

ABSTRACT

Wheeled Robot Soccer is part of a world robot soccer research who strive to produce a robot soccer that is able to against with professional world soccer player. A robot soccer should be able to detect, pursue, and kick the ball, so it needs a system or sensor to detect the ball. In this final project made a ball detection system consists of a digital camera to capture the image and a single board computer to process and identify the ball on that image using computer vision technique. The result of the ball identification as ball position in the captured image will be used as a reference for robot movement such us navigation, kicking and dribbling, and the other decision-making. The ball detection system will be integrated with the robot's navigation system that consist of several electronic drivers and a microcontroller that will receive the result of the ball identification as ball position, so that the robot can do navigation based on the ball position that is received. In this final project, the system has successfully detect the ball with the ball data as ball position in the frame in pixel units and the robot can navigate to the detected ball position.

Keywords: computer vision, digital camera, microcontroller, single board computer, ball detection system