ABSTRACT

This final year project entitled "Design and development of an Assist driving system using analysis and image processing" is an attempt to create a simple, user-friendly and operating system that will provide convenience to the user in specific aspects of driving.

To serve this purpose, first of all, there was a study of several such systems that are currently available in the market. This search describes how each system works and the way that each one of them provides drivability. Then the main pillars of the system to be developed are analysed. These are the data adjustment system, NI myRIO, a device designed and developed by the company National Instruments, for which a general reference is made, containing a general description and the company history. The reference for the NI myRIO, includes the description of its operation, the device's specifications and the advantages of its use.

 The data acquisition system is consisted by the software NI LabView, also a development by the company National Instruments. This software is the software used to program the NI myRIO, correct processing of data and extracting information. Also, the data receiving system contains sensors that may be included in the system. These sensors are sonar, radar, infrared sensor and photodiode along with the webcam that will be used to capture images.

Later on, in particular Chapter 5 analyses the preliminary procedures followed to connect the NI myRIO, with the computer, wired and wireless, and mobile or tablet. A description, which includes the original procedures before programming is made with pictures and very clear step by step instructions.

Chapter 6 analyses the specific details that which will consist the final system basis by the means available. This description includes the analysis of the models that will be used function, technical characteristics and how these are applied to the system.

Chapter 7 clarifies the detailed mode of the system together with a description of the programming code, how the notifications are received, how the results are transmitted to the server and the convenience that each of the system part provides to the user.

Finally, the last three chapters, state the conclusions from all the study, the analysis of the overall cost, ways of reducing and ways in which the system can be made more functional, more efficient and how to provide more convenience to the user.