

OBSTACLE AVOIDANCE & LIVE BROADCASTING

ROBOT



Final Year Project Report

Presented

By

Hamza Imtiaz

12002106009

Khudaija-Tul-Murtaza

13004106011

Punema Martin

12002106001

Department of Informatics

School of System & Technology

University of Management & Technology - Lahore

OBSTACLE AVOIDANCE & LIVE BROADCASTING ROBOT

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Supervised by

Muhammad Fahad Zia

Advisor Signature: _____

FYP Committee

Muhammad Fahad Zia (Assistant Professor): _____

Usman Inayat (Lecturer): _____

Zunaira Nazir (Lecturer): _____

Chairman

Signature: _____

Department of Informatics

School of System & Technology

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Signature: _____

Hamza Imtiaz

Signature: _____

Khudaija-Tul-Murtaza

Signature: _____

Punema Martin

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ABSTRACT

Wheeled mobile robots created from the self-ruling mobile robot named “Yamabico” which has been planned for numerous years. The robot used in this study is a mobile robot which is furnished with four actuator wheels and is examine as a system subject to non-holonomic restraints. This project is very low budget mobile robot for heavy load that consists of distance sensors, Arduino, Dual tone multi frequency, L298 motor driver and DC motors with wheels. Extra bulb is used for lighting the zone in front of robot; this is very beneficial for dark area.

The main motto of designing this robot is to help the military and rescue services to use it as surveillance or rescue service robot. Not only this, it can reduce the complexity of operating remote control based robots. For example, military, industrial robotics, construction vehicles in civil side etc. come under this category.

Commands to the robot are sent by cell phone depending on either controlled or autonomous. Once the commands are received by the receiver on robot, it processes them in order to change position or speeds. It also develops real-time obstacle detection and obstacle avoidance for navigation of mobile robots using IR sensors in an unstructured environment.

The process of robot control includes;

- Collect information from the environment (Senses).
- Information collected is used and processed (Process).
- Follow instructions to perform actions (Acts).

In this progressive approach, at first robot detects the earth and gathers the data and afterward designs the following activity. Information gathered will be passed to Arduino to process those information. Deterrents encompassed by the robot can be distinguished by sensor introduced on the robot, for example, infrared Proximity sensors. This maintains a strategic distance from robot crash. Camera introduced on the robot can give video sustain to the client keeping in mind the end goal to perform examination in new zone or tight passage.

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CHAPTER 1

INTRODUCTION

Autonomous robots have made their way into different commercial industries as well as for defense purposes. Its practical uses make it possible to save human life and allow it to be used in places where sending work force is not feasible. One of its most important uses is in different catastrophic disasters where demolished buildings and wreckage makes it impossible to access the situation and sending workers in a sensitive area could take put the lives of many in danger.

In order to avoid the loss of human life implementing autonomous robotics systems can be helpful. It allows the robot to evaluate the environment around it and sends real time data to the user with accuracy. Their use has increased by a great margin recently due to the advancement in the field of robotics and the obvious demand for such devices. The purpose for us to take up this project was to ensure to develop a system for robotic mapping and navigation which is more user friendly as well less costly. The aim was to make a user-friendly, feasible and safe autonomous robot that requires minimal user intervention and is reliable enough to be used in different scenarios.