

ELE494-08

Autonomous Robotic Systems

Project CTE Document 3

Yousif Khaireddin

63618

Dr. Shayok Mukhopadhyay

**Results I have Achieved**

Throughout this project I have learned a lot and achieved a great amount. One of the most important things I learned was choosing the required sensors and interfacing them to properly and accurately complete a required task. The next most important thing I learned is the motivation behind the need for a Kalman filter, and this comes from the lack of accuracy we faced with our sensors. One of the major results I have achieved was adequately selecting all the hardware (with the help of Nasir) and properly piecing together all the parts to build the entire system. Another important result I achieved was learning to properly track the execution of a program throughout time since that is required throughout all the integrations we have used in the code. One last result I achieved was properly calibrating the motors and other hardware used to account for the inaccuracies present in mismatch of design.

**Contribution to Project**

I would like to preface this section by saying that all sections of the project had significant input from both members since we always worked side by side in the lab. So, while it is me, in fact, who completed the things listed below, Nasir’s input was vital throughout every step.

* Choosing the correct hardware for the project
* Developing separate testing mechanisms for each piece of equipment
* Constructing the robot and developing the circuitry
* Developing code to account for reversing directions
* Tracking timestep throughout the code
* Building the code for Ackerman’s steering
* Building the code for the complementary filter

One good way to track each of our contributions would be to visit the GitHub repository Nasir has set up here:

<https://github.com/NasirKhalid24/ELE494-08-Project>