REVIEW ON WIRELESS VOICE CONTROLLED ROBOT

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Abstract - *Robotics is currently being used in any field right from industrial automation to medical sciences and home automation. The ongoing techniques on the robot control methodology and analysis of the same has delivered few impressive results and innovative methodologies in the control of the robotic vehicle. A lot of research work is being carried out to enhance the control methodology and improve the easy interaction between the human and the robots. The robot control techniques vary from completely autonomous which can take their decisions on own using SLAM and manual control techniques or sem autonomous techniques. The Autonomous robots fail and fall short in results where more human intelligence is required and decisions are to be made in real time. The autonomous control techniques of the robot involves various techniques including the pre-programmed path on which robot vehicle can move, GPS guided navigation, SLAM and LIDAR based real time path mapping systems and RF based indoor positioning techniques.*

Key Words: SLAM, LIDAR, robotic vehicle, GPS guided navigation, RF based indoor positioning techniques

1. INTRODUCTION

Automation is the need of the time. Robotics and automation with some sort of human intelligence can be used to handle tough situations which are difficult to handle by humans alone. The voice command system is the most user friendly way to control any system and is being implemented over the time to make most of the systems respondent to the voice. The Voice command control system is necessary to be implemented in robotics and robot control system which will control the robot in accordance with the commands received from the human using the speech recognition.

2. Robotic Car Using Arduino with Bluetooth Controller

selvaraj vijayalakshmi [1] The Android controlled temperature sensing Robo-Car. The working is based on Android OS, Arduino, L298N motor, DC motor driver, temperature sensor-DHT11 and Bluetooth module. Arduino is an open-source prototype platform. Sensing the environment of the temperature sensor. Remote control car, with an Arduino, L298N motor and Bluetooth module. Sensing the temperature, with an DHT11, Arduino and Bluetooth module. Upload the code to the Arduino using the knowledge of programming. The Arduino code simulated on

software and be interface with the hardware. The device can be controlled by any smart device with android. AirDroid is an app exclusive to Android which enables you to connect your device to PC through a Wi-Fi controller of wireless network. It is used to connect the mobile camera to view in our pc to fixing in the car. It also used to view the location of the car. The Robotic car sense the temperature to view by the mobile app. All the controls of the vehicle on the app on that device. It is used to sense the environment of the military force before doing some of the process. It is used for the sensing the environment of the system.

3. IOT Based Robot Control Design Based On Smartphone

Shruti Verma rt.al [2]Robotics is a emerging technology which can can be used in many applications such as manufacturing, processing operations, dangerous areas, medical environments, military, inaccessible areas etc. Also ICT applications became more complex while including various wired and wireless technologies Nowadays a robot can be integrated as an entity in the new paradigm of Internet of Things (IoT). Thus, in the IoT, a robot can be connected as a thing and establish connections with other things over the Internet. Despite some raised technical issues, the integration of robots within the IoT can offer great advantages in many fields.

4. Design of a Bluetooth Enabled Android Application for a Microcontroller Driven Robot

Vito M. Guardi [3]:It is possible to create a single Android application capable of working with a number of electronic devices typically used within the hobby and armature robotics field , without the devices creator having to know anything about developing an Android application. To do this, a standard communication protocol must be established between Android powered devices and other electronic devices. To limit the scope of this task, this paper considers communication between an electronic device powered by a typical microcontroller and an Android 4.0 (Jelly Bean) or later powered device. Additionally communication between the two devices takes place over Bluetooth communication channels.

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5. Android Based Robot Implementation For Pick and Retain of Objects

Ranjith Kumar Goud et.al [4] : Now-a-days it is complicated about terrorists and their bomb attacks. Even though we found a bomb it is much more complicated to remove the bomb safely. Many lives are depending on the bomb diffusion. Thise papers helps in diffusion of bombs with safe distance from the bomb. Bomb diffusion is controlled with the help of wireless communication using android phones. By our project we can diffuse the bomb from safe distance and it can save more lives. Thise paper send the few commands to the robot situated at the bomb. control two motors situated at the wheels for direction control and other two motors at robot hand. With these four motors can control all the directions of the robot and at the same time can pick

6. Smart Phone Based Robotic Control for Survllince Applications

M. Selvan[5]: The robotics and automation industry which is ruled the sectors from manufacturing to household entertainments. It is widely used because of its simplicity and ability to modify to meet changes of needs. The project is designed to develop a robotic vehicle using android application for remote operation attached with wireless camera for monitoring purpose. The robot along with camera can wirelessly transmit real time video with night vision capabilities. This is kind of robot can be helpful for spying purpose in war field

