

BASKETBALL PLAYING ROBOT

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ABSTRACT

Robot, it is an interesting term which can be defines as an intelligent agent which built by human being. Through the evolution of technology from time to time, more robots with greater intelligence and workforce are created in order to do the task automatically without any instruction of human. For example, a robot was built and sent to the mars for the investigation purpose. It is able to move by itself by passing over the rocky surface on the mars and determining the water source automatically. Thus, by evolving the robot in the ways of performing more humans' action will help to making a multifunctional and automatic robot that is able to help solving the problem.

Thus, a basketball playing robot is being design to perform several action of the human like basketball bouncing, ball gripping, and shooting. Besides that, the robot is able to avoid itself from the obstacle in front and tried not to leaving the basketball court area. The sharp infrared sensor is used to sense the object in front of the robot. Then, robot will try to avoid itself away if the object is determined as an obstacle. Then, there were 5 infrared sensors built and were installed at certain part of the robot for certain purpose. Four of them were basically used as the basketball robot from moving out of the basketball court. However, two infrared sensors that installed at the front edge of the robot were also used as the shooting line position detector where the robot will start the shooting operation when the front infrared sensor detects the basketball court's shooting area. Well, the last infrared sensor will be installed at the part of servo gripper. It was used to sense the absent or present of the basketball. During the absent of the basketball, the self-designed servo gripper will be open and waiting for the basketball to be located in servo gripper. Thus, in a simple description, the basketball robot will be able to avoid itself from obstacle, staying inside the court, performs with the present of the ball, and shooting the ball whenever it meets the shooting line.

The prototype was constructed successfully and at the same time, it is able to perform the objectives set at the beginning expect for the ball bouncing function due to some reasons. There will be more details of the project like hardware and software design, working principles and etc which will be explained further inside the project report.