



WEEKLY REPORT

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WEEKLY REPORT II

This is the second weekly report for the EE493 Engineering design course. In this document we intend to present our weekly progress on the course so far. Just to remind the subjects that we discussed in the previous report, a brief introduction will be made.

We were considering the four options in terms of what we would like to learn or how much we could learn from the project after having succeeded at the end of the term and at the end of the year. Therefore, our intention is basically to choose one of the projects according to the reasoning mentioned above.

After the meeting with our advisor Emre Özkan we decided to take action to come up with a choice between the four projects. In the first half of the last week we were mostly collecting information about the projects from the internet and from the people who had graduated and/or is still studying in our university. During these research and brief meetings with the people and especially in the meetings, we were able to grasp the requirements that we should gain if we were to choose the mentioned project. For each individual project after we got the information for example the equipment that we will need or a particular task that we should learn we as a group argued the four possible projects with these knowledges in hand and we agreed to choose our project. We will go with the device trying to extract the plan of its surroundings as “mapping robot” shortly. The reason for this choice is that we see the mapping as a crucial part of a robot especially if it is a mobile robot. Whatever the task the robot is supposed to do it must for example locate the objects around it and position itself accordingly. For instance, it does not matter if it is made to fly, swim, run, survive, investigate etc. it is necessary for the robot to perceive the environment and make the choices that will keep itself on the track. Even if the task is simple like walking in a straight road it should be able to decide when to stop or start autonomously to avoid any collision. These reasons can be increased to more general cases. Of course, all the other three projects may have similar qualities and features in an analogous perspective. However, later if we are asked what kind of project that we made in the senior year, we would like to say “a robot that maps its environment autonomously” without any external help.

In the second half of the last week after making the choice, we started to gather general information on mapping and approaches to this kind of problem. We found a few sources that we think it will facilitate our progress. One of them was given in the Weekly Report-I.

Right now, since we are on the surface, we are not very sure whether it will work out or not but we will try to make use of it in the next weeks. We are trying to determine which components should we use like which programmable microcontroller, sensors, motors etc. Firstly, we are planning to start by making the robot to complete one lap around the walls, following closely the walls. Probably we will have problems at achieving this task similar to the other tasks that will be mentioned in a short time. We will try to solve these problems and our second aim will be the extraction of the information of the objects. Similarly, we will be dealing with the problems here as well. One of the examples might be the sensors not getting the correct data due to the shape of the object and/or sensor position. And finally, after getting these problems solved we will try to send the data to a screen and display the map. We expect that some of these problems will not be solved easily as we wrote down.

To sum up, we decided which project we work on it and how process we will follow. Next week, we will detail steps of the process. In addition, we will try to constitute some parts of the project and make them work properly.