DEVELOPMENT OF MOBILE ROBOT CONTROLLED BY ANDROID PHONE VIA BLUETOOTH

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ABSTRACT

This robot was designed so that it can be controlled by an android phone instead of using the usual controller, which would be the PS2 controller. The android phone acts as a remote control to operate the movements of the robot. The robot is controlled wirelessly using the Bluetooth feature which is present in all android smart phones. A Bluetooth module is mounted on the robot to allow wireless communication between both the android phone and the robot. An open sourced application called Blue Control is downloaded into the android smart phone to enable the communication between both the android phone and the robot. This application acts as an interface between both devices. PIC microcontroller is used as a controlling device for this whole system. It is programmed to implement the movement algorithm of this robot.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

A robot is an automatic mechanical device often trying to duplicate the behavior of a human or animal. Modern robots are usually an electro-mechanical machine governed by a computer program or electronic circuitry. A robot can be autonomous or semi-autonomous [1]. It is a system that works together to perform a task by incorporating control systems, manipulators, power supplies and software [2]. A robot can be controlled by a human operator, sometimes from afar. Usually, a robot is controlled using a PS2 controller or any sort of other controller of such, be it wired or wireless. However, in this project, instead of using a controller as mentioned, an android phone is used to direct a robot.

What is android? Android is an operating system for mobile phones and tablets, in much the same way that PCs run Microsoft Windows as their operating system. Android comes in a few different versions and is maintained by Google [3]. Android is designed mainly for touch screen mobile devices such as smart phones and tablets. Android contains the vital functions to using mobile phones. However, user can buy or download applications for free to allow the smart phone to do more. For this project, an application (app) was downloaded for free from Play Store. The app is called Blue Control. It is a free application, available for users to program their own robot movements [4].