, py, vx, and vy RMSE should be less than or equal to the values [.11, .11, 0.52, 0.52].

Follows the Correct Algorithm

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.

Your algorithm should use the first measurements to initialize the state vectors and covariance matrices.

Upon receiving a measurement after the first, the algorithm should predict object position to the current timestep and then update the prediction using the new measurement.

Your algorithm sets up the appropriate matrices given the type of measurement and calls the correct measurement function for a given sensor type.

Code Efficiency

This is mostly a "code smell" test. Your algorithm does not need to sacrifice comprehension, stability, robustness or security for speed, however it should maintain good practice with respect to calculations.

Here are some things to avoid. This is not a complete list, but rather 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.

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