7. Android Phone Controlled Robot Using Bluetooth

Arpit Sharma et.al [6]: To day human-machine interaction is moving away from mouse and pen and is becoming pervasive and much more compatible with the physical world. With each passing day the gap between machines and humans is being reduced with the introduction of new technologies to ease the standard of living. Gestures have played a vital role in diminishing this abyss. In this paper, a rigorous analysis of different techniques of "Human-Machine Interaction" using gestures has been presented. Gestures can be captured with the help of an accelerometer, however, with the evolution of smartphone its independent usage has been rendered useless. This paper analyses the motion technology to capture gestures through an android smartphone with an inbuilt accelerometer and Bluetooth module to control the kinetics of a robot.

8. Robotic Control Using an Android Application

Saurabh Khoje et.al [7]: Nowadays we can see that things which were previously controlled manually are automated using machines and electronic remote controls. The main objective of this paper is to create an Android application which can be used to control the robot using wireless technology. Nowadays Android is the most popular operating system used for smart devices. Smart devices which are using the Android platform are also becoming more popular these days because of its smart and easy to use touch interface. Also hardware technology utilized in smart phones is improving significantly day by day. The wheeled robot is used in this paper will be able to connect with an Android smart phones using HC05 Bluetooth module. The closed loop system is implemented in the robot using PID (proportional, integrated, derivative) controller will provide us the constant feedback of the current status of performance of the robot. By using that feedback from the PID system errors in the system will be reduced and consistency of the performance of the system will be maintained

9. Controlling a Robot using Android Interface and Voice

Kishan Raj KC [8] : The objective of this paper is to develop a program or an Android app to control a robot powered by Arduino using a motor driver shield and a Bluetooth modem. The process involved in building the robot includes the assembling of a chassis used for the robot and programing the Arduino as well as the interface for the android device. This paper documents the design process for the robot and programming for the android interface. The details in the paper give the information about the different aspects of computing involved in whole project. The outcome of the project is a combination of embedded computing and programming.

10. Bluetooth based home automation system using Android phones".

Piyare, R. [9]: A robot is usually an electro-mechanical machine that is guided by computer and electronic programming. Many robots have been built for manufacturing purpose and can be found in factories around the world. Designing of the latest inverted ROBOT which can be controlling using an APP for android mobile. And in which we use Bluetooth communication to interface Arduino UNO and android. Arduino can be interfaced to the Bluetooth module though UART protocol. According to commands received from android the robot motion can be controlled. The consistent output of a robotic system along with quality and repeatability are unmatched. This robots can be reprogrammable and can be interchanged to provide multiple application

11. Motion Control of Wheeled Mobile Robot

Gyula Mester [10]: The paper deals with the modeling and control strategies of the motion of wheeled mobile robots. The model of the vehicle has two driving wheels and the angular velocities of the two wheels are independently controlled. First, the vehicle kinematics model and the control

strategies using a feed forward compensator are analyzed. Second, fuzzy reactive control of a mobile robot motion in an unknown environment with obstacles are proposed. Finally, the mobile robot simulation is illustrated.

12. Comparative result

➢ By using Ardino studio to control the Re module the car will revive the commands via Bluetooth and move accordingly.

➢ It will used to check the Temperature and humidity of the Environment.

➢ The operating System Dies still in an early stage of development it has already to succeed in several of its goals.

➢ The OS of phone is android which can develop Effective remote control program

➢ It has proven to allow for meaningful two way communication

➢ Android phone and Robot which will allow non-expert interact with System amegh16 controller

➢ The Robotic Architecture proposed is very scalable

➢ The potential of System can be increased by adding more features like wifi connectivity, robotic arms, and camera different types of system.

➢ The main Advantage is Small phone easily available and remote can replace at low cost.

13. CONCLUSION

Reviving all the literature Surveys and by knowing our needs a suitable design of wireless voice control Robot is made. The use of Robotic devices and automation can drastically improve productivity. The voice controlled vehicle could be widely used in various automated control systems of improved continuously we can use this kind Systems in the Environment harmful for human health like collecting, packing and disposing radioactive in contaminated dusty places Etc. Thus in this project we developed a robotic vehicle which will receive the command via Bluetooth device of waste and move accordingly, we are provide robotic architecture which can be controlled by smart phone with Bluetooth Technology

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