

ABSTRACT

Mobile Robot is a system that is able to perform or navigate intelligently using sensor-actuator control techniques. Currently the Mobile Robot system is developing rapidly in various fields and research on it is increasingly being carried out. The research that has been done aims to find an efficient navigation system to be applied to the Mobile Robot system. In its application the navigation system on the Mobile Robot uses one or more sensors embedded in the Mobile Robot. This can lead to inefficiencies in terms of computing and in terms of making decisions in navigating the Mobile Robot.

In the navigation system on the Mobile Robot, simplification of the use of sensors and computing can be made. By using Sensor Vision, namely the camera and performing centralized computing, it can create a time- and memory-efficient navigation system. The use of Sensor Vision is to replace the sensor which is usually implanted directly on the Mobile Robot to recognize or read the Mobile Robot's working environment properly. The data that will be obtained from environmental readings are in the form of robot coordinates, goals, and obstacles using Object Detection. By computing centrally, the data will be processed with a Personal Computer (PC) using the Fuzzy Logic Control method, so that the Mobile Robot will only receive data in the form of right and left wheel speeds.

Keyword: Mobile Robot, Object Detection, Sensor Vision, Obstacle, Fuzzy Logic Control.