



AMERICAN UNIVERSITY OF SHARJAH

ELE494-08

AUTONOMOUS ROBOTIC SYSTEMS

Project CTE #3 Document

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1 Result Achieved

Through the project I was able to develop a deeper understanding of autonomous robotic systems and the theory behind them. Working with the hardware was a new opportunity to learn how to interface with sensors and configure a different microcontroller to them. It also gave me the opportunity to learn programming languages I had little experience with previously. However, the most interesting part of the project was developing an entire system from scratch because this was not done before in other courses, figuring out the components, body, programming, software etc. By the end of the project I had been successful in my attempts to get real time data and configure sensors as well as helping my partner in developing the system code for the Robot and assembly.

2 Contribution

While the items listed below are things I dedicated most of my time to, it is important to note that my partner Youssef and me would work at the same time so there was constant input by both of us on the tasks that each person was doing. Therefore, although I had 'worked' on these parts it in no way discredits the efforts of my partner in development:

- Identifying components to order for Robot
- Soldering work and Robot assembly
- Developing all code to interface with the Encoders and Accelerometer
- Developing code for connection of microcontroller to server
- Developing code for frontend/backend (All Visualization)
- Setting up Github Repository for Project

By examining our Github Repository and it's commits it also shows our contributions to the code of the project over time (<https://github.com/NasirKhalid24/ELE494-08-Project>). In terms of novelty, from our research we were unable to find a system like ours where data was transmitted in real time the same way we had done it through a front and back end.