

Project Specification

Unscented Kalman Filters

CRITERIA	MEET SPECIFICATIONS
<p><u>Compiling :</u></p> <p>Code should Compile</p>	<p>Source Code Files are,</p> <ol style="list-style-type: none">1. src\ground_truth_package.h2. src\json.hpp3. src\main.cpp4. src\measurement_package.h5. src\tools.cpp6. src\tools.h7. src\ukf.cpp8. src\ukf.h <p>code Files stored under src directory compiled successfully using cmake and make under ubuntu linux operating system. CMakeList. File also attached for reference.</p>
<p><u>Accuracy :</u></p> <p>For the latest version of the project, there is now only one data set "obj_pose-laser-radar-synthetic-input.txt".</p> <p>px, py, vx, vy output coordinates must have an RMSE \leq [.09, .10, .40, .30] when using the file: "obj_pose-laser-radar-synthetic-input.txt"</p>	<p>Output as generated by the program is provided in the attached file out_put.txt under data folder.</p> <p>Required RMSE values achieved.</p> <p>RMSE values obtained:</p> <ul style="list-style-type: none">• 0.597474 is less than prescribed value of .09• 0.0849002 is less than prescribed value of .10• 0.274991 is less than prescribed value of .40• 0.157023 is less than prescribed value of .30 <p>Screen shot file "Screenshot from 2017-06-20 21-44-29.png" attached for reference.</p>
<p><u>Following Correct Algorithm</u></p> <p>Your Sensor Fusion algorithm follows the general processing flow as taught in the preceding lessons.</p> <p>Your Kalman Filter algorithm handles the first measurements appropriately.</p> <p>Your Kalman Filter algorithm first predicts then updates.</p> <p>Your Kalman Filter can handle radar and lidar measurements.</p>	<p>Radar and Lidar inputs as provided by udacity in the file - obj_pose-laser-radar-synthetic-input.txt are read using c++ stream reader, and checked for Lidar / Radar Flag as appropriate for each record in the txt file.</p> <p>UKF algorithm as written in c++ File ukf.cpp is used for due predict and update measurements.</p> <p>Records are picked up from single txt file and UKF filter is designed to handle the Lidar and Radar measurements by duly checking the Lidar/Radar flags.</p>
<p><u>Code Efficiency</u></p> <p>Your algorithm should avoid unnecessary calculations.</p>	<p>Code is written to avoid the list of inefficiencies as indicated in the rubrics.</p>