

Light Following Robot

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Abstract: *The increasing demand of making the roads safer has triggered a lot of companies to develop complete self-driving cars. A self-driving car requires a great number of different sensors as gyros, radars, GPS, tachymeters etc. and advanced software. This thesis will focus on the possibilities of using only light sensing devices for a tracking robot and examine the advantages and disadvantages of this. The purpose is to investigate which type of light sensor is more suitable for a tracking robot and what the limitations of a tracking robot using this technology are. A demonstrator using two light sensors for controlling speed and direction and a color sensor to avoid obstacles will be built. Apart from choosing the most suitable sensor for a light-tracking robot the sensing distance and range of the chosen one will be tested. To investigate the different light-tracking possibilities and the accuracy of the demonstrator, the vehicle will be put in an open indoor space with arranged colored luminous obstacles. The robot will be tested in both a completely dark room and a lit room. The intention with the outcome is to see the differences of the robots behaviour when disturbances from surrounding light are added as an additional aspect. The results from the test are presented and the use of different sensors are discussed. The final conclusion on using light sensing for a tracking robot is that it is an easy and inexpensive method, but it should be used as a complement to other sensing devices not as a stand-alone method.*

Keywords: Motor Shield, LDRs, Node MCU

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