ABSTRACT

In the competitive contests of wheeled soccer robots, the robots are expected to have the ability as worthy as a game of human playing soccer, such as chasing and dribbling the ball, avoiding the opponents, and kicking the ball to the other team's goalpost. Object detection is one of the methods that can be implemented so that the robots can identify certain objects. The objects that are identified using the object detection algorithm are as follows. An orange futsal ball with a circumference of approximately 60–70 centimeters, a black dove-colored robot using a cyan or magenta shawl, and a white-colored goalpost. The purpose of having the ability to perform an object detection is to ease the robot in the process of identifying the object of a ball, other robots, and goalposts. Therefore, the detection and identification of the objects are more specified and the robot doesn't misinterpret the objects that are similar to the specified balls, robots, or goalposts. The object detection algorithm is expected to detect and identify objects with a 70% detection accuracy. By using an omnidirectional camera system and object detection algorithm, the robot is expected to run optimally on top of the green arena.

Keywords: Object Detection, Omnidirectional Camera